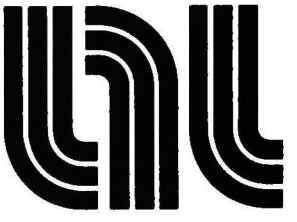

SEVENTH ANNUAL CONVENTION

OF THE

INTERNATIONAL ASSOCIATION

OF

FACTORY INSPECTORS

OF

NORTH AMERICA.

HELD AT

Chicago, Ills., September 19—22, 1893.

FOREST CITY PRINTING HOUSE,
113 CHAMPLAIN STREET,
CLEVELAND, O

OFFICERS.

JOHN FRANEY, New York	President.
J. T. MURPHY, Mass.	First Vice-President.
MRS. M. B. MCENERY, Penn.	Second Vice-President.
F. J. CASSERLY, Minnesota	Third Vice-President.
W. J. MCCLOUDE, New Jersey	Fourth Vice-President.
EVAN H. DAVIS, Ohio	Secretary-Treasurer.
MISS MARY E. HALLY, Mass.	Assistant Secretary.

ORDER OF BUSINESS.

Roll-call of Officers and Delegates.

Reading of Minutes.

Reports of Committees.

Unfinished Business.

Election of Officers.

PROCEEDINGS.

Persuant to the call issued by First Vice-President John Franey, of New York, the Seventh Annual Convention of the International Association of Factory Inspectors convened in the Council Chamber, City Hall, Chicago, September 19, 1893.

Mr. Franey, assuming the duties of President, in accordance with Section 4 of the Constitution, at 11.30 A. M. declared the Convention in order for business, and requested the Secretary to call the Roll of Officers.

The roll was called, and the following Officers responded:

John Franey, *First Vice-President.*

J. S. Weinthal, *Second Vice-President.*

F. J. Casserly, *Third Vice-President.*

Mary A. O'Reilly, *Secretary-Treasurer.*

The roll of States and Provinces being called, delegates were found to be present as follows:

MASSACHUSETTS. — Rufus R. Wade, *Chief*; Inspectors John T. White, Joseph M. Dyson, Jos. A. Moore, W. T. Buxton, H. A. Dexter, Jos. Halstrick, John Tierney, J. L. Knight, Henry Bardwell, A. J. Pheney, John T. Murphy, Isaac S. Mullen, J. E. Griffin, J. H. Plunkett, Henry Splaine, J. J. Sheehan, Paul Hannagan, Thomas Hawley, Miss Mary E. Halley, Mrs. Fannie B. Ames, Jas. R. Howe, Jas. C. Murry, T. W. Merriam.

NEW YORK. — John Franey, *Assistant Chief.* Inspectors John Jordan, Geo. A. McKay, Mrs. Margaret Finn, Miss Louise Cuthel, Hiram Blanchard, Francis U. Coe, Guy H. Fuller, Fred. C. Mulken, P. J. Delaney.

NEW JERSEY. — L T. Fell, *Chief.* Inspectors J. S. Weinthal, W. J. McCloude, John D'Arcy.

OHIO. — E. M. Slack, *Acting Chief.* Inspectors Evan H. Davis, Charles Burns, John W. Bath, Fred. M. Campfield, Willard Ducomb, A. M. True, W. R. Matthews, John H. Ellis, E. T. Ridenour, James A. Armstrong, Thos. T. Yeager.

PENNSYLVANIA. — Inspectors Mrs. M. B. McEnery, Miss Mary A. O'Reilly, Miss Mary Wagner, B. T. Castle, W. O'Keefe.

ILLINOIS. — Mrs. Florence Kelly, *Chief.* Inspectors Mrs. A. P. Stevens, Mrs. B. M. Powell, Mrs. J. R. Power, Miss M. A. Kenny, Miss Fannie Jones, E. P. Jensen, John Merz, A. Bisno, James Hickey.

MINNESOTA. — Inspector F. J. Casserly.

RHODE ISLAND. — John H. Davis.

PROVINCE OF ONTARIO. — Robert Barber, Jas. R. Brown.

On motion of Chief Wade, of Mass., the reading of the minutes of the Sixth Annual Convention was dispensed with.

In the absence of the Mayor of the city, who had intended to be present, but was unavoidably detained with other important official engagements, Mrs. Kelly, Chief Inspector of the State of Illinois, arose, and, after expressing her regrets that Mayor Harrison was unable to greet the delegates in person, extended to the Convention a cordial welcome to the hospitalities of the city and State, with the hope that the occasion would prove one of great profit, as she felt certain it would of much pleasure to all present.

Chairman Franey responded on behalf of the delegates to the kindly words of greeting, and then proceeded to deliver the annual address of the President, which was as follows.

PRESIDENT'S ADDRESS.

LADIES AND GENTLEMEN OF THE CONVENTION:

The duty of calling this Convention to order devolves upon me because of the resignation of the President elected at our meeting in Hartford last year. In so doing I may be permitted to express the mutual pleasure which we all feel in renewing the acquaintance made in these annual gatherings during the years past, and in welcoming to our conference those who, through the mutations of our American system of politics, or because of the passage of new inspection laws, are now for the first time taking part in our deliberations. It does not detract from the public value of these annual gatherings that they have given rise to lasting friendships and developed an appreciation of the good personal qualities af acquantances who for the greater part of the year are widely separated and pursuing their respective duties in distant commonwealths. It is with no

less regret, however, that as our eyes wander over the faces of those present, and fail to note among the familiar ones a few which we have been accustomed to see in our gatherings heretofore, we regretfully recall the frailties of nature and the iron logic of events which has caused changes to be made in the personnel of the inspection departments of some of the States. It is a satisfaction to know, however, notwithstanding the passing of individuals, that the progress in material legislation in the direction of improving some factory laws and enacting others has gone steadily on, and I am happy to say that in this direction our Convention at Hartford last year was not without its beneficial influence. Pennsylvania has since then increased her force of inspectors and improved her original factory law in important respects; Ohio has advanced another long step in the purpose of protecting her toilers in mills and factories; New York has further strengthened the hands of her inspectors in their efforts to curtail the evils of the sweating system; New Jersey has reduced the legal number of hours of labor for women and minors in mills and factories to fifty-four per week, and the great State of Illinois has fallen into line and created an inspection department to enforce new and stringent factory regulations. There has been no step backward in any State. All new legislation has been formed upon lines endorsed by the experience of the inspectors and modelled upon the acts of the most progressive States.

The good results that have flown from these Conventions have been manifold. They have stirred to emulation those of the States which were without legal restrictions of any kind in the conduct of their industrial pursuits, and by this indifference not only permitted the artisan elements of their populations to suffer various ills, dangers and annoyances from foul atmosphere, dangerous machinery, defective toilet facilities and long hours of labor, the results of crude knowledge of factory and mechanical construction or the grasping tendencies of unscrupulous employers, but by a fear of befriending too much the humble laborer and workman, their statesmen withhold from the manufacturer the benefits of wise laws which experience has shown have improved the product of the mills in quality and quantity, in the same ratio as beneficent factory legislation has been applied. While thus educating the law-makers of the country and tending to equalize the statutes of the different commonwealths, the papers which are read at these conventions and the discussions which follow their reading, the comparison of experiences, the practical demonstration of applied invention, and new discoveries, go far to fit the inspectors present for a better and more efficient performance of their duties, and broaden the scope of their knowledge of proper factory inspection beyond the official requirements of their own States. This increase of information is especially of benefit where the law does not as yet embrace all subjects usually understood to be within the domain of an inspector's duties. It is the experience of all of the factory departments, that with the majority of employers it is only necessary to suggest an improvement in existing conditions to have it properly attended to, and in this way without the compulsion

of law many reforms have been accomplished. The law follows later for application to those of unfriendly or unwilling disposition, and then the inspector is prepared to suggest, with the certainty that his suggestions will be followed, those changes which formerly he found it useless to advise. It is also necessary to hold meetings of the inspectors of each State from time to time, in order that a uniform system of inspection may be carried out. In this way a thorough understanding of the law, as practically applied, will be disseminated and fewer mistakes will occur.

I will not detain the Convention with any further comment upon the purpose of our meeting, and I therefore conclude, with the hope that in conjunction with our duties here, advantage will be taken of the opportunity which this city affords to enlighten and aid us in the wonderful display of the world's products and man's achievements at the great Exposition now being held in this city.

F. L. Casserly, of Minnesota, moved that the chair appoint a Committee on Programme

The following committee was appointed: F. L. Casserly, of Minn.; Rufus R. Wade, of Mass.; E. M. Slack, of Ohio.

On motion of Mrs. M. B. McEnery, of Pennsylvania, to appoint a Committee of three on Finances, the following were appointed on said committee: Mrs. M. B. McEnery of Pennsylvania, W. J. McCloude, of New Jersey, Guy Fuller, of New York,

The Committee on Programme retiring for consultation, a recess was taken and agents present were priviledged to exhibit and explain to the delegates the merits of various mechanical appliances, as fences and guards for the prevention of accidents. The display was an interesting one, among which were several new designs of elevator gates, devices to prevent the bursting of emery wheels, and guards for saws and other wood-working machinery.

Inspector Coe, of New York, also took advantage of the occasion to illustrate to the Convention with a series of models, the operation of "Kidder's Elevator Safety Interlock." The device received very favorable comments from the delegates, and was recognized generally as supplying a long-felt want in affording absolute and continual protection against risk of persons falling through elevator shafts.

Ths Committee on Programme being ready to report, the Convention again came to order.

REPORT OF COMMIMTEE.

We recommend that all papers prepared by delegates be read in the following order:

1. "Factory legislation in Illinois." Mrs. Florence Kelly of Illinois.
2. "Women as factory inspectors." Mrs. Margaret Finn, of New York.
3. "Inspection laws — the benefits derived therefrom." Isaac S. Mullen, Mass.
4. "Guarding of elevators." Francis U. Coe, New York.
5. "The removal of dust from wood-working machinery,—how best it can be done." Evan H. Davis, Ohio.
6. "Should public buildings as to lighting, heating, and ventilation be under government control." J. S. Weinthal, New Jersey.
7. "Observations on factory light, with recommendations for shorter hours of labor." Henry Splaine, Mass.
8. "Has factory legislation in Pennsylvania been beneficial to factory operatives? If so, how?" Mrs. M. B. McEnery, Pennsylvania.
9. "Child labor." Mrs. A. P. Stevens, Illinois.
10. The inspection of steam boilers under State supervision." Rufus R. Wade, Massachusetts.
11. "Labor legislation in Minnesota." F. L. Casserly, Minnesota.
12. "The ideal mill of the future,—what it will be." Chas. Burns, Ohio.
13. "Purifying air in factories." John Franey, New York.
14. "Operation of the law in Massachusetts relating to the sale and manufacturing of clothing in unhealthy places." John Griffin, Massachusetts.
15. "Has the enforcement of labor laws in New Jersey been beneficial?" John D'Arcy, New Jersey.
16. "The sweating system." Geo. A. McKay, New York.
17. "Ventilation in school buildings." Jos. A. Moore, Massachusetts.
18. "Devices for guarding elevators." Jas. A. Armstrong, Ohio.
19. "Fire escapes — good, bad and indifferent." A. M. True, Ohio.
20. "How he worked forty years ago." Jos. M. Dyson, Massachusetts.
21. "Child labor." G. H. Fuller, New York.
22. "Theaters, — how they should be built and arranged." Willard Ducomb, Ohio.
23. "Children in dangerous and unhealthy occupations." John H. Ellis, Ohio.
24. "Buildings under government control." Wm. J. McCloude, N. J.

We further recommend that the hours of meeting each day shall be from 9 A. M. to 12 M., and from 2 P. M. to 5 P. M.

Signed,

F. J. CASSERLY,
E. M. SLACK,
R. R. WADE.

Inspector Evan H. Davis, of Ohio, moved that the report of the committee be adopted.

Upon which the Chair suggested that it would be well to divide the report, and to act upon each recommendation separately. This was agreed to, and the report as it relates to the reading of papers was adopted

Inspector McKay, of New York, moved that the time of meeting be from 9 A. M. to 2 P. M. each day.

After some discussion the motion prevailed, and the report of the Committee, as amended, was adopted.

Mrs. Florence Kelly, of Illinois, being called, read a paper as follows:

FACTORY LEGISLATION IN ILLINOIS.

Factory legislation in Illinois is still in the earliest experimental stages, the law creating the office of State inspector having been passed by the latest legislature and signed by Governor Altgeld in June of the present year.

The Illinois Factory and Workshop Inspection law is a sanitary measure. It has no educational feature such as characterize the law of New York, nor does it aim to guard the employe from death by fire or from mutilation by unguarded machinery, as do the laws of several eastern States.

The first three paragraphs of the law are designed to protect the community from the infection which is an inevitable accompaniment of the manufacture of clothing under the sweating system.

The subsequent body of the law aims to protect in some measure the health of the women and children employed in all forms of manufacture.

The legislators who framed the Illinos Factory law examined the tag and license provisions of the Massachusetts and New York laws and decided to follow the instinct of the sweater victims, who assured them that a more effective measure would be found in the eight hours' section. The argument is simple, to the effect that a sweater's shop is a small group of workers, and no one can extort enough profit out of them in eight hours per day to make the shop pay. It takes the 14, 16, 18 hours-day to make the sweater's shop pay. Hence the enforcement of this clause must lead to large shops, with large groups of eight hour employes. But such shops would not be sweater's shops, and the clothing trades would thus be placed on a level with the regular factory trades. For no large group of workers ever submit to the unsanitary conditions which are accepted as inevitable by feeble groups largely composed of children.

It is characteristic of Illinois that the enormous manufacture of the state have grown up so suddenly that the working class has had little time for study of the situation. So that thousands of children have come to be

employed with a recklessness now outgrown in other communities, and under conditions which would not be tolerated in Massachusetts or New York. And many a corporation, which in its New York factory guards its machinery, discharges its illiterate boys and girls and obeys the ten hour law, all in compliance with the New York labor code, has been working unlimited hours with women and tiny children in Illinois, unrestrained by any law whatever.

This last year a respectable working girl of my acquaintance was assaulted almost on her own doorstep as she was returning from work in one of the foremost book establishments of Chicago, having worked from 7 A. M. to 11.30 P. M.

The class of little children whom I taught in the Polk Street night school last winter, was made up of Italian boys and girls, ten, eleven and twelve years old, children so wholly illiterate that they were struggling with the bats, cats and rats in the opening pages of the primer. In November and December a large number of them left the night school because the candy factory in which they spent their days began to work overtime, and my pupils worked in it from 7 A. M. to 9 P. M. with a half hour for dinner and no supper, a working week of 82 hours. I used to see them going home long after night school closed at nine o'clock.

Under the new law such outrages as these upon the health and welfare of women and children are prohibited by the eight hours section, and it is again characteristic of Illinois her people that who had taken no action for so long a time, when the time for their action came, went farther and passed a more searching law than adorns the statute books of any other State.

For not only does the new law provide for destroying infectious garments, for limiting the age of child workers and thoroughly inspecting home and shop and factory; it also limits to eight hours per day and forty-eight hours per week the working time of every female of whatever age in every factory and workshop in the State.

Construing the law as a sanitary measure, it become the first duty of the inspectors to ascertain in what trades women and children are employed, and to give immediate attention to the more injurious of these. Accordingly, the manufactories of clothing, candy, paper boxes, tobacco, cigars and crackers, and the wood-working and stamping trades were thoroughly canvassed.

Especially injurious to the health is the running of sewing machines by foot-power in the clothing trades. This so exhausts men that I have never found a man forty years of age who was able to maintain the pace required. How much worse must it be for growing girls! Yet there were, last year, hundreds of girls between 12 and 16 years of age, employed in this way, some of them working 14 to 18 hours a day in the hottest months of summer.

Not only does the new law reduce to eight the hours of daily work of these unfortunate children, it further provides for winnowing out the more

delicate of them by requiring a physician's certificate, and prohibiting the employment of any child who cannot obtain one.

If the medical profession will do its duty, examining both the occupation and the child before granting the certificate, the standard of health of employes in a dozen trades will be vastly improved during the present year.

A valuable result of the new law already to some extent attained, is the greater uniformity of work and rest insured to girls and women. Formerly the custom prevailed of working overtime in many trades during a part of the year, and then closing the factory outright or working three or four very long days a week. This irregularity is one of the most cruelly demoralizing experiences of the working girls' life, injurious alike to health and to every habit of thrift and persevering effort. The regulation of the hours of work inevitable tends to distribute work over the year, and so to assure greater stability of occupation. This must prove especially beneficient in the clothing trades in which the long wearing days have come at midsummer, and the enforced idleness and privation at midwinter, when they were hardest to bear and most costly in vitality.

In many cases the shortening of the day has been in the morning, so that women and children who have had a long walk or ride before reaching the factory at seven o'clock, now sleep an hour later and reach their work at eight. The mother of the family, who rises still earlier to cook the breakfast and put up the lunch, also profits by this added hour of rest.

The vital clause of the law is, of course, this eight hours section. This makes it a matter of trade union principle for every union man and woman in Illinois to report at once every infraction of the law, and the unions have been found invaluable aids in enforcing this section.

The work of the inspectors has hitherto been chiefly by way of making known the law, no previous measure having paved the way for it. Much explanation is needed everywhere before the affidavits required for children between fourteen and sixteen are made, filed, recorded on the work-room walls, registered in the office and deposited where the inspector can find them on demand. Much argument and persuasion are requisite before the eight hours placards are duly posted, and often a factory must be watched for days before the firm decides that the inspector means what he says and the law must be obeyed.

However, two months' patient work have borne fruit in several ways. There is now a large body of honorable employers who are complying with the law in good faith, and a large and rapidly growing body of girls who not only obey the law and value it, but work as volunteers, making known its provisions and urging upon all their acquaintances the duty of co-operation with the inspectors, by insisting that the eight hours limit shall be observed.

Open defiance of the law is confined to a few metal stamping and woodworking firms, reinforced by the leading cracker-bakers and those notorious pillars of the sweating system, the millionaire merchants of the Chicago clothing trades.

Before engaging time and energies in prosecuting these, it has seemed wiser to enlist the ready support of a number of law abiding employers and to afford time for a body of wage earners to experience the advantage of the eight hours working day. It was necessary also, to obtain adequate evidence and assure myself of sufficient numbers of witnesses before asking the courts to condemn these offenders under the new law.

The intentional, determined law breakers are now thoroughly ascertained, and the difficulties in the way of legal proceedings are, I believe, obviated, so that it is now my intention to take steps at an early day for the enforcement of the eight hours clause in the few cases in which it is persistently violated.

The eight hours section of the Illinois factory law is one link in a chain of measures which have been adopted during a long series of years in many countries and in several States of our own Union, all recognizing the principle involved in a restriction of the hours of work of women.

Since England set the example in 1848 of a legal ten hours working day for women, and Australia, followed with the eight hours day for men and women, Germany has adopted a day of nine and a half hours effective work, (11 hours minus one for dinner and and ½ for supper), Massachusetts the 58 hours week and New Jersey the week of 55 hours.

In view of the widespread movement and the variation of the length of the working day, the question whether the week shall consist of 60 hours, or of 59 as in Germany, 58 as in Massachusetts, 56 as in England, 55 as in New Jersey or 48 as in Australia and Illinois, is merely one of detail. The principle is established, and it only remains for the more conservative States to emulate the example of Australia and Illinois and adopt the working week of 48 hours and the working day of eight hours.

You will all have marvelled at the beauty of the World's Fair, and we speak of this as the World's Fair year. But the Fair is an episode in a busy world. A year hence it will be only a charming memory and ten years hence the young people will wonder at our enthusiasm.

Meanwhile this law, which now commands so little attention, will unobstrusively fulfill its mission, checking the spread of disease, lengthening the childhood of the sons and daughters of the wage earners, prolonging the trade life of the girls and women, and paving the way for a shorter day of toil for men. And the people of Illinois of another generation, looking back from a happier day, will call this not the World's Fair year, but the first year of the Eight Hours Law of America.

The paper was of a most interesting character, inasmuch as it gave evidence of advanced legislation by the State of Illinois over the laws of other manufacturing States for restricting and bringing under uniform regulation the hours of labor for women and children, and in suggesting to the other States a practical way by which the worst features of the nefarious

sweating system could be remedied, and the system eventually obliterated, as a result of the strict enforcement of the law.

After much discussion of the merits of the law, in which several delegates participated, Mrs. Ames, of Massachusetts, desired Mrs. Kelly to give a more extended and detailed explanation as to the operation and results hitherto of the eight hour clause of the enactment, asserting that all facts that could be furnished relative thereto would be of the utmost importance to know, in order to effect similar legislation in other States.

Mrs. Kelly read the clause referred to, and spoke upon the subject at some length; she gave in detail a number of instances on the part of manufacturers and employes to override the provisions of the statute, but maintained that it encountered no more opposition than might naturally be expected for any change of so radical a character, and which so materially struck at the immediate pecuniary interests of the more selfishly inclined affected thereby. In her opinion the law had not been sufficiently long in operation to give precisely what it was capable of accomplishing, and that its effects for good were more to be anticipated than to be dwelt upon as a realization.

Miss M. A. O'Reilley, of Pennsylvania, moved that no delegate be permitted to speak more than once upon any subject, until others may have had the same privilege, nor longer than five minutes at any one time, unless by the consent of the Convention.

Chief Wade, of Massachusetts, offered the following resolution, which was unanimously adopted,

Whereas — Our republican form of government is based upon a recognition of equal rights, equal duties and equal opportunities; and

Whereas — Legislation is the practical expression of the public will; therefore

Resolved — That the gain of the industrial class in comfort, contentment, leisure, prosperity and health is the gain of the whole nation, and if under existing conditions our industries fail to provide work for multitudes of willing hands, to reduce the hours of labor means the employment of thousands of unemployed, and therefore promotes the general welfare; therefore we recommend the reduction of the hours of labor for the wage-earners.

Meeting adjourned at 3 P. M.

SEPTEMBER 20, 1893.

Convention came to order at 9.30 A. M., with First Vice-President Franey in the chair.

Miss Margaret Finn was called and responded with the following paper:

Men have always been regarded as women's natural protectors. If women have seemed to step forward to look after themselves, it is merely with the desire that men shall not be overworked.

This is not mere pleasantry. Every man among you must have observed how the ranks of women-workers of all sorts have increased in the last twenty years. This may not be so apparent in the country or in smaller places, where labor takes a less organized form. But in the State which I represent, there are not less than 131,000 women employed in the trades that come under the provisions of the factory law.

In 1888 the factory laws of the State of New York had been in operation two years. Part of this time there were but two inspectors, and then eight deputy inspectors were appointed for the entire State, all men. However great the zeal, and unremitting the energy of these men, it was apparent to every one interested that they were unequal in numbers to the task. To visit once the factories throughout the State, it would have required at least two years, barring vacations. If the entire force had been concentrated in New York City alone, it would have taken a discouraging length of time before its factories could have been covered once.

The need of a greater number of inspectors being manifest, and in view of the large numbers of women and children employed in factories, the Working Woman's Society of New York City proposed an amendment to the factory law providing for the appointment of six women inspectors.

Considering the facts, this did not seem unreasonable. The plea on the part of the women, however, did not rest on the abstract justice of such representation of their sex. It was confidently believed by the women, that women inspectors could accomplish certain ends that the male inspectors could not hope to accomplish. The women employed in factories, it was urged, would confide to women inspectors grievances relating to matters of propriety, that they would not tell to inspectors who are men. The women inspectors would be able to regulate matters, that otherwise women employes would be obliged to suffer in silence.

These arguments were urged in assemblies of women and women's clubs, and when the amendment went to Albany it was not without many and powerful friends.

There are probably very few present who do not know what it means to get a bill through a legislative body. Imagine then how much the women had to learn.

It is the nature of women, I assure you, to believe what men tell them. It will scarcely surprise you, with your knowledge of the law-maker in his

business of law making, that when the women were assured that they would have a majority in houses for their bill, they went home content. They were never more mistaken in their lives; what they did not know was that a bill introduced after a certain date could be defeated by one dissenting vote. That vote was promptly on hand. The bill was defeated, but everybody had virtually fulfilled their pledges.

But for the benefit of the women here, let me give a bit of legislative detail with reference to the Amendment, which shows the failure on the part of the women to estimate just what they are doing. It is an open secret that the women did not believe that their Amendment had the sympathy of the factory inspectors' department. They accordingly in their bill put the power of removal of the women inspectors in the hands of the Governor, thus placing the women inspectors on a different basis from that of the men. It was known subsequently that if the Amendment had passed, it would have been rejected, and justly, for it would have resulted in a subversion of discipline, as unwise for the women as it was unjust to the responsible head of the department.

The next year several amendments of the same nature were presented. By this time almost every means of moving legislative machinery was put in motion, and women of social prominence and working women hurried to the legislature, in season and out of season. Public presence was effectual. The Amendment was passed in its altered form, which placed the women inspectors on the same terms as the men, and was promptly signed by Governor Hill, who, I will here take pleasure in saying, however he takes pains to avoid the individual woman, has shown himself generously disposed toward women as part of the body politic.

The Amendment went immediately into action. In a month or so afterwards, the chief appointed eight women out of several hundred applicants.

The promoters of the bill had directed their efforts no further than the protection of women and children. It was supposed that the women inspectors would be placed in charge of women exclusively. When in the assignment of districts to women, no such distinction was made. The most zealous supporters of the Amendment were not prepared for so thorough a test of the value of women inspectors as this would present. By some indeed, it was felt that the chief was making this perilously difficult and that the continuance of women inspectors was conveniently put in jeopardy. In getting more than they had bargained for after so prolonged a contest, their fears were, perhaps, not unnatural.

It would perhaps not be so tempting to relate all this in detail, if their fears had been realized. On the contrary, there is not a woman inspector now, who does not know that the proposed scheme of the friends of the bill was impracticable. In apportioning out to us our duties, as they are apportioned to men, the chief did us a service, and I may express a hope that he did the cause of factory inspection no injury. Not only would it have been impossible to have set apart the manufactories in which women

and children only were employed, but if possible, it would have entailed a loss of time in going from place to place which would have crippled the service.

An even more important fact to make clear is that the peculiar evils that were so strongly urged, and that only women could remedy by gaining the confidence of the women employes, do not exist. This I may testify, both in my position as factory inspector, and on my previous experience as a factory worker.

I am proud to state thus publicly that the thousands of women, from whose ranks I come, do not need such protection at the hands of the law. They hold their honor in their own hands, and are capable of defending it without the aid of the State. But they are not called upon to so defend it. The employer knows that nothing so demoralizes his work-rooms and work people as favoritism shown to employes by those he puts over them; if he had no other reasons than those of self-interest, he desires that the moral tone of his factory be not lowered.

No, the provisions of the factory law are explicit. These when carried out, make the sex of the inspector comparatively unimportant. It may be finally admitted by women, that this may be as well done by men as by themselves.

Now as to the objections of our friends, the enemy to women inspectors, these seem to be based on three grounds. The first on inferior strength. This audience need not be told that a factory inspector should be physically strong. No man among you, remembering the tired feet and bodily weariness of many long days, will not admit it. Physical health, moreover, is necessary to the steady nerves, cool judgment, tact and good temper, which are among the necessary qualifications of a factory inspector. These are not, however, a mere matter of larger frames, excuse me, of broader feet, nor of muscles capable of lifting a greater number of pounds. They are matters of harmonious adjustment of the physical powers, and on this depends the staying qualities of either sex, and may be possessed by women as fully as by men.

The second objection to women inspectors is their lack of familiarity with machinery. The successful factory inspector has an eye that quickly detects the presence or absence of the necessary safeguards. This most women lack, unless they have served a previous apprenticeship in a factory. It is this that enforces the propriety of appointing factory inspectors from the ranks of working-women, a propriety which, if the Department of Labor could be severed from politics, would appeal much more forcibly than at present. But that quick intelligence that a factory inspector has need to possess, will in time make up for this previous deficiency in women. This I feel sure that the experience of the Chief Inspector of my state, and of his assistant, will confirm.

The third objection to women inspectors was that the manufacturers would not receive them here, and thereby unnecessary friction would arise. The manufacturer, as a man, as well as an employer, would object to dicta-

tation, to interference in his affairs by women, as he would not object to it on the part of men. The answer to this must necessarily be given out of personal experience. However, the manufacturer may have felt in the beginning at what was impending, I can only say that in most cases I have been courteously received, that my recommendations have been listened to respectfully, and more than that I have been even deferred to. Not infrequently the manufacturer will ask what he can do to make his establishment a model one, for there are many men, however, who may have objected to factory inspection at first, are now concerned to have their factories meet with approval. In this repect you will all agree with me that the factory law has been a great educator.

If it had done nothing more than changed the conditions of child labor, it would have performed a task worthy of the great States that have inaugurated it. Before the factory law went into execution, children of 9, 10 and 11 years were put to work, ruining all the advantages of school at the time, if ever they can take advantage of its opportunities. I can speak feelingly on this subject. I went to work at the age of 11, and know how difficult it has been to pick up in later years the knowledge I could have so easily acquired then. Unhappily these matters cannot be left to the parents. The scanty earnings that children bring are welcome in too many households. Here is an instance:

A man injured his hand in removing paper match boxes from the machine that cut them. This machine cut about 100 boxes a minute; to remove them from the knife, the hand moved with the rapidity of the machine itself. Yet this man was willing that his child should take his place. This the child did until the girls employed in the shop made such effectual remonstrances that the child was removed. This father was not only willing that his child should work when it should be at school, but to risk also its being crippled for life as he had been. The State, now recognizing its duty toward the helpless, and to its future citizens, does not permit even a father to sacrifice his child in this manner.

So thorough have the provisions against child labor been enforced in the factories of New York State, that the manufacturers, especially those of the better sort, exercise that care in seeing that their employes are the required age, that at first the department had to exercise.

Unfortunately, hundreds of children under age are employed in mercantile houses. Although there is a school law requiring that they be sent to school, the law is practically not enforced. This of itself presents the cogent reason why mercantile houses should be brought under the factory law. There has been an Amendment to this effect for two years under the consideration of the legislature, but through the combined efforts of the retail dry goods dealers of the State, it has not yet succeeded in becoming a law. These are matters relating to children we appreciate as factory inspectors, but as women we feel.

How much factory inspection has done to ameliorate the conditions of labor, not only among women and children, but among men. We know it

is impossible, however, in spending three years among factories of all sorts, in seeing working people under varied circumstances, not to have formed in the mind some opinion concerning the state of affairs that rendered it necessary for the State to take action, and its remedy. It may not come under the scope of my subject, but it is a privilege, if I may be permitted to say, that all that the State has done in this manner for working people could have been done as well by the working people themselves, if they were thoroughly organized. The spectacle of a united band of working people looking after and caring for their own interests, is not a wild dream of the imagination, but a fact that may be realized; and when it is realized it will be a fortunate day for the welfare and dignity of the working people, even though, my dear friends, it will no longer give us the excuse for meeting thus pleasantly, and renewing yearly our association.

Again the more personal privilege may be granted by testifying how as women inspectors of the State of New York, we have been sustained and encouraged by the department. Our errors have been faulty, but have been firmly pointed out; to this we bow our heads respectfully. What is and ought to be most gratifying is, that we have been treated fairly by our chief, and his justice and consideration has been repeated in his assistant. We have had justice. More than this we have no right to ask.

As to the success of what manifestly was an experiment, I can give no better evidence than that afforded by the factory reports of the State of New York of 1891, '92 and '93.

In the first of these, the chief states that five months is scarcely long enough to form an opinion as to our success, but suggests that we might be made useful if the law permitted, in seeing that the saleswomen had seats. This, it will be seen, was very guarded.

In the report of 1892, the chief speaks very encouragingly of our work, but admits our limitation in the way of machinery, concerning which, however, we are not too forward, but willing to defer to the men inspectors when necessary.

In the report of 1893 we are not mentioned at all. This silence is eloquent. The women inspectors have made their peace.

Chief Wade, of Mass., moved a suspension of the rules for the purpose of considering the advisability of changing the place of meeting from the Council Chamber to the chapel of the University of Chicago.

Professor Bemis, of the University, was present, and on behalf of the faculty tendered to the Convention the use of the chapel for future meetings of the session. After some deliberation, the desirability of the change was generally conceded, when Inspector Coe, of New York, made the following motion:

That when the meeting adjourned, it would be to meet at 9.30 A. M. in the chapel of the Chicago University.

Inspector Mullen, of Mass., then read a paper as follows:

FACTORY INSPECTION LAWS—THE BENEFITS TO BE DERIVED THEREFROM.

Mr. President and Members of the Association of Factory Inspectors.

That the public in general might be conversant with the term inspection laws, it would be expedient to define the same briefly. It may be said, that the term applies to such laws as appertain to factories and public buildings, mercantile establishments, and in some States not all to hotels, tenements and lodging houses.

As we all know, those whose duties calls them to inspect factories, that there are many and various matters which attention is called to. In the inspection of public buildings, great responsibilities rest upon the inspector in perhaps a hundred different ways.

In factories and workshops many thousand wage-earners derive untold benefits, calculated not only to benefit the employe but the employer as well. In very many respects great protection has been given to employers for the better advancement of their business in many particulars.

Legislation in respect to factory laws dates back to the year 1802 in Great Britain. At that time the law related to the preservation of health and morals of those employed in cotton and other mills, also to cleansing and disinfecting such establishments, and of ventilation.

In 1796, a board of health was appointed in Great Britain for the purpose of carrying out certain provisions of laws made at that time for the benefit of wage-earners. This provision related to the health and morals of both males and females employed in cotton and woolen mills; also that factories be whitewashed once a year, and that there be sufficient windows to supply fresh air. The time of employment not to exceed twelve hours daily, and no night work under certain conditions. This system was superseded by what was known as the Factory and Work-shop act, containing many new provisions. It provided educational learning, and the various acts since passed in Great Britain and the United States contain laws applying to the education of the masses. From these various laws of bygone days, it became apparent that there should be a more tangible system, to be known perhaps more extensively, and hence the system of inspection laws relating to factories, etc.

Excessive labor was one of the things that required to be remedied, the hardships that came from the employment of females and young children, greatly taxed the sympathies of many law-makers and friends of the wage-earner.

In the matter of protection from machinery, where so many dangers occur, much attention was paid to the subject of these dangers. In 1878

an inspection law was passed in England looking to education, and in 1877 Massachusetts enacted a law in relation to the same matter.

In 1877 a law relating to fire escapes was passed in Massachussetts, providing for some means of safe egress and for the better protection of life from fire and panic in hotels, theatres, public halls and other places of public assembly. As you know, other States having inspection laws fell in line and suitable laws were enacted tending in this direction, and was also the case regarding safety, of elevators and proper appliances looking to the safety of the many thousand passengers who are transported in them from day to day.

The law regulating the hours of labor, was at one time opposed to those whom it was intended to benefit, but after due consideration by many thousand operatives, it was unwise to endeavor to further antagonize a law which had a tendency to benefit them. Then came the employment of children, who were confined for hours in places where the atmosphere was bad in every particular; it was a great hardship to the young toilers, their bright and happy childhood was lost to them on account of the toil which they had to undergo.

The necessity of inspection laws arose from the natural sequence of varied employments, and from the utility of different occupations. The increasing wants with the advancement of civilization originated new employments, and this was also one of the many causes for legislation laws. It is said "that it is a well-known fact, that the vast machinery of industry, so necessary to civilization, is chiefly set in motion by the wants of man to satisfy his appetite, far more so than by the want of protecting his body, or the necessity of clothing and housing."

From the works of Von Hommer and Evlia we are informed, "that Adam was the first tailor, builder, and sawyer; Seth was the first button maker and wool stapler; Enoch the first weaver; Noah the first shipwright; Joseph the first watchmaker and a most expert carpenter; Solomon a basket-maker. It must be presumed that in those early days of the world's history, those engaged or endowed with trades similar to those of this day and time, was not troubled with laws to govern their hours of labor or for their protection against accidents or otherwise.

We notice that it is where civilization and enlightenment exists, that regular employments are performed, and as the people advance in wealth and power, distinct employments increase.

Through inspection laws much benefit is derived by those who make these advancements in the various industries. As does also the mechanic, whose fitness and skill is increased, and better tools and machinery are obtained. It brings about perfectness, and increases and makes greater competition among wage-earners. It simplifies occupations, and the exertion is not so great to obtain a knowledge of these occupations. It suggests ways of less time. It affords opportunities for social intercourse and intellectual pleasures. We might also say, that the law benefits and rears

an immense number of industrious men in very many particulars. The laws of to-day enable both young and old to obtain an education; they do not render the wage-earner incapable of properly discharging their duties, nor make them ignorant of their various trades and occupations, but trains them to exercise their powers for their own advantage.

Inspection laws and the benefits to be derived therefrom, tend to benefit wage-earners, and in more ways than one the organizations to which they belong. And why should this not be so? They belong to associations intended to be of benefit to them. I would refer to the fact, that in the British Museum there are papers which show that in ancient times associations of working people existed among the Saxons and Romans, the Athenians, also Turks; they embraced every calling in which the wage-earner takes part to-day. And so down through every decade men more, or less, have been identified with such associations. Therefore, the laws of to-day more or less, have a tendency to benefit the wage-earner of these associations.

Great advantages are to be derived in calling attention to many wrongs, as it were, and in redressing the same. The laws have been an incentive to exact and elevate. We are told, that "science has made earth give up her most valuable treasures. It has taught the sailor to plow the waters of the deep blue sea, has caused it to yield up its richest gems, has explored nature's labyrinth, and penetrated some of her most latent secrets. Art may continue to invent, and science to produce her ample stores, but the intelligence of man is needed to make judicious use of them." So it is in this present age, that good laws, intended to promote the welfare and interests of the wage-earner, has caused the most valuable treasures of the human mind to exert itself. Such as skill, talent and intelligence. The laws have had a tendency to have provided better tools, as it were, better machinery and better structures for their safety and convenience, and also provided better means in the progress of making and manufacturing.

Conditions in life are various; some have joy and sorrow, others care and pleasure — what is lost in one way, is gained in another. One's talents may be good and accomplish great results in one occupation, others may be valueless, but equally useful in another. So that, some inspection laws cause much benefit to be derived, that good results may be accomplished to those having skill and intelligence.

Not many years have elapsed in some States, and it has not been long since, that a certain class of wage-earners suffered and experienced great difficulty in the matter of proper ventilation, and especially so in regard to their health. Female workers especially become constitutionally weaker, and liable to fall sooner or later as victims of their occupations. Some perhaps, had years of suffering; many work-people had never thought of the subject, nor of the results upon their health; they could not give any definite intelligence or make any statements, and sometimes reluctant to

acknowledge their employment was unhealthy, even if they knew it to be so. This order of things has been changed by the enactment of suitable laws covering the matter of health through and by the means of good ventilation.

It is no doubt well to live with such a systematic arrangement of time, that every day will bring its plain and positive duties to perform. The busy hours of work should be interspersed with enough pleasures to impart spirit and brightness, to this end the laws of regulating the hours of labor appertain. Inspection laws also tend to the education of the laboring classes of this country. It is one of the noblest works of the age; it helps to elevate, and makes secure, and establishes the respect for many rights. It improves the condition of the working classes. They advance in intelligence and refinement, and they are inspired with a feeling of personal freedom and independence. And so it is in this country, that the working classes have every facility for acquiring education and advancement. In no other country, as in this, have the children of the poor such means of acquiring an education, while freedom of speech is condusive to the forming of a correct estimate of matters and things in general. And so it is, that the laboring classes are educated and think for themselves. Inspection laws benefit in regard to education.

"As public opinion changes, the customs of society will become more liberal, and in time, will follow a corresponding change in the laws, based upon free, liberal and sensible principles. It is, or should be, a result of the foundation on which the structure is erected. There is, perhaps, room for improvement in the making of new laws, and amendment of old ones. The laws that govern to-day would not have answered fifty years ago, nor will the laws that govern to-day be likely to answer fifty years hence. If the spread of knowledge and of education in this country, during the next fifty years are proportioned to the advance of the last fifty years, we not only predict a great elevation in the scale of intelligence, and a higher moral tone in society, but that such benefit will particularly accrue to the wage-earner. Every reform must be gradually accomplished — step at a time.

Through and by inspection laws untold benefits are derived in the matter of the safety of human lives. And, perhaps, there is no greater responsibility resting upon an inspector than that of looking after the safeguards that are required for the protection of life and limb. But, of course, there are many accidents to which mankind are exposed, which no human wisdom can foresee or prevent. Being furnished with faculties of a limited nature, and placed in the midst of a scene where so many powerful and complicated causes are in constant operation, we are sometimes exposed, all on a sudden, to the action of destructive causes of which we are ignorant or over which we have no control.

An ample field still remains for the exertion of all the energies of the human mind in the enactment of still more laws for the benefit of the wage-earner. Such as we have are as yet far removed from perfection.

It may be said that in many instances it will be found that ignorance is the fruitful source of indolence, waste and extravagance. The knowledge of the laws should be known in the various departments of labor, and it would prevent inattention, which to some extent is common among the working classes.

Wherever we turn our eyes, especially in the direction where the laws have an influence, and survey with attention the various processes, we perceive at every step the most striking benefits that are to be derived therefrom. It is not well to let any cause fail and languish for want of right management and for that support which the occasion demands. It is, therefore, in the province of the inspector to advance, when occasion requires, the various laws to such an extent, that there can be no misunderstanding as to the benefit to be derived. Judgment will be required in many cases, so that no mistakes may be made. Much can be done towards bringing about favorable results to the wage-earner, so that there can be brought about a right appreciation of the laws intended for their benefit. Improvements in the laws are going on, and it must be presumed that in these improvements the country and the wage-earner will be more prosperous and longer continue so.

Let us hope that the various inspection laws will have their beneficial effects upon those engaged in active employments. And that every new law enacted may be founded on broad and substantial principles, so that they may render to the mechanic, manufacturer and laborer greater benefits than the laws of to-day. And that they may pave the way for improvements, which will promote the external comforts of the wage-earner, so that the pleasures arising from such laws may be accessible to all, and human happiness will nearly be on a level, and the different ranks of mankind will enjoy it in nearly an equal degree. We may indulge the hope, that it will be the chief attention of such States that have no inspection laws, that they will see the advantage of enacting such laws that will tend to the interests of all wage-earners, so that it will be the means of producing great benefits wherever their influence extends.

Chief Wade, of Mass., made a few remarks upon the subject matter of Inspector Mullen's paper, and solicited discussion thereon by the delegates.

A paper was read by Inspector Weinthal, of N. J., as follows:

SHOULD PUBLIC BUILDINGS BE PLACED UNDER GOVERNMENT CONTROL, ETC.

This question first requires a definition of what may be considered public buildings. I assume them, therefore, to include federal, municipal, churches, theatres, schools, and in fact any other structure in which the occupant has no direct opportunity to arrange matters for his own health

or convenience. In a certain sense office buildings are public, but if unsuitable conditions prevail, it is easy for the tenant to vacate, or force the remedy.

Factories already come under regular inspection in many States.

The second question, and the main point, whether such structures should be placed under government, i. e., federal, or under local inspection, is open to decided discussion.

Divided responsibility is always a dangerous condition, and yet it is usually well nevertheless to have definite rules and unprejudiced inspection, when constructing buildings, to prevent danger due from ignorance or carelessness of the owners or builders.

On the other hand, in cities, where the question is of most importance, as a rule the services of reputable architects are retained to plan and carry out necessary features of safe and healthful construction, and almost invariably so where the structure is of any special importance.

A *resume* of the varying conditions and methods of heating, lighting and ventilation might perhaps suggest some of the necessity for or lack of need of special inspection by federal or local officials.

Unless the position of inspector be held rigidly without fear or favor, the same disadvantage would apply to both federal and local officers, viz: their dependence on political preferment as long as it is a position not visibly as a rule, although actually, a matter of the public health, and apparently not after certain rules and regulations have been enacted, demanding a man of the highest expert attainments to fill.

Taking these buildings considered as coming under the heading in brief review:

Federal buildings are invariably built under the plans and regulations of the architects and officers of the government, and permanently remain under their supervision.

Municipal buildings not infrequently suffer more from defects in these requisites than any other class, except as local pride may keep them up to a good standard of excellence, for what is the whole public's business through their officials as well, is most frequently to their own loss, in their attendance to seemingly larger matters of public interest.

Churches, and to a still greater degree theatres, are dependent upon their perfection of appointment and healthful comfort, for large congregations and audiences, without which in the one case, their influence and their growth suffer; in the other their finances, from scanty patronage.

Schools are, as a rule, built by special commissions of representative capable men, who, having a matter of most serious importance to handle, call in expert opinion, if their own information is inadequate, the result being in most cases at the present time in buildings which suitably provides warmth, light and fresh air for the young workers, who need healthful conditions during their brain working periods, while growing physically as well, more than perhaps any other portion of the human race. The

one danger in school buildings is to see that the operation of these special plants is kept up to their designed abilities, and it is fair to say that, as a rule, the school boards do this duty satisfactorily.

The builders of great office buildings of our large cities, due to considerable rivalry for patronage, can usually be trusted to provide every facility for health and comfort that money and ingenuity can afford.

In brief, therefore, it seems as if questions of personal interest, would tend to keep up to a fair standard of excellence most of these structures, and would not require the amount of official inspection, seemingly warranted by having federal officers, the main points of construction where the general community is interested, being safe dimensions and suitable materials. These are provided for in our larger cities by local building department rules and inspectors, and in several States by factory laws and special inspectors, which keep under control the one class of constructions most liable to be built regardless of hygienic principles, and without regard to fire protection, a feature that enters with great importance into the consideration of all classes of structures, and especially those where many people are to be gathered.

In general conclusion, it seems, therefore, to be an unnecessary task to lay upon the federal government, that of providing special inspectors for these questions of heat, light and ventilation, that do not effect the general welfare of the country, being but local in their dangers, even if improperly supplied.

Personal interest, local pride, and present laws may safely be left to render whatever inspection may be needed at the present day, and perhaps for many years to come.

Mrs. Kelly, of Illinois, desired to know what States had laws specifically providing for the ventilation of factories and work-shops.

Delegates from Massachusetts, New York, New Jersey, Pennsylvania and Canada responded to the inquiry, and gave in detail the requirements by law in each of the aforesaid States upon the subject.

Mrs. Ames, of Massachusetts, dwelt upon the importance of legislation in every State requiring wholesome sanitary conditions, whenever any number of people were gathered together, and gave incidents to show the good which had resulted in States, where such provisions had been made.

Francis U. Coe, of New York, was called and read the following paper :

GUARDING OF ELEVATORS.

Mr. President, Ladies and Gentlemen :

Both passenger and freight elevators are so essentially a part of the proper equipment of buildings for business purposes, that without them it is probable that a majority of our larger buildings would never have been erected. Without an elevator, floors in any building above the fourth or fifth story are comparatively worthless.

Not only are elevators an essential element, but, responding to the greater demands upon them, manufacturers from year to year are increasing their speed. The public demands it. We prefer the fastest steamers in ocean travel, the most rapid transit in street car service, and we take the express that arrives first.

Elevators that a few years ago were designated "rapid," are now designated "slow." From the moderate speed of a pedestrian, elevators are now run up to a speed of ten or fifteen miles per hour. Many of the express cars to the clouds do not stop at all between the first and seventh stories. Patrons are fortunate if they stop anywhere, long enough to be entered or left in safety. Elevator boys are filled with this spirit of haste. They start the car before closing the door, and they open the door before stopping the car. They think it smart if they can get a door closed by the time it is beyond reach. All goes well till accidents occur, and then, if the boys are careless, the owners of buildings often suffer heavy damages, and the reckless boys are liable to fine or imprisonment, or both.

Many elevators are run by irresponsible boys who often thoughtlessly pull the operating rope or swing the lever, starting or stopping while persons are entering or leaving. In such practice one fairly takes his life in his hands in crossing the car threshold.

From newspaper clippings of published reports of elevator accidents in the United States, there now appears to be an average of not less than ten fatal, and fifteen serious, or a total of not less than twenty-five accidents per month, resulting from a well door being open with the car in motion. It is easily shown how most of these accidents occur : Referring to the passenger service ;—several persons are entering a car; one waits courteously for the others to proceed; a little in the rear he follows, but the boy, thinking all are aboard, starts his car, downward, before closing the door. The car starts just as the last patron is crossing the threshold. The top of the car entrance strikes him violently on the head, either knocking him down on the floor or into the car, in which case the accident is likely to be serious, or grinding him between the car and the floor, in which case the accident is generally fatal. Again, a passenger leaves a car; finding that he has gotten off at the wrong floor, he hastily steps back, just as the car is started, or again, he steps through an open door before the car is stopped, and is killed.

As several persons frequently operate the same freight elevator, the variety of accidents here is much greater. Persons jump on or off the platform while it is in motion; they put their heads through open gateways and are crushed, or they are caught in automatic gates. Frequently one person will start a car while someone else, at another floor, is using it.

Standing as a prominent feature in elevator accidents is the fact that so large a percentage results from a door being open with the car in motion.

Opening a well door should, itself, mechanically and positively lock the car stationary, impossible to be started till after the door is closed; and vice versa, a moving car should be a positive mechanical guarantee that all doors are closed from basement to roof, none of which can be opened till after the car stops.

The records of fatal and serious accidents on an essential part of the equipment of every first-class building, has drawn attention to the necessity of providing every possible guard for the public safety.

So far as it is demonstrated that practicable safeguards of great value for the protection of human life are available, it becomes the duty of owners to provide them. This should be enforced, if necessary, by legislation in every State.

Much has already been accomplished in this direction. Passenger elevators are provided with conductors, instructed to close doors before starting cars, although it must be confessed that in practice this is rarely done. Regular inspection of elevators has accomplished much to reduce the number of accidents. The law in most States requires gates or doors of some sort at all elevator entrances.

Some of the best known of these appliances for freight elevators are automatic,- required to be automatic by law in some States, the purpose of the law being simply to insure the well entrances closed when not in use. But it is not really safe nor desirable that a door or gate should be automatic, as in this case the door, moved unmercifully by the car, becomes itself an element of danger. A person might as well be killed by the car as by the door or gate.

The things desirable are, 1st, That all doors or gates remain closed while the car is in motion; and 2nd, That an open door or gate shall at all times be a positive guarantee that the car is locked stationary, and cannot be started till the door is closed.

As this part of the subject of guarding elevators is of so much importance, our paper will be confined to very recent improvements, the first to effectively cover these necessary requirements.

The invention to which we shall refer is by P. Kidder, of Boston, whose attention was forcibly directed to the need of better elevator protection from the accident in the Exchange Building in that city a few months ago, by which a lady in leaving the car, fell ten stories to the base of the elevator well.

Briefly, Kidder's Safety Interlock, as arranged for passenger elevators, consists of a stop or block fast to the return operating rope, the stop duplicated at each floor, and placed at the rear edge of the sliding well doors, so connected as to move vertically with the rope behind the doors while the car is in motion, thus holding the doors closed. When the car stops, by movement of the operating rope to its central position, the stop rests opposite the equivilant of a horizontal groove in the side of the door, so that in opening the door the groove engages the stop fast to the rope, thus locking the operating rope till the door is again closed. This will be readily understood from the model here marked "Exhibit A." The device is extremely simple, durable and effective. By its use a car cannot be started with a well door open on any floor; door cannot be opened till after car stops; opening a well door locks car stationary; no additional effort or labor is required in operating either the car or the doors, nor is the speed or safely running an elevator diminished.

A modification of the invention for passenger elevators is shown in the second model, marked "Exhibit B." In this arrangement the ordinary latch of the door is not required. A mechanical guarantee is here furnished that the well door of every floor in the building is not only closed, but locked closed, before the car can be started, and furthermore, that stopping the car at any possible elevation does not unlock any of the doors. No door can be opened until the car is at rest within six inches of its proper level for that floor. A further advantage in this arrangement is that a leeway of an inch ajar can be allowed for each door when locked closed, thereby releasing a lady's dress, if caught. This provision would have prevented the fatal accident in the "Waldoff," New York, on its dedication night a few months ago, according to the information we have received. A further advantage in this arrangement of Mr. Kidder's invention, is that no dependence need be placed on the present ordinary latches, which are frequently out of order, due in part to the loose fitting and wear of sliding doors in their guide-ways; and further, that no mechanism of any kind is required on the doors. A press button in the floor of the car at the point where an operator naturally stands to open a door, is provided, which, if the car is within six inches of its proper level, engages and swings the upright bar forward from behind the door, allowing the latter to be opened in the usual manner, after the car is stopped.

In the third model, marked "Exhibit C," is shown an adaptation to freight elevators with vertically sliding doors. The doors may be double as shown, counterbalancing each other, or a single door used, as preferred in some cases. An auxillary rope over additional sheaves, carrying other stops, similarly equips other doors when placed on opposite sides of the well. In this way it is practicable to apply the device to doors on all four sides of the well at each landing.

In all of the arrangements shown, it is desirable that the doors be made at least 6½ feet in height to entirely close the entrance ways, thus

preventing an elevator well from becoming a flue in case of fire. The ordinary trap door, or automatic hatch way-cover, is intended to provide this latter protection, but is objectionable on several accounts: 1st, It can only be used on slow speed elevators, although there are several manufacturers of these doors who advertise and, in some cases, guarantee them to work satisfactorily for a given time in a well where the elevator travels at a speed of two hundred and forty feet per minute. I have never seen any system of automatic trap doors working in an elevator well smoothly, where the elevator traveled above fifty feet per minute, and I know that reliable manufacturers of the best of those appliances will not give a guarantee when an elevator exceeds that rate of speed. While I believe that no freight elevator should be allowed to travel much faster than fifty feet per minute, the business community do not agree with me, and it is a common thing in my State to meet with some which travel as fast as one hundred and fifty feet per minute; 2nd, They are heavy and cumbersome, working with considerable noise, and causing a very disagreeable jarring of the car as it passes through each floor. The mechanism which operates them in most cases is complicated, and liable to get out of order. Where I have found them on elevators which run above fifty feet per minute, they are nearly always tied back because they are out of order, or to save power, which is by no means a small item of expense, after the doors are attached, as they must be opened and closed at each floor every time the elevator car passes up or down. One firm in Buffalo, which has five elevators equipped with the "Morton System of Automatic Trap Doors," informed me that it required, on an average, ten horse power to operate them when they were all in working order. This, I think, is rather a high estimate, but if it takes one-half of that amount, it would seem to account for a great deal of the bitter opposition of elevator owners to those appliances. They are very expensive, costing from fifty to seventy-five dollars a floor. Then they cannot be applied to very large elevators, such as are used in planing mills, or other factories where large machinery or bulky packages have to be carried, and lastly, they are not always safe; a number of very serious accidents have happened in my district by persons being caught standing on the doors when the elevator car was ascending. Two accidents of this kind happened in the city of Jamestown within a year. The wife of the proprietor of a shoe factory went into the building and stepped onto the trap door; when the elevator car came up, it raised the door on which she was standing, and threw her violently to the floor, breaking one of her legs. The other happened in a worsted mill; a boy was standing on the trap door, when the elevator came up from a lower floor, raised the door and threw him against a railing by the side of the elevator, where the life would have been crushed out of him but for the presence of mind of the man on the car, who, when he heard the boy scream, stopped the elevator. As it was he received very serious injuries.

There are automatic gates of different makes and styles, as well as

vertical automatic doors, but they are all open to the same objections that have been raised against the automatic hatch covers, namely, they are expensive, liable to get out of order, can be opened when the car is in motion, and are often hooked or tied back. All of these objections have been overcome by the inventor of the Kidder Interlocking Device.

Summarizing the advantages of this for freight elevators, it may be stated: 1st, The car cannot be started till all the doors are locked closed. 2nd, No door can be opened till car stops. 3rd, Opening a door locks car stationary. 4th, The stop on the rope insures proper position of rope, so that a car is not likely to crawl while being loaded. 5th, No person on one floor can start the car if it is in use, or a door open on any other floor. 6th, The use of this device is a protection and advantage to the present ordinary mechanism of elevators in this way, that on power elevators it insures the rope being pulled to the correct point to stop the car and apply the brake; on hydraulic elevators insures the valve completely closed; and on electric elevators prevents burning out the switches. 7th, The device is extremely simple and not at all likely to get out of order. 8th, It is inexpensive.

The device is conveniently applicable to passenger elevators using an operating lever in the car instead of the pull rope, either by use of an auxiliary rope for the stops, connecting directly with the rocker arms or shaft of the valve mechanism, or by an engagement of the vertical swinging bar of model B with a locking bar attached to the car directly engaging the operating lever.

Mr. Davis, of Ohio, spoke at some length on the need of thorough discussion of all papers submitted before the Convention, especially when related to practical inspection work, and to devices suggested for the prevention of accidents. He dwelt upon the vital importance of inspectors becoming thoroughly acquainted with every appliance recommended for guarding elevator openings, and that it should be their purpose to suggest to inventors what is required in that direction.

Miss O'Reilly, of Pennsylvania, took up the same line of thought, and spoke of the difficulty met with in her own State in having elevator shafts properly protected; when the discussion became general Mr. White of Massachusetts, Mr. Armstrong, of Ohio, Mr. Dyson and Mrs. Buxton, of Massachusetts, all participating.

Mr. Davis, of Ohio, again reverted to the subject, stating what efforts had been made in his own State to provide suitable

gates for passenger elevators, and then requested Mr. Coe to again explain the operations of the different models he had presented the previous day

Mr. Coe, of New York, gave in a very minute manner the desired explanation, when Mr. Jno. H. Davis, of Rhode Island and Mr. Brown, of Ontario, took up the question, and made some very instructive remarks thereon.

The discussion was a very interesting one and served to show what efforts were being made in the different States to guard against accidents from that fruitful source of accidents. the elevator shaft.

Professor Bemis, of the Chicago University, was present, and explained to the delegates the most convenient means of transit between the different sections of the city, and the best way of reaching the various points of interest

Labor Commissioner E. T. Powers, of Minnesota, being in attendance at the Convention and about to leave the city, Chief Wade, of Massachusetts, expressed the desire that Mr. Powers be requested to address the delegates before departing.

The Chairman, Mr. Franey, introduced Mr. Powers to the Convention, who, after commenting in most forcible style upon the importance of these annual gatherings and their influence for obtaining salutary legislation in behalf of the public, referred particularly to the necessity of laws requiring, under direction of the States, the inspection of steam boilers. He maintained that greater responsibility ought to be placed upon employers, not only in employing men found qualified by examination to operate and care for steam boilers, but also in being compelled to provide boilers of sustaining strength adequate with the pressure required, and to adopt such safety appliances in connection with the boilers, which science has demonstrated essential to secure comparative safety in their operation.

Mr. Splaine, of Massachusetts, read a paper as follows:

OBSERVATIONS ON FACTORY LIFE — WITH RECOMMENDATIONS FOR SHORTER HOURS.

Inspection legislation and the enforcement of the provisions of legislative acts, bearing upon industrial life in some of the States of this Union

and in other countries, the governments of which have been so progressive as to grasp the importance of making laws looking to the amelioration of the condition of their people employed in manufacturing establishments, has worked palpable improvement in the homes of wage-earners, and has improved them physically, mentally and morally.

The able paper read by Inspectress Fannie B. Ames, of Massachusetts, at the last International Convention of Factory Inspectors at Hartford, Conn., last September, shows very plainly and painfully, too, the low physical, mental and moral condition of factory operatives in England, prior to 1835, and especially does it show the deplorable condition of women and children employed in English factories.

The children varied in age between five and eleven years. These waifs and women worked from 5.30 A. M. until 8.30 P. M., or so far as law was concerned they worked, up to 1835, as many hours per day as the overseer directed. The unfortunate conditions, mental, physical and moral, alluded to, were doubtless the result of long hours, over-work, poor food, indifferent shelter, and with not time enough to attend to moral and religious training, or duties, and other things which enter into the make-up of happy homes.

I cite Mrs. Ames' paper, because I esteem it as authority, it being a careful collection of statistical and historical data bearing upon the matters which we are called upon to consider, and touches matters which we are called upon to look after in our respective districts. I believe that if inspectors would read it carefully, they would find it both instructive and interesting.

Factory life in the United States was never, as a whole, so degrading as that in England before the adoption and enforcement of inspection laws by that nation; but while making this boast for America, I must confess, that my truthfulness will not permit me to claim that factory life in this country has been all that we could have wished for. I remember having seen a little, and having heard considerable about factory life during the last forty years, and my memory and my ears being true to me, I must say, that even in Massachusetts, there were long hours for operatives — men, women and children—in factories of that great and good State, all of which were not the cleanest and best ventilated in the world. Men, women, and children worked long hours for small pay — hours from early morning until late at night; but, happily for Massachusetts, such things do not exist there now. Before inspection laws and the enforcement of their provisions became established facts, employment in factories, even in Massachusetts, was not looked upon as an over-attractive mode of earning a livelihood. The physical appearance of factory operatives, because of unhealthful surroundings incident to factory life, as compared with the appearance of persons employed in more healthful pursuits, was so apparent that one could, with almost a certainty, select the factory employed members of

the community by the pallid cheek, a weakly physical development and a general lassitude not observable generally in persons employed at other callings.

Then factory people, owing to the long hours and the confining nature of their labor in establishments where ventilation and sanitation had scarcely been thought of, were looked upon as unfortunate members of the community, and as persons who could not be either healthy, or hope for long and happy lives. Consumption and kindred diseases claimed as their own many whom God had intended for noble men and women, and this nobility of mind and body would have been assured, had they succeeded in finding employment at some industry where pure air could have been breathed, and a reasonable number of hours allowed for recreation and rest. To-day, in Massachusetts and, I am proud to say, in other States, there are laws which regulate the hours of labor for women and children, and with these laws enforced, there is some opportunity for operatives to look after themselves, and to enjoy the blessings which flow from leisure hours judicially employed. Inspection laws in Massachusetts from the first act in 1874, that being the ten-hour law for women and minors, and other acts looking to the improvement of the condition of operatives in industrial concerns, are ably described and commented upon by Chief Inspector Wade, of Massachusetts, in his report for 1892. I call attention to this review, as being perhaps the best extant, on factory laws, their application and enforcement, and the great good resulting to the industrial laboring classes, whose health and happiness depend so largely upon the paternal care of the State, in making and enforcing laws wise enough to protect and encourage the employed, without endangering the success of capital invested in the great manufacturing enterprises throughout the State.

In factory life and among factory employes years ago, as now understood by my hearers, what opportunities were there for development of body, mind or soul? What time was there, even for members of the same family, all of whom worked in the mill, to enjoy the society of one another or to engage in pleasant recreation? Was there time for the tired and despondent mother to fondle and bless her children, and teach them the way they ought to go? No time for school, no time for church! At night all were tired, all dejected, all breaking down. How is it to-day? Through agitation and wise legislation, and through the wise and prudent enforcement of inspection laws in Massachusetts and some other States and nations, it has become possible—more, it has become a fact, that the operatives of to-day, in the States referred to, are no longer slaves bound and driven mercilessly by the greed of aggregated capital.

Shorter hours of labor enable all—young and old—to devote some time to their own physical, mental and moral welfare; and the schooling laws compel and therefore enable children to obtain a liberal education. Look into our factories and workshops where young women are employed to-day, and you find many of them well educated — all or nearly all of them

handsomely developed, physically—happy and contented as compared with their female predecessors of twenty, thirty and forty years ago, and all because of shorter hours of labor, better conditions of ventilation and sanitation, and strange to say, that, although the hours of labor are shorter now than formerly, yet the operatives get better pay than when the hours of labor were much longer. Look into factories and workshops to-day where our young men are employed, and there you find better looking, better developed physically, mentally, morally, and also better paid men than could have possibly been found thirty or forty years ago. Then they were bent, dejected—all tired and despondent — to-day the young men in factories are handsome athletic fellows—nature's noblemen. To-day old people are fast disappearing from factory life, the young people, because of better pay, notwithstanding shorter hours of labor, being able to look after their aged parents. There is no law in Massachusetts compelling shorter hours for adult males, yet the tendency in their case is towards shorter hours; and so sure as hours of labor are shortened for women and minors, so sure will the hours for men fall in that direction. I contend that there is no danger in further shortening the hours of labor, and I here assert that many among our best and wisest manufacturers in Massachusetts are of the same opinion.

And I further assert, that some of the improvements made in our factories in the direction of securing better ventilation, better sanitation, guarding dangerous machinery, adequate egress in case of fire, and even to reducing the hours of labor, have been made by the manufacturers themselves. This speaks well for the manufacturers. There are corporations that have souls; doubtless there are some without. The tendency of the age is towards shorter hours for labor, the tendency among humane manufacturers points in the same direction. The less humane ones must wheel into line.

Will the further reduction of the hours of labor endanger manufacturers in competition with those of other communities? will it endanger capital already invested?—I say no! Shorten the hours of labor, and what then—the brains, the dexterity of the American operative, directed by the impulses made happy by shorter hours, better treatment, the consciousness that better health is theirs, the security felt that there is a chance for life in case of fire, will more than make up for what appears, on the surface, as a loss by the shortening of hours.

There being no discussion, Mrs. McEnery, of Pennsylvania, read the following paper:

HAS FACTORY LEGISLATION IN PENNSYLVANIA BEEN BENEFICIAL TO FACTORY OPERATIVES? IF SO, HOW?

Mr. Chairman, Ladies and Gentlemen!

Man is an animal. That goes without saying. And well, woman, she must also be an animal; but this time don't count. What does count is that man is an animal and rude and cruel in design, if not so crude

in means, as in the days of "auld lang syne" when might made right.

Then men plundered for existence, and existed for and by plunder, without the form of law, just as justifiably as they would plunder regardless of law if that law were not enforced in a spirit what in the near time millennium, will doubtless be termed human equality.

In other words, laws, though made ostensibly for the protection of the weaker in their unequal fight against the stronger, are subverted by the strongest — always the ruling power eventually, which ever way the beam inclines, when the balance begins to vibrate — and the weaker are driven to the wall, reduced to wear the yoke, if not the garb, of servitude, and yield up their just share of the spoils by the domination of a force more invulnerable and pitiless than lead or steel; and that force is *consolidated capita*

Now, this is not to inveigh against capital, nor yet to decry the actions and motives of the strong as arrayed against the weak.

Let us concede, that "whatever is, is right," and that, since human nature is found so constructed, or as easily capable of such self-construction as to array the strong against the weaker in men as well as in the lower animals, let us concede that such arrangement is all right *per se*, but needs the existence of just and wise laws to enforce and preserve the nice equilibrium, which nature did not provide only in so far as she made man capable of so regulating it.

This leads, by one short step further, to the insidious suggestion that laws are only beneficial in proportion as they are wisely, energetically and equally enforced; and that unlatches and flings wide open the gateway to the field of discussion in point. The law regarding women and children employed in factories is a just, human and wise law. But — and the but should be spelled in big letters and underscored with inverted rule lines— the law would not and could not enforce itself. In the inevitable, because natural, struggle between the weak and strong, it is the strong who always gain and exercise the prerogative of interpreting the laws — and, well, interpretation is a big item in that matter.

It's just here the wise factory law comes in and provides agents for its own enforcement, because observance is enforcement in all practical senses.

The title of the law explains itself. It reads: "An act to regulate the employment and provide for the safety of women and children in manufacturing establishments, mercantile industries, laundry or renovating establishments, and to provide for the appointment of inspectors to enforce the same and other acts providing for the safety or regulating the employment of such persons."

The act — the latest one — bearing date of May, 1893, provides, in brief, that no minor shall be employed in any such establishment more than twelve hours a day, nor for more than sixty hours a week. That no child under thirteen years of age shall be so employed. That all such es-

tablishments shall be equipped with fire escapes, safety appliances to elevator shafts, etc., suitable wash-rooms and closets intended for female use shall be screened and kept in decent privacy and seclusion, and that the most approved and safest heating, lighting and ventilating regulations shall prevail.

Factory inspectors authorized by this act are empowered to visit and inspect all such establishments at reasonable hours, and to enforce the provisions of the act, and to prosecute all such employers who do not in letter and spirit conform to the provisions of the act.

Out of this law, and its enforcement by the devoted and courageous factory inspectors appointed under it, has grown, in the past five years, the practical enfranchisement of women and children employes. The puny child and haggard women, who used to throng the streets morning and night going to and returning from their places in inhuman torture, are now the exceptions. They have been replaced by a cheerful army of women and children, well dressed and well fed, with vigor in their steps, hope in their eyes, and health in every motion and act. Their places of employment are as safe, as pleasant and as wholesome as their homes. They respect themselves, and the dread of law under efficient interference of the factory inspectors, *compels* employers to *respect them.* Rich and poor are equal before the law, and both classes are gainers by its fearless enforcement. Employers secure greater and better returns from labor in 12 hours than they formerly did in sixteen or eighteen hours a day, and employes are eminently more able and willing to give such results.

The State of Pennsylvania has much to be proud of in this pioneer movement for the great reform of the century. She has practically abolished the sweat shops and torture pens from which mingled tears, groans and curses went to pitying heaven from so many women and children through so many years. She has thrown her protecting arms around the helpless and oppressed, and made the factory inspector, under the law, the moral and temporal redeemer of this vast army of employes.

There is much yet to be done, but it is being done by each succeeding Legislature. The latest act, 1893, clothes the inspector with such powers and penalties as render the lot of women and children employes not only tolerable, but safe and pleasant. The vigilance and courage of these inspectors has made the weak equal to the strong; has replaced languor and disease with vigor and health; has made life a pleasure instead of a torment, and has converted the damp, dark, dangerous sweat-shop and torture pens, filled with groans and curses, into the light, wholesome and comfortable work-room of to-day, vocal with hymns of the redeemed and protected toilers.

The great reform has passed its experimental stages and is an established institution come to stay. It will go forward instead of backward in all the years of the future, and spread to other States, as already shown, more and more rapidly every year. But let it be remembered that the law

is as a dead letter without special provisions for its enforcement. It is the faithful and fearless factory inspector under the law, who has become and remains the great redeemer and enfranchiser of the nineteenth century.

The next paper called for was read by Mr. Moore, of Massachusetts:

VENTILATION OF SCHOOL BUILDINGS IN MASSACHUSETTS.

Mr. President and Members of the Convention:

The law passed in 1888 in the State of Massachusetts requiring proper ventilation and sanitary provisions in public buildings and school houses, has been productive of much good, and its results are plainly seen on all sides by the increased provisions made for preserving the health of those who occupy these buildings, and also in the interest awakened in meeting the requirements of the law. While all the good results hoped for have not yet been achieved, yet the progress made in Massachusetts in this direction is gratifying to all those who wish to see the public health, especially that of the rising generation, preserved.

The present year the law has been amended, and now requires that architects or others who prepare plans for, or superintend the construction of buildings of this class, shall include in their plans the plans for the ventilation, all of which shall be filed with the inspector of the district in which the building is located. This law now provides an ample penalty for those who fail to comply with its requirements. The plans, after having been approved by the inspector and also by the chief, cannot legally be changed without obtaining a new certificate of approval. This amendment of the law is producing very excellent results, which are becoming more noticeable as the time passes, and the requirements are more generally understood. It also enables the inspector to point out any serious defects in the plans as presented, and to caution the interested parties against adopting methods that will result in failure; thereby saving the city or town, if it is a building being erected from the public treasury, from the useless expenditure of money, by adopting some method which is sure to result in disappointment as to the expected results.

Results have been promised by smart and smooth talking salesmen of some patented systems, whose chief aim is to put in his system and make as much money out of the operation as possible; his object being to collect his pay, regardless of results or the expense of operating his so-called system. Now that the plans for ventilation have to be filed with the inspector, the smooth talking and sometimes unscrupulous salesman finds it advisable to more carefully plan his work, and to secure better results than he previously intended to. He may succeed in imposing upon a school committee who have had little, if any, experience in properly ventilating a school house, and induce them to believe his patent automatic air valve, or his separate flue system, or an under floor system of ducts, is the only

proper way to ventilate a building. Let the committee present a proposition like the following for his signature, and require a bond for its proper fulfillment, and it becomes interesting to see what excuses will be resorted to to avoid signing the document:

"To guarantee to furnish at least thirty cubic feet of fresh, properly warmed and circulated air per minute for each pupil, allowing (any given number, say 50) pupils to each room, and to remove an equal quantity of vitiated air per minute for each pupil. To maintain a temperature of at least seventy degrees in each room in the coldest weather, the temperature not to vary more than three degrees between any two points in the room on the same level at the same time. The whole to be done subject to the approval of the State Inspector of Public Buildings for the district in which the building is situated; said inspector to examine and give a written approval of the work before more than one-half the contract price is paid to the contractor or his agent."

These results are and can easily be obtained, and if the salesman is not willing to guarantee as above, it will be well for the committee to look for some person who will do what is required. I have known of cases where substantially this guarantee has been given, yet by smooth talk and misrepresentation the contractor has succeeded in obtaining his money before the State inspector has examined and approved the work. A careful inspection has afterwards shown the guaranteed work was not as represented, and was in fact, a bad failure. The position of a committee thus imposed upon was anything but pleasant.

Some of the results obtained in the earlier attempts to properly ventilate school buildings by so-called patent systems were failures, and did much to retard the cause of good ventilation. Now there is no excuse for a school or building committee to allow themselves to be imposed upon. If they will consult the inspectors before signing contracts, the inspectors will give all desired information, and the committee may be able to save the city or town many dollars, as well as much annoyance. The cheapest work in first cost is sometimes the most expensive in the long run. This is a fact that some smart salesmen avoid talking about. Will not a prudent business man, if he is going to put into his factory a new machine or engine, carefully investigate what amount of work it will do and what it will cost to run it, as well as what the first cost will be? Why not use the same discretion in selecting the means of properly heating and ventilating a public building?

It sometimes happens that committees, in their desire to reduce the expense of putting in a heating and ventilating apparatus, will, to save a few dollars, omit some very important details, and thereby make a failure of what would otherwise have been a success. Saving of a few dollars in the original cost of one apparatus is made by substituting another, without considering which will be the more economical to operate—it may be the latter will cost one-third more to operate than the former.

I once heard a salesman say, when asked by a disinterested party how he expected to heat and ventilate a certain building by his patent system, "We will do it if coal enough is burned." "But will it not require a large amount of coal?" asked his inquirer. "Yes, but that is none of our look-out, as the town has got to pay for the coal."

Sometimes committees, who have had no experience in heating and ventilation, in their desire to be economical, devise and put in what they think will be a cheap system of heating and ventilation, but which proves to be a total failure, and has to be taken out and something else substituted, thereby causing considerable expense and annoyance. All this may be avoided by consulting the inspector, and paying attention to his recommendations.

In arranging for the heating and ventilation of a public building or school house, it should at first be determined what means are to be used—whether fans and indirect radiation, indirect radiation without fans, furnaces, or jacketed stoves. After deciding this point, the location and size of the ducts and flues, and the amount of heating surface (and size and power of fans, if used) should next be arranged. The location and kind of sanitary appliances should also be decided upon. These things should all be decided upon, and included in the architect's plans, before estimates are called for, or contracts signed. Very often these matters are neglected till after the general plans and contracts are made, and then it sometimes becomes a difficult matter to properly arrange what should have been done before. The plan may be so made that it will be very expensive, if not almost impractical, to put in a first class system of heating, ventilating and sanitary appliances, and something has to be resorted to that will give but indifferent results, but which will cost as much, if not more, than a first class system would if properly arranged at first.

Some of the errors made by architects and heating contractors have been in using much too small ducts and shafts, and introducing air at too high temperature and velocity; too small amount of heating and radiating surface, and an arrangement of the inlet and outlet ducts without proper consideration of the laws of the circulation of air. I have seen many instances where a sufficient amount of heat and fresh air have been introduced into a room, to give the very best results if the inlets and outlets had been properly constructed and located; but on account of the poor arrangement of inlets and outlets, the room was anything but properly heated and ventilated.

The velocity at which warm air enters a school room should not exceed four huudred feet per minute, and better results will be obtained if the velocity does not exceed three hundred and fifty feet. This can be done by enlarging the ducts, and although the cost of construction may be somewhat increased, the results obtained will be sufficient to justify it. With fans, especially, it is usual to bring in the air at much too high velocity. This was particularly noticeable in some of the early attempts at

mechanical ventilation. In one of these early attempts the inlet ducts were only one square foot in area, and the air was forced in at a velocity of 2,820 feet per minute, the outlet being placed on the outer wall, nearly opposite the inlet, but at the bottom of the room. In this case there was almost a gale of wind passing over the heads of the pupils in front of the inlet, and descending on the outer wall towards the outlet. The greater part, however, escaped from the upper part of the room, through the openings and cracks, without circulating. This failure would have been avoided had the ducts been of the right size and properly located. The room could have been thoroughly warmed and ventilated with even less expenditure of fuel for heat and power.

Inlet ducts for a fifty-seat school room should never be less than four square feet net area; four and one-half is better, and five square feet has given even better results. Register faces should not be used, as they generally reduce the available size of the inlet about one-third. Wall inlets and outlets should be covered only with stout wire netting of large mesh. The duct should be properly curved at the top, and also at the bottom of the inlet, to give proper direction to the current, and also to utilize the full area of the opening.

A large number of examinations by the inspectors has demonstrated that in a room with two cold or exposed sides, the best results have been obtained when the bottom of the warm air inlet was located in the inner or warm side about eight feet above the floor, and about four feet from the outer or cold side.

In a room with three cold or exposed sides, the best results were noticed when the warm air was brought in through two ducts in the inner warm side, eight feet above the floor, but each duct about four feet from an outer wall or cold side. These ducts should have an aggregate net area of not less than four and one-half square feet.

As this arrangement is not always practicable, on account of the plan of the building, the location of heating apparatus, or cost of construction, it is often the case that first-class results are obtained when but one inlet is provided, located about eight feet above the floor, and as nearly as practicable, in the centre of the warm or inner side of the room. The size and location of the outlets, or foul air ducts, is of equal importance with that of the inlets. For a fifty-seat school room, the outlet duct should have an area of not less than five square feet net, and should be placed at the bottom of the inner side of the room, or in the floor at the inner side, if the air is to be taken from the first story down to the bottom of the foul air shaft in the basement. In a room with two cold or exposed sides, the outlet should be as near the inner or warm angle of the room as possible. In a room with three exposed sides, the outlet should be as near the centre of the inner or warm side as practicable. This applies equally well, whether the warm air is brought in through either one or two inlets, located as previously described. Inlets or outlets of the size and location described, will be sure to give good circulation.

It is desirable that the outflow of air from the room through the outlet should be a little in excess of the amount brought in at the warm air inlet —the difference being made up by air drawn into the room through cracks and the various small openings. By having the outflow slightly in excess of the inflow through the ducts, much better circulation will be obtained, and the heat and fresh air will be used more economically than where the plenum condition exists; that is, where the inflow through the warm air duct is in excess of the outflow through the foul air opening.

By the plenum method of forcing air into a room, without adequate means of circulating and removing it, a large number of experiments by the inspectors have demonstrated, that there is a large amount of both heat and fresh air wasted by escape through the outer walls and ceiling, without circulating through the room. A strong exhaust, without provision for introducing a proper supply of warm air, is objectionable, on the ground of economy in heating, and also in being unable to maintain an even temperature in all parts of the room. A large number of tests show that the best results are obtained by a judicious combination of the plenum and exhaust methods.

The best results are obtained when separate inlet and outlet ducts are provided in each room; but this statement should be qualified by saying that these ducts should be properly located to secure a good circulation. Attempts are frequently made to economize in the cost of construction by using the lower part of a flue or duct to convey warm air to a lower room, and to exhaust the foul air from an upper room, a division or cutoff being built for this purpose in the duct, and between the two rooms.

With a room having three cold or three warm sides, this can be done to good advantage; but where attempted with two cold and two warm sides to a room, it is generally anything but a success, and numerous failures have clearly demonstrated the fallacy of this claim. The air is, as it may be called, short-circuited, and the circulation is generally bad. Sufficient power must be provided in the outlet or foul air ducts to cause a proper movement of outgoing air. This may be done either by fans, steam coils, stack heaters (stoves), or gas burners. Where a fan is used, the foul air ducts may all be brought together into one chamber where the fan is located, and from thence forced to the outside of the building. Where practicable, the exhaust fan should be placed in the top part of the building. In case several ducts enter this fan chamber, each duct should be provided with an equalizing valve or damper of some kind, in order that one room may not be ventilated at the expense of another, and that the draft in the several ducts may be equalized.

Rules are given for the reduction or increase of ducts according to their length and size, and the work to be done; but, unfortunately, in actual practice these rules do not always hold good. The conditions of temperature, force and direction of the wind, and other atmospheric changes which are constantly occurring, disarrange the best calculations; but by providing proper equalizing valves, and attention to their manage-

ment, we may overcome these difficulties. Where separate outlets with steam pipes or radiators in each are used, excellent results are obtained. These steam pipes or radiators should be placed about one foot above the top of the outlet from the room, to secure the best results. When placed either at the bottom or top of the duct, the results shown by numerous tests are by no means as good as when the pipes or radiators are about one foot above the top of the opening. When the pipes or radiators are placed in a central chamber, and the ducts from the several rooms enter this chamber, the results are not as good as where the separate ducts are each supplied with independent heating pipes. Twenty square feet of radiating surface in each outlet gives excellent results for a fifty-seat school room, which, in Massachusetts, is generally 28x32x12 feet. Valves, to be controlled by the engineer or janitor, should be provided for each set of pipes or radiators.

If the ducts all lead to a central chamber where the radiators or pipes are placed, equalizing valves should be provided, as in the case of use of a fan. Means for regulating the outflow of air through the exhaust ducts should be provided. This may be done by placing inside the wire grating a slightly curved metal damper, hinged at the bottom, and arranged to be opened or closed when desired, by means of a chain and pulley. Or a roller shade curtain may be placed over the outside of the wire grating, and operated by a cord and catch pulley. Something of this nature should in all cases be provided. In mild, calm or misty weather, it may be necessary to have the outlet open the full size; but in very cold or windy weather, the velocity of the outgoing air will increase to such an extent, that it will be desirable to decrease the size of the outlet. Attention to this will be well rewarded by the results obtained. At night, and when the room is not occupied, it is desirable to economize the heat, and by closing the outlet all but three or four inches, a considerable saving in fuel is effected.

Do not use "direct steam" or "direct indirect steam," so-called, in warming a school room. The room may be warmed; but it will not be properly ventilated if either of these are used. Where indirect steam is used in some schools, two rows of steam pipe are placed around the outer or cold sides of the room. This is only intended to be used at night, or to warm the room before school is opened in the morning. Do not use this during school hours, as it interferes with the proper circulation of the air. After the room has been properly aired out by the indirect, after close of the session, the indirect can be turned off, the direct turned on, the outlet closed—except about three or four inches at the bottom—and a considerable saving of fuel made during the night. The room will be comparatively warm in the morning. The small opening left in the outlet will cause enough circulation to evenly warm the room. In the morning, the engineer or janitor, after clearing his fires, should turn on the indirect, and properly open the outlet. After the room is sufficiently warmed, and

before the commencement of the session, the direct should be turned off and not used during the session. When a direct radiator is used as an auxiliary heater, better results appear to be obtained when it is placed under the warm air inlet, instead of on an outer side of the room. The circulation of air is much better. Sufficient indirect radiating surface should be provided.

Many of those who are engaged in steam heating appear to have based their calculations on results that have been obtained with direct radiation. Actual tests, made by the inspectors, show that for a fifty-seat school room 360 square feet of indirect radiation give excellent results. This should be divided into three sections, for use in moderate, cold or severe weather, as may be required. Care should be taken to allow sufficient—but not too much—space for the passage of air between the sections of the radiators or pipes. When a fan is used, the amount of indirect radiating surface may be reduced two-fifths to one-half less than the amount given above. The stacks of indirect radiators for each room should be enclosed on the sides and top in separate galvanized iron casings, and each provided with a separate mixing valve.

In Massachusetts the law does not now allow any wooden ducts or flues for either heating or ventilation to be placed in any public building. When a fan is used, a set of radiators or steam pipes, placed in front of the fan, may be used to raise the air to about sixty degrees, the air being forced through the radiators to the main duct, and taken off by smaller branching pipes to the several rooms, each branching pipe being provided with an adjusting valve, to regulate the supply to each room. Before entering the room, the air is forced through coils of steam pipes or radiators, and there raised to the required temperature. These last coils, or radiators, should be provided with valves to turn on or off steam, as desired. Suitable mixing valves should also be provided, to enable the teacher to admit cold air and regulate the temperature of the incoming air without materially decreasing the volume. The exhaust steam from the engine driving the fan, may be utilized to heat the coils or radiators in front of the fan. Where a fan is placed in the upper part of a building, an electric motor can be used with advantage; and it is also sometimes advisable to use one to run the plenum fan, especially in warm weather. A small separate boiler should be provided to heat the steam pipes in the exhaust ducts, in warm weather when there is no steam in the large boiler, suitable piping and valves being provided, that either the large or small boiler may be used as desired. In large buildings it is advisable to have the main boilers of different sizes—the smaller for moderate, the larger for cold, and both for the coldest weather. Economy in fuel will result from this arrangement. Low is better than high pressure for school buildings, and with the ordinary janitor much safer. Indirect radiators with floor registers, should be provided in the corridors, to enable the pupils to warm and dry themselves in cold and stormy weather. Direct radiators may also be used

to assist in warming the corridors. The corridors should also be provided with ducts for exhausting the foul air. Small rooms used only by the teachers, or for a short time (not by the pupils) may be heated by direct radiation. In the corridors the clothing may be hung on screens of stout wire, and a steam pipe may be placed under the screen to dry and warm the clothing, if desired. These screens should be about six feet high, with the bottom about eight or ten inches above the floor, to give room for the steam pipe.

In the best new school buildings the teachers' platforms are being omitted and a table desk used instead.

It is advisable, when it can be done, to place the sanitary closets in a small annex, separated from the main building by a covered way, with doors at each end, and windows or louvres between. These closets may be arranged to lead off from each story, thereby avoiding going up and down stairs, as is required when the sanitaries are in the basement. Separate closets are desirable, when they can be provided, although some improved kinds of wash-out iron flush vaults are used to good advantage. There should also be provided automatic flush tanks.

The boys' urinals should be provided with automatic means of flushing. The whole should be ventilated into a separate exhaust flue provided with a fan, steam pipes or stove (shaft heater). In some cases an iron smoke pipe from the boiler may be carried up inside this ventilating flue or shaft; but there should also be provided means of heating, or causing an outflow of foul air when there is no fire under the boiler. Ample ventilation should be provided for these sanitary rooms, and they should be well heated to prevent freezing in cold weather.

All drains, sinks, bowls, sanitary closets and urinals should be well trapped, and the plumbing should be carefully looked after. Automatic closing covers should be provided for the closets.

Where an annex cannot be provided and it becomes desirable to place the sanitaries in the basement, they should be, if possible, connected with a sewer by well trapped pipes, and the ventilation should be from the room outward through the closets into a separate ventilating duct, with abundant power provided to cause a strong draft by either fan, steam, shaft heater or gas burners.

Automatic flushing tanks and automatic closing covers should also be provided.

The Secretary then read the following as her report:

Mr. President and Members of the Association:

At the close of the Seventh Annual Convention, held at Hartford, Conn., the matter of compiling and having the proceedings printed was the question of moment. Mr. Mullen, of Massachusetts, the Ex-Secretary, proffered his assistance in this connection. Being a very busy woman the offer was gladly accepted. The result was not all that could be wished for, as

the issuing of reports was later than at any time since the inauguration of the Inspectors' Association.

In my attempt to ascertain the causes why, much correspondence ensued. I finally located the manuscript in Ohio, where it had been forwarded by Mr. Mullen, and as Secretary, on the 28th day of June, 1893, I received the first copy of the previous session.

I must confess a keen disappointment, so far as my official career in the Association is concerned. When entering upon the duties I had hopes of great accomplishments within a limited time. Knowing the power for good this body can wield, if properly directed, I was enthusiastic and thought oh! for the co-operation, born of a desire to advance the good cause, to agitate and to educate being my main desire. To single out manufacturing States that require, but have no factory law, to further the work of improving the existing laws, so that the imperfect might be made more perfect, and in time to secure, as far as practicable, a uniformity in all matters pertaining to inspection laws the land throughout. This can be done and will be done by this Association, but the time was not mine for the completion of such a victory. Any attempt to correspond was discouraged by the President, Mr. McDonald, who simply assumed the consumate prerogative of attending to all things, and when the time came that he could no longer officiate, he very generously transferred the power to the First Vice-President, Mr. Franey, of New York, who called the meeting and very satisfactorily arranged the details, so that the position of Secretary-Treasurer has existed more in a figurative than a realistic sense.

As Treasurer I have received no money; Mr. Mullen collected the amount of seventy ($70.00) dollars in assessments, and utilized same for work done in compiling subject matter for report of previous proceedings. The States of Pennsylvania, Ohio, Maine and Tennessee, he reports, have yet to be heard from in this connection.

Recognizing a need in the matter of more properly regulating the finance, I would recommend that a constitutional provision be enacted regulating the establishment of a light contingent fund, as we have here a glaring evidence of the need of that same in the fact that to-day the delegates are bedecked with badges paid for by the presiding officer. I trust the committee on finance will consider this matter sufficiently to recommend a remedy which will avert a repetition of this kind. Prospects bid fair to record this as the greatest Convention ever held by the Inspectors' Association. Let us act wisely and well, so that generations unborn will view with as much satisfaction the good work we are doing, as do those who to-day are assembled to witness the event of events, the World's Fair in this the great White City of Chicago.

On motion of Mr. Davis, of Rhode Island, the report was received, and the recommendations it contained were adopted.

The hour of closing having arrived, the meeting adjourned.

SEPTEMBER 21, 1893.

The Convention was called to order in Chapel of the Chicago University at 9.30 A. M., First Vice-President Franey presiding.

The reading of papers being in order, Mrs. Stevens, of Illinois, read a paper as follows:

CHILD LABOR.

Mr. President and Members of the Convention:

In department K. of the Fine Arts building at the World's Fair, is a group in plaster, the work of Gelert, of this city, which I should like all delegates to this convention to see. It seems that in some parts of England, when extra help is needed in some great manufacturing establishment, the foreman of the works will open a window and throw out as many tickets as he needs hands. It is a fight for the possession of one of these tickets which Mr. Gelert has wrought out in his group, which is named, "A Struggle for Work."

The central figure is the fortunate workman who has secured the ticket. He stands erect, holding the ticket high above his head, looking sorrowfully down, even while pushing him away, upon an attenuated old man upon the left, who clings to him, begging for his chance to work. On his right the ticket is sought by a youth who is not so much pleading for the chance as plotting to seize it by force. In the struggle of the three men a woman has been thrown under their heedless feet. In this position of danger to herself, she yet strives to shield the babe beneath her, which will be crushed as she is further trampled down. Seeking to clamber up on the holder of the ticket is a little lad whose wolfish face shows all the hunger of the old man, all the ferocity and cunning of the youth, all the hopelessness of the woman.

The group is finely illustrative of the condition of to-day's wage earners the world over. We need not go to the World's Fair to see typified what is to be met in grim earnest all over the World's Fair City; men who beg for work and go without, or have it doled out to them as charity, while women and children are worked ten hours a day by employers who rebel against a State edict that has reduced these hours to eight.

Factory inspectors know that child labor is one of the factors on which our captains of industry count in their calculation on cost of production; that the employment of children increases, notwithstanding statutory regulations intended to check it; that avenues for this employment are multiplied with every evolvement of genius perfected in an improved machine; and that as the magical machine and the child are brought together, so in geometrical ratio is increased the number of un-

employed adults. With the effects of its labor upon the child we are also sadly familiar. The census of 1880, the last yet available, gave the number of wage-earning children as 1,118,258; one child in every 16 robbed of its birthright of playtime, of physical growth, of mental training. It is probable that at the present time not less than two million children under 16 years of age are in workshops and factories.

THE DANGER TO THE CHILD.

The child in workshop and factory is in fourfold danger: accidental death, mutilation, permanent ill health, vitiated morals wait upon its steps, and sometimes the most fortunate child is the one to whom the first of these four evils comes, for that is at least a finality. To each of you will occur the instance which supports this statement of fourfold danger, and I need not weary you with citations from our labor bureau reports, which are now fortunately available for general use, and in which have been collected a remarkably large and useful amount of data on this subject, the more remarkable as employers everywhere cover up and conceal more than they report of accidents, fatal and otherwise.

My own observation extends over a period of thirty years, for though I have been a factory inspector less than three months, I have been a wage earner since I was 13 years old. For many years past I have been, also, as a trades unionist and a Knight of Labor, actively interested in investigating this phase of the labor problem. One of my earliest working day recollections is a lifelong pain; the remembrance of the laughing face of a girl friend suddenly convulsed and fixed in horror as she stepped off into space in an open elevator shaft and was dashed down to death five stories below. This was 31 years ago, in a cotton mill in New Hampshire, but to-day, in the course of my inspection duties, I can find the unprotected elevator opening (31 years) and who can compute how many have been done to death in the same trap in these years? And yet the building of and protection to elevators must be made a matter of legislation and of inspection, and when that is done, we hear mutterings as to the infringement of the State or of the municipality upon the proprietor's rights, his individual liberty.

I had just passed my fourteenth birthday when my first experience of dangerous machinery was received, and this mutilated right hand will go with me to the grave as a momento of it. I was a weaver, and was cleaning behind and under my loom while it was running, because the looms were running ten hours every day, and to clean when the loom was stopped meant going into the mills before 6.30 in the morning. The waste I was using was caught between two cogwheels, and my hand was drawn after it. This stopped the loom for a few minutes and stopped my earning capacity for many weeks. I was taken to the corporation doctor, whom the corporation employed to lump its accident cases at so much a year, and he gave me, presumably, so much or so little attention as was my pro rata share under this lump arrangement. It was not enough to save the worst in-

jured of my fingers, and mortification having set in he proceeded to cut the finger off in what surgeons since have told me was anything but a workmanlike way. Two weeks of physical suffering, and mental suffering even greater (for I feared I had lost the use of the hand on which my livlihood depended), had unfitted me for an anesthetic. The doctor mixed a glass of whiskey and water and offered me that, and when I declined it, the second hand of the mill, who accompanied me to the doctor's office — the corporation did not furnish a nurse—said he would drink the whiskey and I could smell his breath. He drank the whiskey and the doctor sawed off the finger, and I watched both operations. When I forgot all that, homeless, motherless, heartsick, bodysick child of 14 thought of in those weeks of agony, then will I cease to demand and to work for the abolition of child labor.

There is very little machinery at which children are employed that does not endanger life and limbs. We are often told, as I was in a stamping factory a few days since, that accidents happen because children are careless. This is an aggravation of rather than an excuse for the crime against the child. We rob childhood from one of its prerogatives when we make care-taking little old men and women of children among machines. No child under 16 should be allowed among steam-driven or electricity-propelled machines.

The occupations in which the health of children is destroyed by other causes than accidents are myriad. Here in Chicago we have learned that frame-gilding is done almost exclusively by children, and that in a short time their fingers are stiffened by their work, so that it is profitable for their bosses to discharge them and employ and ruin a new lot. We have found one firm that has such a large average of costly accidents to children that the firm now makes contracts with children's parents and guardians, that it shall be exempt from prosecutions and costs in case of accidents. We find children slowly roasting before baker's ovens, slowly dying from handling arsenical paper, rotten paste, and poisonous paints. We find them stooping with rounded shoulders over tobacco and confectioners benches. We find boys deafened by working where plate is hammered out. We find girls in the clothing trade contracting diseases from running machines by foot power—diseases that mean a life long martyrdom and the loss of the crown of woman's life, the power to bear healthy children.

It is impossible to specify all the health and life destroying occupations in which our children are engaged, nor is such detail necessary before a convention of expert specialists who have knowledge of these things.

The last of the fourfold dangers to the child, that of corrupting its morals by factory life, is closely associated with the question,

WHAT OF THE CHILD'S FUTURE?

While it is true that all educated people are not good, and that the highest type of moral life is frequently found among the uneducated,

it is also a truth not requiring argument to support it, that the common school education which we falsely assert our republic supplies to all its children, is a foundation which infinitely increases the probabilities that the boys and girls of to-day will be the good citizens of to-morrow. The factory system for children and the common school system of this republic will never work together. When Mrs. Helen Campbell, of New York, read a paper before the labor congress in this city of the labor of women and children, she dwelt upon the ignorance of the factory children, many of whom she said, did not know the name of the State in which they lived, and as a specimen of the depths of their ignorance she said many of them had never heard of the Revolutionary War. I found a week or two ago a Greek boy, between 16 and 17, working in an establishment where he had been nearly three years, who could speak no language but his native tongue, and could not write at all. "He is very bright," the forman said. The more shame to that employer and to every resident of Illinois, that with all his brightness he can neither read, write nor speak English. What sort of a voter will he be four years from now? Certainly I did not ask if this boy had ever heard of our Revolutionary War. It was obvious that much more useful knowledge than that is forever locked away from him.

It is appalling to question these factory children under 16 and over 14, and find the narrow limits of their horizon. Many do not know when and where they were born, what are their parents' names, what a birthday is, or if they ever had one. Many cannot take a pencil and compute their age. Many, indeed, cannot write even their own names, or write anything in English or in any way other language. We, of Illinois, would be glad indeed if our State law contained a section like that of the New York law which provides that "no child under 16 years of age shall be employed in any manufacturing establishment who cannot read or write simple sentences in the English language, except during the vacation of public schools." Perhaps some of the New York delegates here present will tell us how this provision of the law works.

It is idle to talk of "14 weeks schooling in the year," or of the "evening school," as affording sufficient opportunity for factory children. The provisions of a 14 weeks school law are always evaded. The evening school is a positive cruelty and torture for a child that has done a day's work. When Miss Kenney, one of our inspectors, was in Streator, this State, recently, she found an evening school for the boys who are employed in the glass industry there. She also found the little lads — she was told by residents of Streator — that they go to work so young they have to take their nursing bottles along, and she is convinced from observation, that many of them are under ten years. These little lads, she found, walk from 75 to 80 miles a day, carrying and bringing things for the skilled laborers. Grown men broke down in this trotting business. The lithe child can stand it — but at what cost to its future? and what a hellish farce is this evening school opportunity for these boys, or for any

children who work all day! The only way to give our boys and girls the basis of an education is to keep them out of the factory and in the school until they are 16 years old.

For all children who must spend the hours of the day and often many of the evening hours outside of home and school environment, there is of course manifold opportunity to see the moral side of social life. Vice walks abroad at the hours when our young girls and boys are going home from their over-time work during the holiday seasons, and their over-taxed bodies are then in just the condition to incline them to a life in which manual labor has no place. The subtle influences of environment and of association, the demoralizing effects of constant observation of evil, all tend to corrupt our working boys and girls, and to lure them from the hard paths of a virtue whose most immediate recompenses are aching bodies, starved lives and a wage which provides the most meagre living.

An effect of labor upon the children which has serious bearing on its future, has already been touched upon its connection with health-destroying occupations. But it is safe to say there is no employment open to children which any boy or girl may follow steadily before the age of 16 has been passed, but that the boy has few chances of making a sound man, and the girl will almost certainly fail to be fitted for a wife's—a mother's duties. I have already cited the effect of machine running upon young girls. One other trade which girls follow extensively, I am convinced from personal observation is quite as bad, if not worse, and that is work in the cigar and tobacco factory.

In a neighboring State, where I had special facilities for watching female cigar makers, I noticed the general unhealthy appearance of the girls employed, and knew something of their ailments. When one escaped her work through the doors of matrimony, I was rejoiced, until, watching them through subsequent years, I discovered that if there were any fruit from their marriage it was a still born babe. It is now a matter of record in the medical profession that women who have worked at the cigar trade as children are generally sterile. Better so than that puny children should be born to a life of constant disease, but what an indictment of our civilization none the less. The other day at the exposition, Ohio dedicated a group of statues of her great men, Stanton, Chase, Garfield, Sherman. I thought of these little prematurely still-born babes, which belonged to the same State, while such contrasts as these exist, a State scarcely has reason for boasting!

THE ILLINOIS LAW.

So far as children are concerned, our new law in Illinois, (1st), absolutely prohibits the employment of any child under 14 years of age; and (2nd), requires where children between 14 and 16 years are employed that the employer shall keep a register of all such children in his office, shall keep posted in every room where the children are a record showing their names, ages and places of residence, and shall employ no child of these

years who has not first filed an affidavit in which oath has been made as to the age, date and place of birth of such child. The affidavits and register must be so kept that they can always be produced on demand of an inspection. By the laws the hours for female children are cut down to eight per day, no overtime allowed, and a minor of either sex may be taken out of a manufactory or workshop, if he or she cannot obtain a physician's certificate of physical fitness for the work performed.

Our experience so far in the enforcement of these provisions of the law are very encouraging. One good result of the use of affidavits has been that we have come nearer, through them, to finding out how old the working children really are. Before the new law took effect children seeking work secured certificates or permits the purport of which was, either that the child was over 14, or that, for reasons deemed sufficient, he or she was granted a permit to work under that age. These certificates and permits were secured on the statement of the child, or its parents or guardians. The statements were not always truthful, but we find now that an oath as to the child's place and date of birth is required, many parents, and others who would make false statements, will hesitate and will finally refuse to perjure themselves by making a false oath. One manufacturer, who employs many children amid dangerous machinery, told me, when I made a second visit to inspect affidavits previously left for filling, that he had discharged several children whom he supposed, until the affidavits were filed, were over 14, among them one boy who had begun work two years before on a certificate stating he was over 14, but who was found, by his affidavit, not to have yet reached that age. This boy was running a dangerous machine. So many instances of this kind have come under our observations, that we conclude one of the highest values attaching to our system of affidavits for children between 14 and 16, is that it enables us to thoroughly weed out those who are under 14.

A surprising thing developed by the use of affidavits is the migratory methods pursued by employed children. Our system in handling the affidavits is this: Having given them out in an establishment where the children are, with instructions that they shall be filled and filled at once, we return in a few days to see that the thing has been done. The affidavits are then first examined to see if they are right on the face of them, properly filled, signed and sealed, and proving the child over 14. Then the affidavits are taken through the factory and each fitted to the child to whom it belongs. After that the inspector stamps the affidavit, the stamp being the inspector's name and the date of the visit. This stamp is a guarantee to subsequent inspectors that the affidavit is correct, and the child to whom it belongs need not be again questioned, if working in the room where the record shows the affidavit belongs.

At the outset of this work, whenever I found an employer of many children, he complained of the amount of "bother" the new law would make him in the matter of keeping records and registers. These he was

not willing to keep, though as a rule perfectly willing the children should get the affidavits filled (at their own expense). The objection to records and registers was always the same, namely: That one set of children would be at work one week, and the next week a totally different lot, for whom new records must be posted and a new register prepared.

At first their complaints did not particularly impress me, for wherever I went I found the employer favored all clauses of our law, except such as applied to his place, and these last he always found all wrong and impossible to comply with.

Experience shows, however, that the large employer of children was strictly within the truth when he complained that compliance with the register and record provisions of the law would make him "keep an extra clerk" because of changing children employes. I cite one instance typical of all:

On August 22, I inspected a candy factory, in which I found 80 children under 16. For 63 of these affidavits had been filed, of which I found 43 correct and 21, worthless because improperly made out. The 43 correct affidavits were stamped, 17 children unprovided with affidavits were sent home, and the 20 defective affidavits were returned to the children who were given until the next morning to get them right. On September 8, another inspector visited this factory and found 71 children at work, with 63 affidavits awaiting examination, only one of these bearing the date of my previous inspection two weeks before. The 70 children were a new lot, and all those I had examined, with one exception, had taken their affidavits and flitted off to other work. In the same factory, on September 11, three days later, and one of these a Sunday, a third inspector found 119 children, and of course new records, and an almost total change in the register, were again necessary.

From such experiences, as these we are led to hope that the trouble employers will find over the affidavits business will lead them to the employment of older help. Indeed, this candy manufacturer is already seeking girls over 16. He will find plenty of them, but he cannot get them at 4½ cents an hour, which is the wage these little girls averaged.

This drifting about of the children in employment indicates a most demoralizing and demoralized condition, which should be carefully studied by those who argue in favor of giving children work. They talk with insufficient knowledge who say it is an advantage to boys and girls to have "steady occupation," a chance to "learn a trade." The places where boys and girls are learning trades are the exception. The places where fortunes are being built by employing them in droves are the ones where most of them are found working.

We may well ask what can be learned by a boy or girl who is to-day in one factory of one kind and to-morrow in another factory of another kind; one week wrapping caramels and the next gilding frames.

It is obvious that the condition of work and wages in these factories is so unsatisfactory that employment in them is a mere make-shift. The next place will be no better and another change will follow.

No! it is not a trade that is learned in the great workshops where the labor of children is the foundation of a company's riches. What the child does learn is instability, unthrift, trifling with opportunity. Little wonder that each year finds the ranks of wage-earners filled with increasing numbers who can do nothing well; who are fitted out with no manual skill which enables them to command work at living wages; who in the best of times tremble on the verge of starvation, and at every economical upheaval topple over into the abyss of pauperdom.

FUTURE LEGISLATION.

It seems to me it is a part of our duty to the State to learn from one another, and from observation, all that is possible of the conditions and effects of child labor, and to try and have adopted in every State such enactment as are found to work well where one State tries them. Uniformity in the factory legislation of the different States is very desirable, and that the best laws should be adopted by all is no less to be desired.

Our highest duty is to posterity, and for the sake of those who will come after us, "to bless or curse our work as they review its results in the ages to come," we should make our ultimate aim no less than the absolute prohibition of the employment of any child under 16 years.

In this connection and in conclusion, I desire to quote to you from "Our Toiling Children" a pamphlet written by the chief of our Illinois Bureau in 1889, and which contains the best and most complete statistics on child labor that I have ever found in small compass.

Mrs. Kelly says: "The key to the child labor question is the enforcement of school attendance to the age of sixteen, and the granting of such ample help to the poorest of the working children as shall make our so-called public schools not the class institutions they now are, but indeed and in truth the schools of the people, by the people, for the people. Only when every child is known to be in school, can there be any security against the tenement house labor of children in our great cities. The legislation need is of the simplest but most comprehensive description. We need to have 1. The minimum age for work fixed at sixteen; 2. School attendance made compulsory to the same age; 3. Factory inspectors and truant officers, both men and women, equipped with adequate salaries and traveling expenses, charged with the duty of removing children from mill and workshop, mine and store, and placing them at school; 4. Ample provision for school accomodations. Money supplied by the State through the school authorities for the support of such orphans, half orphans and children of the employed as are now kept out of school by destitution."

President Franey requested that discussion upon the subject of Mrs. Stevens' paper be deferred until one of similar import by Mr. Fuller, of New York, was read. This was agreed to and Mr. Fuller read his paper as follows:

CHILD LABOR.

Mr. President, Ladies and Gentlemen of the Convention:

I think that never in the history of this country did there exist such a strong and broad sense of Americanism as at the present time. From all sections comes an ardent desire to arrange our society on a basis which will educate public opinion up to a standard where all our people will work together intelligently, and for the moral good and intellectual well-being of mankind.

The employment of child labor has been a question of vital importance which has been given earnest investigation by the law-making bodies of the civilized worlds, and by all humanitarians who see the retrogression of mankind by a system which takes from the child all the benefits of our public schools; which contracts their physical and mental energies, robs them of the loving and moral care of a mother's nature, and, above all, the influence of home, so potent in developing the prosperity of our great nation. In the discussion of this question it it not presumptious to claim, in the limitation and regulation of such labor, the influence and power of the Factory Inspection Department of the various States.

The agitation of this great wrong and the deep interest manifested therein by law-making bodies, was the stepping stone to the enactment of laws which proclaimed that education was the foundation stone upon which our free and independent government is builded, and the future prosperity of the nation depends upon the judicious enforcement of these laws. The Empire State has nothing to regret in her compulsory education law, in the creation of her Factory Inspection Department, or in the power granted her inspectors for the enforcement of those child labor laws. The day of experiment in these respects is a thing of the past, and every succeeding legislature weaves stronger bands of protection around her children.

Nor is there any deception in these laws. From the moment the child is born our law reaches out its iron hand of justice, inflexible alike to the indulgent or worthless father and mother, and it claims the right to lead that child in the paths of virtue and intelligence. The obstacles that have been placed in our path against the proper observance of these laws have not come so much from the employers of labor as from the degraded, avaricious disposition which is found in so many of the human race. It seems incredible that the love of a parent has become so degraded that the responsibility of this crime of tearing the child of tender years away from home and school, must rest solely with the parent. But it is so.

How often in the discharge of his duties, will the inspector find the evasion of the law springing from the head of the family, who takes advantage of every technical point in the law, and who forces his wife and children into the work shop or mills that he may enjoy freedom from cares, and allow his vices to have imperious sway upon the labor of that wife and her innocent children? It is nothing for such a bestial thing in the guise of man to bear false witness as to the age of his children, and thus give to his offspring the first lesson in deceit and falsehood. We have seen it stated in such cases that "six months in jail and hard labor would be fit punishment for such a man." But the inspector find such depravity in the homes of laboring classes, the free, intelligent American laboring man, the righteous indignation which swells up in his breast finds no slayer of all that is good and ennobling in his own child, and no punishment which could be inflicted is too great for the moral leper who swells the great army of illiterates, adds to the inmates of houses of prostitution, and fills the cells of our penal institutions to overflowing.

The inspectors are constantly recommending to the legislature amendments to the law for the better protection of the laboring classes, and for the strictest enforcement of those laws. The thousands of cripples seen by them in their rounds of duty, made cripples by the neglect to place proper safeguards around machinery, has been the means of giving much needed protection in this respect. Fire escapes, ventilation, sanitary conditions, etc., have all received our attention, but, above all things that appeal to our sense of right and justice, of common humanity even, are safeguards which should be placed around the young. And what safeguard is greater than the vast influence of home — of a mother's loving care and moral influence over her loved ones?

The duties of a factory inspector are onerous, and the responsibilities which rest on his shoulders are not always pleasant and are almost indurable. It is my honest belief, backed by the history of our departments in the past, that upon him lies to a greater degree the responsibility of the future welfare of true Americanism than upon the individual who fills the pulpit. And the power of the factory inspector for good or evil lies in his enforcement of those wise laws created for the public good. The advancing march of a higher civilization demanded the enactment of compulsory laws in regard to child labor, for careful observance of the results of such a system revealed in all its baneful light the ignorance and depravity which it thrust upon the world. What more potent incentive is needed by the inspector to compel the brutal parent to recognize the responsibility which rests upon him to educate his children and surround them with the moral and intellectual benefits which accrue from our public institutions of learning and from a mother's love and care?

And now arises a question that demands the most careful and earnest consideration. It is the age at which a child should be allowed to seek employment. True, we find cases where our heartfelt sympathy goes out

to the widow, or to the home where sickness and death have been the prime mover, for the resolve to place a child at labor in a mill or work-shop. Our heart goes out to the afflicted ones in cases of this kind, but our duty to future generations must outweigh our sympathy for the present circumstance. In such instances, I believe that if our charitable institutions would work in unison with the department of factory inspectors, their field of usefulness and power for doing good would be augmented three-fold, and they would do much more for the alleviation of distress than they could by adopting any other method of procedure.

The question of age is of too great importance to be left with the parent as an individual. The parent sees but one side of the question, and so it becomes the duty of the State to intervene between parent and child, that the latter may receive the full benefits of the privileges due to a future citizen. The young child is more susceptible to good or evil than the man or woman, and needs the healthful influence of a home and school to fit him for the future battles of life. Our public schools prepare the mental faculties, while God's free given air prepares the physical body for all its future demands. Sixteen years of age is none too young to leave the home circle and school for the mill or work-shop, while eighteen years would meet my greater approbation, for the following reasons:

1. A more comprehensive education would result to the child, and its physical body would be more nearly rounded out and made strong enough to enter upon the arduous labors required to make a living in these times, when hard work and plenty of it are demanded.

2. Much of the vexed question of capital and labor would be obviated by the employment of the thousands of the unemployed at a remuneration in keeping with the needs of the family. It would do away with the employment of mere children, and forcing them to do a man's work for a child's pay, an existing evil to which may be attributed a great deal of the present trouble between capital and labor.

3. I have observed that when a child of tender years once leaves school to earn money, for a short period only, let us say, owing to force of circumstances which makes it necessary for a larger income in that family, that child very rarely goes back to school again. When the boy or girl once begins to work, childhood is gone forever.

But your patience or time will not permit me to go further at this present time, although much more can be said upon the question. It may be that the age of eighteen years will not meet the general favor, but I would suggest that not less than sixteen years, at the earliest, be made the legal age at which a child may be employed in mill or workshop. It is true that sixteen years does not permit the child to attain the full development of its mind and physical growth, but in the good public schools of our country, surrounded by the benign influence of home and a mother's care, the future man or woman who must be a part and parcel of the pros-

perity and development of our great country, may, by the time he or she has become sixteen years old, be morally, mentally and physically fit to enter upon the burdens of labor.

In conclusion let, me say, let us be Americans for America; let us give ample protection to coming generations. Our country demands men not dwarfs, physically and mentally. Do not, then, let us rob the innocent and helpless being thrust upon the world of any of the rights to which it was born under our Constitution. Our task is a fearful one, but—

"Granted the odds are against us, granted we enter the field,
When fate has fought and conquered, broken the sword and shield:
What then? Shall we ask for quarter, or say our work is done?
Say, rather, a greater glory be ours if the field be won.
It is war with the wrong of years, prejudice, pride and hate;
Against the world's decrees and the frown of an evil fate.
A crown to the one who wins, and the worst is only a grave;
And somewhere, somewhere still, a reward awaits the brave.
A broken shield without, but a heros' heart within,
And grasp with the hand of steel the broken blade may win."

These two papers upon the same subject elicited considerable discussion, a majority of the delegates taking part therein. It mainly resulted in bringing out information on the difference in the number of hours of labor for children in the various manufacturing States, the age at which they are permitted to be employed, conditions to which as employes they are subjected, and the underlying causes which necessitates their employment. It was maintained that while the best interests of the State would be served by advancing in every State the age at which minors could be employed, inasmuch as it raised the line of competition and at the same time shut off all inducement for the child to quit school until it had arrived at an age when it might have had full opportunity to obtain a thorough common school education, yet unless an uniformity of laws existed in all manufacturing States on this subject, the employer in the States where the age limit was highest, was at a disadvantage in manufacturing with his competitor located in States where the minimum age prevailed.

The concensus of opinion upon the subject was embodied in a resolution offered by Miss M. A. O'Reilly, of Pennsylvania, and adopted unanimously:

Resolved, That the Committee on Resolutions be instructed to recommend an uniformity of legislation in the various States

relative to the age and number of hours per day at which minors may be employed, the most advanced law in any State upon the subject to be adopted as the standard for all.

A paper was then read by Inspector Ellis, of Ohio, as follows:

EMPLOYMENT OF CHILDREN AT DANGEROUS OCCUPATIONS UNDER THE LAWS OF OHIO.

Mr. President and Fellow Inspectors:

In following our vocations as inspectors, we came across a great many minors working at dangerous machinery, and other employment which we considered that youths of tender age should not be employed at, and in consequence, we started an agitation against the evils of such employment, with the result that the legislature on April 8, 1890, passed the following law.

AN ACT

To prevent the engagement of children at such employment whereby their lives and limbs may be endangered, or their health injured, or their morals likely to be impaired.

Section 1. Be it enacted by the General Assembly of the State of Ohio, that no child under the age of sixteen years shall be employed by any person, firm or corporation in this State, at employment whereby its life or limb is endangered, or its health is likely to be injured, or its morals may be depraved by such employment.

Sec. 2. Any person, firm or corporation in this State, who wilfully causes or permits the life or limb of any child under the age of sixteen years to be endangered, or its health to be injured, or its morals to become depraved from and while actually in their employ, or who willfully permits such child to be placed in such a position or to engage in such employment that its life or limb is in danger, or its health likely to be injured, or its morals likely to be impaired by such position or employment, shall be deemed guilty of a misdemeanor, and upon conviction thereof shall be fined in any sum not less than ten (10) dollars nor more than fifty (50) dollars, or imprisonment not less than thirty nor more than ninety days for each and every offense.

Sec. 3. It shall be the duty of the State inspector of workshops and factories to enforce the provisions of this act.

Sec. 4. This act shall take effect and be in force from and after its passage. (Passed April 8, 1890).

You will see by the provisions of the law, that the employment of children under the age of sixteen years at any occupation whereby their lives or limbs are endangered, their health injured, or their morals depraved by such employment, was left entirely to the inspectors to judge. It became necessary, therefore, that we should exercise our judgment very

carefully, so as to benefit the children and at the same time not work hardship to poor widows or others who depend on the meager support of such children. Therefore, after the first year's inspection, we prepared a partial list of employments at which children under sixteen years of age should not be employed, at which is as follows.

EMPLOYMENTS AT WHICH CHILDREN UNDER THE AGE OF SIXTEEN YEARS SHALL NOT BE EMPLOYED.

Manufacturers and others coming under the above act passed April 8, 1890, "to prevent the engagement of children at such employment whereby their limbs and lives may be endangered or their health injured, or their morals likely to be impaired," will please adhere to the following:

No child under the age of sixteen years shall be employed at sewing belts, or to assist in sewing belts in any capacity whatever; nor shall any such child adjust any belt to any machinery; they shall not oil or assist in oiling, wiping or cleaning machinery; they shall not operate or assist in operating circular or band-saws, wood shapers, wood-jointers, planers, sand-paper or wood-polishing machinery, wood-turning or boring machinery, stamping machines in sheet metal and tinware manufacturing, stamping machines in washer and nut factories, operating corrugating rolls, such as are used in roofing or wash-board factories, nor shall they be employed in operating any steam boilers, steam machinery or other steam generating apparatus; they shall not operate or assist in operating dough brakes or cracker machinery of any description, wire or iron straightening machinery; nor shall they operate or assist in operating rolling mill machinery, punches or shears, washing, grinding or mixing mills, or calender rolls in rubber manufacturing; nor shall they operate or assist in operating laundrying machinery; they shall not be employed in stripping or working in tobacco in any form; nor shall such children be employed in any capacity in preparing composition for matches, or dipping, dyeing, or packing matches; they shall not be employed in any capacity in the manufacture of paints, colors or white lead; nor shall they be employed in any capacity whatever in operating or assisting to operate any passenger or freight elevator; nor shall they be employed in any capacity whatever in the manufacture of goods for immoral purposes or any other employment that may be considered dangerous to their lives and limbs, or where their health may be injured or morals depraved; nor shall females under sixteen years of age be employed in any capacity where such employment compels them to remain standing constantly.

The list is only a partial one, as we in our inspections almost daily come across some child working at something that we consider they should not be employed at, and promptly have them removed; and I am glad to say, that the manufacturers, or a majority of them, are heartily in favor of the law. During the year 1891, we had a large number of children discharged, most of whom worked in tobacco in various forms. People may differ in their opinions in regard to the evil effects of working with

tobacco, so we obtained the opinions of some of the best physicians in the country on the subject, and they say that working in tobacco is injurious to the health of young people, as their system will absorb a certain amount of nicotine that tobacco contains, and nicotine being a poison, the system would retain the poison, causing heart and lung trouble, sallow complexion and dyspepsia; that is why working in tobacco was included in our list of employments at which children should not be employed.

I can recall many incidents where adults were seriously injured on certain kinds of work, which goes to prove that if adults have not the judgment to prevent injury, much less have children under sixteen years of age. One case, a woman was showing some friends through a laundry where she worked. They came to the machine called the centrifugal wringer. It is made of two cylinders, one on the inside of the other, the outside one is stationary and the inside one is perforated and revolves at a high velocity, from 2000 to 2500 per minute. They are as large as an ordinary sized wash-tub open at the top; the clothes are placed on the inside of the inside cylinder and the machine started; the water is forced out of the clothes by centrifugal force, and as a consequence the clothes go to the surface of cylinder, leaving the center, to all appearance empty; this lady was explaining the workings of the machine and told them to look, she could put her hand down in the machine without touching. She did so and in the tenth part of a second, her arm was torn off at the shoulder. I could cite many cases where adults have been injured through either carelessness or a lack of knowledge of the workings of the machinery. A great many instances have come to my knowledge, where children of both sexes of tender years have been injured. I have often been asked what was to become of the children if we turned them out of the workshops and factories, and I tell them they should be at school. We have a law on our statute books requiring children to attend school until they are of a certain age, which is as follows:

AN ACT

To compel the elementary education of children.

Section 1. Be it enacted by the General Assembly of the State of Ohio, That all parents, guardians and other persons who have the care of children, shall instruct them, or cause them to be instructed, in reading, spelling, writing, English grammar, geography and arithmetic. Every parent, guardian or other person having the charge of any child between the age of eight and fourteen years, shall send such child to a public, private or parochial school, for the following period: In the city districts, in each school year beginning September first, not less than twenty weeks, at least ten weeks of which, commencing within the first four weeks of the school year, shall be consecutive; and in special, village, and township districts, not less than sixteen weeks in each school year, eight of which, commencing within the first four weeks of the school year, shall be consecutive, unless the child is excused from such attendance by the superintendent of the public schools, in city or other districts having such super-

intendent, or by the clerk of the board of education in special, village or township districts not having such superintendent, or by the principal of the private or parochial school, upon a satisfactory showing, either that the bodily or mental condition of the child does not permit of its attendance at school, or that the child is being instructed at home by a person qualified, in the opinion of the superintendent in city or other districts having such superintendent, or the clerk of the board of education in special, village or township districts not having such superintendent, to teach the branches named in this section. In case such superintendent, principal or clerk refuse to excuse a child from attendance at school, an appeal may be taken from such decision to the probate judge of the county, upon the giving of a bond, within ten days after said refusal, to the approval of said judge to pay all the costs of the appeal, and the decision of the probate judge in the matter shall be final. All children between the ages of eight and sixteen years, not engaged in some regular employment, shall attend school for the full term the schools of the district in which they reside are in session during the school year, unless excused for the reasons above named.

The law does not, in my mind, go far enough. It should be in conformity with the inspection laws; not only that, but it should be universal for this reason : that in Ohio, especially along the Ohio river, I have ordered small boys working in the glass factories and nail mills discharged on account of their age, and they would go across the river and get like employment in Virginia and Kentucky, where they can work if they are only old enough to do what is required of them. Ofcourse, where boys or girls under 16 are discharged, the work they have done must be done by someone else, and the result is that older persons must be employed to take their places and command better wages, while the manufacturer across the river, who employs the boys we discharged, make the same kind of ware and pay less wages, and can undersell the manufacturer on the Ohio side with the same profit; therefore, the law should be universal, and I think it should be our aim to have each State enact similar laws. I do not give the experience of the Ohio inspectors only, but also that of the inspectors of other States, who are confronted with the same conditions. The law under which we are working has proved very beneficial to children, at least to those who have been removed from working at dangerous machinery or at work whereby their health has been injured, etc., because they get some recreation which children naturally need. But there are some parents, I am sorry to say, who, when approached on the subject of their children working, say that they need their help, and they would rather have them in the workshops than have them run the streets or going to school; they also say that they had to go to work when they were 12 years old, and their children were no better than they. Our laws have done a great deal for the benefit of children, as will be proven by referring to our report. In the report for 1891 we had about 200 children discharged from

unhealthy and dangerous occupations, and last year only about one-fourth of that number, showing a large decrease, as the manufacturers are getting to be more careful whom they employ and what they employ them to do, as they do not wish to violate the law. I have seen children toiling from day to day in illy ventilated workshops, who actually looked as though they had been taken from the grave. They were going about their work with pale and emaciated forms, as though they were carrying heavy burdens, and when meal time came they could not eat, so tired were they; then have their brutal parents tell me that they were better off in the shops than running the streets or at school.

Friends, think of it, small boys and girls working among the whizzing machinery of a planing mill, or woolen factory, or cotton mill, or cordage factory, nail mills, rolling mills, rubber factories, match factories, feeding printing presses, working at emery or buffing wheels, sand belts, wood planers, buzz saws, stave jointers, and a hundred and one other kinds of employment where they are liable to be hurled into eternity or be crippled for life at any minute.

The men and women who are holding high positions as officers, civil and military, and teachers of the young are fast passing away, and the children must of necessity, sooner or later, take their places. Now, I ask you, what kind of a government can we expect of the rising generation, if we allow them to work in illy ventilated workshops, or at machinery whereby their lives or limbs may be endangered or their health injured? Therefore, let us exert ourselves to have the law making power of the several States enact laws that will compel children under 16 years of age to attend school, so that it will give them a start to the higher branches of education, and fit them to hold the positions which they will be called on to fill. By doing this, we will be sure that we will have a good government, good healthy men and women, and not a generation of dwarfs and cripples.

Mrs. Kelly, of Illinois, desired information from the different States on the following questions, "When the prohibition of work for a child inflicts suffering on a family by reason of the loss of its wages, what do you do?" Answers were given as follows:

In Massachusetts permission to work is granted to orphans and half-orphans.

In New York such cases are referred to the authorities with the recommendation that relief be furnished until the child is able to work.

In New Jersey children are permitted to work when over

twelve years of age, consequently very little hardship is inflicted as a result of enforcing the law.

In Ohio "The Compulsory Education Law" makes it the duty of the truant officer to obtain the necessary relief in all such cases.

Inspector Dyson, of Massachusetts, moved that the Convention hold an evening session, which motion the Chair ruled out of order, when a motion was made to suspend the rules in order to admit the former motion, the latter motion was also defeated.

The Chairman introduced Mr. Chas. W. Haskins, of Columbus, Ohio, who addressed the Convention upon the aims and objects of the Columbian College of Citizenship.

Mr. Dyson, of Massachusetts, moved that no person who was not a delegate be permitted hereafter to address the Convention on any subject until after the business of the Association is completed. The motion prevailed.

Mr. Franey, of New York, desired to know if the motion just carried would deprive Mr. Jeremiah J. Sullivan, expert of the Department of Labor, Washington, D. C., the privilege of reading a paper specially prepared for the Convention. At Mr. Franey's request several supporters of the previous motion asserted that such would be their conclusion. To obtain the sense of the Convention a motion was made that Mr. Sullivan be permitted to read his paper. It was carried.

Mr. Sullivan being introduced by the Chair proceeded to read the following paper:

WHO IS THE FACTORY INSPECTOR?

Mr. President, Ladies and Gentlemen:

I think I can adopt no better prelude to this paper than by asking:

1. Who are the factory inspectors?
2. Where are they?
3. And why are they?
4. And what do members of labor organizations expect from them.

I desire to spread the title out pretty well, as I have a standing grievance against the president of this association, which has been drawing interest for about seven years, and which I desire to pay; and then, too, I

have some crude ideas in my head, which I believe, if acted upon, will undoubtedly benefit the whole human race, and I desire to vent them right here, as this is the first, and I believe it will be the last public audience that will ever care to listen to me.

In treating of this question, I speak from a strictly trades-union standpoint. Trades-unions have had much to do with the creation of factory laws in the past, and will have much to do with their creation and proper observance in the future. We do not deny, however, that factory laws are for the benefit of all factory employes, union and non-union alike, and we are glad that they are so general and salutary in their effects; but we are speaking as one of that class whose efforts, more than any other source, placed these laws upon the statute books. I am a firm believer in the fable of the "bundle of sticks," and will be as long as I live, whether toiling in the work-shop, or released from the restraint which it imposes, for in my judgment trades-unionism is the toiler's best dogma, his anchor of hope, and the only life-boat that will successfully buffet and safely ride the adverse winds and waves of labor's sea. The more the wage workers can be banded together in organization, created and administering for themselves and for the protection of their own interests, the better it will be, not only for themselves, but for the communities of which they are a party; and I believe that this truth has been pretty thoroughly demonstrated in the recent labor troubles in Chicago.

When the peace of society was endangered, and the law was to be defied, trades-unionists not only held aloof from these useless demonstrations which you witnessed, but offered their services in preserving the peace, and the fact that legitimate trades-unionists were not found in these demonstrations at all, is the very best argument that can be offered in favor of unionism, as it demonstrated plainly that even in times of great business depressions, the union is a safeguard and a help in being able to keep most of its members at work. I think, therefore, my friends, that as trades-unionists we are entitled to some consideration, in fact to much more than we generally receive, only in an uncomplimentary way, and that you will agree with me, when I assert, that the most efficient and intelligent workers, and orderly and law-abiding citizens are to be found in trades-union ranks, and as such you must wish them well.

I mentioned in the beginning that I had a grievance against your president, and I think it no more than right that I should tell you something about it, and when you have learned the facts in the case, I believe you will agree with me that our friend Franey is both heartless and unfeeling. Some years ago your presiding officer here was the president of a typographical union to which I was attached, and when he laid down the composing stick and evoluted to the office of factory inspector, he relinquished into my hands the presidential gavel, which he had wielded so vigorously and effectively as president of the union. In that position I was often compelled to come in contact with the factory inspectors, for,

while it is well known that the counting rooms of many printing offices are finished off in rose wood and plate glass, and are supplied with Turkish rugs and Persian mats, and are alike comfortable and inviting, the composing rooms of some of these same establishments are sadly wanting in the agreeable conditions which should be found there, and which would be found there if the factory laws were properly enforced. Well, to use a vulgarism, I thought I had a "dead cinch" on the factory inspector's office of my own State, and I was, therefore, not at all modest in my demands upon that office; and, so when I carefully prepared my first letter to our friend here, and suggested therein that as practical scheme and a really good thing, the idea of lodging the employes in the factory, and of copiously supplying the shop with "sliding poles," now used in our fire engine houses, and also of furnishing every employe with a complete working garment, made in one piece, that could be put on with one jerk of the buckle, in order to accelerate the movements of the weary-limbed, and enable them to respond hastily to a sudden call if the foreman pied the form, I confidently expected that my suggestions would receive some consideration—and they did. I received a letter, written on a large sheet of paper, with our friend Franey's name printed upon it in conspicuously large type, with a good deal of fancy scroll work about it, and with a picture of a nice looking young lady holding a fish scale in her hand, although the sign above the stilliards was "seal." I was informed that there were several insane asylums in the State, and a particularly good one for harmless imbeciles at Bloomington, where copies of the annual report of the factory inspectors would be mailed to me, and from the perusal of which it was hoped that, at lucid intervals, I would derive much pleasure and benefit. Such, alas, is the golden realization of hope, the fickle and uncertain goddess whom we woo so lovingly.

With one rude gust the incense and myrrh which I had offered at her altar was swept away, and the factory inspector's stood out boldly in all their heartlessness. I was disgusted, of course, and resolved to take a departed sage's advice and "go west," and while lingering here in this phenomenal city, I ran across your president. He wanted to know how I liked his annual reports, and if I didn't feel grateful enough, provided my mind had ceased to wander, to say something to you ladies and gentlemen about the great benefits resulting from factory laws, and I might incidentally mention what members of labor organizations expected from factory inspectors. Now, my friends, I believe it is well to "aim high, if you shoot low," for it shows a laudible ambition at least, but if there are any here who have requests to make upon the factory inspectors, I would strongly advise them to reverse the principle of "aiming high" and to "shoot low," as factory game is not to be found in very high altitudes. And so I have accepted the invitation of your president, and before I get through, he'll want to offer me a bribe to cut this paper short, or else get a policeman to pull me off the stage. But

"WHO ARE THE FACTORY INSPECTORS?"

While reflecting seriously upon this question, I arrived at the sad conclusion that factory inspectors, whom I had conceived to be etherial and esthetical beings, first from the fact that they can seldom be found, and when at last unearthed are discoverd sipping arrack, with a taste which, if esthetical, is at least healthy, are nothing more than plain, common every-day individuals of both genders, who have been taken from the ordinary ranks of humanity, and led by devious paths and winding ways into that haven of rest—the factory inspector's office—the goal upon which a few thousand self-sacrificing men, and an equally, if not greater number of self-sacrificing women, have their eye, where 12 or 16 hours of self-sacrifice each day is invariably rewarded by kicks, cuffs and sore abuse, and in the return to his native heath of the wanderer after factory glory, a wiser, sader, but better man.

Throwing jesting aside, we find that factory inspectors are practical men and women, who have been chosen or appointed on account of their special fitness and interest in the work, to execute those laws which the different States have placed upon their statute books, and which have for their objects the moral, physical, and I believe we may add, the intellectual improvement of shop operatives. Laws which, if properly enforced, will give more light and more sunshine, purer air and more of it, and will add to the healthful and improved sanitary surroundings of the factory employe, conditions which mean for him a little longer life and a little pleasanter life while he toils in the workshop for his daily bread.

As one who has been closely affiliated with labor organizations for some years, I have frequently been brought in contact with factory inspectors, and while the activity of pernicious politicians or other causes have sometimes brought disappointments in trying to secure the improvements desired, I am frank to say that I have always found the factory inspectors in my own State honest and untiring in their efforts to execute faithfully every factory law upon the books, and ever ready and willing to listen to and adjust the grievances which I have presented in behalf of my fellow workers, and the few instances in which my requests were not granted, the law itself, and not the factory, inspectors was to blame. There may be some particular cases where the unseen hand—the hand of the assemblyman, the senator or even the governor is made to play a part, where some big corporation or some big railroad company is involved, and the law is thwarted, but when this is the case, a power, higher than the factory inspectors can exercise, is responsible for the act, and no one should feel the defeat more keenly than the factory inspector himself.

If factory inspectors were clothed with more authority than they now possess, especially in some of the States, and the members of labor organizations were possessed of a better knowledge of factory laws generally, and especially versed in factory laws which apply to their own locality, and there is no reason why they should not be so, as copies of these laws

can be secured for the asking, some of the disappointments which are now inevitable would not be experienced. It is the duty, therefore, of members of labor organizations to see that the authority which is now lacking be granted, and that insufficient or imperfect factory laws be improved. There should be no conflict, and I am happy to say that in my experience I have seldom found any between factory inspectors and the members of labor organizations, but the most cordial relations should exist between them, and the most cordial relations will exist between them if the former faithfully discharge their trust, and the latter are true to themselves and to the unions to which they belong. In this day and in this age, factory inspectors and factory laws are a necessity, and to undertake to properly regulate factories without them is as useless as for a man with a wooden leg to try and win a foot race. They are surely a great help to those for whom they were created, and many of the sad conditions which surrounded the factory employe in the past, and which in some cases still surrounds him to-day, have been improved, and will in the near future be entirely eradicated, under the rigid application and enforcement of factory laws. Between them both, the "sweater" should be of short duration, and there never was more joy in heaven over one sinner or over a dozen sinners doing pennance, than there will be among members of labor organizations when this cockroach of humanity, this waterbug of our commercial life, dark and ugly, that crawls around in damp basements and dark corners, has once and forever, and for all time, been eradicated from factory life. Factory laws are the outcome of the efforts of members of labor organizations to improve their working conditions, coupled with the assistance of noble and humane men and women who have the improvement of the laboring and deserving workers at heart; and in my humble judgment, those who are appointed as factory inspectors, and those into whose hands the execution of factory laws are entrusted, should come from the ranks of those, the tireless efforts of whose members have placed factory laws upon the statute books of sixteen States in the Union. The politician should have as little to do with the factory laws as possible, and I use the word politician in its narrow sense, for it is from this source, more than from any other, that obstruction to the faithful execution of factory laws is generally found.

There should be more uniformity in the factory laws of the different States, as the conditions which require factory laws are the same in one State as another. Fire escapes are as necessary on buildings in the State of Illinois as they are in the State of New York; proper sanitation is as necessary here as there; the proper guarding of elevator shafts and of dangerous machinery is likewise as necessary in one State as in another, yet if a member of a labor organization, or in fact any other factory employe, were to make a request upon the factory inspector of Illinois for the placing of fire escapes upon the building in which he is employed, or for the proper guarding of dangerous machinery, he would not meet with success,

for the factory laws here for some reason do not cover these improvements. This should not be so, and we hope to see these improvements made at the next session of the Illinois legislature, and the members of the powerful labor organizations here should help along in the matter. Of course, we remember that factory laws are something new for Illinois, and some time must elapse before they are as perfect and salutary as the members of labor organizations here desire to see them.

Factories are necessarily the same in all civilized countries, so far as outward appearances go. The inward construction varies only as between the old machinery and the new. The factory whistle and the factory bell continue to perform their usual functions—that of getting the people out of bed in the middle of the night or earlier, to commence their daily toil; no change in this. Numerous devices are now in use to check the tardy ones, from the ordinary check down to a recent electrical enumerator, which checks the man's name, and registers the exact time of his appearance. There seems to be no limit to the time-savers that a visit to any of these factories will unfold. I would suggest as another good thing, that already offered before, that the employes be lodged in the factory, and the "sliding pole" be introduced, so as to economize time.

It is said in defence of the factory system that the buildings are well constructed and well ventilated, and that all the luxuries of the season are at the command of the employes. Well, those benefits are conferred upon the lower animals under care of the beneficient master, and really at times, I am given to the reflection that to be a horse or a mule would be far more comfortable than being a common factory worker in some of the establishments which I have seen.

In the present crisis, when the industrial congestion and disorder is a burning disgrace to common intelligence, it is well for us to consider conditions from an optimistic standpoint, and "look out for the greatest good to the greatest number," and that is No. 1. Let the United States restrict immigration for a term of years, until that mass of humanity now upon our shores may affiliate and become citizens, and a part of the body politic. The various alleged remedies so freely circulated by newspapers, labor organizations, etc., looking toward land colonization, work upon public improvements, etc., are not remedies; they simply cover up the festering sores, and leave the disease to run riot through the system. It is noticeable that this question of immigration is touched upon very generously by all parties and all men. It has such a direct bearing upon factory life that I have concluded to touch upon it here. Is it cowardice or humanity? I am inclined to think that cowardice is the predominating feature. Humanity will suggest that the entire change of life which these people take up, together with their poverty, would aggravate the disease. The European governments have, since the formation of this republic, relieved themselves of their criminals, paupers and surplus population, not for the benefit of that class of humanity, but for the purpose of relieving the strain

upon their national purse-strings. Why should this country longer sustain this unnatural course? Let us temporize no longer upon these questions. As a result of this low grade and indiscriminate immigration, every city in the United States to-day is cursed with sweat-shops, and sweat-shops of the most revolting character.

The factory life continues to develop into commercial life, is noticeable by all investigators of statistics and factory inspectors, but that is a feature in name only, as all its essential features are *nil*, except in the older countries of Europe. There the daily habits of life, food, morals, recreations and holidays are all cut from the same pattern. What the father has done, so will the children continue to follow, until forced to change by improved machinery. The food supply, meals, time, etc., are the same in each household. This feature of factory life must necessarily accrue to the advantage of the employer only, as he is, therefore, enabled to base his wage rate upon the cost of living, and not upon the cost of production, or upon the productive capacity of the worker. It is not a matter of equity and justice that governs all men—it is that of greed. Will the time ever come, when some eminent physician will discover the lymph to innoculate man, that will eradicate that greed from the system. If so, the labor problem will then be solved. The best lymph so far discovered, is the factory law rigidly administered, and this is one of the things which members of labor organizations expect from factory inspectors. In looking over the Second Special Report of the United States Commissioner of Labor, a compilation of the factory and labor laws of the States and Territories, we find that there are factory inspectors proper in only sixteen States, while in fourteen others laws partially regulating work-shops are found. This information astonishes us, as we are unable to understand why factory employes are so laggard of their own interests, of their own safety, and of their own health and comfort, as not to avail themselves of the benefits of factory laws, and we are, therefore, not at all surprised to notice the sad condition of affairs which we find existing in certain localities.

When we go down into some of the underground habitations, where we can almost truthfully say that God's sunlight never enters, and where the perpetual gloom is broken only by the uncertain light of the lamp's fitful glare; where the home, if we can desecrate the name, and the factory, if we can misapply the term, are one; where the atmosphere is damp, and fetid and diseased, and where little mites of humanity—children 6, 7 and 8 years of age are found sitting on damp and dirty floors making knee-pants for 2 and 2½ cents a pair, and averaging a wage rate of 40, 60 and 70 cents per week; and when these little ones are found pale, sickly and emaciated, and almost warped out of shape by such inhuman surroundings, and such inhuman toil, we cannot wonder at crime and immorality in the community which engenders or at least allows, by its indifference, such conditions to prevail. When we see these things, and we have seen

them, do you wonder why factory laws were brought into existence, or, do you wonder why members of legitimate labor organizations ask, nay demand, the rigid enforcement of the factory laws that we now have in sixteen States, and the immediate enactment of the same salutary laws in the other twenty-eight?

In some States the factory laws are powerless to wipe out or even regulate such places as I have just described. If only members of the family are found at work herein, and no outsiders are brought in, they do not come under the operation of factory laws. One thing that members of labor organizations expect is, that the factory inspectors will see that the law is remedied so as to apply to just such places as these; that they are brought within the operation of humane, healthful and sanitary laws, and that any garment, any article made therein, is stamped with the proper tag of the "sweater." The fact that the knee-pants, the cloak, the cape, and the undergarments manufactured in these lowly abiding places of God's miserably poor, are for the merchant prince with a palatial store, does not make this place any the less a "sweater's den." Yes, the palatial store may be 17 stories high as a result of this human misery, and it would have went a story or two higher, but the knee-pants bricks didn't hold out, and there wasn't human sweat, and blood, and tears enough, and enough crushed and sifted sand of human life to mix any more mortar. Do you wonder that the people cry to God against the barbarism of our modern civilization, and do you wonder that the members of labor organizations clamor for factory laws? and do you still subscribe money to civilize and Christianize the heathen in foreign climes? In God's name begin at home and try to Christianize and humanize your merchant princes. But some one may say: Oh, the merchant is not responsible for this condition of human affairs; he lets his work out by contract to a third party, who is the "sweater." Does this fact lessen the merchant's responsibility or minimize the curse, because he is too much afraid of the search-light of humanity to make his contracts direct. Don't say that these things are not so, that they are not, cannot be real. I have seen them through no other eyes but my own, and they are matters of record in the departments of the government.

In conclusion, ladies and gentlemen, enforce the law, and hew rigidly and impartially to the line, regardless of where the chips may fall. When you have done this, you will have faithfully discharged your official trust, and will have performed all that is expected of you from the members of labor organizations.

Chief Fell, of New Jersey, gave notice that on Friday at 11 A. M. he would move to suspend rules for the purpose of going into the election of officers.

Mr. Casserly, of Minnesota, presented his paper as follows:

LABOR LEGISLATION IN MINNESOTA.

Mr. President and Members of the Association:

The meetings of this convention from year to year mark an increasing interest by the people of the several States of this union in the legal protection of the working classes. Its members, engaged in the grand work of lightening the burdens of the toilers in our midst, are ever ready to rejoice at any progress made in any part of the world in the legislation for the protection of those toilers. You will, I know, rejoice with me at the progress made in that line in Minnesota since our last meeting. The last legislature enacted ten laws directly affecting labor, and in addition passed three statutes pertaining to subjects which have attracted great attention among labor organizations, and for which the members of those organizations have been earnest advocates. That you may realize the great progress signalized by the passage of these thirteen laws, I will first briefly review all previous labor legislation in Minnesota. That legislation may be divided into two periods, the first of which began with the reception of Minnesota into the Union as a State in 1858, and ends with 1882, a period of twenty-five years, and the second from 1883 to the present time.

In the first of these periods we find no law placed upon the statute book at the request of workingmen. No law enacted during those twenty-five years was especially in their interest. On the contrary, the only law enacted during that time, which gives a hint of the existence of organized labor in our midst, was once passed in 1865 relating to the intimidation of workmen. That act forbade any person by himself, or in combination with others, to threaten or use any means to intimidate any workman in the employ, or desirous to enter the service of any other person, persons or corporation in the State, with intent thereby to cause such workman to leave such employ or to prevent him from entering therein. This law, seeking to lessen the power of labor organizations and to prevent, if possible, their growth in Minnesota, antedates by nearly, if not quite twenty years, the enactment of any law formally championed by the organized labor of the State, or with two exceptions, that were really calculated to benefit or protect the working people.

The first of these two exceptional laws mentioned above was passed in 1858 at the session of the first legislature. It was an act regulating the hours of labor of women and children in factories, and making ten hours a legal day's work. This law was placed upon the statute book as the result of the first discussion in America of the evils of the factory system. It was, at its passage, in advance of the laws of Massachusetts or England, and its enactment at the time was alone rendered possible by the absence in Minnesota of any appreciable amount of the labor of women and children in the factories of the State. This early law, thus in one sense far in advance of the legislation of other States upon the same subject, was, however, for practical purposes, a dead letter. It was the same with the

second law for the regulation of labor enacted in 1879. This latter was called into being, not as a result of any agitation of the working people, but as the outcome of the efforts of Anthony Comstock and the movement which he represents.

The aim of this kind second child-labor law of Minnesota was to prevent the employment of children under fourteen in theaters, dance houses and kindred places of amusement. The law had some excellent features, but practically has been of little value, and for years stood on the statute book without the knowledge of the most of those interested in the general subject of child labor.

In the first twenty-five years of the history of Minnesota as a State, in addition to the two laws mentioned above for the regulation of the labor of women and children and the law aimed as a blow at labor organizations, viz., the law to prevent intimidation of workmen, the legislature enacted a number of mechanic lien laws and laws granting exemptions to homesteads from execution for debt and similar statutes as stay laws. Thus the first legislature passed a homestead act, with exemption from debts, for a farm used as a homestead and quite large exemptions in the shape of personal property. This early exemption law expressly excepted sums due for wages of servants, laborers and others. No property was exempt from execution for a debt for such services.

The first homestead and exemption laws were framed in the general interest of the employer and not of the employe, of the small capitalist and not of the toiler. Nearly every legislature which has met in Minnesota since the first one in 1858, has placed upon the statute books some modification or addition to those early exemption and lien laws. An interesting article could readily be made by tracing the changes of thirty-five years in those laws. The greatest changes were, however, made from 1876 to 1878, when the general lien and exemption laws were modified quite a considerable in the interest of the working classes. These changes doubtless mark the first wave of the rising tide of the labor movement which ten years later was destined to leave its more pronounced influence upon the statute books of the State. The rise of this movement has in the past ten years taken up the old subjects of exemption and lien laws, and secured various further modifications of the same in the interest of the workingman.

Of other laws passed in recent years in the direct interest of the working classes, or for the protection of their lives, limbs or health, the first in the order of years was the act of 1881, creating a state board of inspectors for steam boilers. With its later amendments, this is one of the wisest and best laws for the protection of human life now on the statute books of any State. No State in the union has better, if so good, a system of boiler inspection as Minnesota.

Another good law, and the second of the kind to be passed by Minnesota, was enacted in 1883, being an act for the preservation of life and for

the protection of travelers. This provides means of fighting fires in buildings, as hotels, factories, etc., and also for the construction of external fire escapes on such buildings. These two acts, although in the interest of the working classes, were not passed as a result of any labor agitation.

The first law, apart from some of the earlier lien and exemption laws, to be placed on the statute books of the State at the request of the working classes, was one for the regulation of employment offices, approved February 28, 1885. The same session saw the enactment of a law for the regulation of the labor of locomotive engineers and firemen. It also enacted the present penal code of the State with its sections relating to conspiracy and coercion so objectionable to a large number of organized labor. The session of 1887 marked the first great "Impress of Organized Labor" upon the legislation of Minnesota. That session passed a law increasing the financial liability of railway companies for injuries to their employes. It passed a law requiring railway companies to block the frogs, switches and guard rails of their tracks to prevent accidents. The same session called the bureau of labor statistics into existence. It made modifications in pre-existing lien and exemption laws, both by changes in statute and by constitutional amendments.

The legislature of 1889 enacted a convict labor law in harmony with the demands of the working people. It passed a law protecting the trademarks of the labor organizations, one requiring employers to furnish their female employes seats when not engaged at active work, and made important changes in the earlier laws regulating the inspection of steam boilers and the law governing the bureau of labor statistics.

The legislature of 1891 passed three distinctively labor measures, one for the regulation of the labor of railway employes, forbidding the use of Pinkerton men as peace officers, and a change in the penal code forbidding a forced reduction in the claims of a workingman. This does not include some minor changes made in the lien laws, as such changes have not been traced out by years.

Of the sessions before that of 1893 the legislature of 1887 has the honor of having passed about one-half of all the laws enacted at the request of organized labor. The legislature of 1893 enacted a greater number of bills in the line suggested by the workingmen, than all its predecessors, if the lien and exemption laws are not taken into account. This legislature also enacted a greater volume of law upon the subject, judged by its number of sections and its relative importance. It enacted "ten distinctively labor measures" and three other laws which had received great attention from organized men. The briefest possible review of these laws will be made.

House file 95, chapter 7 of the General Laws of 1893, is the longest and most important of these measures in some respects. It provides for safeguards against accidents for a long list of machines and appliances. It thus does for a wide field what the boiler inspection act of an earlier date

does for a single invention. If properly enforced it must be the means of saving many lives and a still larger number of crippling accidents each year in the State. This factory inspection act is one of the most complete factory acts in force in the United States. It covers in one statute what is provided in Massachusetts in a dozen different statutes. It covers the whole field of factory inspection acts of this country and England, with the exception of a regulation of child labor and that of women.

This defect of the Minnesota factory act, above referred to, was sought to be supplied by an amendment to the child labor act of 1879, which was secured by the followers of Anthony Comstock. These amendments aimed to prohibit the employment of children under sixteen at dangerous occupations, or occupations where their lives or limbs may be endangered, or their health injured, or their morals depraved. Owing to a defect of the language employed this admirable intent of the law is in a large part defeated. One feature of this amendatory act which may, however, prove of great service to the children, is one which prohibits their employment in stores or shops before 7 o'clock in the morning, nor after 6 o'clock in the evening.

The legislature of 1893 passed a law for the protection of the employes on the street railways, requiring all cars used in the winter months to be properly vestibuled. House file 67 changed the law relative to change of venue, so that in suits for the collection of wages the rich employer could not transfer the case out of the county and so defraud the plaintiff by putting him to unnecessary expense. House file 78 changes, in some minor particulars, the old laws relating to liens on logs and lumber.

House file 319 was a small bill regulating the payment of wages to minors.

Organized labor was recognized in the provisions of House file 262, giving the trade marks of labor organizations the same protection as has long been accorded to trade marks of employers and other business corporations.

Organized labor was further recognized in House file 465, making labor-day, the first Monday in September, a legal holiday. Labor obtained a further and more practical recognition in the enactment of House file 36, preventing employers from requiring their employes to renounce labor organizations a condition of employment. This act does the same for the protection of the employes as was done eighteen years before by the intimidation law of 1865 for the employers, or for the same class by the provisions of the penal code of 1885 relating to conspiracy and coercion.

" Labor Bureau Armed." In addition to the foregoing laws, the legislature of 1893 so revised the law relating to the bureau of labor as to make it what it never has been and could not be under the laws of '87 and '89, a very important factor in the enforcement of laws for the protection of the working classes. The new law places the officers of the bureau in a position where they can enforce, not only the laws of this session, but the

greater mass of the preceding laws reviewed in this article. In that way it changes many a law from a dead letter into a possible active force. It is hoped that the officers of the bureau will use added power with wise discretion for the good of the toilers of Minnesota.

In addition to the ten labor laws mentioned above, the legislature of 1893 passed three acts in which workingmen took a great interest, although none of them can be properly called a labor measure. These laws were Senate file 114, providing for a constitutional amendment relating to the collection of an inheritance tax. House file 162, giving the State a more perfect election law, and House file 592, providing for free text books. These last, as well as the distinctively labor laws already mentioned, showing a growing influence of organized labor, and also a growing ability of the members of labor unions to master the right principles of legislation. Alike we can see in them a good augury for the future both of the State and for the labor movement.

Of legislation needed in the immediate future and which I have faith to believe, will be secured at the next session of the legislature, I will mention first a more perfect law for the regulation of the labor of women and children. Next in importance will be the enactment of a good mine inspection law, to guard the lives of the men engaged in the rapidly growing industry of iron mining in the northern part of the State. Other laws which will doubtless be secured in the early future are the following: Laws creating a permanent court of arbitration in industrial disputes, a law establishing free employment bureaus in the larger cities of the commonwealth, and some form of legislation, either in the form of better employers liability laws or laws regulating accident insurance, giving greater financial relief to workmen injured by accidents. To secure the enactment of these laws is the present supreme aim of the department with which I have the honor to be connected. I trust that with singleness of purpose on the part of those in that department and with the cordial support of those in the ranks of labor, that I may be able to report two years hence, the passage of all these proposed laws and several other acts still more valuable and extensive than the thirteen acts whose passage since our last meeting I have here passed to review.

Inspector Evan H. Davis, of Ohio, read a paper as follows:

THE REMOVAL OF DUST FROM WOOD-WORKING MACHINERY, AND HOW BEST IT CAN BE DONE.

Mr. President and Members of the Convention:

As factory inspectors, and guardians of the health and safety of factory workers, we are supposed to give good and satisfactory reasons for everything we do. Therefore, before undertaking to show how to extract dust from wood-working factories, it would be well to give reasons why it should be done. To do this, I found it necessary to look up authorities,

and I was surprised to discover that of all that has been written as to the effects upon the human system through the inhalation of dust proceeding from mechanical processes, that information relative to wood-dust is very limited. From what I have seen upon the subject, it would not be unreasonable to conclude that, while the removal of wood-dust may be desirable, it cannot be regarded as essential from a sanitary standpoint. In fact, where vegetable dust is mentioned, that produced from ordinary wood is considered harmless, unless it contains fine particles of sand or other insoluble substances. It is true that many wood-workers maintain that they are subject to pulmonary ailment as a result of their occupations, yet there is no data which goes to prove that lung trouble is more prevalent among that class of workers than among factory workers in general. One writer states that among carpenters and cabinet makers consumption prevails at a rate of fourteen to one hundred, which is only an excess of two per cent over the average among all classes in this country. And this excess, slight as it is, might reasonably be attributed to the posture or attitude in which these artisans usually perform their labors. However, carpenters and cabinet makers do not include to-day that large body of men who work at wood-working machinery. And it would be rather an assumption to accept the above ratio as evidence that wood-dust inhalation is not particularly injurious.

That it is absolutely harmless, those who have had any extended experience with wood-working machinery will hardly admit, however insufficient their information may be to warrant a contrary opinion. Wood-workers themselves claim that none but men of robust constitution, and with well developed breathing capacity should follow the trade, and that those disposed to catarrhal affections had better engage in other vocations. We know that the respiratory organs are exceedingly sensitive, and when compelled to receive any substance foreign to what nature designed, a strenuous effort is made to expel and cast it off again. If such effort fails, or if constant demand is made upon it, irritation and inflammation is likely to ensue, which will result sooner or later in some form of acute or actual ailment.

Sand-dust, it is admitted, conveyed into the bronchial tubes, will cause their impairment; and it has been known to have reached by some course the lung tissues puncturing them, and causing ulceration and final breaking down. Dust from very hard wood appears to partake somewhat of the nature of sand; is comparitively as indissoluble, and one might suppose would produce from inhalation a similar internal effect. The dust of mahogany and rose-wood, and some men include black walnut, is regarded by wood-workers as baneful to health. It carries with it a pungent odor, which they say is very offensive and irritating to the respiratory system. Many of them claim that wood-dust ordinarily impairs the digestive organs, and insist that dyspepsia is their common enemy. Whether this be so or not, certain it is that the majority of young men and boys employed

in washboard, pail and other light wood-ware factories have a pinched, undeveloped and pallid appearance. This may be due to the unripe age at which they begin their career as wage earners, as much as to the nature of their employment, and probably it is due to both causes combined. However, I have never entered one of these factories without a certain impression that the boys employed therein were so at the sacrifice of their health.

But whether wood-dust is afflictive to health or not, there are other good reasons why it ought to be conveyed from the factory as rapidly as it is produced. To be compelled to labor in a shop where chips, shavings and saw-dust are allowed to accumulate, and lay around throughout the day, and where the atmosphere is constantly laden with the finer particles of refuse, may not be particularly unwholesome, but it certainly is a condition very disagreeable and undesirable. The worker in such a shop is at considerable of a disadvantage to perform as satisfactory labor as one employed where order and cleanliness is a requisite of his daily surroundings. His labor of itself is of a character which requires considerable care, and most diligent application of his attention at all times His own security from danger largely depends upon his dexterity of hand and the vigilance with which he regards his machine, and nothing of a nature to irritate him or to divert his thoughts should be allowed to prevail. Whatever does this, simply decreases and retards his efficiency as a worker, and makes him more liable to accident and personal injury.

In these days of labor-saving machinery, and of labor-aiding appliances, it must be conceded that whatever contributes to the comfort and convenience of the factory employe is a source of economy to the factory owner. Money cannot be uselessly or unprofitably expended when applied to divest the workshop of everything of a hampering and obstructive character. With every dollar so expended, the place of toil to its occupants takes upon itself less the appearance of a place of task service. Workingmen work better, and produce more expeditiously and perfectly the wares they fashion, when a feeling of safety and comfort forces itself upon them. Environment is everything to every one. Do as we may, all are more or less controlled by, and subject to its influences. So it is in the factory; when it is clean, conveniently arranged, well aired, and in every respect a place where men feel like toiling with a cheerful and contented mind, the employer can always count upon the very best results.

There is another important view, and one from a standpoint of dollars and cents too, in which to regard this subject. The wood factory, where no provision is made for the speedy removal of its refuse, is a poor insurance risk. It is claimed that dust-conductors in the past have been the cause of some very destructive fires. This may be correct, but it is an argument in favor of adopting always a system of exhaust thoroughly efficient, and constructed upon scientific principles. Where fires can be traced to conductor pipes, it will be found that they were invariably fash-

ioned from wooden boards, square shaped, and of equal dimensions throughout their entire length, and under no circumstance adopted to do adequate exhaust work. Of the refuse entering these tubes, the finer dust is never wholly extracted, but gathers and lodges in the corners and crevices of the boards, and only requires a spark from some source to ignite the whole mass.

People do not generally regard wood-dust as being explosive, but it is highly so, and when it is allowed to collect and accumulate inside the shop, a burning out some time may reasonably be expected. Wooden exhaust conductors are a waste of material to construct, and a waste of power and consequently of money afterwards to operate. They never did and never can work successfully, and it is not to be wondered at that men who know so little of the principles of pneumatics as to tolerate their construction, denounce exhaust systems in general as worthless.

The ordinary rate of insurance upon wood factories is much in excess of what other factories are rated, and while, if the proper precaution was taken for keeping down fires, there is no reason why a wood shop would not be as safe a risk as a blacksmith or a machine shop. I have visited some wood factories where it seemed questionable to me that any company could afford to accept a risk upon them at any rate. Shavings and chips in heaps in every corner, with dust inches thick upon rafters, casings, and every projection it could settle upon, and the air so filled that a match struck in its midst would instantly set everything ablaze. I have been in other shops where a large number of machines were in operation, and yet the floors were kept scrupulously clean, and the air almost as pure and free from dust as that on the outside. Clearly the fire risk should be much less on the latter than the former shop.

Some time ago I had occasion to visit a locality where several wood factories are operated. The first shop to which I gave attention, had a partial system of exhaust. The fan appeared to be equal in power to what was required, but the tubing was a sort of agglomerated patched affair of wood and galvanized sheet iron, and every workman in the shop was covered from head to foot with dust, and a twenty minutes inspection did as much for me.

Out of this shop I stepped across the street into another. Here I found everything neat, clean and orderly, for a powerful exhaust fan was in full operation. Every machine on both floors of this establishment was well hooded, and properly connected with the exhaust. The flying particles on either floor were almost imperceptible, and the contrast between the condition of working in both shops was so striking that I felt it my duty to make an order on the proprietor of the first visited shop to go and pattern after the doings of his neighbor.

The manager of the well ordered factory informed me that his exhaust system had cost him in the neighborhood of five hundred dollars —"but," he said, "it pays to have it, and I would not go without it." How did it

pay? Liability of fire was lessened thereby, and this man's employes were conditioned to work to their best capacity. These are some reasons why dust should be removed from wood factories. I will now endeavor to explain what in my judgment is the best means of doing it.

The first requisite of a good exhaust system is power, and an exhauster built with a view of capacity and durability. An exhauster, I might state, is a fan having but one suction inlet; in this it is different to a blower, the latter having an air inflow on both sides. In selecting a fan, the nature of the work to be performed should be considered; it should be adapted in construction to accomplish just what is expected of it. It must have suction capacity equal to the weight and kind of wood refuse it is expected to carry. If a given weight is to be continually lifted and carried to the fan and then discharged, it is plain to be seen that certain suction power is necessary. This must be provided by having an exhauster of sufficient draft capacity with the requisite speed applied to it. It must be known that while power increases with speed, it does not correspondingly increase with the size of the exhauster. If a fan of given size and speed will produce a certain degree of power, a fan twice the size, with the same speed will not perform twice the amount of work. A small fan then, with attachments proportionate to its size, will do more work than a larger one, or otherwise, two small fans will accomplish more than one equal to both in size. This is important to know when it is desirable to secure the most suction with the least power.

If the machinery in a shop is so located as to require a very long exhaust pipe, it would require a larger fan than would a shorter pipe. Better results can be obtained by dividing the exhaust pipe into two parts and by operating two fans. This would not necessarily increase the cost to any great extent, for as the fans would be smaller the piping would be correspondingly less in area and would require lighter material in their construction.

There could be a further improvement by adopting in place of two fans a double exhauster; that is, two fans receiving from opposite directions operated by the same belt and from same counter shaft and pulley. This arrangement would provide a draft from opposite directions, while the discharge from both fans could be thrown into the same discharge pipe. It must be plain to any one that the power of an exhauster decreases with the length of exhaust pipe, and that to obtain the requisite suction, speed and size of fan, must be increased relatively with the length of pipe. Besides, the longer the exhaust pipe the more numerous generally are the inlets or branch connections; therefore increased power of fan is required from that cause also. The size of a fan should be governed by the diameter of the main suction pipe. Allowing fifty or sixty feet as the maximum length, its area where it enters the fan should be at least equal to all its inlets. The work in a wood factory requires a suction of from three to six ounces, obviously, to obtain this; the pipe being properly ad-

justed, all depends upon the speed at which the fan is operated. Therefore the pulleys on main and counter shaft should be so adjusted as to produce such speed. This may be unnecessary to state, but in many factories much more satisfactory results could be obtained from exhaust fans already in use if this essential was more duly considered. Exhausters are frequently referred to as being too small, while if properly speeded and systematically piped would be fully equal to the demand made upon them. Every exhauster should be constructed without any bearing for the draft wheel on the inlet side, but on the operating side the pulley should be hung within a double bearing. It should only be located to avoid as much as possible all necessity for turns in the exhaust pipe, and as near as possible to machinery doing the heaviest work and requiring the largest branch pipes.

Next to securing a suitable exhauster, proper pipe connections should receive consideration. Too little apparently is known upon this important subject. Metal workers are frequently employed to pipe up exhausters who have not the first idea of the principles of pneumatics. The movement of air has never received a moment's attention from them; yet they undertake the work, and the factory owner, just as ignorant upon the subject, is satisfied that he has done all in his power for the comfort of his employes when the job is done and the bill of its cost is paid. Sometime later that factory owner learns there is a wrong and right way to do everything. In the first place, galvanized sheet iron is the proper material for exhaust tubing, and its weight should conform to the diameter or area surface to be provided for. Tin is sometimes used for smaller sizes of piping because it presents a smooth surface, but light weight galvanized sheet iron is preferable, being more rigid and less liable to impairment. The larger the diameter of the pipe the heavier should be the metal. The main suction pipe should be made to diminish in size as it recedes from the fan inlet proportionally with all its connections. In other words, if its farthest end from the fan is five inches in diameter, it should increase in size as each connection is added, until its area at the inlet aggregates the whole area of its branches. An authority states "That it would be preferable to provide an excess of area for the main pipe of twenty per cent over what is obtained by calculating together the area of its connections." Another says, "Starting with five inches diameter for the smallest size for a main pipe, there should be added at least ten inches of sectional area for each machine that is connected, except for surfacing planers, which require twice as much." This excess would provide to some extent for the loss of power from area or surface friction.

All connecting pipes should be as short and have as few turns as possible, and should enter the main from the sides or top with a gradual inclination in the direction of velocity. While each pipe should be of suitable size to provide for the machine to which in is attached, it should not be larger than necessary, as an excess of area in such case would entail a

waste of power. For the same reason, gates should be provided on all pipe openings, so that when the machine is idle, the suction may be cut off. Hand holes should also be provided with tight fitting gates near all sharp bends, so as to allow for the removal of any obstruction that may become lodged therein. The last requisite of a good exhaust system, while not the least important is that of providing suitable connections between the branch pipes and the different machines, or, by bringing into as close contact with it as possible the mouth of the pipe, and in such form as is best adapted to secure adequate velocity in the hood and piping to collect and carry away the cast off material. The connecting appliance for each machine will vary in form with the construction of the machine, but the principle of successful operation is the same in all such appliances, that is, that the opening for the inward flow of air be equal to the area of the pipe. Planers and other cylindrical cutting machines are the most difficult to connect in this manner, as, however long the cylinder may be, the suction must be distributed equally, or sufficiently powerful to all parts of the cutters to take up the dust, or other refuse. For this reason hoods adjusted to planers should fit tightly over the upper cylinder; entirely covering it, and should be so contracted in size where it connects with the pipe that the inflow there shall be of corresponding area with the pipe. This equality of area must be maintained in transforming the hood at its contracted part into the shape of the connected pipe. Ordinarily this care is not taken, but, when neglected, the best results are not secured. The lower cylinder of a planer should be provided with a hopper below, into which all refuse will drop, and thus partially filling the opening, it is to that extent contracted in inflow area, and increased suction follows. To properly pipe a planer will require as many as three branches, one from the upper hood, one from the hopper and one leading from the floor with a flattened opening to gather chips falling in the rear of the machine. The majority of wood-working machines can be provided with hopper attachments. In this number jointers and all kinds of saws can be included. The frame work of some jointers and buzz-saws make it difficult to adjust proper connections, but the exercise of a little ingenuity will generally overcome any such difficulty.

There is no dust creating machine but what has an opening below for cleaning away refuse; this in every case can be utilized and pipe connections inserted. Wood shapers can best be provided for with a flattened opening, butting against the table on the side toward which the dust is cast. For lathes, a hood receiver in line with the revolving spindle can be so arranged as not to interfere with the work. Sand surfacing machines are of various construction, those having a single large cylinder should have a casing enveloping the whole lower half of the wheel coming up in the rear in the form of a hood, and as near to the front as the work will admit. From this hood a flattened pipe opening should be attached, leading to the main pipe, and as I have already mentioned, the area of inflow to be

maintained throughout the connection. I would suggest also that a channel about six inches wide and three inches deep, be provided in the bottom of the casing to contain a small supply of water to catch the dust escaping from the suction-pipe. Other kinds of sand-surfacing machines can be provided with hood and hopper attachments, the construction of the machine suggesting the method of application.

All hoppers should have hand-openings as near to the floor as possible. Floors should be kept clean, by adjusting take-up pipes in different parts of the shop, the openings to be flattened and to rest on the floor and provided with shut-off gates.

Wood-working machines include such a wide range of inventions that it would be impossible to specialize what form of connection would be best adapted to every kind of machine, but sufficient has been given to suggest what may be done in every case.

In adjusting pipe-connections, it will rarely be found necessary to connect a branch-pipe larger than eight inches in diameter. If it should be deemed necessary to do so, two pipes of smaller area would give better results, or otherwise a divided hood leading to one branch pipe. The smaller sized machinery ordinarily requires piping from three to six inches in diameter.

The discharge pipe is of course a part of an exhaust system, but all that is necessary to be said relative to it is, that it should be of proportionate size with the main pipe. I do not deem it important to know where and how the discharge is made so long as it is carried to a receiver and out of the factory. But proper precaution should be taken to locate the receiver in such manner that no liability to fire is incurred thereby, and outlet enough should be provided for the escape of air from the room to prevent any possibility of back pressure upon the exhauster.

In conclusion I would remark that there is no more reason why a dust exhaust system may not be constructed as perfectly as any other piece of mechanism built upon established principles. It is to-day a necessary adjunct of every well ordered wood-working factory, and there are manufacturers who make a specialty of that class of work. Rules governing every part of construction are definable, and the person undertaking to do such work unacquainted with these rules, is incompetent to render satisfactory service for the money he receives. A manufacturer needs to obtain in this respect the very best for which he pays, and without counting the after cost in loss of power and inefficient results, frequently the first cost of a good exhaust system would be less than one constructed by incompetent workmen. Whether this be so or not, in exhausts as in everything else, the rule applies, that whatever is needed to be done at all, needs to be done well, and the cheapest mechanical appliance is that which best performs what is required of it.

Chief Wade, of Massachusetts, read the following paper:

INSPECTION OF STEAM BOILERS UNDER STATE SUPERVISION.

Mr. President and Members of the Convention:

The subject to which I would ask your attention, is one that seems to me of great importance to any State, that seeks to protect the lives or to guard from injury those who toil for their daily bread, and are obliged to labor in places containing dangerous machinery over which they have no control.

The commonwealth of Massachusetts, early in the history of labor legislation, recognized the necessity of protecting the working people employed in manufacturing establishments from the dangers to which they were exposed by unprotected machinery. Other laws providing for the proper ventilation of work-rooms, adequate means of egress from buildings where operatives are employed, and laws looking to and providing for the safety and comfort of the industrial classes throughout the State, were subsequently enacted. But there was one link absent which, if inserted in the chain, would make our system of factory inspection as perfect as legislation could provide, and insure to the work people that the commonwealth is doing everything in its power to provide for them healthful work-rooms, and to secure safety to life and limb. This missing link in our factory inspection laws is that of boiler inspection and the proper supervision over those in charge of them.

It is not necessary to point out the danger attending the operation of steam boilers. Yet, one is apt to forget, until some casualty occurs, which forcibly reminds them of a danger unforeseen. "Familiarity breeds contempt;" this is as true of the steam boiler as in other things, and after passing by or working near a steam boiler under pressure, we begin to look less shyly at it, and to regard its danger as less real; but it is still there, and the pressure of the steam within the boiler is ever searching unceasingly for the weak spot upon which it can exert its point of energy, and deal death and destruction with a liberal hand. If, when you go to your hotel some day or retire for the night, you were to be told that beneath there was a 100 pound keg of powder with a lighted candle upon the head, you would feel rather uncomfortable and uncertain as to what might happen. It would be safe to say that no one would care to run the risk of the fire from that candle reaching the powder. Yet just such condition of affairs exists under every hotel having a boiler under steam pressure in its basement. It would be a very easy matter to figure out to your satisfaction that the energy in a common boiler under steam is capable of being let loose by a little carelessness as readily as with the powder magazine. Certainly, if those who lost their lives, thirty or more, but a short time ago by the explosion of the boiler of the Park Central Hotel in Hartford, Conn., could have known that fatal night of the condition of the boiler be-

neath them, they would have felt less at ease. The morning will never tell them, for they had seen the setting sun for the last time.

It would be only true to say that those people had no assurance that the State had provided for their safety by any law looking to the careful inspection of steam boilers. Many States recognize the importance of fire escapes, and look after the safety of the building itself from fire and insecure construction. Should it not also look after the safety of those who occupy the building by requiring that all the safeguards possible should be provided in the use of steam boilers used upon the premises? What is true of the duty of the State towards the traveler is also true of the work people who are obliged to labor near these machines. They know but little, if anything, of its dangers; they rely upon the employers, and if from fear through any cause, have no means of protest except to leave their positions, and perchance the next place may be even worse. Thousands of instances might be cited of workmen who have been killed or maimed for life by the explosion of their employer's boilers.

Very seldom by process of law does the maimed and innocent employe recover compensation for the injury received. The State also owes protection to its citizens whose duty may lead them to pass near an establishment whose boilers are under pressure. In many cities boilers are under the sidewalk or just within the line. The explosion of one of these would be fatal to the passers-by upon the street. The reasons that have led the State to enact laws which we as factory inspectors are required to enforce, and which have resulted, as you all can testify, by giving the greatest security to those whose only capital is their daily labor, and who live by manual toil, are well known.

The importance of this subject I have recognized for many years, and at the last session of the legislature, at my suggestion, a law was enacted providing that a competent person should be appointed, whose duty it should be to inspect boilers not already under inspection by boiler insurance companies, and to inquire into the competency of those having charge of them. Such an officer was appointed, and the results of his investigations thus far have clearly demonstrated to my mind that in Massachusetts some law should be enacted which would insure the greater safety from dangerous steam boilers, and to provide for their removal when unfit for further use. The conditions in which many boilers have been found in my own State will be found in other States, neglect and unskilled attention, and equal disregard for the interest of the laborer in the matter.

The practice of keeping a boiler in use as long as it will hold water without too much leakage and provide steam, should be prevented by the most stringent laws. I am told by good authority that as disastrous an explosion may occur when a boiler is under low pressure as under high pressure, for it is the large volume of heated water in the boiler suddenly turned into steam by the release of the pressure upon it that makes the explosion so farreaching in its effects. It is a mistaken idea that a boiler can do little damage under low pressure.

It has been reported to me that in a large factory in Massachusetts there were four boilers, and within a radius of fifty feet were working from 75 to 100 persons. Two of these boilers were in good condition, but the other two showed upon their fronts the marks of the hard usage they had been subjected to. A thorough inspection of these boilers was made, and a large extent of corrosion found at all the seams. The inspector scraped the rust partially away, and very few signs of good iron were apparent, yet determined to find how deep the corrosion was, he scraped until before long he found he had scraped a hole through that boiler shell. Within a short time several holes had been made in that boiler simply by scraping the corrosion away. And yet that boiler, with all that unsoundness around one seam, was daily subjected to a pressure of 60 pounds, and the lives of nearly 100 people hanging upon the slightest mishap. What had the proprietor to say to such a condition of affairs? When the inspector pointed it out to him, he simply wanted to know if it could not be fixed somehow. "We have to run some risk in this world," was his remark. Yes, he ran a risk and was willing to do it, but how about those who were unconscious workers near that dangerous boiler? He backed his risk by his chance of losing money, but they staked their lives on the risk. He had not thought of them; they could work elsewhere.

At another place where the proprietor wanted "no interference from the State," the boilers were all found defective in some particulars, but one of them was totally unfit for use. The plate of which the boiler was made was of such poor material originally, and had been burned so much, that the iron could be peeled off. One of the pieces so peeled off was over 9 inches across, and of a thickness that took half the depth of the plate away. In the rooms directly over this boiler were a large number of girls, and an accident to this boiler means a large loss of life and fatality from the scalding water. What did this proprietor say? "I'm the only one who has anything to lose if those boilers go up, so I am the only one interested." "What about those girls up there?" was asked; "are they not interested?" and all he could reply was, "Let them look out for themselves." Now there are no doubt a large number of men who are running dangerous boilers who feel this way, but let us ask: How is a girl working near a dangerous boiler, in such cases as I have cited, going to look out for herself? She expects her employer to guard her safety, and even if she knew the danger, we have no laws that can step in and say, "You cannot endanger the lives of these people by running that boiler." These people "are interested" as affectively as any one can be, for they have that to lose that cannot be bought, and no selfish employer should be allowed to set his desire for gold against their lives.

Now these proprietors, and other cases can be given, knew something of the danger in these boilers, for their engineers had warned them. They were mostly second-hand boilers, or some thrown out as worthless by other concerns, and there are doubtless a large number that have not yet come

to our notice. They are each year becoming more numerous, because the crop of boilers sold by good concerns as unfit for their use has been a large one, and is each year being added to.

In another case the inspector found a boiler in the midst of a crowded tenement district, but could not find the attendant, although the boiler was supplying steam for an engine. The boiler was not provided with a water glass, but three gauge cocks were stuck through the setting from the side of the boiler at the rear. Trying the lower of these cocks, he found that the water was below its level. There was 50 pounds of steam on, and as there was no way of ascertaining how much water was in the boiler, a more extended hunt for the engineer found him patching the roof. "How do they expect me to run that splitter, patch roofs, sweep up after everybody, and run this boiler too?" was his first remark. He tried the gauge cock, saw there was no water, and started the pump as cooly as though finding no water was a common occurrence. It was ten minutes before the water got to a level to show in the lower gauge cock, although at no time should it be below this level. Naturally if this was a common occurrence, that boiler could not be in good order, and on opening the doors of the front, eight of the tubes were found badly leaking, and the tube sheet badly corroded. Other defects also appeared, and the boiler was unquestionably a dangerous one. The engineer however did not profess to be one worthy of the name. He knew very little about a boiler, except to fire it, and so paid no attention to the matter of safety, and if he had thought of it, would not have known what to do to make the boiler more secure.

This experience shows the necessity of having some one in charge who is competent to fill the position, and many cases illustrating the ignorance of those in charge of boilers could be given.

At one large plant four of the boilers were not provided with steam gauges, and the safety valves were arranged in such a manner that they were "safety" valves in name only. It is a common occurrence to find a safety valve so corroded that it cannot be moved, and a common occurrence to find them rendered inoperative by being tied down or overweighted, or even so close to the ceiling that their levers cannot lift.

In another case the brickwork in which the boiler was set was so cracked and defective that the boiler was in imminent danger of falling from its setting.

In other places no means was found to blow off the boiler at such frequent intervals as will keep the boiler clean on the inside. This is a common occurrence.

In one place, along the inside of the boiler, on the bottom of the shell, the inspector found an accumulation of dirt and scale over three inches thick, thus preventing the water taking the heat passing into the shell of the boiler. You might be tempted to ask why that boiler did not burn out on the bottom. The only reason was that the furnace was filled so

much with soot and ashes that the dirt touched the bottom of the shell, and the fire was compelled to hug the sides of the boiler, thus keeping it from the part where the scale was inside. It isn't safe to say that "two wrongs make a right," but here was certainly a case where neglect both inside and outside saved a boiler from injury. If the fireman had been a little less lazy and cleaned out that furnace occasionally, it would have been bad for that boiler, when its internal condition is considered.

I cite these few of many cases to show in what direction the neglect of boilers lies. There are owners who will run a boiler no matter how dangerous, so long as it will hold together.

There are men who will not hire a person competent to care for their boilers, either permanently as an engineer, or occasionally, except in absolute necessity. And there are men who represent to their employer that they are thoroughly competent to look after a boiler when in reality they do not possess the skill necessary to the boiler's demands. The combination of all these conditions, or either one of them, will soon put a boiler in such a position as to be a danger to the public, and some legislation governing these matters should be brought about. I am not prepared to say yet as to the details of such legislative act, but, broadly speaking, the inspection of boilers at a stated period should be provided for, a thorough internal and external inspection by a thoroughly competent man, the examination of those in charge, and provision made for a safety valve that can be locked at a certain pressure by the inspector.

To show the importance that the National government attaches to this matter, it may be cited that no boiler for use on steam vessels of any kind can be built until the material for the shell has been tested and approved by government inspectors, and stamped with this approval upon the plate. No marine boiler can be used without a certificate of safety from the inspector, and this certificate is for one year only, and granted only after a thorough examination of the boiler inside and outside. The engineers in charge must be examined, and can receive a license to run such marine engine and boiler only when the examination proves them to be qualified.

Let us, as inspectors, use our best efforts to secure legislation in our respective States and provinces which will afford protection from the use of dangerous steam boilers.

The report of the Committee on Finance was presented by Mrs. McEnery, of Pennsylvania.

We, your Committee on Finance, respectfully recommend as follows :

1. That funds be raised for the purpose of defraying expenses of the Association by assessing each State represented to the amount of ten dollars.

2. That all States prepared to pay said assessment to do so previous to the final adjournment of the Convention.

3. That the bills against the Association which are on hand and approved by this Committee, be paid from the first money received by the Treasurer.

4. That an alphabetical list of the names of all members of the Association be kept by the Secretary showing the address of each delegate.

Signed,

M. B. McENERY,
W. J. McCLOUDE,
G. H. FULLER.

Mr. Franey, of New York, read a paper as follows:

PURIFYING AIR IN FACTORIES.

The purport of this paper is not to enter into lengthy theoretical calculations of the amount of air required by employes in manufactories for respiration, as dependent upon the varied existing conditions therein met, nor to incite a protracted discussion as to the best methods of supplying it. Lines of manufacture differ so materially with the generators of gases, smoke, dust and foul odors, together with the number of occupants required to work in a given space, so widely reduced in one case and increased in another, that a satisfactory *resume* of the subject could not be handled outside of the extensive volume. The aim, therefore, will simply be to present in a concise and practicable a manner as possible, means which will readily recommend themselves to every proprietor of such establishments for adoption in overcoming the evil effects to workmen attendant upon the necessary presence of dust-creating machinery and air visiting processes.

The complaints of employes to the effect that the atmosphere is neither agreeable, comfortable nor healthful, in numerous lines of industries, are by no means without foundation. This every inspector through his periodic visits to various institutions, has learned to thoroughly appreciate. Foremost among evils in the majority of factories are the refuse from emery and buffing wheels, gases and smoke in foundries at "pouring off" time, the dust and dirt from tumbling barrels, and yet there are but few large industries which do not have some particular process for bringing forth their products which is so vitiating to the air as to render it injurious to a great extent. We also come in contact with emanations from defective sanitary arrangements, odors from oils and grease, unhealthy and destructive acid fumes, and innumerable obnoxious gases, which, combined with the air already vitiated by respiration in factories employing large numbers of people, render it foul in the extreme. Common evils like some of those referred to above do not end in themselves. In hundreds of places they go hand in hand with the various and peculiar processes of perfecting the output of the plant, and being thus united, it is no marvel that the air is exceedingly disagreeable and unhealthy. Other frequent but necessary annoying appliances, for which

there are effectual remedies, as we shall see further on, are steam drying cylinders, glue pots, bleaching, lacquer and pickling rooms, dye houses, etc.

If one will but give thought to the subject, it will readily be seen that the architectural features of buildings used for manufacturing purposes, occupy a most important position with regard to their ventilation. Without fear of criticism, it may be stated that especially in the case of foundry buildings and other similar situations where large quantities of steam, smoke and gas are generated, the architectural features at once clearly indicate whether the occupants are to suffer from an accumulation of these, or whether, on the other hand, it is to be an easy task to maintain an atmosphere sufficiently pure to make the situation comfortable. Even in the example of the largest industrial establishments of this country, we frequently find, in getting at the root of the matter, that an architect has been employed who has given no consideration to the ventilation of the building in planning it, either on account of utter ignorance of the subject, or carelessness in overlooking it. The attendant result is that it is an impossibility, by any natural means, to free certain apartments of the promises from the disagreeable odors and poisonous gases therein created, and it is no infrequent occurence that the conditions are such even by the introduction of a fan, most carefully applied to the work, only moderate relief can be insured. Further than this, we frequently observe in such situations that gases and odors permeate other large areas of the establishment, with the result of not only causing ill health among the occupants where they originate, but to those employed in other departments as well. Concerning the latter feature, mechanical and civil engineers who have in charge the details of the arrangement and locations of the different departments and machinery, are as frequently at fault as the owner or the architect. The application of fans to places of this character, and the conditions under which they can be installed to advantage, are not sufficiently well known to the engineering and architectural profession, and it is certainly a subject which is deserving of far greater consideration, and more careful study, than it has heretofore received.

The location of a factory also, is a subject which is not always decided in its proper manner. The question of power and railroad facilities, of course, must always be the first points considered. Is not the low price of land usually the next important feature? Rather than let this come next, the point of healthy surroundings, and a superabundance of pure air and light, should govern the selection of the building site. The present movement among real estate boomers and founders of new towns, while having the effect of more widely separating the manufacturing industries in attracting them from city points, is altogether a commendable one, as it has the result of vastly improving the atmosphere which employes are compelled to breathe about 10 hours out of every 24. Foster as much as is possible this idea of locating new works, and there will always remain cheaply built and closely clustered shops in large manufacturing cities.

Until recent years the thought of applying any means of ventilation to shops of the latter class has been regarded as preposterous. Manufacturers of improved ventilating appliances, in seeking their sale, have met with the unanswerable arguments of the owners of such institutions, "We have run our works for years without such rigs, and there is no reason why we cannot continue to do so." The positive position of the various State legislatures toward the better protection and increased comfort of employes in all establishments is, therefore, not only receiving the commendation of those who daily toil in such shops, but is supported by the sentiment of the public at large.

There are, of course, many far-sighted managers of mills who will appreciate that the application of fans to the source of pollution of the atmosphere presents two aspects, a humanitarian standpoint, and that of monetary return. Those with less perceptive powers, and who scrutinize the original outlay far too closely, are free to assert that the latter is vastly more imaginary than real; it is a simple matter of record, however, that this is not the case. In this paper it is impossible to present detailed data from various manufacturers upon this point, but the frequent remarks of factory owners who have installed improved ventilating and dust-removing apparatus, are enough in themselves to show that such outfits yield direct returns in the increased amount of work turned out per day, and with a decrease in the absence of employes. The percentage will range from 8 to 20 per cent in the former instance, and 5 to 12 per cent in the latter. We will now apply the subject of the paper more particularly to stated classes of buildings and situations which need improving by the application of fans, pointing out the most approved methods of their introduction.

FOUNDRIES.

Let us first consider the building where the moulding and casting is done, leaving the casting, cleaning and tumbling rooms for a separate heading. The most general construction form used for foundries proper is the one-story type generally provided with lantern-roofs, and having large wall, roof and window surfaces per cubic foot of enclosed space. It is usually calculated that the high walls and sloping roof, coupled with the opening of the ventilators, (all being conditions helping to that end), will be ample for carrying off the fumes, gases and smoke generated at "pouring off" time; and in a properly designed structure, with favorable conditions of the wind, such results are usually realized to such an extent that an inspector during the summer months can find but little at fault. If, however, one happens to visit such a building during the "heat" with the winds contrary, the situation is different. It will readily be appreciated that in cold weather keeping the windows open is impracticable beyond a slight extent. While it is true that the hot sand and castings in foundries tend to heat the air, yet even in conjunction with the heating apparatus in severe weather, the opening of windows for discharging the

smoke and gases will reduce the temperature so greatly that it will be uncomfortable to work in. All these features clearly indicate that with the most favorable conditions of construction, there is scarcely a foundry to which a ventilating appliance, properly installed, will not greatly remedy the working temperature and purity of the atmosphere. The most common manner of ventilating manufacturing departments of this kind, is by the installation of a fan known as the disc or propeller type. With this style of fan construction, it is possible to deliver a greater volume of air per horse-power than with any other construction form.

In calculating the required size of a disc or propeller fan for a foundry, one must first take into consideration the construction of the building. Generally speaking, in a structure of the type above described, an estimate based upon a change of air once every 4 to 5 minutes during the "pouring off" period will be ample. With buildings having flat roofs, and especially with those having low ceilings, it is required to estimate much more liberally. A change of air once every one or two minutes must be provided for, as the heights of ceilings decrease, and according to the density of the steam and gases. In some situations any calculation less than twice a minute will not give satisfactory results, the latter, of course, being rather exceptional. The best location for the fan is always in close relation to the point at which the fumes are created. A ventilating wheel or disc-fan, should be placed at one end of the building rather than at the side, and as high up as possible. The relation of the source of air supply to the fan through the room is so important a matter, that if improperly placed, the effectiveness of the ventilating wheel is often impaired to such an extent that it is practically valueless. There is always more or less complaint and disappointment of the results derived from fans, and which is due primarily to a lack of intelligence in their installation. To show by practical example: A foundryman recently ordered a large ventilating wheel, and of size recommended by the manufacturer, also locating it as directed by him; the result was that the accumulation of fumes caused during the "pouring off" period was relieved but little. Being unacquainted with fans, naturally the entire blame was thrown upon the fan and its manufacturer, when the real cause of the failure was due to the air supply to the fan being obtained nearly in its entirety from an open window not over 10 feet away. When this was closed, and the air supply taken from the opposite end of the room, the difficulty was entirely overcome, and the maximum efficiency of the machine obtained to the satisaction of both purchaser and seller. Exhausting from a foundry by means of a ventilating wheel or fan, is always the better manner in which to accomplish the removal of vapor, steam, gases, etc. Blowing into an apartment of this character, only serves to more evenly distribute through it the pollution of the atmosphere from its source. No demonstration is needed to show that an exhaust wheel causes a partial vacuum or an exhaustive influence upon any enclosed space to which it is applied. By

selecting one of proper size, and regulating the source of the air supply from an opposite end of the building, discharging at the nearest convenient point from the fan, the greatest efficiency, and the clearest atmosphere will be ensured. The fan being located near to the dust and fume creating source, first acts upon it by sucking the air laden therewith, which place is taken by pure air from its point of entrance. Another important feature is in getting the area of the intakes much in excess of the area of the fan. The width and length of the building enter the consideration in determining this.

So far as the removal of gases, vapor and smoke are concerned, there is as much need of the foundry ventilating outfit being run during the winter as in the summer; yet it is seldom that fans are run at this period of the year, on account of the attendant great reduction of the temperature in the rooms under the usual conditions of their application. This status of affairs should not exist, and the feature of reducing the temperature of the air too greatly may be overcome by the introduction of a tempering coil in the space through which the air is taken into the building. The air must be derived from a pure source, which usually means directly from the outside, and while exhaust steam can be used in a coil of this character, it is necessary that large areas for the drip be provided. By bringing the air in cold from out-doors, the condensation in the tempering coils will be rapid, and the amount of water therefrom large, necessitating its being promptly taken care of. Outside of the possibility of obstructing too much light, there is no objection to locating such a coil in front of windows, which should be opened while the fans are being run, and closed afterward. Tight and loose pulleys, so that the fans may be started and stopped instantly when desired, should invariably be employed in all ventilating outfits where it is not desirable to run the fans all the time.

In occasional cases the introduction of two fans, instead of a single one, for the purpose of cooling and ventilating a foundry, will be found far more efficient than the employment of a single machine of the combined capacity of the two smaller ones. No greater mistake can be made than to attempt to economize in the original outlay by selecting too small a fan. In the first place, a small fan at a high speed, although it may move practically the same amount of air as the larger one at a lower velocity, is by no means as effective in accomplishing the uniform ventilation of a large area as the larger fan. There is great economy in the matter of power by also choosing the larger machine; this saving alone in time will more than counterbalance the extra initial cost.

Unless the location of a ventilating fan be at a high point, a heavy wire screen should be placed around it as a safeguard. This is not necessary because this type of fan is such a powerful exhauster that it is liable to draw people into it, but the blades do not materially obstruct the light, and instances have come to my observation where cats have endeav-

ored to pass through the space when the fan was running. The result is invariably a reduction to jelly of the cat, and a complete wreck of the fan. With some of the lighter makes of fans, blades have often been broken out by rats passing through, and the suction at a high speed is often sufficient to draw people's clothing into it with frequent injurious results.

In the erection of disc or propeller fans, many times the proper location of the fan requires the discharge to be facing directly toward the point from which emanates the prevailing winds. These are frequently so heavy that the effectiveness of this type of fan is entirely overcome; in fact, I have seen a disc wheel discharging at the west side of a building when the wind would be so strong as to very materially reduce its speed, and, in fact, drive the air which it was attempting to discharge, back into the building. This annoyance may be overcome by the use of a discharge pipe of the same diameter of the wheel or slightly increased, leading it upward, and with a very easy curve at the end pointing to the south or east.

CASTING CLEANING ROOMS.

Probably no situation exists where it is more difficult to maintain a pure atmosphere than in that department of the foundry where the tumbling barrels are located. The dust-laden air, if no provision is made for its escape, and in the absence of a constant new supply, grows thicker by the continual motion of the rattlers. Apply a ventilating fan of large size to such a room as this, run it at a speed even in excess of that ordinarily required, provide ample areas for the supply of fresh air, and it is impossible to keep a tumbling room free from dust, for the reason that the dust is being generated at every turn of the tumbling barrels. This method of purifying the air should only be recommended as a last resort, and in the event of its not being feasible to apply a volume fan in conjunction with a piping system. Of course it will very greatly relieve the situation, and make it fairly endurable for employes, but such an application cannot be counted a complete success.

The introduction and installation of the improved form of exhaust tumbling barrels has marked a great advance in bettering the air in this department of foundries. It is only of late years that the exhaust tumbling barrels have come into vogue, though their principle of operation in connection with some special lines of manufacture can be traced back half a century. Reference is made to the employment of draughts of air in connection with the cleaning and brightening of metallic articles in a dry state, for the purpose of carrying away the dust as fast as the tumbling loosens it. The efficiency of the air arises from its power as it rushes into the barrels, in cutting the films of dirt that envelope the articles to be cleaned, and in removing them. This accomplished, and clean metal brought into contact with clean metal, brightness of surface soon follows.

The fans which are effective for this purpose are of the pressure or positive volume type, and most generally have cast iron shells. They are of the exhaust pattern, having but one inlet either on the right or left side of the fan as required. Cast iron fans are not made in so large diameters as are frequently required, and therefore, when there are a quantity of barrels to be exhausted from through a system of piping which cannot be handled by the larger sizes of cast iron machines, steel plate fans are substituted. The shells of fans used for exhausting from tumbling barrels, whether steel plate or of cast iron type, are constructed in the form of a scroll, constantly increased in its distance from the center as it approaches the outlet of the exhauster. Both these types of fans may be obtained in right or left hand styles, with top or bottom discharge outlets. Open b elts must invariably be employed for driving, and the selection of a special discharge and hand of fan will frequently be necessary in order to prevent a twisted belt. The disc or propeller fan is not at all suited for this work, for while it will move a much larger volume of air at a given horse-power, it is totally incapable of producing the heavy pressure required to exhaust the particles of metal and heavy dust produced by the rattlers. The employment of the exhaust tumbling barrels, aside from abating a nuisance to any establishment, and preserving cleanliness and health in the room, is of further value in the way of economy of power and space, as a smaller number of barrels are required to do a given work of the old type. Leading foundrymen agree that also better work is done, and in a shorter time. Several excellent forms of exhaust tumbling barrels are now employed. A favorite one is known as the "Two-way Exhaust Barrel." It receives the air through slight openings in the joints, or through small perforations in the sides. In this type of barrel, the dirt is removed at both ends by being connected with the exhaust fan by means of piping. Another barrel is the oval or egg-shaped type, which connects only at one end to the pipe leading to the exhauster. Nearly all of the exhaust types of tumblers are not only a real economy, but they convert the tumbling room from one of suffocation to one of comfort for the workmen, and their use should be strongly recommended.

EMERY WHEELS.

The successful removal of particles from emery wheels, calls for not only a fan to handle air under heavy pressure, but for great skill in applying it. The reason that there are so many failures in the application of fans for this service is due, primarily, to a lack of intelligence and understanding as to how they should be installed. In reality, the majority of exhaust outfits from emery wheels are nothing more than apologies, and giving due consideration to the fact that there are thousands of fans to-day connected to emery wheels through piping systems, there are few really successful outfits. Principal among the causes of failure are the selection of too small a fan, running it at too low a speed, but greatest of all, is the hooding of the wheels. In nearly every large manufactory there

are different kinds of work done on emery wheels, and the grinding is performed at various points on the wheel. In one department there may be a series of wheels which may all be hooded in a certain way, while those in another department, doing different work, require to be hooded and piped to the exhauster in an opposite manner, owing solely to the way in which the grinding is done upon the wheel. Heretofore, the common practice has been invariably to locate the main pipe from the exhauster underneath the wheels, and to connect thereto by means of branches. Sometimes, the results derived have been favorable, and other times, flat failures have ensued. It has been conclusively demonstrated in some instances where the grinding is done in such a manner, that the particles are carried by the motion of the emery wheel upward, instead of downward, that the main pipe must be overhead instead of underneath. This calls for great increase in the expenditure of power for driving the exhauster at the requisite high velocity to lift these particles, and far exceeds what would be necessary if the piping were placed downward; yet the hood cannot be so built and connected to the main pipe as to catch the refuse in the latter case, for the scheme has been tried time and time again. As previously intimated, the pressure or volume cast-iron exhausters are best suited for handling the refuse from emery and buffing wheels. Generally speaking, they should be run at a speed sufficient to produce a pressure of 5 ozs, which is equal to a velocity of 11,676 feet of air per minute for average work, and with the main piping underneath the wheels. Where the grinding is extra heavy, and the wheel is large, with the attendant result of the particles being heavier to move, the speed will have to be ample to produce a 6 to 7 oz. pressure. It will be readily understood the speed of different sizes of fans to produce a certain pressure of air varies. For example: a small fan for 7 oz. pressure will run at high speed, while one twice its diameter at a material reduction of the speed will give the same velocity. This is due to the fact that in the former instance the wheel is small and the velocity of air at its periphery, to be great, requires high speed. In the latter, the wheel is greater in diameter, and the peripherical velocity likewise increased. Where the main pipe is carried overhead with branches communicating to the emery wheels, and the particles are thereby all drawn upward, a speed will be necessary to give 6 oz. to 9 oz. pressure, according to whether the work is light or heavy.

In determining the size of an exhauster for emery wheel work, the number and diameter of the wheels must be ascertained. The size of pipe for various emery wheels depends upon the size of the wheel; for instance: a wheel 10 inches in diameter requires a 2 inch round pipe; a wheel 12 to 18 inches in diameter requires a 4 inch round pipe, and a wheel 18 to 24 inches, requires a 4½ inch round pipe. The area of the main pipe leading to the exhausters will be governed by the combined areas of the branch openings, and it should be quite a little in excess of same, dependent upon the extent of space through which the material has

to be carried. Reference is requested to the table showing necessary increase in diameter for different lengths of pipes, and the table of "friction of air in pipes" apended herewith, for which I am indebted to the catalogue of the Buffalo Forge Co.; the latter also gives extra power required to force a given amount of air through different lengths, and the extra speed which must be provided for upon an exhauster operating under such conditions. When the main pipe has thus been determined, this will indicate the size of fan which should be employed, and an exhauster with an inlet of equal diameter to that of the main pipe should be selected.

As previously indicated, the volume or pressure exhaust fans are usually chosen for this work in preference to the steel plate exhausters. The latter, however, are thoroughly efficient for such work, but should be built with their wheels and sides of heavier material than for ordinary planing mill service, as the constant friction of the emery particles wear them out more quickly. Heavier gauges of iron should also be employed in piping layouts; and in making connections to the emery wheel hoods, be sure that there are no low places in the pipes where the heavy dust can lodge. Many outfits work apparently well at first, but later on are complained of as being inefficient, when the trouble lies in their having become clogged. This is less liable to occur in the overhead system than when the main pipe is located underneath of the wheel. In the latter case, periodic investigation should be made, and the pipes cleaned out wherever necessary. A curious and unpardonable blunder in piping up emery wheels frequently occurs. It is this: instead of lapping the joints in the direction of the air toward the exhauster, they are sometimes put up directly opposite. An outfit thus erected will be clogged up more than half the time, for every joint of the pipe affords opportunity for the refuse to collect. No remarks can be made which can be followed as hard and fast rules regarding the arrangement and proportion of the hoods for all cases. Each particular situation requires study in its planning, and this should be placed in the hands of an expert. All emery and buffing wheel hoods must be of the adjustable sort, so that as the wheels wear by constant grinding the hoods may be contracted to fit closely as they decrease in size. When new wheels are put on the spindles, then they may be opened to full size again.

The installation of an exhaust fan for removing the dust from emery, buffing and polishing wheels, should not be undertaken by one having no previous knowledge of this class of work, especially if the plant be a large one, or at all intricate. Where there are only four or five wheels to hood, then the work can be satisfactorily placed by an ordinary mechanic. Blast gates should invariably be employed at each wheel, spindle or in every branch pipe, so that when not in use, they can be closed off, and the suction at other openings increased. Accompanying this, will be found diagrams showing various arrangements of adjustable hoods, slip joints and general layouts of exhaust fans applied to emery wheels, buffing

wheels, etc., all of which are sufficiently explanatory in themselves. When a factory inspector issues an order for the installation of an exhauster, it certainly behooves him to strongly discourage the idea of what apparently seems economy to the owner by choosing too small a fan, or not consulting with those experienced in the installation of such outfits, who are in a position to point out the way of obtaining thoroughly efficient results and reliable service from the fans employed.

Instances are frequent where the arrangement of emery wheels and location, with work performed thereon, are of such nature that two or more fans should, for effective results, be applied to the work, instead of attempting to handle the entire refuse by one exhauster. The reason for this will be readily appreciated when one stops to observe the fact that the grinding done on a certain set of wheels is of much lighter nature than the work performed on others. In a case like this, to be effectual for the heaviest work, the fan would have to be run at a very high rate of speed, and, in fact, a speed far in excess of that actually required for the wheels where light work is being performed. Another argument in favor of the introduction of a number of fans is, that if the wheels were all connected to a single machine, it would involve an intricate layout of piping. An emery exhaust system is never effective excepting where the runs of piping are straight and direct, with very few bends and turns. It is impossible to obtain good service with even one abrupt bend or turn. Very easy curves alone can be tolerated, and these must be limited in number. One of the greatest annoyances which occur in this work, is the continued clogging up of the pipes, and nothing helps to cause such a result more than crooked piping arrangements. Further than this, there is a great saving in power, and the cost of the piping is reduced by choosing several fans for an emery department where the wheels are separated, and the work performed is of heavy and lighter character. Each fan will then be speeded and arranged according to the requirements of the sets of wheels from which it is to handle the particles.

The discharge of dust from emery wheel exhausters, is a subject which often perplexes greatly. In some lines of manufacture, it must be saved, as particles of the very valuable material employed in the output are incorporated with the grindings from the wheel. There are two ways in which the saving of this refuse may be accomplished. The cheapest way, usually, is to employ a large vat of water, and lead the discharge pipe from the fan outlet to within a few inches of the water, by means of an easy curve into the vat. The air discharged by the exhauster will naturally be directed downward toward the water, and as it comes into contact, it will escape, while the material settles to the bottom of the tank, and can be removed from time to time as it accumulates, afterwards being dried, if necessary, before separating. Another way in which the same results may be secured is by the use of a dust separator. Generally speaking, however, it is not quite so satisfactory, for the reason that most dust separators are

manufactured for planing mill work, and are not nearly so effective as they should be. They seldom collect all the fine dust and particles, which is often a great necessity in preventing annoyance to the neighbors.

RAG WAREHOUSES.

Probably in no single situation is there an accumulation of a wider variety of germs and filth than in these institutions. While shops of this character are not so frequent as other industries, it is, nevertheless, necessary that each situation be provided with ample ventilation, and by fans, if necessary, to the end of being on the safe side, using every precaution to prevent the distribution of disease germs and the odor from filth being breathed and assimilated into the system by employes.

In every carpet beating and cleaning room, feather renovating and other similar establishments, it is also imperative that fans be installed for the same service. The most frequent application is to employ a disc wheel or ventilating fan. Where the carpet beating and cleaning is done by machinery, their construction and arrangement most always is of such nature that a steel plate exhauster in conjunction with a piping system, not unlike that employed for exhaust tumbling barrels in foundry rattling rooms, can be introduced to greater advantage. Where this is not feasible, means of ridding the air of dust by disc wheels applied to the room to create a complete change of air at least once in two minutes should be used.

CLOSET VENTILATION.

A necessary adjunct to every mercantile and manufacturing establishment, are the closets for the use of the occupants, varying in number according to those employed, and the extent of the business. Any remarks concerning the occasion or need for ventilation of such apartments, is entirely out of place. No person of ordinary sense will question the imperativeness for pure air in such situations, and there is not the least excuse for its not being supplied. Frequently the location of closets, especially in mercantile houses, is assigned to such a point, that pure air cannot be introduced directly from the outside. With the exercise of a little intelligence in installing the plant, the removal of the foul odors and purification of the air can, nevertheless, be readily accomplished. It is not frequent that the disc type of fan can be applied with advantage to this class of ventilating work. The requirements do not call for the removal of excessive quantities of air, for the apartments are usually small, but on the other hand, a rapid change is indispensable to good results. Again, the gas and foul odors, common to such apartments, do not rise to the ceiling. The point at which the air should be taken from closets is directly over the urinals and seats. This opening must communicate to an exhauster of the volume of steel plate type, which should preferably discharge into a chimney flue. If this is not feasible, the air may be carried by an upward pipe either inside or outside of the building to the top, or at a point sufficiently high that the discharge of the foul gases will not

be annoying to other people. Installed after the manner above briefly outlined, the air, instead of being laden with impurities as it is invariably in closets where fans are not employed for ventilation, will be pure and wholesome. In my opinion, it is but a question of time when the minds of the majority of proprietors of dry goods and mercantile business houses in every city, will be convinced of the advisability of providing pure air in sufficient volume for the proper comfort of their employes, though it may not come from a humanitarian standpoint. It will follow from the attractiveness of the place to customers, and from the saving of time lost by clerks on account of sickness, directly caused by poor ventilation and bad air. If the public at large could fully appreciate that Heating and Ventilating are both necessary, and that they go hand in hand, our mercantile buildings would be arranged and equipped widely different from what they now are. The "fan" system of heating and ventilating, or "blower" system as it is sometimes called, possesses merits for such situations far exceeding those of any other method. The ventilating and heating is accomplished at the same time, being combined in one apparatus, large fans and steam coils being employed, which are contracted at a given point, usually in the basement of the building, being heated and ventilated. The construction of most apparatus is further of such character, that the ventilation may always be accomplished, and the air kept at a mild and healthful degree for comfort at all times. The latter result is obtained by the ability to perfectly regulate the amount of heating surface as required by the natural outside temperature, and even to such an extent that it may be entirely closed off during the summer and the fan run for ventilating and cooling only. An entire paper upon this subject and the application of this system to manufacturing establishments of all classes, as well as to buildings used for mercantile purposes, could profitably form the subject of a paper to be presented at a future meeting.

WOOD WORKING ESTABLISHMENT.

As the introduction of steel plate exhaust fans of the type commonly known as "planing mill exhausters" has become so general in the larger mills, but few remarks upon the subject are in order. Like all other machinery, the proprietor is glad to adopt what is going to tend to most directly increase the fatness of his purse. The great economy in the removal of shavings, sawdust and chips by the use of a fan, instead of performing it by hand, is recognized at once. The saving does not end at this point. By the use of a separator in conjunction with a fan and a proper arrangement of branch pipes, with dampers automatically adjusted for feeding the boilers, the entire refuse drawn in by the fan can be deposited into the boilers and used for fuel. The plant, as usually placed, also provided for depositing the shavings into a bin or shaving house convenient to the boiler room by means of a branch pipe from the separator, when the wood working machinery is producing more refuse than the boiler

fires will burn; this latter feature is a very convenient and desirable one. When properly erected, a planing mill exhaust outfit will not only decrease the fire risk, but has other meritorious features as well in the way of accidentally accomplishing, to a certain extent, ventilation in such apartments which otherwise would not be provided for in any way. Some planing mills are thus incidentally better ventilated and cooled in summer than many elegantly equipped banks or other of the better classes of mercantile houses, and we may also include the engine rooms of street railway and other power houses, which are invariably intended to be an attractive feature of the premises. Aside from properly hooding wood working machinery, there is little to be desired in the application of fans excepting to get the sizes of pipes adjusted rightly.

MISCELLANEOUS.

It has been impossible in this paper, by a considerable, to cover all situations requiring ventilation which come under the attention of the factory inspector. There are candy manufactories, where fans should be installed in conjunction with systems of piping and hoods over the boiling kettles, etc., after the same general arrangement employed in forge shops for removing the gases and smoke from the fires, and also for cooling the atmosphere. In glue manufactories the odors arising from the skins and processes of perfecting the product also render it very opportune that ventilation and pure air should be provided. In steam laundries, where there are so many operators, it is particularly necessary that fans should be employed for the exhausting of steam, hot air and all the offensive odors common to the apartments containing the washing, dampening, wringing and similar machinery. For removing the steam and heat in paper mills by means of a large oiled canvas hood over various machinery, fans are also of great service, and in cooling in hot weather the room and preventing dripping from the ceiling by condensation of the steam in winter. In restaurants and hotel kitchens, for carrying of the disagreeable odors arising from cooking and preventing them prevading the other rooms, fans of the disc type have found wide favor. Of course, in all situations outlined above, and in the hundreds of others found in, and peculiar to various industrial establishments, the fan type which will most effectually serve, is governed by the conditions met in applying.

The hour of adjournment having arrived the meeting was declared adjourned.

SEPTEMBER 22, 1893.

Meeting came to order upon call of the President at 9.30 A. M.

Mr. Armstrong, of Ohio, was called for and read the following paper:

ELEVATOR GATES, THE BEST MANNER OF PROTECTION FOR ELEVATOR SHAFT OPENINGS.

Mr. President, Ladies and Gentlemen of the Convention:

The subject assigned to me, "The Best Manner of Protection for Elevator Shaft Openings," is one of no small import, since so many accidents occur from insufficient protection, a large proportion of which prove fatal.

There are offered for sale many and various devices usually covered by letters patent, a large proportion of which are a mere pretense to safety or protection. In my experience the cheapest as well as the most deceptive appliance is the hand, or automatic bar. The first, though depended upon by the proprietor and landlord, is seldom if ever closed by the employes; and the manner of construction of the latter is at fault from the fact that the power is applied at one end to raise it, and a hand carelessly resting on the other is generally sufficient to break the operating parts. If, to the contrary, sufficient strength is provided to withstand such a strain, there is grave danger that persons who are employed about the elevator will be struck by the bar, causing severe pain, if not a broken arm, jaw-bone or other serious injury.

Next in regular course is a hand-gate, opened and closed by the operatives about the elevator. Suffice it to say, concerning such a device, that it is opened by hand, but never closed unless the inspector's arrival is announced.

The next in the line is the drop or self-closing gate, so arranged as to remain open only when the carriage is at the floor. This form of gate affords pretty good protection when new, but soon gets to sticking in the guide-ways, largely from the fact that it must be so nearly balanced by weights to prevent dropping heavily; therefore, a slight change in the atmosphere will cause it to remain up when it should close. Another and even greater menace to the security afforded by a self-closing gate, is the fact that it must be operated or opened by hand, and to raise a gate over one's head to the height of from seven to nine feet, as the case may be, is no light task when it is considered that it must be done many times every day, and the person or persons having this work to do will invariably raise the gate a couple of feet, then, with a throw, up it goes with a bang. The result is that it is soon so racked that it does not work properly, and will drop at some unexpected moment on the head of some one in charge. It is then tied or propped up to remain until the inspector comes around to order it repaired.

Next in order is a full automatic gate, the elevator both opening and closing it. This form of gate is more generally used in the State of Ohio than any of the others, and gives universal satisfaction; yet to an inspector it has defects. The principal one is that it opens at every landing, whether the car is to stop there or not. There are, however, devices to

prevent its doing so, but, in my judgment, they complicate matters to such an extent that it is better to allow the gates to open and close. Further, statistics show that very few accidents occur where this style of gate is used, and they are invariably found in working order.

It is frequently impossible to have a gate of any description, on account of ceilings of factories and warehouses being too low to permit the use of a gate high enough to prevent persons from looking over. In such cases, I would recommend that the gates be set out twelve or fourteen inches from the edge of the hatchway; or a gate should be used which is made in two sections, one of which slides past the other, which is frequently done with a full automatic gate. This insures a gate of sufficient height for protection, yet when up it is so folded that it does not interfere with the handling of large packages.

Leaving the gate branch of protection, we come to doors, hatch and otherwise. Doors for the protection of hatchways should be so arranged and constructed that they could be opened only from the car of the elevator, for they are often mistaken for the doors to stairways and other non-dangerous places, and have led to very serious accidents. Hence, they should be so arranged that they could be opened only when the car of the elevator is at the landing. Automatic hatch doors serve to prevent the spreading of fire, but as a means of protection to life and limb from falling through hatch-ways, I do not consider them practical. Elevator manufacturers seriously object to them, because they interfere with the otherwise smooth action of the elevator. Doors of this description are frequently taken for the car of the elevator, and trucks are sometimes run upon them. Then when the elevator strikes them, it not only endangers life, but a complete wreck of the elevator is sure to follow; the cable is almost sure to be so impaired as to be unfit for further service. In addition to what has been said, it may be added that elevators equipped with hatch-doors cannot move rapidly, and speed is considered quite a factor in elevator construction at the present time.

Summing up the whole matter, the writer believes the best protection for freight elevators, all things considered, to consist in a well-made, first-class, and substantially erected elevator gate, preferably full automatic, to provide against accidents, and a hatch-door which can be closed with a windlass at night, or set off during business hours with a trigger, weight, or otherwise, from any given floor, as a protection against the spread of fire.

In conclusion, I would recommend that legislative action be taken limiting and restricting the speed of freight elevators in from seventy-five to one hundred feet per minute; and would further recommend that inspectors be empowered to require architects and persons superintending the construction of buildings to consult with them to insure that sufficient space will be allowed for the proper application of safety appliances within brick-ways or otherwise.

Remarks upon the subject matter of the paper were made by Mr. Dyson and Mr. Splaine, of Massachusetts, and by Mr. Ellis, of Ohio.

Mr. McKay, of New York, read a paper on the following subject:

THE SWEATING SYSTEM.

Mr. President and Members of the Convention!

What is the sweating system? This question is one which has been answered so different by persons who have given testimony before governmental committees, that I am of the opinion it will be well to cite a few of them. The following evidence was given last year before the Committee on Manufacture of the House of Representatives, when investigating the sweating system. A member of a committee appointed to investigate it in Chicago describes it as a system where "the work is taken out by sweaters. They go to the large firms and make a contract for so much work at such a price, and then they employ men, women and children, and pay their wages at the very lowest, and work them not less than ten hours per day, and some of them work eighteen hours per day, and in many cases on Sunday. In some of these places they board the workers." A custom tailor of Chicago testified that it is a system where "a man is not guaranteed but that his suit may be made up in a kitchen where dirty linen is being washed."

A cloak-maker gives the meaning to be where a man takes work home, and he has the use of his wife and children and neighbors. He employs others; these are the germs of the sweat shop. Sweat shops are shops at home; and now they have grown, by reason of employing more and more, into a factory. * * * The nuisance was brought about because the people can work longer than in a factory."

A Boston clothing cutter says "it is the giving out of work to be made in tenement houses, or in shops, in fact, at a price which is lower than it can be done in shops. They may state a certain price, and then keep increasing the amount of work that they require for that price."

Another clothing cutter of Boston defines it to be "where work is given out to contractors, and they in turn giving it out to others, receiving a profit therefore, and doing no labor."

The Secretary of the Anti-Tenement-House League of Boston describes it as "the system of making clothing under filthy and inhuman conditions."

A journeyman coatmaker understands it "to mean where men are employed under unhealthy conditions and on wages not sufficient to give them a comfortable livlihood."

A clothing contractor of Boston says it is "a class of people employed making garments at a dollar or a dollar and a quarter, where they should receive two dollars or two and a half."

A clothing operator, of the same city, says "it doesn't mean solely the tenement-house work; it means the conditions that exist under which the work is done. It is a system by which, under the piece-price arrangement, people are compelled to work for wages too low for the work that they do."

Another Boston tailor describes it as "that impediment of that element which stands between me and capital, or, in other words, the contract system."

The Secretary of the Journeymen Tailors' Union of America says, it "is a system under which work is given out to a contractor by the manufacturer, and by the contractor sublet to a workman who makes their work. The meaning is, in our understanding, that the contractor sweats something out of the employes, out of the people who work for him."

The Select Committee appointed by the House of Lords to consider the evidence relating to the sweating system in the United Kingdom, after having examined 291 witnesses, including clergymen, physicians, representatives of trade societies, health officers, factory and sanitary inspectors, journalists, manufacturers, middlemen, managers, superintendents, factory hands, home workers, and others, as to the prevalence of sweating in 14 different trades and in the larger cities of Great Britain, reports that: "The replies received were neither clear nor consistent. It was urged by some that sweating is an abuse of the sub-contract system, and consequently that there can be no sweating where there is no sub-contracting. Others, on the contrary, maintained that sub-contracting is by no means a necessary element of sweating, which consists, according to them, in taking advantage of the necessities of the poorer and more helpless class of workers, either by forcing them to work too hard or too long, or under insanitary conditions, or for starvation wages, or by exacting what some witnesses call an undue profit out of their labor."

Mr. Arnold White, who testified before the committee, observed "that the broadest definition he can give to the term sweating is the process of grinding the faces of the poor."

After stating that they considered their inquiry should embrace "the means employed to take advantage of the necessities of the poorer and helpless class of workers, the conditions under which such workers live, the causes that have conduced to the state of things disclosed, and the remedies proposed," the committee reports that "ample evidence having been brought before us on every matter comprised within its scope, we are of the opinion that, although we cannot assign an exact meaning to 'sweating', the evils known by that name are shown to be an unduly low rate of wages, excessive hours of labor, and the insanitary state of the houses in which the work is carried on." They also state that "these evils can hardly be exaggerated. The earnings of the lowest classes of workers are barely sufficient to sustain existence. The hours of labor are such as to make the lives of the workers periods of careless toil, hard and unlovely

to the last degree. The sanitary condition under which the work is conducted are not only injurious to the health of the persons employed, but are dangerous to the public, in the case of the trades concerned in making clothes, as infectious diseases are spread by the sale of garments made in rooms inhabited by persons suffering from small-pox and other diseases," and adds that they "make the above statements on evidence of the truth of which we are fully satisfied."

After listening to the various opinions of those who have had more or less to do with what is known as the 'sweating system', one is at a loss to know what it really is; but I am inclined to the belief that it is best described in the report just referred to. It says: "But though the term 'sweating system' is vague, and seems incapable of accurate and common interpretation, it is well recognized in the trades as signifying a system under which certain industries are carried on, and as implying certain conditions affecting the labor employed therein. In so far as it signifies a system, it may be expressed as a development of sub-contracting and of the sub-division of work; considered as a condition affecting labor it involves excessive hours of work, insufficient remuneration, and the employment of labor under conditions prejudicial to physical and moral health. * * * 'Sweating' has somewhat different significations in different trades, and there is much controversy as to the persons to whom it can be rightly applied; but when we come to deal with the facts, we find that there exists in London and other large cities a considerable class of workers who are unable to deal directly with a *bona fide* employer, and who are compelled to accept whatever terms may be offered by a middleman or a sub-contractor. The middleman soon discovers that, as a general rule, he has at his disposal an overcrowded labor market, and that a large proportion of the persons who fill it are without friends, organization, or the means of obtaining help. * * * Many are in total ignorance of, and most of them have but an imperfect dexterity in the trades which they profess to practice. By taking advantage of these circumstances, the sweater, who may either be a mere go-between, possessing no knowledge whatever of the trade by which he lives, or a workman little better off in any respect than the person he employs, is enabled to get this class entirely into his power, and the usual result is that he works them as many hours and for whatever wages he may think proper to fix. He has nothing to fear from combination against him, for the ranks of the sweated class are continually enlarged by foreign immigration. These people are ignorant of the country in which they find themselves, and of the laws to which they would often have a right to appeal for protection."

The sweating system commenced through competition, and it has for some time past been suffering from the same cause. The sweaters began by reducing the profits of the ordinary tradesman, and by lowering the price of labor. But their number increases, one sweater makes war upon

the other, and still the demand for cheapness is not satisfied. His profits diminish, and he cuts down the wages of his miserable work-people to a lower point than ever. It is a fact, that every year the prices are being lowered, which can only be accounted for by the competition and rivalry of the sweaters with each other.

One of the victims of the system (a woman who had worked at finishing on trousers for twenty-two years), on being asked if she could account for the continued reduction of wages, answered: "There are so many of these foreign Jews, who come and take it one against the other; one will go in and do it so much cheaper than another, and that is how it is the work is brought down as it is; that is how the trade is brought down."

There is certainly more truth than poetry in that answer, as any one who has dealings with the sweaters can testify, although there are unscrupulous contractors of other nationalities and creeds. In a letter from the chief of the Massachusetts Bureau of Statistics of Labor to Congressman Sherman Hoar, it is stated that of the 33 Boston contractors from whom returns were received, 26 were Hebrew, and that of the 1107 employes, 931 were employed by them. The report of the New York Factory Inspector for the last year says: "There seems to be some sort of an arrangement, the precise nature of which it is difficult to determine, by which the Polish and Russian Jewish immigrants are controlled so that they may be easily congregated and utilized in the clothing trades. * * * Whatever may be the impelling cause of this, it is certain that their employers are nearly always compatriots and co-religionists, who, having been here longer and become familiar with the language and customs of the country, do not scruple to take advantage of the ignorance and poverty of their newly-arrived brethren. The very much reduced rate of wages which has been accepted by these immigrants, has naturally resulted in cutting down the prices paid to the skilled workmen in the trade."

It has been told me very often by contractors that they are compelled to accept the prices offered by the wholesalers, or, if they did not, some one else would take the same work for a less price; thus bearing out the statement that the competition and rivalry of the sweaters are the principal causes of the reduction of wages.

The wholesale house which gives out the work may allege that it knows nothing about sweating, and employs no sweaters. Its business is to get its work done as low as possible. It does not inquire into the circumstances of the man or woman who makes the goods. Yet it would not be too much to expect that the large houses, which charge the highest prices to their customers, on the ground that they supply the best article, should take ordinary care to ascertain that a fair price is also paid for the labor they employ, and that the people who do their work are not deprived by sweaters of the wages to which they are honestly entitled.

It ought not to be impossible for establishments of public repute to make sure that they are not being turned into buttresses for the sweating system.

As regards the excessive hours of labor in sweat shops. I do not believe that any one will deny the truth of the statement of the House of Lords Committee, that they "are such as to make the lives of the workers periods of ceaseless toil"—for it is borne out by the testimony of a large number of witnesses whom they examined—or that of the Congressional Committee when it says: "As to hours there is practically no limit except the endurance of the employe, the work not merely being paid for by the task, but the task so adjusted as practically to drive from the shop each employe who is not willing to work to the limit of physical endurance, the hours of labor under this system rarely being less than twelve, generally thirteen or fourteen, and frequently from fifteen to eighteen hours in the twenty-four." The evidence brought before both of those committee were so conclusive on that point that they agree that it is one of the worst features of the sweating system.

Now as to the sanitary — or, rather, insanitary — state of the places where sweating is carried on. In the case of the tenement-house shop it is deplorable in the extreme. It is rarely healthy or clean, while filth and noxious odors are abundant. It is on record that in the city of Chicago there was a rear sweat shop, the yard of which is nothing more than a garbage receptacle. The dirty rags, ashes, and decayed garbage, together with the foul odors that issue from two unclean closets, show great neglect as to the healthful and sanitary conditions. In another place in the same city there was an apartment, the front room of which was used as a shop in which sixteen people were at work. In another room was a dirty bed, on which there was a sick child, while in the kitchen and dining-room the week's wash was being dried by a hot stove. The sanitary conditions were poor, while the open vaults were in a bad condition. Still another was that of a cloak maker, who used one room for his shop, while the other three rooms were supposed to be used for domestic purposes only, his family consisting of his wife and seven children. In the room adjoining the shop, used as the kitchen, there was a red-hot stove, two tables, a clothes rack, and several piles of goods. A woman was making bread on a table upon which there was a baby's stocking, scraps of cloth, several old tin cans, and a small pile of unfinished garments. In the next room was an old woman with a diseased face walking the floor with a crying child in her arms.

In Boston there was found a place consisting of two rooms, occupied by a man, wife, and four children, with several boarders or guests, the latter lying about in a way to indicate that they were decidedly at home. Upon the three beds were piled the goods ready to be made up. The stench and filth were such as to make it impossible for the investigating committee to remain in them, while the closets were a mass of filth.

Another place visited by the committee was decidedly filthy, and clothing was being made up and stacked upon the beds. In still another were found a man and his wife, three children, a girl cousin and two employes occupying three rooms, the entire space being 20x18 feet. Cooking, eating, sleeping and working were being carried on in the same room, and the goods were piled upon the beds and the tables where the food lay. The filth was nauseating, and the committee could hardly complete its inspection.

In New York the committee reports, from a personal inspection, that in one place the stench in the halls was nauseating, and in another house in which sweaters abound, they found the premises filthy and the stench abominable. In nearly all the places visited by them they found very little discrimination being shown between the work-rooms and the living rooms, piles of clothing being heaped up in all available places, and children running und playing in any or all of the rooms with impunity.

The evidence taken in Great Britain is of a similar character, and goes to show that wherever sweating is carried on, the shops, as a rule, are in anything but a cleanly condition, and the danger from the filth and obnoxious smells that abound therein to those employed, is only equalled to that which may be caused by the spread of infectious diseases, through clothing being carried to different parts of the country after being made up under those conditions and in such places as that where a clergyman testified that he knew of a case of a child with measles being covered by one of the garments.

I again quote from the report of the Parliamentary Committee: "It is only necessary to add that the unhealthy conditions under which sweating is carried on threaten serious dangers, not only to the sweaters themselves, but to the rest of the community. There can be little doubt that outbreaks of scarlet fever and other infections and contagious diseases would frequently be traced to the pestilential workrooms of crowded cities. On this point the evidence of competent witnesses is quite conclusive. 'I have seen,' said the physician to the North London Hospital for Consumption, 'patients ill with scarlet fever kept at home, from want of recognition of the disease, all through the complaint, and their parents, or, at all events, their father, working in the same room with them as tailors; and in that case, of course, the garments, that he made might very possibly carry infection to wherever they were taken.' Measles can be carried about in this way, without the least chance of its origin being traced. Thus, parents who buy knickerbocker and other suits for their children at the wholesale sweaters, may unconsciously be conveying to them a malignant disease. And it must be remembered that the shops of these wholesale sweaters are not always situated in the poorer districts of London. The danger extends all over the metropolis. In one instance a case of small-pox was in the house, and the mother of the child did the button-holes for the post-office coats." An health officer testifies: "I

have visited patients suffering from small-pox and scarlet fever in rooms where half-finished garments were used to cover up and keep the patient warm."

In view of all this testimony, can it be possible that any sane person can be found who will defend the "sweating system"?

Many of the leading clothing manufacturers of the United States have admitted that they do not know in what kind of places the goods they give out to contractors are made up. That they certainly should know goes without saying. In that connection, Hon. Roswell P. Flower, Governor of New York, in his Annual Message to the Legislature of that State, referring to the "sweating system" section of the Factory Law, says: "The present law does not go far enough to remedy all the evils which have grown up under this system. If the manufacturer escapes the responsibility and expense of running a factory, he should be compelled to keep a register of those who are making up his goods, and no person should be given work who could not produce a certificate from an inspector stating that he occupied healthy and suitable quarters for the purpose of manufacturing. This would be a proper amendment to the present law, and the importance of the subject, it seems to me, warrants its careful consideration."

The question of how to abolish the sweating system is one that has received considerable attention in some States, particularly in Massachusetts, Illinois, and New York, where laws on the subject have been enacted, and a vast amount of good accomplished; but much remains still to be done. In New York city and vicinity, during the past year, there have been upward of one hundred prosecutions for violations of the Factory Law — principally the anti-sweating section — and they have been generally successful, and the offenders fined. It has had the effect there of causing a demand for shops; and the number of shop buildings recently erected and in course of erection on the East Side, presumably for the manufacture of clothing, bears evidence that the tenement-house sweater has come to the conclusion that he will no longer be allowed to use his living apartments for manufacturing purposes.

Various remedies have been proposed, among others the following: The prohibition of any and all processes of manufacture in buildings erected for dwellings; that all buildings used for manufacturing purposes must be made to conform in sanitary and other requirements of State laws; that all manufacturing establishments shall be licensed by the State, said license to be issued to the actual manufacturer or firm, and not to the sweater; that the State require that all manufacturers mark their goods offered for sale with such label as will inform the intended purchaser or the public that they had been made according to the requirements of law; that a tag or label be attached to all goods made in a tenement-house bearing the words "Tenement-house made"; and that the manufacturer has his goods made under his own supervision, and under healthy and comfortable conditions.

Upon reviewing these proposals, I am of the opinion that by combining the first and last of them, we would come nearer *abolishing* the system than by adopting any or all of the others, although I am aware that some of them, especially the use of the tag or label, have done a great deal toward *remedying* the evil.

As factory inspectors, let us consider well this question, for it is one of grave moment to the entire community; and if nothing more can be done by this Convention; let us at least request the States that have no laws on this subject to enact them as soon as possible, and those that already have them to make them more stringent and provide the proper and necessary means to enforce them.

I know of no more fitting language in closing than that used in one of the Reports already quoted, as follows: "We cannot conclude without expressing our earnest hope that the exposure of the evils which have been brought to our notice will induce capitalists to pay closer attention to the conditions under which the labor which supplies them with goods is conducted, and that the public will withhold their custom from traders who are known to conduct their business on a system which regards neither the welfare of the workman nor the quality of the work produced."

Mr. Griffin, of Massachusetts, read a paper as follows:

THE SWEATING SYSTEM OF MASSACHUSETTS.

Mr. President, Ladies and Gentlemen of the Convention:

The law in Massachusetts, relating to the sale and manufacture of clothing made in unhealthy places, is not a law against the sweating system, as has generally been supposed, but a law against some of the evils of this system, viz: Filthy and disease-breeding tenement house work-shops; excessive hours of labor of women and miners; the employment of children, and the spreading of infectious and contagious diseases among the public from clothing made in these workshops. The sweating system is not confined to the clothing industry, it can be used in a great many manufacturing industries.

In England they have applied this system in the manufacture of not only clothing and wearing apparel, but also in the manufacture of cigars, boots and shoes, nails, chains, etc.

The question now naturally arises: What is the sweating system? It is the demanding of an exorbitant amount of work to be done within a prescribed time, which it is impossible to accomplish, thereby forcing the victim to expend an extra amount of time to perform the task, without receiving any compensation for it. You can readily see that the sweating system can be exercised not only in filthy tenement houses, but also in clean and healthy work-shops. This can only be remedied by organization of those thus employed and a healthy public agitation.

If the State could limit the number of hours that men are employed as it does the hours of women and minors, we might look for a speedy

reform. The claim is made that to attempt to do so would be declared unconstitutional, because it is a contract depending upon the agreement made by both parties interested.

The present law in Massachusetts has abolished all tenement house work-shops wherein were employed others than members of the same family dwelling therein, and it stands as a bulwark against the future introduction of them, thereby preventing the spread of disease that these dirty tenement house workshops were very likely to breed. The only tenement house employment that remains in the State is confined to private families engaged principally in the finishing of trousers, and in 95 out of every 100 of these families the work is done by only one member of the family, generally the wife and mother. These houses are regulated by the agency of a license which they are obliged to procure in order to contain work. The law of 1892 has been amended by placing a fine of not less than fifty nor more than one hundred dollars upon any person, contractor, firm or corporation giving wearing apparel of any description whatsoever, intended for sale, to be made, in whole or in part, by any private family or member thereof dwelling in any tenement unless they hold a license.

Previous to this amendment, the fine was imposed upon the poor person doing the work, and this was taken advantage of by some unscrupulous contractors who would send work to unlicensed places and let the poor, ignorant victim run the risk of being prosecuted.

This amendment by placing the responsibility on the proper parties, and its rigid enforcement, has completely stopped this leakage in the law and has made the license more effective. It has done more; it has weeded out the dirty and filthy places where clothing was finished, which were almost as numerous as the clean ones, and thus lessened the supply of finishers. This has indirectly advanced the prices for this class of work. Before the license was enacted it was an every-day occurrence to find women receiving only 4 and 5 cents a pair for finishing trousers, while now the lowest prices we find to be 8 to 10 cents per pair. The contractors when busy, have been pushed for licensed finishers, and were obliged to bid higher for their labor in order to secure them. But these prices are disgraceful when you consider that it takes from two to three hours to finish a pair of trousers.

Those poor women finishing trousers for such miserable prices, constantly in dread of want, unprotected by any organization, are ground into the very earth by their own helplessness. This fierce struggle in our midst for a bare existence is met generally by the great cry of competition. The natural laws of cause and effect act and react on each other, and the lower the wages are the more competition increases and the less the finished product realizes, consequently the less profits. To overcome this capital combines and forms trusts and large companies, whereby the product is regulated by the demand and the factor of labor is ignorant, for getting that it not only produces but consumes. This cut-throat competition causes

business men to become cold, hard-hearted, unscrupulous and avaricious, and the poor and ignorant become the prey to such, and their labor is made subservient to the ends of cupidity in the grinding effects of this competition.

Another excuse that is offered is, that work is given to these poor women through charity. It is justice they want, not charity, which throws a bone to the dog with the hand while it kicks him with the foot. Though the proper sort of charity may alleviate suffering, it cannot ultimately prevent it.

There is another feature that has been overlooked and that is the rank injustice done respectable manufacturers, who take pride in their productions and who make no concessions to the demand for cheap and consequently inferior goods. They pay liberally for good work to be done in their own, well ordered work-shops, and they are obliged to face a competition with the filthy tenement house product—a competition as sharp and ruinous as it is unfair and opposed to all principles of public policy.

There are several States in the Union where the sweating system and its evils exist without any legislation against it. It is time that they should fall in line with other States in their endeavor to crush this evil. It is an evil too grave from a sanitary point of view to be overlooked, and the grievance complained of too far-reaching to be thus passed by in silence. It lies within the power of the factory inspectors to call the attention of their respective legislatures to this silence on their part.

The health of no city or State should be allowed to be endangered without a vigorous protest. If we accept the opinion of reliable medical authority, the health of a city is most certainly endangered when clothing is allowed to be made in filthy tenement houses where the sick and well are buddled together, very often sleeping upon the clothing they make and then allowing it to be sent broadcast throughout the community.

It is unnecessary to describe the fearful conditions of these tenement house work-shops at this late day. The press and pulpit throughout the country has already done so pretty thoroughly, and at best it is an unattractive subject and its unpublished details are totally unfit for ears polite.

In closing I cannot let slip the opportunity of saying a few words on immigration as it exists, for it has always hampered, and always shall hamper, any law which has been enacted tending towards the abolition of the sweating system and its attending evils. With our great ocean monsters annually throwing from the noisome depths of their steerage accommodations, half a million of human machines, brought from the poverty-stricken ports of Europe, with the race between the attendance at the public schools and the population of our almshouses and prisons once so unequal, now fast approaching the neck and neck stretch, it is time that light should dawn upon us and we demand some protection from at least the undesirable portion that are incapable of contributing to the nation's healthy and prosperous growth. A considerable part of this obnoxious

immigration should be turned back at the expense of the steamship companies, by a vigorous application of the existing laws. Instead of a few hundred, thousands should be annually sent back, which would tend to make American citizenship more appreciated by those who were admitted.

A discussion of some length followed the reading of the two papers, engaged in principally by Mrs. Kelly, Mr. Bisno and Mr. Jensen, of Illinois, Mrs. Ames, Mr. Griffin and Mr. Plunkett, of Massachusetts, Mr. McKay, of New York, and Mr. Castle, of Pennsylvania.

The purport of the discussion was to show the pernicious effects upon society of the sweating system, and to bring out views as to the right method of checking its growth and expansion by legislation. It was the opinion of all, that laws limiting the hours of labor for women and children, and the placing of all houses and rooms where such labor is performed under strict factory regulations, would be the most effectual way of dealing with the system and of correcting the abuses which arise therefrom.

Mrs. Kelly, of Illinois, enquired whether the inspectors of Massachusetts and New York found it necessary to frequently prosecute to enforce the law regulating the sweating system. The reply was that the agitation against the system had been so effective that it was only necessary to see the manufacturers to bring the sweater to terms, because the manufacturers so dreaded the publicity attending prosecutions that they refused to give work to law breaking sweaters.

The special hour having arrived at which time Chief Fell, of New Jersey, had given notice he would move to suspend the rules to go into the elections of officers, he announced that he was not prepared to carry out his purpose.

Mr. Castle, of Pennsylvania, moved to suspend the rules and that the Convention proceed to elect officers. The motion caused considerable discussion, principally maintained by Mr. Murphy and Mr. Plunkett, of Massachusetts, Miss O'Reilly and Mr. O'Keefe, of Pennsylvania, and Mr. Bisno, of Illinois. The chair finally ruled the motion out of order.

Inspector D'Arcy, of New Jersey, read a paper as follows:

HAS THE ENFORCEMENT OF NEW JERSEY'S LABOR LAWS BEEN BENEFICIAL?

Mr. President and Members of the Convention:

The enforcement of New Jersey's labor laws began July 4th, 1883. We have had therefore ten years experience with their practical workings and should be able to answer affirmatively the question propounded at the head of this article, or else we should have them expunged from our statute books. To maintain a corps of factory inspectors at the expense of our State, when their labor reaps no benefits for the social fabric, would be an injustice and an extortion. But there is no need for fear on this score. There are ample reasons for believing that the rigid enforcement of these laws has protected thousands of children from the warping of their intellect and dwarfing of the physical characteristics of people who began factory life at a tender age, they have provided them with a rudimentary education, secured better sanitary conditions and protection against accident and injury in the manufacturing establishments of our State.

The labor laws of New Jersey, which we are called upon to enforce, are all embraced in three classes: (1) Laws relating to the employment of children; (2) Compulsory education laws; (3) General factory laws that relate to the health, comfort and safety of employes in manufacturing establishments. The laws of the first class provide, that no boy under twelve years or girl under fourteen shall be employed in any factory where the manufacture of any goods whatever is carried on. (2) That no child (boy or girl) shall be employed who has not attended some day or night school for twelve consecutive weeks within the year immediately preceding their employment.

The mere statement of the provisions to these two laws, carried with them a conviction of the advantages derived from their vigorous enforcement. The subject of child labor has engaged the earliest attention of philanthropists and statesmen for years, but in the progress of uplifting agencies and influences, the conditions of hardship, poverty and neglect which surround many of our children have not been ameliorated as they should have been; but one of these many evils which, however, is now largely rooted out, is the employment of child labor. No intelligent man will deny that the only safeguard of a republic lies in the virtue and intelligence of its people; and the standard of popular government can only be elevated by reaching out a helping hand to the young. To confine them in the dusty workshops and factories during the most receptive periods of their lives, surrounding them often with vicious and ignorant associates, and compelling them to go through an endless routine of manual labor, when they should be pouring over their books or indulging in healthy open exercise, is certain to dull and stupify their minds, unnerve

their bodies, and cause them to grow up to be mere machines, dangerous machines, too, because surrounded by brutalizing and vicious influences. There can be no gain to society, either, from this ill-paid class of labor. It does not cheapen the product on which it is employed. The profit from it is reaped by the employer, and it is nothing but the avarice of this class, incidentally urged on by the heartlessness of some parents, that encourages the employment of children.

Against this injustice the factory inspectors of New Jersey have been laboring for ten years and the law has been rigidly enforced. There are no longer hordes of young lives streaming out of our factories saturated with vice and ignorance, but instead, those future citizens are being trained in our schools for lives of usefulness and nobleness.

Already the influences of this change have been felt in our reformatory institutions. In the nine years preceding the enactment of these laws 135 girls were committed to the state reform school for girls, while in the nine years succeeding only 119 were committed. This decrease would appear rather insignificant, unless we consider the fact that our population increased over 20 per cent., and also that the nine years preceding the passage of these laws were almost the first years of this institution's existence, and consequently many girls were, during that period, committed to the jails, a rare occurrence now with young girls. We can find like results at the state reform school for boys; seven or nine years preceding 1883 the average number committed each year was 88, and for the nine years succeeding the passage of these laws the average commitments to this institution was 101, an increase of 15 per cent, but we find that the increase in youths between 5 and 18 years in that period have far outstripped that, being 27 per cent. Thus, while the number of youths increased 27 per cent, the number of juvenile criminals only went up 15 per cent, which I think is a good showing for New Jersey's youths. All the credit for this change may not be due to the enforcement of labor laws, but the terrors of the criminal statutes and the influence of Christian societies were in operation for many years previous; therefore I feel safe in saying, that the enforcement of labor laws have played no mean part in thus reducing the number of youthful law-breakers in our State.

The second class into which we divided New Jersey's labor laws, was compulsory education. The main provision of these laws is, that all children between 7 and 12 years must attend school 20 weeks, and all children between 12 and 15 years shall attend school 12 weeks each year. Without this provision, the one before discussed would be of little value, while perhaps the majority of parents would send their children to school rather than see them idling about the streets; yet, there is an indifferent class against which society must protect itself, who do nothing save what they are forced to do. Besides, it is not only right but a duty of our government to see that its future citizens are educated, for upon their intelligence depends the very life of its institutions, both politically and materially;

for the wealth-producing citizens are invariably the intelligent citizens. The men who are blessed with a common school education are better workmen, have greater respect for justice and rights, and are in every way better equipped to exercise the functions of citizenship and promote the prosperity of the country, than their illiterate fellow workmen. The influence of the compulsory education law upon the enrollment and attendance at our schools is very marked. The total number of scholars enrolled in all our schools in 1877 was 198,709, in 1883 it was 211,905, an increase of 6 per cent, while the school census showed an increase of 9 per cent in the same period, while in the next five years the enrollment advanced 30 per cent and the population 11 per cent over 1883.

Thus, while in the five years preceding the enactment of the compulsory education law the increase in the enrollment of our children in the schools did not keep pace with the increase in population, while in the next five years the enrollment far outstripped the increase in population. The average attendance of the children enrolled also shows a marked increase after 1883. The children no longer able to find employment, were kept in more regular attendence at school; all through the seventies the average attendance fluctuated between 51 per cent. and 56 per cent. In 1882 it fell to 54 per cent. and then rose in 1884 to 56 and in 1886 to 60 per cent., and have remained about that figure ever since. Sixty per cent. of the enrollment in attendance at school is considered a remarkable record. This too has been in the face of insufficient accomodations; hundreds of children in our large cities are unable to attend school owing to their crowded condition.

Of the laws of the third class, it would only be an imposition on the time of the convention and the patience of my listeners to speak, as a perusal of them would be more convincing of their merit than an attempt to justify them by absolute proof of their profit.

In conclusion, New Jersey has no need of being ashamed of answering affirmatively the question as to the benefits attained by the enforcement of her labor laws, they have been a boon to many a child whose parents were tempted by poverty or avarice to barter its health and morals for filthy lucre, and they are aiding in training up a hardy, noble, law abiding set of citizens on whose integrity and intelligence the pillars of our government will rest secure.

A motion was made by Inspector Burns, of Ohio, that all further papers be submitted to the Secretary without being read to the Convention.

The motion was amended by Inspector McCloude, of New Jersey, as follows: That all papers be read and submitted without discussion for insertion in the proceedings. The amendment was carried.

Inspector True, of Ohio, read the following paper:

FIRE ESCAPES—GOOD, BAD, INDIFFERENT.

Mr. President and Members of the Convention:

This is a subject of the most vital importance and a subject that should receive the most serious thought and consideration from all thinking people, for there is hardly a day passes but what some large building goes up in smoke, and in almost every case more or less human life is lost, for the want of a life saving device. Cases almost without number might be cited where hundreds, yes, thousands, of lives might have been saved had there been a fire escape. Little attention is given in the construction of large buildings to the means of egress in case of fire. What can be more trying than the sight that meets the eyes of those that delve in the debris of some burned buildings for the recovery of the remains of loved ones, who were unable to escape from the burning building, and who might have been saved from such a horrible death had there been a fire escape. Think for a moment of the sight that meets the workman's gaze when he uncovers the charred remains of one who one day trod this earth, and enjoyed its pleasures and felt its disappointments. A book of no small size might be written on this subject.

I hold that the laws on our statute books are not severe enough, neither are they specific enough, pertaining to the construction and erection of fire escapes. Hundreds and thousands of lives are in jeopardy every hour in the day for want of protection. In hotels and opera houses, in apartment and tenement houses, in workshops and factories, and in fact, all kinds of buildings, and when the owner of a building is ordered to provide an escape, he thinks he is being unjustly dealt with.

The thought seldom, if ever, occurs to him that a fire escape is necessary, or that it is a life saver. But the thought that is paramount, is the cost of the device, and the disfigurement of his building. Men who are fortunate enough to own such buildings as are required by law to be provided with this device, will argue that it mars the architectural beauty of the building, and in almost every case he will condemn the law, and the men who made it, and the men whose duty it is to see that the law is enforced. At present there is too much of a diversity of opinion as to what constitutes a fire escape. This same thing occurs in the interpretation of the construction of this same law, compelling the erection of fire escapes. And this is something that certainly should not exist, and in my opinion this convention should take some action that will bring about more uniformity of construction, also to the establishment of a law that will be more specific. There should be one universal law that would require the erection of one legal fire escape, setting forth the plans and specifications, and when this is accomplished, the escapes will be the same in all the States, and the so-called fire escapes, such as the straight ladder, and the rope and others too numerous to mention, will have been relegated to the past.

Think for a moment, of a woman with a child in her arms attempting to escape from a burning building by means of the straight ladder, or rope, and many others equally as dangerous. What could be more absurd or preposterous, than to expect a woman or children to descend or attempt to descend in safety by either of the means just mentioned. There should be a law that would prevent the erection of the straight ladder, and many others that are mere death traps, and are equally if not more dangerous than the ladder and rope. All fire escapes, or so-called devices, should be so constructed and erected as to allow women and children to descend in perfect safety, otherwise they are useless.

I would suggest that this convention take some action that will bring about more uniformity, and thereby obviate the unpleasantness that arises under the present law. Too much of the Inspector's valuable time is taken up in explaining away obstacles that are put in his way by the man or persons who have been ordered to provide this life-saving device.

I feel perfectly safe in saying to this convention that the escape as ordered and recommended by the Department of Workshop Inspectors of Ohio, are perfectly safe, and as good as can be found anywhere, they are the balcony stairway.

Inspector Dyson, of Massachusetts, read a paper as follows:

HOW HE WORKED FORTY YEARS AGO.

Mr. President and Members of the Convention:

In those days the laws had not found out that there were such institutions as mills. Legislatures had not learned the time of the sun's rising and the going down thereof. Often before the sun began his course to mark the day we were at work, and quit by the light of the bright and gorgeous moon. There were no legislative acts controlling the employment of labor then.

It was not until the year 1874 that the Legislature of Massachusetts passed a law prohibiting the employment of women and children more than 10 hours a day. For over three years this law was a dead letter because the statute itself was faulty and inoperative, and there was no one even then to call public attention to this state of things. Laws do not generally enforce themselves.

In 1877 factory inspectors were born in Massachusetts, a new species of the human family, and they have been increasing and multiplying ever since, also in other States. From this time the question of labor has received more or less consideration from each succeeding legislation. To-day the hours of labor in mechanical and manufacturing establishments are 58 per week for women and children. Contrast this with the condition of affairs forty years ago. We went slowly and quietly to work, after our regular morning prayers, at 5 o'clock. We were released at 6.30 for break-

fast and were rung back again at 7 o'clock. Noon came and we were given 30 minutes, from 12 to 12.30, for dinner. At 7.30 in the evening we were rung out after working 13½ hours per day. Multiply that 13½ by six (6), and you will get 81, the number of hours a week we worked. A difference of 23 hours a week in favor of 40 years ago.

Notwithstanding all our work in those early days we were not unhappy. In the evening we indulged in such rousing fun as walking around town for an hour or so, and by 9.30 o'clock were fast asleep. Sundays and holidays we roamed about the fields, enjoying ourselves as boys do and can. In confidence I will tell you that as I grew older many a Saturday night I walked to Worcester and back, making a journey of 18 miles.

I well remember when the manufacturers by general consent reduced the hours from 13½ to 12 per day. This was due partly to labor agitation and partly to the generosity and kindness of the proprietors of the mills. We hailed this reduction as the dawn of the new era; we celebrated the event with as much ardor as ever we put into a Fourth of July jollification. We didn't get much in those days, and when we did get anything, we were thankful and rejoiced accordingly.

To-day, with the hours of labor regulated by law and reduced to 58 per week, are the employes more benefitted than they were in any time of long days?

Let it be remembered that the gradual reduction in the hours of labor has been met by the manufacturers with improved machinery. This machinery demands so much additional care, such constant attention, that it is a question whether slow machinery and long hours, or fast machinery and short hours, are the most favorable to the wage-worker.

Undoubtedly all labor legislation is intended in some way to be of benefit to the employe, but here is a condition where the legislatures have stopped short of their whole duty. Has not the time arrived for our legislature to take one more forward step and restrict the speed at which machinery should be run?

A mule spinner 40 years ago cared for 600 spindles, 2½ stretches per minute, doffing twice a day, in '67 and '68 increased to 3½ stretches. To-day the mule spinner cares for from 1200 to 1600 spindles making from 4 to 5 stretches in 60 to 64 seconds, doffing 4 times a day without any material change of stock, which means that the spinner on account of the increased breaking of ends must be constantly passing from one end of his carriage to the other, with no opportunity or chance to even lean against a post to rest his weary and tired body.

Again the weaver whose loom formerly ran from 60 to 70 picks per minute, now runs from 120 to 130 picks on woolen goods, and on cotton looms the picks are increased in the same proportion.

Did you ever look back and think of the changes forty years have wrought? I will select one example. Forty years ago Fall River, in my

State, had 100,320 spindles in operation. To-day there are 2,520,490 spindles in operation, an increase of nearly 2,500,000.

In a textile mill there is a very small fraction of the work that requires muscular strength. But it is the constant and steady application of the mind, the eager use of the eyes which exhaust and wear out the human body.

The entire nervous system is so intently directed to the detail of the work while the machinery is running to its utmost capacity, that by night the worker is not only tired and weary, but well nigh worn out.

Do not think that I am advocating a return to longer hours, far from it. I know what they mean to the employe. Often in the days of forty years ago, I fell from my bench fast asleep to be awakened by the boot end of an overseer or by the sweet lullaby of a broomstick. Still, I was happy.

Look at the factory operatives to-day. A few years' work in the mill gives him that tired, worn, pale, exhausted appearance which is pitiable in the extreme. His bent form and round shoulders make a fit subject for consumption and other diseases of the throat and lungs. He does not have any better food or clothes than we did 40 years ago, working without the assistance of the benign influence of legislative acts.

See what the Massachusetts legislature has done for wage-workers:

10 hours per day for women and children, which practically means the same for men.

The guarding of dangerous machinery, including elevators and elevator wells.

The employment of factory inspectors.

Compelling every person or corporation employing females in manufacturing mechanical or mercantile establishments, to provide seats for the same.

Limiting the age when children should be allowed to work.

Weekly payments by all corporations.

Prohibiting the employment of women and minors between the hours of ten at night and six in the morning.

Providing for means of egress, and prohibiting the locking of doors in mills and workshops.

The 58 hour law, and numerous other acts for the better protection of the lives and health of our mill operatives.

A few years ago I was summoned before a legislative committee to give evidence in a hearing concerning workers in mills. A well known manufacturer, who was present at the hearing, pointed to me as a healthy good-looking specimen of a factory operative. Forty years ago there were other healthy, good looking factory operatives, but to-day they are not numerous.

When I was in the mill and at the time I left, a worker had a chance to sit down to rest while his machine was running and the overseer away. A man's whole system was not keyed up to a breaking tension. No wonder that the wage-workers to-day are asking for shorter hours.

It is a surprise to me that the manufacturers cannot see the handwriting on the wall, that the limit of human endurance has been reached.

And, ladies and gentlemen, I think it is within the province of this body to carefully study this subject and to recommend such legislation as would give the factory operative of to-day a longer period of life.

The following paper was read by Inspector Ducomb, of Ohio:

THEATERS, HOW THEY SHOULD BE BUILT AND ARRANGED.

Mr. President, Ladies and Gentlemen of the Convention:

The subject which has been assigned to me — the construction of public buildings — is one, which by reason of its vital importance, should possibly have been assigned to some one of our members, whose experience in this particular branch of the profession would cause greater weight to be attached to whatever remarks or suggestions he might make.

The many terrible disasters which have taken place in this and other countries as a direct result of the improper construction of opera houses and places of amusements, has made the subject of their proper construction one of general study among architects and builders, and the fact that accidents of this character are yearly becoming less frequent is conclusive proof that their efforts to provide the people of the country with safer and more convenient places of amusement, have not been in vain.

The limited time allotted to me for the expression of my views upon this most important subject will permit of only a general statement of what I consider to be the best plans to be followed in the construction of an opera house, where the safety and comfort of the audience are both to be considered, and, indeed, the fact that so many of my auditors are men who have given this subject much more thought and consideration than I have been able to devote to it, makes this limited character of my remarks a cause for mutual congratulation; to them that they will be bored for so short a period, and to me that I will be obliged to parade such a small portion of my lack of knowledge upon the subject.

In the first place, an opera house or other building intended as a place of amusement, should be limited by law to a height of two stories, and should, in like manner, be limited to construction upon what in real estate parlance are known as "corner lots," in order that sufficient means of exit can be obtained in case of fire or panics. A location upon the northwest corner of a square, with the main entrance upon the street running north and south, is, to my mind, the most convenient for this purpose, but it is a matter of minor importance, the valuation of the real estate in most cases deciding the location of the building.

The stage, auditorium and lobby should occupy the lower floor, while the upper one is taken up with a gallery, resting upon an oval row of supports, which form the only obstructions on the floor of the auditorium,

and which should be arranged in the manner which will cause the least inconvenience to the audience, both as to a clear and unobstructed view of the stage, and as a matter of convenience in going to and from their seats.

The stage with its wings should occupy the entire rear portion of the building, with at least two exits upon the alley, with a large double door opening direct upon the alley, for the reception of special scenery, properties, etc.

The lobby should extend the entire frontage of the building, with the exception of two spaces at either end, to be occupied by stairways leading from the galleries on the second floor. The box office should be situated at one side of the lobby, at a point sufficiently removed from the main entrance to the auditorium that the persons purchasing tickets and those entering the auditorium will in no way conflict with each other.

The private boxes should be built at the sides of the stage, and are to be entered from the rear by means of the passage way leading to the stage, both from the auditorium and the gallery.

The second floor should be entered by means of the two stairways at the ends of the lobby, which have already been mentioned, and which should open direct upon the street. This will prevent the mingling of the crowds from the lower and upper floors until the street is reached, which will be a matter not only of great convenience to the people, but will also greatly reduce the possibility of loss of life in case of fire or panics; exits from the second floor should also be provided by way of the wings or stage.

The lighting and heating apparatus should be located in the basement, and should be of the latest design and best quality obtainable. The heating should be effected either by steam or hot air pipes, and the lighting should be by electricity, as this is universally conceded to be the best and most convenient light for this purpose, and experience has proved that a separate plant for this purpose is not only a great convenience, but that in the long run it will prove an economical venture. Duplicate dynamos should be provided, in anticipation of any breakage that may occur, and the entire lighting system should be regulated from a switch board located in one of the wings. Of course great precaution should be taken to see that the insulation of all the wires should be perfect.

The only natural light should come from a central dome fitted with stained glass in artistic designs, and in this dome should also be located the large chandelier of arc lights, arranged beneath reflectors that will scatter the light equally in all directions. The other lights should be arranged in clusters along the walls and gallery fronts.

Great care should also be exercised in the construction and location of the ventilators, especially in buildings where gas is to be used as an illuminant.

It is needless to state that great care should be exercised in the selection of the materials to be used in the construction of buildings of this description, and as a matter of safety, they should be erected under the direction and supervision of State Inspectors, who should be given unlimited authority to condemn and reject all material which in their judgment is considered of an inferior quality, or that will in any way lessen the fire-proof nature of the building.

Those States which have already undertaken the supervision of their workshops and factories are doing a grand and noble work for the cause of humanity, and a more thorough supervision of the construction of places of amusement by competent State officials cannot help but be of inestimable benefit to mankind in general.

Of the interior decorations I have said nothing, as this is a matter which is of very little importance as far as public safety and convenience is concerned, and can safely be left to the judgment of the proprietors of the building.

Hoping that my remarks have wearied none of you, and that some of you may have received a few new ideas which may at some future day be of practical benefit to you, I will close by thanking you for the kind and close attention you have accorded me, and with the hope that the day is not far distant when the inventive genius of man shall have so far improved upon our present modes of construction, that the burning or falling of places of amusement, as well as other buildings, shall have become things of the past.

Inspector McCloude, of New Jersey, read a paper as follows:

BUILDINGS UNDER GOVERNMENT CONTROL—THEIR HEATING, LIGHTING AND VENTILATION.

Mr. President, Ladies and Gentlemen of the Convention:

Either one of the topics including so generously in the title of this paper opens a wide field for investigation and discussion, especially as the case is rare where two government buildings are erected under the same conditions.

The average large city building for office purpose or factory, differs but a little from its neighbor in condition, — built in solid blocks, a rear court fronting on a relatively narrow street, compared with the height of the building, so that the three questions of heat, light and ventilation depend mostly on the peculiar form of mechanical device used to procure the results required.

On the contrary, in the same city, it is very unlikely that there are any large number of government buildings; not infrequently they are so situated as to have space on all sides, free of other structures, simplifying the question of light and ventilation and making more difficult that of heating.

Again, the purposes for which the building is erected vary the requirements. If for exclusively daylight use for offices, natural light alone is demanded, except in rare emergencies, when a less satisfactory service can be put up with, for a time. Ventilation, again, is a less serious matter for this use, for the complete changes of air can be made when office hours are over or during an almost invariable mid-day recess. Buildings for post-office use or other purpose, where hours of service are more or less continuous throughout the 24 hours, involve all of the more difficult conditions.

The three necessities for the healthful occupation of any building, public or private, by human beings, are:

1st. Uniform temperature of from 68 to 71 degrees Fahrenheit.

2nd. Evenly distributed light, subdued rather than a glare.

3rd. And most important, a generous allowance of pure fresh air, free from dust particles, and admitted in such a manner as not to cause draughts, and the vitiated air just as steadily removed.

The question of lighting resolves itself into, daylight properly diffused, — by far the most preferable, — and gas or electric lamps, either together or in separate systems. To discuss the matter, one would have to take some special case and examine the various possibilities, so that here it will perhaps be wisest to omit its discussion and simply to emphasize the point that the system which gives a uniform light in all parts of the rooms, without glare in any part, is the system to be adopted, and by a careful arrangement of windows, shaded skylights and lamps properly spaced, it can be readily accomplished.

Heating and ventilation should go hand in hand in every structure, but especially in those where the credit of the nation is more or less at stake in the care of its officers and employes.

As has been earlier mentioned, the maintaining of equable temperature of from 68 to 71 degrees has been found most conducive to good health.

Where the question of expense is not the greatest essential, with a little care this result can be accomplished without great difficulty and with greater satisfaction than by any direct method or heating, as follows: Force or lead into the rooms in question fresh pure air—heated or cooled as the season may require, and slightly moistened before entering the rooms; at the same time draw out the rooms the vitiated air and send it to the external atmosphere to be purified by natural methods. Here again, after stating the main result to be desired, the detail should depend on the individual case in question.

The development of methods of heating and ventilation from the tents of the savage, through the range of more enduring huts, cabins and houses to the complicated huge structures of the present day is an interesting study. From a fire on the ground and a hole in the roof to let out the smoke; the fireplaces where several great logs could be placed at once; the charcoal heaters of Europe and warming pans of our ancestors;

the great tele stoves of Germany; the huge flat ovens of Russia; to the most modern stoves of this day and the furnaces, steam and hot water plants controlled at one point and heating vast structures, with the various mechanical appliances for increasing draft, avoiding draughts, uniform distribution of heat and removal of vitiated air.

It is temptation to go off on these side lines, but we must stick closely to the three methods properly available for our requirements, viz: hot-air furnaces, steam and hot-water plants. I name them in their historic, though perhaps the reserve of their best practical order.

The objections to a system are always more patent than the good points, so we can readily imagine the evils arising from the dust laden, heated air from the hot-air furnaces, receiving in the rooms, often at mercy of the prevailing winds, entering at the temperature frequently of 120 degrees, and unless distributed at many points, and the foul air removed from as many others, creating currents of heated air alternating with cold ones, very uncomfortable if not always unhealthy. The impossibility often, as hinted above, of heating certain rooms most exposed to the wind, at all, to say nothing of the gases always liable to come through the flues from cracked furnace castings, makes out a sad case.

Steam heat is open to other objections, that of not furnishing fresh, out-door air at all, merely heating the atmosphere of the room by direct contact with hot steam pipes, without access to any moisture, or any means of ventilation, directly incidental thereto.

Hot-water heaters are based on very similar principles to the steam systems, except that the heat is furnished at a much lower temperature, doing away with the danger of burning the air, otherwise the same objections as apply to steam affect it.

The merit of its lower temperature, however, is a great one. Steam can only commence to flow at 212 degrees. Water commences to warm the room as soon as the fire raises it to a hotter point than the temperature of the air in contact with it.

With any of these systems, suitable ventilation can only be accomplished by providing artificial means for withdrawing the foul air and supplying fresh—a common and fairly satisfactory method being to use fan blowers to force air into the rooms and hot air flues to draw it out by natural or induced draft.

Perhaps the ideal system is to heat the air by either one of the beforementioned methods, pass it through sprays of water, then cloth screens to remove dust and dirt and excessive moisture, forcing it by fans through many scattered small netted openings above the head line in the room to be heated, while the foul air is drawn through many openings also, at the base of the walls, passing through spaces between the double floors so provided, thus warming slightly the floors at the same time, and carried off through a flue into the external air above the building.

Of course such a system means considerable first cost, and can only be applied to new buildings, unless at great trouble, but it comes more nearly reaching the ideal than any other method yet tried, and is equally affective for hot air in winter or cool air in summer. But it also approximates to that millennium where all parties to the construction of a public building shall work in harmony, and adapt their plans to the finished need, and not their own temporary advantage.

The paper of Inspector Burns, of Ohio, was submitted to the Convention without being read. It was ordered to be inserted in the proceedings.

Paper submitted by Mr. Burns, of Ohio :

THE IDEAL MILL OF THE FUTURE—WHAT IT WILL BE.

Mr. President and Members of the Convention !

We know what the mill of the past has been, but we cannot predict what it will be in the future, for in this age of invention and progression, the ingenuity of man is constantly making improvements in the mechanical arts, and if the invention of labor-saving machinery continues in the next quarter of a century as it has in the past, who can predict but that manual labor will be wholly supplanted by ingenious machines. Even now improved machinery makes it possible for one man to do the work of ten without the aid of such machinery.

I well remember when they used to manufacture iron rails. One rail was all that could be rolled at a time, and then it took eleven or twelve men to roll that one rail through the different sets of rolls. Now by means of improvements in the machinery they can take a steel ingot and roll it out into four or five lengths, and three or four men do the work which formerly gave employment to ten or twelve.

We well know that machinery has revolutionized all departments of labor. A few days since I inspected a cartridge factory. There I saw a machine which can load, seal and stamp more shells in an hour than the best man in the factory can in twelve.

We know that less time is required to perform a certain amount of work than heretofore. It would take a machinist with hammer and chisel a week to cut out a certain piece of work. Now a machine will do better work and in a few hours.

I have often heard old sailors say what good times they had when it took a sailing vessel three or four months to cross the Atlantic Ocean. Machinery has accomplished the same on the seas as on the land, and it is now possible to make this same voyage in six days or less.

When we look back twenty or twenty-five years and see how machinery has displaced labor, we need not ask ourselves why there are so many out of employment. I am satisfied that in our mills and factories, machinery has crowded out fifty per cent of the employes, for the workingman's

knowledge and skill in certain work is no longer regarded in the field of labor. It's the knowledge of special machinery and the skill in operating that machinery, or in other words, the ability of becoming a part of a labor-saving device, a machine, that is essential in these days.

The inspector, as he tramps through mill and factory, can readily see why it is that there are so many men out of employment. Wherever you see light machinery, there you will find the boy or girl. I often wish our laws were more stringent. The employment of children should be made an inter-state question. Uniform laws governing the employment of children should be enforced throughout the United States, for we all know that children much too young are brought into competition with adults. It is true that a child can operate some machinery as well as a man, but the child will receive only from ninety cents to one dollar a day, while a man would, in all probability, receive from a dollar and seventy-five to two dollars and fifty cents.

Our attention is often called to the apparent age of certain minors. The little fellows appear to be well posted, as they will look one straight in the face and declare that they are past the age governing minors.

The other day Brother Evan H. Davis and myself had occasion to inspect a rag-picking establishment. There were eight small girls. Only one out of the eight could write her own name and she was the only one who could speak the English language. Upon inquiring how much wages she got, she answered: "Whatever I can get." In other words, whatever the blood-sucking "Shylock," her boss, wished to pay her. Upon further inquiry, she pointed out to us a young man about twenty-five years of age, who was pressing and picking rags. He was like the majority of them, could not speak a word of English, but we were reliably informed that he received the extraordinary wages of sixty cents per day.

Now, Mr. President, if we allow such conditions to exist, who knows what will become of our ideal mills and workshops. I know, and so does every good citizen, that the future prosperity and good government depends on the education of our coming generations. I therefore suggest that each and every inspector will use all honorable means with the legislature of his State to influence its members to enact laws that will enable the good people of this country to wipe out of existence all such "blood-sucking barbarians."

I believe the time has arrived when we ought to discountenance and bring to justice all such designing despots. No honest man would wish to override his fellow man simply because circumstances have favored him with more of this world's wealth. We are all human and should be so treated by those so-called employers. But it is often our own fault. We are too jealous of each other, and instead of having confidence in our fellow workman, we will cry him down. We ought to cultivate a greater degree of respect for each other and place more reliance in the integrity and honesty of our companions, and cast off those suspicious feelings. We

ought, and must, lay aside all small bickerings and keep in view this fact, that individual prosperity depends upon the integrity one person should have towards another. And when we have accomplished this, then will confidence be restored and prosperity will abound throughout the length and breadth of our land.

The advancement made in the mechanical art has not inproved the condition of the working masses, for they have to work from sunrise to sunset for a mere living. They have to perform more labor now under the circumstances, taking machinery into consideration, than before machinery became so popular.

Although the question of shorter hours has been discussed by all labor organizations, yet they have thus far accomplished nothing. I think it was Benjamin Franklin, who once said, that "if all the workers of the world would labor but four hour a day, they could produce enough in that length of time to supply the wants of mankind." Now if it was true that four hours of labor was enough to supply the demands of the people, for it surely has not lost any of its force since then, I agree with labor organizations that the watchword of the future should be, "shorter hours of labor." For shorter hours means better education; better education will give the workingman more knowledge and fit him and qualify him to fill any important position which his fellow citizens may call him to fill.

It is better to send men to our legislatures and to Congress who have had experience and know the wants of the working people of this great country. Havent we often appealed to our law makers asking them to give us protection. Protection to the American laboring man by restricing emigration. We are too liberal-minded to demand a prohibitive restriction, but we do most emphatically insist that our ports shall be closed against a certain element which now infests our shores. We don't want Anarchists neither do we want Nihilists, but we do not complain against those people who are honest and will live up to our laws and become good American citizens.

Our motto is "live and let live." Then give us the required protection and we will be the happiest people that live on this earth.

There being no more papers to read, the Chairman announced the next order of business would be the presentation of Resolutions. The following were read, and in the order read were adopted.

Presented by Mrs. Stevens, of Illinois:

Resolved, That no minor of either sex be allowed to work for wages in any occupation whatsoever, under the age of sixteen years, and that we pledge ourselves to work for uniform laws to this effect in all States of the Union and in Canada.

Presented by Mrs. Kelly, of Illinois:

Resolved, That it is the duty of the Inspection Department of each State to urge upon the legislature the necessity of reducing the hours of labor of women and children to eight hours, both in the interest of the health of the workers thus protected, and also as a means of obtaining greater uniformity and stability of occupation throughout the year.

Presented by Mr. McCloude, of New Jersey:

Resolved, That the chiefs of the different States represented in the Convention be requested to prepare an address to be submitted to the Governors of the different States in the United States, showing the necessity for uniform factory legislation in all the manufacturing States of the Union, and further, requesting the Governors to transmit to their respective legislative bodies by message recommendations which will result in legislation conforming with the foregoing requirements.

Presented by Miss O'Reilly, of Pennsylvania:

Resolved, That the Association of Factory Inspectors use every effort to have mercantile establishments placed within the jurisdiction of the inspectors in the various States where such requirement does not at present exist.

Presented by Mr. O'Keefe, of Pennsylvania:

Resolved, That a committee to consist of the President and the Secretary of the Association and one other member, be authorized to submit as early as possible a list of subjects upon which papers are to be prepared for the next Convention. That the same be properly apportioned to the different States and Provinces represented in this body, and in printed form distributed at least three months prior to date of next meeting of the Association.

Chief Fell, of New Jersey, moved to suspend the rules in order to nominate and elect officers for the ensuing year. The motion prevailed.

Inspector Davis, of Rhode Island, placed before the convention the name of Assistant Chief Inspector John Franey, of New York, for President. Inspector Casserly, of Minnesota, seconded the nomination.

There being but one candidate named for President, Inspector McKay, of New York, made a motion as follows: "That we proceed to elect Inspector Franey President." The Secretary to cast the ballot of the Convention.

Inspector O'Keefe, of Pennsylvania, desired to know if the motion would preclude delegates from voting for any other candidate not regularly nominated.

The Chairman decided, that all ballots so cast would be irregular.

Inspector Murphy, of Massachusetts, protested against the ruling of the Chair, and maintained that the motion to elect by acclamation was out of order.

Inspectors Kelly and Stevens, of Illinois, protested against the Secretary casting the ballot of the Convention.

The motion being put, the Convention decided, by a rising vote of twenty-nine to twenty-seven, that the Secretary should not cast the ballot of the Convention.

A rather warm discussion ensued, which terminated by Chief Wade obtaining the floor and moving that a recess of ten minutes be taken for consultation.

Upon resumption of business, Inspector Murphy, of Massachusetts, read from Cushing's Manual supporting his position that the Secretary could not cast the ballot of a meeting against the protest of a minority.

The Chairman maintained, that Inspector Murphy unintentionally misconstrued the reading of the manual.

The motion to elect the President by acclamation was withdrawn and the delegates were instructed to prepare their ballots for their choice of President.

Chairman Franey appointed as tellers Inspectors Davis, of Rhode Island, Jensen, of Illinois, and Weinthal, of New Jersey.

The ballot for President resulted as follows:

John Franey	38
L. T. Fell	25
Whole number of votes cast . .	63

During the counting of the votes Mr. Fell insisted that he was not a candidate for the Presidency, and radically objected to the use of his name for such a position by any of the delegates, and when the vote was announced moved that the election of Mr. Franey be made unanimous, which motion was carried unanimously.

Inspector O'Keefe, of Pennsylvania, placed in nomination for First Vice President, Mrs. F. B. Ames, of Massachusetts. Inspector D'Arcy nominated J. S. Weinthal, of New Jersey. Mr. Weinthal declined.

Inspector Ridenour, of Ohio, nominated John Murphy, of Massachusetts.

Inspector True, of Ohio, nominated L. T. Fell, of New Jersey. Mr. Fell declined.

Inspector Coe, of New York, nominated Mrs. Kelly, of Illinois. Mrs. Kelly declined.

The ballot for First Vice President resulted as follows:

Mr. John Murphy	34
Mrs. F. B. Ames	26
Scattering	1
Whole number of votes cast . .	61

Mr. Murphy, having received a majority of votes cast, was declared elected First Vice President.

Inspector Mullen, of Massachusetts, nominated Mrs. M. B. McEnery, of Pennsylvania, for Second Vice President.

Inspector Murphy, of Massachusetts, moved that the Secretary cast a ballot declaring Mrs. McEnery the unanimous choice of the Convention for Second Vice President. Mrs. McEnery was elected.

Inspector Armstrong, of Ohio, nominated Mr. F. J. Casserly, of Minnesota, for Third Vice President

There being no other candidate, Mr. Casserly was elected Third Vice President by acclamation.

Mr. McCloude, of New Jersey, was nominated and elected Fourth Vice President by acclamation.

Inspector Splaine, of Massachusetts, nominated Miss M. A. O'Reilly for Secretary and Treasurer.

Inspector McCloude, of New Jersey, nominated Evan H. Davis, of Ohio, for Secretary and Treasurer.

The ballot for Secretary-Treasurer resulted as follows:

Evan H. Davis	29
Miss M. A. O'Reilly	21

Mr. Davis, receiving a majority of votes cast, was declared elected.

Miss Mary E. Hally, of Massachusetts, was nominated and elected by acclamation for Assistant Secretary.

The Committee on Resolutions made the following report:

Recognizing the inequality of existing laws regulating the employment of women and minors in the different States and Territories, and with a view of bringing into effect more uniformity in the same, which would be just and profitable to all engaged in industrial pursuits; first, by

placing the employers in the different States on an equal basis of competition so far as hours of labor are concerned, and by affording to the employed the same fair protection from the evils which follow the overworking of women and children, wherever practiced; therefore, we recommend the adoption by the several States of laws regulating the hours of labor of women and minors to forty-eight (48) per week.

We also recommend that all children under 16 years of age be prohibited from being employed in any occupation and that the education of such children be made compulsory, provision being made for the maintenance of indigent children during school year when found necessary by the State.

We further recommend the enactment of laws of the most stringent character establishing a thorough system of inspection of all buildings where people are employed or otherwise congregated, in which shall be required perfect hygienic conditions, separate and distinct toilet and dressing rooms where women are employed, the proper guarding of machinery in all factories, making it compulsory upon employers to provide such guard when deemed necessary by an inspector, and to keep the same applied and in good order, making it a misdemeanor to remove such guards, without promptly replacing the same. We also recommend that laws be enacted governing the construction of elevators and hoistways, to the extent of securing perfect construction and their safe operation, and providing that inspectors shall have power to condemn their use when on inspection they have been found to be defective, or dangerous; also requiring that all well-holes or elevator shafts shall be surrounded by a brick wall, or fire proof material, from the basement to the roof, and that no elevator be opened when not supported with two or more lifting ropes, and provided with an efficient safety catch operated by means of a counterpois weight.

We also recommend, as a means of protection of life in factories and public buildings, that laws be enacted for the inspection of boilers, and a system of examination and registration of engineers engaged in operating the same.

Recognizing the great nervous strain upon the operators of cable and electric surface road cars, and the consequent additional danger to pedestrians, we earnestly recommend the adoption of laws, reducing the hours of labor of employes to not more then 10 hours in 12 hours per day.

Realizing the great danger to public health by the manufacture of wearing apparel in tenement house sweat shops, we earnestly recommend the enactment of laws prohibiting the same in tenement or dwellings where others than members of the immediate family are employed, and also regulating the same in private families, to the end that vermin and disease may not be spread through this system.

We also recommend that national legislation be enacted compelling inventors to place suitable guards on all machines before a patent is granted for the same.

Respectfully submitted

JOSEPH S. WEINTHALL,
JOHN K. PLUNKETT,
FRANCIS U. COE,
J. W. DAVIS,
J. R. BROWN.

The report was unanimously adopted.

Inspector Davis, of Ohio, offered the following resolution as an amendment to the Constitution:

Resolved, That at the commencement of each Annual Convention, the chief of each delegation present shall furnish the Committee on Resolutions with a copy of all factory laws enacted by the different States and Provinces during the preceding year, and of all bills of similar import pending legislation, the same to be arranged by the committee in such order as their provisions shall designate, and thus be reported to the Convention, with such remarks and suggestions as the committee may regard necessary.

Inspector Davis, of Ohio, moved that the next annual gathering be held in the city of Philadelphia. The motion was carried.

On motion it was decided that the time of holding next Convention be left to the President to decide.

Mr. Casserly moved that each State announce the number of copies of proceedings it would agree to take, with the following result:

New York, 100; Pennsylvania, 50; New Jersey, 200; Ohio, 100; Massachusetts, 100; Rhode Island, 50; Illinois, 1000; Minnesota, 50; Ontario, 16.

The following resolution was offered by Inspector Mullen, of Massachusetts:

Resolved, That the thanks of this Convention be and are hereby extended to the Hon. Mayor Carter Harrison and City Council of Chicago, and to Professor Bemis, of the Chicago University, for the courtesies extended in granting the use of the respective places for holding the Seventh Annual Session of the International Association of Factory Inspectors, also to the press for courtesies extended.

Inspectors Murphy, of Massachusetts, and Matthews, of Ohio, offered the following resolution, which was adopted:

Resolved, That this Convention does by a rising vote express their appreciation and thanks to the President and Secretary of this Association for the prompt and efficient manner in which they have performed their duties in the past year and during the session of this Convention.

There being no further business the Convention at 2 P. M. adjourned *sine die*.

PREAMBLE.

In view of the fact that there exists in the several States and Canada, Departments of Inspection of Factories, Workshops and Public Buildings, and as an Association has been organized under the name of "International Association of Factory Inspectors," the following Constitution and By-Laws are for the government of the Association:

CONSTITUTION.

SECTION 1. This Association shall be known by the name of the International Association of Factory Inspectors.

SEC. 2. The officers shall consist of a President and four Vice-Presidents, Secretary-Treasurer and Assistant Secretary.

SEC. 3. The officers shall be elected by ballot at the annual meeting of the Association, and shall hold office until their successors are elected, which shall be for a period of one year.

SEC. 4. The President shall preside at all meetings of the Association; when absent, a Vice-President shall act in his place.

SEC. 5. The Secretary shall keep a correct account of the proceedings of the Association, and such transactions as may be deemed necessary, and shall also act as Treasurer of the organization.

SEC. 6. Each Department shall be assessed such amount annually as may be determined upon at the annual meetings of the Association.

SEC. 7. The membership of the Association shall consist of the Inspectors of the various departments, and such persons of other departments whose duties are the inspection of factories, public buildings, and workshops.

SEC. 8. Any member of the Association shall be eligible to office, provided such person shall be present at the annual meeting.

SEC. 9. There shall be a committee of one from each State, to be appointed by the President previous to the annual meeting of the Association, to whom shall be presented such papers that are to be read, and such committee shall draw up a programme and submit the same to the Convention at its first session.

SEC. 10. At the Commencement of each Annual Convention the Chief Inspector of each delegation present shall furnish the Committee of Resolutions with a copy of all factory laws enacted by the different States during the preceding year, and of all bills of similar import pending legislation, the same to be arranged by the Committee in such order as their provisions shall designate and thus be reported to the Convention with such remarks and suggestions as the Committee may regard necessary.

SEC. 11. Order of Business shall be: Roll-call of Officers and Delegates; Reading of Minutes; Reports of Committees; Unfinished Business; New Business; Election of Officers.

SEC. 12. This Constitution shall not be altered or amended unless by a majority vote of the Convention. The deliberations of the Convention shall be governed by Cushing's Manual.

Roster of Inspectors by States.

Massachusetts.

Chief Inspector—Rufus R. Wade,.....65 Bowdoin St., Boston
Inspector—Edwin Y. Brown, ... " " " "
" John T. White,..... " " " "
" Joseph A. Moore,..... " " " "
" Isaac S. Mullen,..... " " " "
" Jos. Halstrick,..... " " " "
" Henry J. Bardwell,..... " " " "
" Henry Splaine,..... " " " "
" John E. Griffin,..... " " " "
" John H. Plunkett,..... " " " "
" Thos. H. Hawley,..... " " " "
" Samuel C. Hunt,.....P. O. 20, Chelinsford, Mass.
" Joseph M. Dyson,.....Worcester, "
" Warren S. Buxton,.....Springfield, "
" Ansel J. Cheney,.....12 Kingman Blk., Salem, "
" John J. Sheehan,..... " " " " "
" Henry A. Dexter,.....Fall River, "
" John F. Tierney,..... " " "
" Fred. W. Merriam,.....North Adams, "
" James R. Howes,..... " " "
" John L. Knight,.....Springfield, "
" John F. Murphy,.....Central Blk., Lowell, "
" James C. Murray,..... " " " "
" Paul Hannagan,..... " " " "
" Mary E. Halley,..... " " " "
" Lewis F. F. Abbott,.....Worcester, "
" Fanny B. Ames,.....12 Chestnut St., Boston, "

New York.

Chief Inspector—James Connelly,.....306 W. 47th St., New York City
Ass't Chief Inspector—John Franey,..... 101 Woodlawn Ave., Buffalo, N. Y.
Inspector—John Jordan.....163 High St., Brooklyn, "
" George A. McKay,.....318 E. Third St., New York, "
" Hiram Blanchard.....927 Second St., Peekskill, "
" Patrick J. Delaney,.....454 First St., Troy, "
" Leonard Drake,..... .....507 Bleecker St., Utica, "
" Johnson Beers,.....317 Water St., Elmira, "
" Dennis J. Sullivan,.....50 Myrtle St., Rochester, "
" Francis U. Coe,.....92 Nineteenth St., Buffalo, "
" Guy H. Fuller,.....Jamestown, Chaut. Co., "
" Bernard J. McCarthy,.....13 Burchard St., Watertown, "
" Thomas Gunn,.....213 N. Seventh St., Brooklyn, "
" Fred. C. Mulkin.....Friendship, Allegany Co., "
" Fred. C. Simerson,.....Mt. Morris, Liv., Co., "
" Thomas Troy,.....165 Union St., Olean, Catt., Co., "
" James Cunningham,.....539 W. 50th St., New York, "
" Mrs. E. A. Carroll,.....94 S. Oxford St., Brooklyn, "
" Miss M. Finn, ...40 Marion St., New York, "
" Mrs. Kate Hall,.....163 E. 124th St., " "
" Mrs. Sophie Rauch,.....9 Third Ave., " "

Inspector—Mrs. Louise Cuthell,.....77 E. 124th St., New York, N. Y.
" Miss Mary Donnelly.....58 Prospect Pl., " "
" Mrs. Ella Nagle,.....254 W. 37th St., " "
" Miss Bertha L. Aschoff,.....273 Elm St., Albany, "
" Miss Annie Campbell,.....26 Clark St., Binghamtown, "

New Jersey.

Chief Inspector—L. T. Fell,.....Orange, N. J.
Inspector—P. Callan,.....Newark, "
" J. S. Weinthal,.....Hoboken, "
" James Keys,.....Patterson, "
" John D'Arcy,.....Trenton, "
" W. J. McCloude.....Elizabeth, "
" W. W. Johnson.....Elmer, "

Ohio.

Chief Inspector—J. W. Knaub,.....Capitol Bldg., Columbus, Ohio.
Inspector—Evan H. Davis,.....177 Aetna St., Cleveland, "
" John W. Bath,.....Elyria, "
" Charles Burns.....Warren, "
" A. M. True,.....57 Franklin St., Canton, "
" W. R. Mathews,.....92 Center St., Zanesville, "
" F. M. Campfield,.....2258 Kent St., Toledo, "
" Willard Ducomb,.....Findlay, "
" Thos. T. Yeager,.....Portsmouth, "
" John H. Ellis,.....Columbus, "
" E. T. Ridenour,.....Springfield, "
" James Armstrong,.....46 Wesley Ave., Cincinnati, "
Chief Clerk—E. M. Slack, ...P. O. Box 633, Columbus, "

Pennsylvania.

Chief Inspector—Robert Watchorn,.....1313 Somerset St, Philadelphia, Pa.
Inspector—George J. McCrane, ...2572 Collins St., " "
" Daniel J. Donohue,.....520 W. Cambria St., " "
" John O'Keefe,.....2719 Hicks St., " "
" Mary O'Reilly.....2723 N. 11th St., " "
" Mrs. Belle McEnery.....2244 Van Pelt St., " "
" David McAvoy,.....Chester, "
" Thomas F. Owens,.....14 Kenley St., Pittston, "
" B. T. Castles,.....427 Monroe Ave., Scranton, "
" M. U. Baker, ...195 Arch St., Allegheny City, "
" Mrs. Annie E. Leisenring,.....432 Chew St., Allentown, "
" Mrs. Isabella G. Coombs,...Wilkinsburg House, Greensburg, "
" Mary Wagner,.....409 N. 2nd St., Harrisburg, "

Illinois.

Chief Inspector—Mrs. Florence Kelley,.....247 W. Polk St., Chicago, Ill.
Ass't. Inspector—A. P. Stevens,.....671 Monroe St., " "
Deputy Inspector—W. E. Kenney,.....253 Ewing St., " "
" " Frances Jones,.....258 S. Center St., " "
" " J. R. Powers,.....74 W. Madison St., " "
" " Jos. Farres,...Gault House, W. Madison St., " "
" " John Merz,.....210 Larrabec St., " "
" " James Hickey,.....Austin, "
" " Alvan Bisno,.....140 Brown St., Chicago, "
" " Ewala Jensen,.....394 Hower St., " "

Minnesota.

Chief Inspector—F. J. Casserly,.....Capitol Bldg., St. Paul, Minn.
Inspector—E. B. Mayo,.....Minneapolis, "
" Antoine Paul,.....Duluth, "

Maine.

Inspector—R. F. Chalk, ...Augusta, Maine.

Connecticut.

Inspector—E. Burrows Brown,.....Hartford, Conn.

Tennessee.

Inspector—John E. Loyd,.....Nashville, Tenn.

Rhode Island.

John H. Davis, Clerk Labor Bureau,.....Providence, R. I.

Missouri.

Henry Blackmore, Com. of Labor Statistics,.....Jefferson, Mo.

Province of Quebec.

Inspector—Jos. Lessard,.....Montreal.
Ass't. Inspector—Jas. Mitchell, ... "

Province of Ontario.

Inspector—Robert Barber,.....Toronto.
" James R. Brown, ... "
" O. A. Rocque,.....Ottawa.

ERRATA.

On page 62 the 21. and 22. line should read as follows :

reading a paper specially prepared for the Convention at Mr. Franey's request. Several supporters of the previous motion