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238 TREMONT ST.

CONSTRUCTION

BOSTON MASS.

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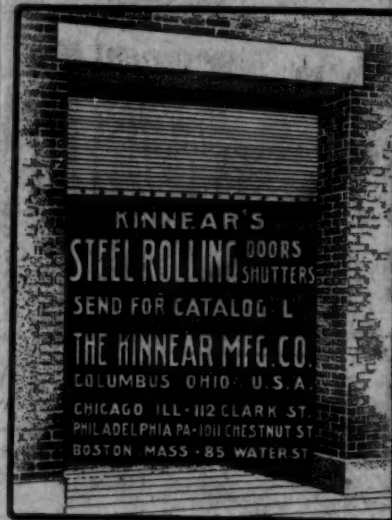
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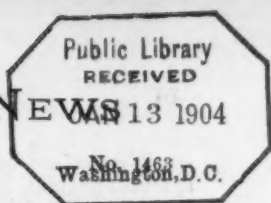
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THE AMERICAN ARCHITECT AND BUILDING NEWS

Vol. LXXXIII

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THE newspapers are filled with accounts of the terrible fire in the Iroquois Theatre at Chicago, and with recommendations, more or less sensible, for building theatres that will not burn. Every one has read the story, and knows that the Iroquois Theatre was one of the most modern in the city, in plan and equipment, and, as the building laws of Chicago are tolerably strict in their provisions in regard to theatres, it was assumed that it must also be nearly or quite fireproof. Unfortunately, the proprietors of theatres rarely pay much attention to building laws, and nobody seems disposed to call them to account for their neglect; so, as it appears, the skylight over the stage, which, in case of fire in that part of the theatre, breaks, or opens, allowing the flames to escape and preventing the fire and smoke from issuing into the auditorium, was nailed up. The omission of this safeguard, the most effectual known to theatre construction, was alone sufficient to insure the deaths of hundreds of persons in case of the breaking out of fire on the stage during a performance; but others, equally necessary, and equally familiar to the architects and managers of theatres, were also neglected. In all large cities, so far as we know, the law requires that the auditorium of the theatre, and all the passages and exits connected therewith, shall be sufficiently lighted by oil lamps, which shall be kept burning during every performance, independently of the gas or electric lighting. No pretence at compliance with this obvious requirement seems to have been made at the Iroquois Theatre, the accounts agreeing that the auditorium was plunged in total darkness immediately after the breaking-out of the fire. Another equally obvious necessity is that such exits as are provided shall be available at all times for exit, and shall not be blocked up, closed or obstructed in any way. The Iroquois Theatre was planned with twenty-seven exit doors, nearly all of which were fastened by a complicated system of levers, or were blocked with ice; so that even those who found their way to them in the darkness were unable to escape through them. In addition to this, a wide aisle, which the plans of the theatre on file at the Department of Buildings showed at the back of the seats, did not actually exist, the seats being carried back to the wall; so that no lateral movement was possible except through or over the chairs. The most glaring piece of recklessness was, however, the stretching of a wire between the stage and the auditorium, through the proscenium opening. This wire of course prevented the lowering of the asbestos curtain, as it would have prevented any other attempt at cutting off the stage from the auditorium.

UNDER these circumstances, an extensive fire on the stage was certain to be fatal to the greater part of the audience, and a fire on the stage is, as every theatre manager knows, a thing to be regarded as at all times probable. In this instance the actors, with the best intentions, and relying on the reputed fireproof character of the building, are said to have assured the audience that there was no danger, and to have ad-

vised them to remain in their seats, as a precaution against panic. The effect of this mistaken kindness was to increase the number of deaths. It should never be forgotten by those who frequent theatres that the average time, as deduced from the accounts of a large number of theatre fires, which elapses between the appearance of flames in the auditorium and the death of every person remaining there is only two minutes, so that those who do not reach an exit within two minutes will usually never reach it at all. In these cases death is, of course, by suffocation, from the smoke which precedes the flame; and the smoke, if once allowed to enter the auditorium, diffuses with great rapidity. Evidently, therefore, it must be prevented from entering there, and the two well-known means for this end are the skylight over the stage and the fireproof curtain, both of which were, in the Iroquois Theatre, wanting or useless. In how many other theatres they are also useless it would be interesting to inquire. The *New York Evening Post* says that, to its knowledge, no person has ever been held responsible for a theatre fire; and until the persons whose duty it is to see that theatres are built in accordance with the building-laws, and that the safeguards required by law are kept in working order, atone for negligence by the penalties prescribed for manslaughter, those who frequent dramatic representations take their lives in their hands.

IT does little good to say, as the *Evening Post* does, that stages can be fitted with apparatus of fireproofed wood, and that scenery can be painted on canvas saturated with tungstate of soda. Independent of the uncertainties of fireproofed wood, and the reported disposition of tungstate of soda to fall out of canvas in fine dust, leaving the fabric as inflammable as before, no manager will use fireproofed wood, or soak his scenery in tungstate of soda, unless he is compelled to by an authority which he fears. In these days competition among theatres is very keen, and expenses must be kept down to meet it, so that the manager who has the most cheaply constructed theatre, provided its defects are not such as to alarm the public, and who cuts down most radically such items as tungstate of soda, fireproofed wood, oil-lamps in passageways, fire-drill of stage-hands, and other outlays which are not obvious to the public, substituting for them the much cheaper newspaper laudation of his "absolutely fireproof" establishment, is the one who succeeds. That a few hundred people should occasionally die a violent death in consequence of their reliance on these representations is unfortunate, of course, but "business is business," and the less sentiment is allowed to interfere with it the better.

THE Springfield *Republican* is usually very judicious in its observations on current events, and it is the more to be deplored that its agitation over the Iroquois Theatre fire should have led it into some rather thoughtless remarks about building laws, which are copied, with additions, in the *Boston Transcript*. The Springfield *Republican* "suggests" that "a plainly-printed plan of the theatre, showing the proper fire-exits for each section, should be printed constantly in the programme." It is probably not aware that this was required by law in New York something like twenty years ago; and it seems to be equally uninformed in saying that "no State in the Union has yet provided itself with a sensible and adequate building-law, and seriously set about enforcing it." It leaves us a little in the dark as to whether it means that no State has a "sensible" building-law applicable to the whole State, or that there is no "sensible and adequate" State law applicable only to one or more cities in the State; but, as it proposes that the enforcement of the provisions of such a law as it would like should "rest with the State Police Department," it is to be inferred that it desires a general law, applicable to the whole State.

AS to the Springfield *Republican's* own State, it is hardly necessary to say that it has already a very good and thorough general law, which is enforced by the State with commendable strictness. This law, recognizing that supervision of all the building operations in a State would be impracticable without an enormous force of inspectors, very

sensibly confines itself to school-houses, factories, hotels and apartment-houses, and public buildings, and the provisions on which it insists for these structures, and which the inspectors acting under it enforce with admirable intelligence and firmness, are models of that good sense in legislation which can avoid impracticable requirements, at the same time that it comprehends as much as possible in the provisions which it proposes to enforce. It is through this law, whose value is too little appreciated by the community, that Massachusetts school-children now breathe reasonably fresh air, changed at proper intervals, instead of contracting disease in the pestilential fog which used to be known as the "school-room atmosphere"; that, if fire breaks out in a Massachusetts school-house, church or concert-room, the people in it have ten times as good a chance of escaping alive as they had a few years ago, on account of the provision of the law that the doors of such places shall open outward; and that hundreds of occupants of factories, hotels, apartment-houses, hospitals and other buildings owe their lives to the provision that all such structures shall have at least two staircases, at an approved distance apart, one of which must be surrounded by a brick wall or other fireproof enclosure.

It would be difficult, we repeat, to improve on what is known as the Factory Law of Massachusetts as an engine for doing the greatest amount of good with the means at the service of the State; and we should be sorry to see it interfered with. In regard to the statute known as the Boston Building Law, and applicable only to the city of Boston, the case is different. It is not that the law is not strict enough. The *Boston Transcript* talks about the "grossly selfish," "narrow and provincial, culpable and immoral" policy of our building-laws, and tells us that "it is easy to quote instances" to show that such laws as it wants are "practicable" by referring to "the countries of Europe," where "with fire departments much less complete and efficient than those of the United States, there are fewer fires and less serious conflagrations than we have here"; apparently in complete ignorance of the fact that the building-laws of Boston and New York are far more scientific and comprehensive than those of any city in the "countries of Europe"; that buildings are put up every day in London and Paris which would not be tolerated for a moment by a Boston or New York architect or inspector; that great conflagrations, in which the losses run into the millions, are more common in Europe than they are in this country; and that, most significant of all, the majority of these destructive conflagrations occur in buildings which have been erected in accordance with these laws which we are told are so superior to ours, and are supposed by the European public, including most of the architects, and all the officials, to be fireproof. It is true that European dwelling-houses, at least in cities, are, as a rule, much less combustible than ours, but this results partly from the greater expense there of timber construction as compared with masonry, and, much more, from the principle of neighborhood responsibility for fires spreading beyond the premises where they originate, which is enforced all over the Continent, and has done more, by its appeal to self-interest, to create habits of careful building, and lessen damage by fire, than all the building-laws of all "the countries of Europe" put together. The point in which European building-laws have the advantage over ours is that they are enforced. The universal American corruption is nowhere more conspicuous than in connection with the enforcement of the building ordinances, and even where they are not flagrantly violated, with the connivance of corrupt inspectors, no one, apparently, is charged with any responsibility in regard to them. In the case of the Iroquois Theatre, the Chicago building-ordinances were ample to have prevented any injury to the audience from a fire on the stage, but they were disregarded. The automatic skylight, which would have drawn the flames and smoke upward, instead of allowing them to break into the auditorium, was fastened down to timbers placed underneath it, so that it could not be opened; the asbestos curtain, which would have held the fire back until the audience could escape, could not be lowered, on account of a wire stretched under it; the oil lamps which should have lighted the passageways were missing; the exit doors, which the ordinances require to be always ready for use, were barred, or blocked up; and the arrangement of the seats, by which circulation was cut off, was in direct violation of the law. All these criminal offenses against the statute were evident to the most careless inspection, yet no one, apparently, thought it his duty to notice them. We need not say that a building-law which is not en-

forced, or is corruptly and partially enforced, is worse than none at all; and if the *Springfield Republican* and the *Boston Transcript*, instead of calling upon the Governor of Massachusetts to consider their vague ideas of what they suppose to be the building-laws of "the countries of Europe" would invite him to think of means for enforcing the far superior building-laws of their own State, or, still better, would invent an effective plan of their own for this purpose, and present it to him, they would confer a benefit upon the community.

A GOOD example has been set in Indianapolis by calling in the architects of the city to discuss a revision of the building ordinances. The methods of construction have changed so much in this country within a few years that the present law is no longer adequate. One would suppose that the architects, who practise the improved methods, would naturally be the best persons to suggest how they should be regulated by statute; but this is, apparently, not the view taken of the matter in other cities, where the builders and insurance men generally concoct the ordinances which are, after their adoption, presented to architects as the law which they must try to understand and follow. The result of this is that, as neither builders nor insurance men understand, as architects do, the correlation, artistic and constructive, between all portions of a building, the ordinance needs continual interpretation and modification, until after years of discussion, appeal and amendment, it is developed into an immense unwritten code, familiar to the local architects and builders, of "what the inspector will allow," and what he is prejudiced against. Of course, it is an injustice to owners, even more than architects and builders, to subject them to a set of arbitrary official decisions, not to say whims, in regard to which they can gain no information from the statute-book, and it is only reasonable that the compilation of building codes should be left, in the first instance, to architects alone. If the insurance men think that the rules drawn up by architects do not require sufficiently thick party-walls, they can say so; and Fire Commissioners and Inspectors of Egress can do the same with regard to specified precautions against fire. Such suggestions would be accepted by the architects as a matter of course, unless they were obviously unreasonable, and would be incorporated with the rest of the code; and the whole would then be satisfactory to everybody concerned, while it would be intelligible to those who have to frame their plans in accordance with it.

THE G. A. Fuller Company, of New York, has applied for admission as a member of the Employers' Association, and, after some demur, has been accepted. This step, on the part of a corporation which has always held aloof from such associations, and has been popularly accused of maintaining secret relations with the walking-delegates, to its own advantage, and to the injury of its competitors, indicates a complete change in its policy, due, presumably, to the change in its management. So far as the public is concerned, the connection of the Fuller Company with the Association is likely to restore to it much of the confidence which it had been losing since the Parks episode; and architects, who have been watching with interest the development of the corporation from a highly speculative concern, with various ways of making money, to a legitimate building company, with a splendid plant, and interesting methods of construction, will very willingly confirm the improvement in popular opinion.

THE discovery, by M. Redon, the architect of the Louvre, of a fine basement, buried twenty-six feet underground, has led to an interesting historical discussion. It appears that the original elevations of the building extended to the bottom of the moat which once surrounded it; but a pamphlet, published in 1650 says that such vast quantities of garbage and refuse had been thrown into the moat from neighboring houses, and from the windows of the Louvre itself, as to fill it completely. Attempts were made, each summer, to clean it out, and on these occasions the court was obliged to leave the palace until the work was over. Even then, the solid refuse accumulated until, when Napoleon took possession of the palace, he found that the simplest thing to do to make the place presentable was to fill the ditch with earth, level it off and plant it. Since then it has remained in the condition in which he left it; and the authorities have decided that, in view of the expense of excavating the moat, and the probability that further work would be found necessary to put the ancient stone-masonry in order, it is best not to disturb the present state of affairs.

THEATRE FIRES.

THE recent awful tragedy in the Iroquois Theatre, Chicago, is of a nature to arouse a feeling of distrust in the mind of every thinking man or woman as to modern fireproofing methods. The question is very pertinently suggested as to whether it is possible to so construct, equip and manage a theatre that such an occurrence as has just horrified the world would be impossible.

Before answering this latter question some account must be taken of theatre fires in the past and of the conditions under which they have originated and spread. The Iroquois Theatre disaster offers the first example of a conflagration in a so-called fireproof structure of its class, for it must be remembered that fireproofing as a science cannot be said to be over thirty-five years old. But in this last fire the loss to life and limb was greater than in any preceding disaster of its kind in this country, over a thousand people being killed, maimed and injured, while the actual deaths at this writing are said to run up over six hundred. Only in two instances has this death list been exceeded, namely, in the Ring Theatre in Vienna, in 1881, when about nine hundred lives were lost, and the Lehmann Theatre, St. Petersburg, in 1836, when the loss was about equal to that in the Iroquois Theatre. As a matter of fact, the construction of a theatre bears very little relation to the loss of life which results in a conflagration. The danger comes partly from the fire spreading rapidly, more to liability of suffocation from smoke and gases, but most of all to the unreasoning, blind panic which is so apt to seize a crowd when threatened with danger. In nearly every theatre fire, after the spectators have either escaped with their lives or been trampled or suffocated to death, the firemen are able to enter the building with relative impunity and proceed systematically to extinguish the flames. Consequently while no theatre ought ever to be constructed which is not in every detail of what we choose to term fireproof construction, the real danger is from other sources, and as one of our daily papers puts it very properly, our theatres must be not merely fireproof but also panic-proof. In the Ring Theatre disaster all of the loss of life occurred during a period of about fifteen minutes. In the Iroquois Theatre inside of thirty minutes after the fire originated the flames had been extinguished.

As to the causes of theatre fires, these are seldom difficult to ascertain. Although accounts do not fully agree it seems pretty certain that the Iroquois fire started by a border or hanging drapery coming in contact with an electric arc of some sort. In the Ring Theatre disaster the fire was caused by the explosion of a lamp which was dropped on the stage. The burning of the Brooklyn Theatre in 1876, when 293 persons were killed, was caused by a border catching fire from border-lights. In nearly every recorded instance of theatre fires when the cause is traced back far enough it is found to be personal, human negligence or carelessness which could very easily have been prevented and the spread has almost invariably been due to the fact that those who should have stood between the public and danger lost their heads completely. Eternal vigilance on the part of everyone is the only price of safety. The installation of the Iroquois Theatre stage was the best that could be devised. It is very easy to look back now and see how disaster might have been averted, but with the amazing complexity of management of the modern stage it can easily be understood how the most careful management and most adequate provision will not always be sufficient to guard against the carelessness of indifferent stage-hands.

There are a number of points that ought to be considered in the construction of every theatre, and although many of them are called for by building-laws, such laws are unfortunately often more honored in the breach than in the observance. A great deal of emphasis is usually accorded to the necessity for a fireproof curtain. Its value can easily be overestimated. Had the curtain in the Iroquois Theatre not stuck when half way down, in a few seconds the whole stage would have been a mass of flame and probably not one of the five or six hundred stage-hands, chorus-girls and actors would have escaped alive, while it is very doubtful if after the alarm had once been given the dropping of the asbestos-curtain would have averted the horrible panic among the spectators. The asbestos-curtain ought to be in every theatre and it ought to be worked up and down during each performance and it should run in iron grooves so that when down it will entirely close the opening. It should, moreover, be suspended in such a manner that the supports cannot be burned away and should be hung so that it will descend of its own weight. To a small theatrical company the danger from closing this curtain during a fire on the stage is not excessive, but with such a large company as played in "Mr. Bluebeard" the fire-curtain when down might easily be a source of danger rather than safety.

Every theatre should be thoroughly equipped throughout the entire stage and the rigging-loft, the dressing-rooms, store-rooms, air-chambers and scene-rooms with automatic-sprinklers supplied from a gravity-tank. Gravity-sprinklers are by no means infallible; they go off when not wanted and on the whole they may damage more property than they save, but if they are kept in proper working order they will go a long way towards ensuring the prompt extinguishment of an incipient flame and that means the saving of life, even though the property be ruined with water. Furthermore, every curtain opening should be equipped with a water-curtain. This device probably in six cases out of ten will fail to work by the holes in the pipes or the orifices of the fan-tail jets becoming stopped with dirt or rust, but the good it might do in the other four times would make it worth all its cost.

The stage rigging and scenery should in every theatre be treated so as to be non-combustible. Taking the average value of human life at five thousand dollars, the Iroquois disaster represents a money liability of three million dollars, which is enough to fireproof all the scenery in the country and leave something over for repairs. The theatrical artists may not like fireproof scenery, neither do they like sprinkler-pipes, but it seems utter folly to carefully fireproof the entire structure of a building and then fill the upper portion of the stage with thirty to fifty tons of highly inflammable fabrics so hung that fire will communicate from one fold to the other like a flash and inside of twenty seconds after the beginning of a flame the whole mass will be blazing. One has to witness a fire on a stage in order to appreciate the terrible rapidity with which flames will spread through scenery. The fire darts along the cloths and the burning fabrics fall off in great blazing shreds which mean sure death to anyone upon whom they fall. And yet all this can be absolutely guarded against by simply impregnating the scenery in one of the many solutions which are made for the purposes of fireproofing. In some cities this is required by law, but so far as is known at present in no city is this law enforced.

It goes without saying that wood should be carefully left out of all stage construction. It need not necessarily be omitted from the scenery itself. It is a fact that wood which is treated with one of the fireproofing compounds, while it will char will not blaze nor spread a fire, and such fireproofing should be insisted upon. Then there should be on each side of the stage at the front and at the back a line of not less than 3-inch standpipe with hose connections, and hose already on a reel at the front and back on each of the fly-galleries, and during the performance there should be some one man on each side at each lever whose sole business it is to simply watch for fire and be prepared to put it out. And lest this man, who in a sense would hold the lives of so many in his hands, should lose his head and fail at the critical moment, seeking safety for himself in flight, there should be a special fire exit readily at hand for his special benefit. This is done in some of the better theatres. It ought to be the rule in every one.

Varnish ought never to be used in any form about a theatre. We have seen a flame start on a face of varnished sheathing and run like a flash over the whole face of the wall, and the varnish in burning throws out an enormous quantity of highly suffocating fumes. There are other compounds which would produce better finish and which are not so highly inflammable.

The building laws in many of our large cities call for a skylight to be placed in the roof over the stage, this skylight to have an area equal to one-tenth of the stage area and to be automatically movable so that in case of fire it can be thrown wide open, allowing free escape for smoke and flames. This is another wise provision, but in practice it is rendered of little value for the reason that the skylights are seldom opened and under emergencies they are very apt to stick and refuse to move.

But fireproofing the stage and scenery will not guard against panic. The only safety in this respect is to so plan the theatre that the public will feel they have every facility for rapid, untrammelled exit. There is not a city in this country in which the laws require that a theatre shall be isolated on all sides, but such ought to be absolutely the rule. It is not possible when the building is so hemmed in as was the Iroquois Theatre to so construct the exits in size and arrangement as to be really safe in time of a sudden panic. Boston is the only city that attempts to guard against this by insisting that there shall be in front of each division of the house a lobby large enough to contain, standing, all the people who would occupy the corresponding division of the house. This is a most excellent provision which is entirely lacking in the Chicago laws. Had there been such lobbies properly placed in front of the Iroquois the death list would undoubtedly have been relatively slight. In estimating the size of these lobbies it has been the custom to assume 1½ square feet as the area to be allotted to each person. This is too small. It ought to be counted at 2 square feet per person at least.

It is to be hoped that the time will come when our law-makers will appreciate the desirability of absolutely prohibiting spectators from standing in any portion of any of the aisles or passageways of the theatre. Such a provision, as far as it relates to aisles, is embodied under the Boston and the New York laws, but it is seldom enforced and every theatre that is built makes admitted provision for "standees." When every seat is filled not another person ought to be allowed in the house. Three of the oldest theatres in the country, the Boston, the Academy of Music in New York and the Academy of Music in Philadelphia, are arranged so as to absolutely exclude standees unless they remain in the outer corridor and peer through the glass doors. It is also in Europe the general custom to so arrange the theatres, but our American managers appreciate so keenly the money value of stand-up tickets that in all our recent theatres most liberal provision is made for such frequenters.

When it comes to a matter of exits, the Boston Building Law is one of the most generous in that it calls for an aggregate of 40 inches in width for each one hundred people. Unfortunately, however, there are several ways in which the margin of safety is infringed upon. On estimating the number of people, provision is commonly made for only as many as there are seats, which is often one or two thousand under the actual number of people in the auditorium. Furthermore, in making up the total aggregate of width, it has been the custom to allow exterior iron fire-escapes to count as part thereof. Fire-escapes ought to be entirely in addition to what

would be considered ample security for the audience, for the number of people who, panic stricken, could with safety avail themselves of the chance to crawl along a fire-escape on a cold snowy night with a raging fire on one side, a badly scared crowd behind them and a dark, uncertain passageway before them, is very slight. As a matter of fact, so far as known, there is not a theatre in this country whose exits aggregate the equivalent of 40 inches in width for each one hundred people who are allowed to enter the house.

Again, the matter of stairs. Most building laws prescribe minimum dimensions of $7\frac{1}{2}$ inches and $10\frac{1}{2}$ inches for the rise and tread respectively of the steps, a maximum width without intermediate hand-rails of 5 feet, and a maximum number of fifteen risers in any one run. Such stairs are too steep for a crowd. With fifteen steps in a run, the rise and tread should not be more than 5 and 14 inches, respectively. And in proportion as the ratio of these dimensions is changed the number of steps in a run ought to vary, until with $7\frac{1}{2}$ " and $10\frac{1}{2}$ " steps the run should not be more than six or eight steps. At the turn of the flight of stairs the landing should extend out at least one foot beyond the line of rail of the upper flight, and every tread in every flight of stairs which is not carpeted should be edged with Mason Tread or something of that nature.

In some theatres attempts have been made to do away entirely with stairs, substituting a long incline or ramp therefor. There is a theatre in Los Angeles in which the gallery and balcony are both reached in this manner, and the recently completed Nixon Theatre in Pittsburgh has a double ramp reaching from the ground floor to the balcony, with a slope of about one in twelve. Both of these theatres were designed by Mr. Marshall, the architect of the Iroquois. It would seem as if such device would obviate a certain amount of danger from panic. Surely no crowd can with safety be compelled to go down stairs in a hurry.

In more recent theatre fires the chief source of danger has generally been something connected with the electrical work, and it is a fact beyond question that electric installations, especially on the stage, are often of a character to invite trouble. A modern stage will consume current at the rate of four or five thousand amperes per hour, and too much care cannot be taken of this extremely important feature of the building. In the first place, the supply to the stage-lights should be entirely independent of all the rest of the house, and the current for the auditorium, the lobbies and the dressing-rooms should not even be taken to the stage switchboard, but should be controlled in another part of the house, so that they could in no circumstances be affected by any accident on the stage. It is customary to depend for protection against overloading entirely upon fuses. These are most unreliable safeguards as applied even under the most careful supervision, and as a matter of actual fact circuits on a stage are generally fused so high that fuses would not melt until after a good deal of damage has been done. Besides, in the hurry of making temporary connections, the stage electricians are by no means always particular as to the kind of fuse which is used, and an interesting collection might be made of various sorts of devices which have been found doing duty as fuses, which would include cold chisels, sections of 0000 wire, hair-pins and ten-penny nails. The only efficient device at present available is an automatic circuit-breaker. These should be installed on every circuit of any size, and if they are used intelligently they constitute a very reliable protection. Exposed arcs of every kind should be absolutely prohibited, and every switch should be enclosed for protection in such manner that sparking at the contacts could not possibly communicate fire to anything.

As regards the exits and passages leading from the auditorium to out-of-doors, they should never be left unlighted for a moment, and the electric wires and the outlets should be so protected that nothing but the destruction of the fixtures could cause a total stoppage of the light. When the panic seized the spectators in the gallery of the Iroquois Theatre, and they rushed towards the exits, it was to find the lights all out and they themselves in total darkness. There is no evidence at present public to show whether the lights were turned off by some overexcited attendant or whether connection was broken by the fire on the stage, but it is perfectly possible to install devices which would be quite independent of either possibility. A small storage-battery can be arranged in shunt with the current supplied to at least one outlet in each corridor and stairway, the battery constantly charging while the lamp is in direct operation from the street current, and lighting up by drawing on the battery when the street supply is cut off. This is a device which costs only a few dollars, and has been installed in some theatres. Something of this kind should be required by law everywhere.

The Boston Building Law prescribes that no boiler, furnace, engine or heating apparatus, except pipes, shall be located under the auditorium nor under any passage or stairway of any exit of a theatre. This provision does not obtain in Chicago nor in many of our cities. As theatres are almost universally now required to be of fireproof construction, the boiler-room can be made perfectly safe almost anywhere, and the only object in keeping it away from under the stage or auditorium is to prevent its being used as a storeroom for rubbish, which is generally the fate of every compartment, large or small, within reach of the stage-manager.

It is safe to say that there is not a theatre in this country which fully answers all the requirements of safety indicated above. The laws in several of our cities prescribe that scenery shall be fireproof, but it is never done. The scenery is generally brought to the theatre with each company that arrives, and is allowed to go up without a

protest from any one. There is an immense amount of rubbish necessarily accumulating all the time about a stage, and each company usually has some special ideas about arrangement of scenes, and more particularly about the electrical work. Consequently, when a system is put in order, it seldom stays so, and it requires the utmost care on the part of the manager, and an amount of electrical knowledge and ingenuity beyond what is possessed by the average stage electrician, to prevent the stage and the electrical fittings getting in such condition that a slight break or short circuit might, without repression, result in serious damage. To say, however, that a theatre cannot be made perfectly secure against fire is to deny the facts. We can build our structures and equipment in such manner that there will be absolutely no danger from fire either on account of scenery or even through carelessness. Then if, in addition to that, our laws compelled us to make our exits on a more generous scale, to give ample lobbies in which a crowd can spread itself out and recover from panic, the liability to such fatalities as the Iroquois Theatre would be enormously reduced. Nothing can absolutely guard against the danger of panic. We have only to recall the shocking catastrophe associated with the coronation of the Czar and the panic which seized the crowd on the Brooklyn Bridge to appreciate that it is the people themselves whom the spectators have most to fear. But we can surely head off the panic by making a blaze in the theatre an impossibility, and a panic-stricken crowd which has plenty of room to spread itself out will speedily recover from its alarm.

C. H. BLACKALL.



THE IROQUOIS THEATRE DISASTER.

THE Iroquois Theatre had been occupied barely a month and the troupe that took part in the opening was just about finishing its engagement, with a spectacular play requiring abundant colored lights, electrical effects, etc. The building was loudly proclaimed to be largely fireproof. Also the exits were advertised as being exceptionally large and numerous, even beyond the actual requirements of the city ordinance. Apparently, as said above, the building itself was actually fireproof in the usually accepted sense of this much abused word, but beyond the construction itself there was a very appreciable amount of combustible material used as is generally the case for floors, doors, trimmings, etc., to which in this case was added inflammable upholstery, and especially dangerous stage scenery, so that the result was, as a matter of fact, fully as bad for the audience as if the walls also had been of inflammable material.

All the world by this time has been shocked by the news of the terrible catastrophe which has fallen upon Chicago in the burning of this new theatre, when 598 human beings, many of them women and children, and young men and women home for their holidays, were compelled to give up their lives.

The year 1904 entered our city in silence. In the city, in the suburbs for miles around, where the foolish custom is usually observed of ushering the new year in with whistling, ringing of bells, shooting of fire-arms, all was silent, and the new year came in and found a community bowed and silent before a deep and common grief. The Mayor has set aside Saturday, the second, for a day of mourning, when all business shall cease and Chicago bury her dead, many of whom lie unidentified in their temporary resting-places, at the present writing. And even before this sad duty has been performed, while the dead yet lie unburied, the question is asked on all sides, How could this hideous thing have happened? on whose head shall rest the blame? and the investigation promises to be thorough and far-reaching till the question is answered.

The coroner's jury has been chosen, and these men have gone through the dreadful ordeal of having gazed on those many dead faces. They have given no answer and it remains for the living to speak. That there may be no failure to do this, witnesses were first held as such, but later not only many of the attachés of the theatre but the two managers, several of the actors and a building-inspector of the city of Chicago have been placed under arrest on the charge of manslaughter, as the stories, as always at such a time, were exceedingly conflicting and there was the rumor that the assistant stage-manager had prepared his men to leave the city at a moment's notice. Of course, this report may be entirely without foundation, as at a time like this, it is hard to sift the truth from the wild reports.

The Chicago Tribune has sent out the following letter to the principal architects and contractors of the city:—

CHICAGO, ILL., Jan. 1, 1904.

My Dear Sir,—The Tribune desires to engage your professional services to make a thorough examination of each and every theatre in the city of Chicago, and, in view of the lamentable happening at the Iroquois Theatre on Wednesday afternoon answer this question:—

Is the ——— theatre a fit, proper and safe building for the purposes for which it is utilized?
THE TRIBUNE COMPANY.

The paper further states that the "Tribune does not desire to

interfere in any way with the various investigations now being made by various municipal and other officials. It simply desires to secure for the people of Chicago the opinions of the leading experts as to the actual conditions that exist in the places of amusement in which thousands of them congregate.

"To the theatres that have lived up to all requirements of the law the inquiry, doubtless, will be welcome. It will be reassuring to their patrons.

"If there are others, the public has the right to know their names.

"The *Tribune* Theatre Commission also will be requested to make a report embodying what, in their opinion, should be done to make a repetition of the Iroquois horror disaster impossible."

Mayor Harrison has also decided to ask the different associations connected with building interests in the city to send representatives to examine the Iroquois. With this end in view, the Builders' Club, the Mason and Builders' Association, the Architects' Business Association, the Traders' and Builders' Exchange and the Illinois Chapter of the American Institute of Architects have been invited to send their representatives to pass on the ill-fated building. In view of the fact that many of the theatres habitually violate the fire-ordinance, the mayor had seventeen houses of amusement closed till the laws should be complied with.

The fire, as every one knows, started on the stage. From the best information obtainable at present and from the most careful examination feasible at the present writing, it seems as if the fire originated either from the explosion of a calcium-light tank or from some defective electrical apparatus, both kinds of light being used for the scenic effects on the stage. Fire, every one admits, was started in some way over the stage and was at once communicated to the light, inflammable hangings above. An attempt is said to have been made to stop the blaze at once with chemicals, but unsuccessfully, and no water seems to have been at hand. At the alarm of fire, there was a rush both from the stage through the back exits into the alley and from the auditorium towards the front exits, which would seem to have created a heavy draught into the auditorium.

The first question asked from every quarter is, Where was the asbestos curtain?

The asbestos curtain was there, but did not drop as it should, that is apparent to everyone. All sorts of wild talk is afloat as to why it was not used, but it seems better to wait till the official inquiry for the actual truth. The curtain was apparently lowered a few feet, then stuck and in the volume of flame that poured from the stage was destroyed. Was it asbestos? Another question to be answered.

Were the stage exits thrown open before the curtain was lowered, thus creating such a terrific draught that it could not be managed? The theatre people say no; it was the opening of the front doors which caused the draft they say. With the volume of flame and smoke went death itself to the audience, so that in practically fifteen minutes all was over, so far as the destruction of life was concerned; and in a comparatively short time the flames almost died out of themselves for lack of material to feed on.

Were the city fire-ordinances obeyed? According to report they were not. The ordinance provides that there should be automatic-sprinklers in every theatre over the stage, in the air-shafts, dressing-rooms, stairways, closets, etc. Rumor has it that there were none at the Iroquois. The city ordinance provides that every theatre should have its own special connection with the fire-department. Rumor has it that the Iroquois had no such convenience and that the first alarm was turned in from a cigar store across the way, while the second one went from a neighboring hardware establishment.

Next the point comes up as to the legitimate seating-capacity of the theatre and whether on this special afternoon it was overcrowded. The theatre has a seating-capacity of 1,602, while 1,700 seats were, in most places outside the city building-department, admitted to be the actual number in the theatre. Rumor has it that 2,000 people were in the audience that fatal afternoon.

As not unusual with such catastrophes of this kind the flames seem to have played most extraordinary pranks, so completely burning individuals in one place that identification was impossible from either clothes or features, while in other parts of the building the upholstery even was not singed or blackened. While there has been no accurate statement obtainable it would seem to appear that, with a few very terrible exceptions, the major part of those seated in the parquette escaped fairly easily. In fact some report that after sitting a few minutes until the first rush was over they walked out with only slight difficulty, while on the other hand the loss of life was most terrific and far more general among those in the balcony and gallery.

As a matter of fact the entire front of the building, beyond one broken light of glass and another cracked one, shows absolutely no sign of the fire that was within; nor on the front of the building is there the slightest sign of smoke or burning. As for the construction of the building, the fireproofing seems to have been entirely satisfactory and there was no falling in of roof, walls or balconies. Indeed, the portions of the iron-construction which were exposed about the stage do not seem to have been heated enough to be greatly warped or twisted.

Finally comes the dreadful question, Were the exits open as they should have been from the first? The coroner's jury in its first inspection of the building found that the paint on the inside of the wooden doors of the exits was scorched and blistered, while the outer iron doors were not even smoked, as was also the case with the

outside of the wooden exit doors, which, had they been opened, would have been the parts scorched.

Mr. McCutcheon has given expression to the popular belief in a grim and forcible cartoon in one of our New Year's Day papers: a heavy doorway encloses a massive door, locked and barred with heavy padlock. Cobwebs hang across the door while grinning Comedy and sour-visaged Tragedy look down upon it. On the frame of the door in emphatically large and plain letters is the word "Exit."

And so we wait to see where the blame shall be placed, at whose door shall the crime lie. This crime may be of ignorance, may be of criminal carelessness. And the long line of little white hearses passes on; there is lamentation in the land and the sound of Rachael weeping for her children.

THE RAPID GROWTH OF THE EUCALYPTUS.

NOWHERE in this country, perhaps, have experiments with the growth of eucalyptus trees been carried to such an extent as in the little valleys along the stretch of the Pacific Coast near Santa Barbara. The eucalyptus, be it known, is the tree which some scientists say is destined to save the world from a famine of wood. Those who are familiar with the tree's growing records in this vicinity are confident in its ability to perform that feat if it should ever be called upon to do so, which is not probable.

Ellwood Cooper, who owns a big ranch a few miles north of Santa Barbara, was one of the pioneers in this experimenting. His first plantations were set out twenty-five years ago. Some of the groves have been cut down three or four times and are again high in the air. Trees which have been permitted to grow for the entire quarter century are as large as oaks whose rings show them to be more than three hundred years old. In other words, the eucalyptus grows twelve times as fast as the oak, and, in fact, there is hardly a tree that it does not put to shame in this respect.

Five years ago a resident of one of the small coast settlements, Carpinteria, planted a row of eucalyptus as a sort of fence along one side of his residence property. Last week he finished cutting it down and secured twenty-two cords of 4-foot firewood from this single row, not more than 250 feet in length. Several of the trees have grown to a height of 75 feet in five years and all were well above 50 feet.

"You can almost see these eucalypts grow," said a rancher who is familiar with them. "There is only one thing I know that can beat them."

"And that?" was asked.

"Mushrooms!" he exclaimed. "We have to give way to them, but the margin is narrow enough. You cut off a eucalyptus and in three or four days it will be sprouting away for dear life. Something seems to just draw them up out of the ground."

They make the finest kind of piles, even better than Oregon pine, to the minds of some experts. More than \$10,000 worth of piles have been sold from the Cooper grove within ten years, and no one knows how many hundred cords of wood; yet one would hardly know that the grove had been touched.

According to reports to the Agricultural Department the eucalyptus is now being planted in this country more largely than any other tree. The ranchers of the great prairie States are setting out thousands of them under the easier name of "gums" or "blue gums." The eucalyptus seems to care no more about the name than about the soil in which it is planted.

Its uses are by no means limited to the production of cord-wood and piling. It protects the orange and lemon groves along the coast from the ocean winds which would bruise the fruit, and has proved an excellent windbreak. In a wood-lot trees can be cut every six or seven years, the average yield being from sixty to seventy-five cords of wood to the acre, and any one who has seen it burn in an open fireplace gives it the palm for wood fuel. It can be sawed into all sorts of lumber, and is used for furniture, street paving, ships, bridges and fences. There are many uses for the oil and its by-products are increasing every year. In California it is a home cure for most everything from whooping-cough to consumption. The children make candy from its honey and garlands from its beautiful blossoms. Some scientists hold that it has a beneficial effect on climatic conditions, but as to that the Californian sayeth not. One cannot get a native son to admit that anything could really improve this climate. — *N. Y. Tribune.*

FLOATING ISLANDS.

IN the centre of the Cyclades rises a rugged mass of granite, formerly known as Delos, but now bearing the name of Micra Dili. The names of Asteria and Ortygia, which it bore in a remoter past, are relics of its legendary history. Asteria, so runs the ancient story, threw herself into the sea to escape the attentions of Jupiter. The modern student of meteors will, perhaps, ask himself if there is not here chronicled in the language of the time the account of a great meteor which fell into the Mediterranean. A star falls from heaven, and according to the fashion of the time, it becomes personified in a maiden, Asteria. The legend adds that Asteria took the form of an ortyx, or quail, and hence the alternative name of Ortygia. Metamorphosed on reaching the sea, Asteria becomes an island. When Leto, in her wanderings, came to Delos,

it was a floating island, drifting about in the Ægean Sea, and to make it a secure dwelling-place for her, so runs the story, Jupiter chained it to the sea-bed with adamant chains. Apparently, however, Delos again became a wanderer, for Virgil relates how Apollo rebound it, "*Quam pius Arcitenens revinxit.*" Homer describes the dwelling-place of Æolus as a floating island: "Then we came to the Æolian Island, and there dwelt Æolus Hippotades, dear to the deathless gods; there he dwelt in a floating island, and round it was a wall of brass that could not be broken, and the smooth rock of it ran up sheer."

The floating islands of fact are not less interesting than those of fiction. A special charm attaches to those of the Mexican lakes. They are, in fact, floating gardens with crops of beans, peas, potatoes, etc., and gay with varied flowers. "There are two sorts of them," says Humboldt, "the one in movement and driven about by the winds, and the other fixed and attached to the shore." The origin of these Chinampas, as they are called, has been traced back to the fourteenth century. They are partly natural and partly artificial. Masses of tangled vegetation collect together in the water, and when these natural rafts become strong enough, soil is placed upon them. Thus they become floating gardens. The movable ones are towed or pushed with strong poles from place to place.

On one of a group of such islands may be seen the cottage of the guard. In Humboldt's time it was one of the sights to see the boats laden with vegetables and flowers grown on the Chinampas coming down the canals to the cities of Ixtacalco and Chalco. The promenade round the lakes among the floating islands was one of the finest to be had in the environs of Mexico. A more recent traveller, Brocklehurst, also describes these floating gardens of Mexico. The lakes were covered in parts by tangled masses of reeds, water plants and bushes. As soon as one of these masses was strong enough, strips of turf were laid upon it. This was done several times, and then some soil laid on the surface. It was now a garden, and yielded crops of vegetables and flowers. At the time of the Spanish conquest they were to be seen in thousands on the lakes. A large part of the revenues of the Aztec Kings came from the cultivation of these floating gardens. They were from 100 to 200 feet long, and from 20 to 100 broad. Long willow poles were driven through them into the bottom of the lake, there to take root and keep the island anchored. Thus unconsciously did the Aztecs adopt Jupiter's treatment of Delos for their own islands, the willow poles playing the part of the adamant chains. In Brocklehurst's time they were all thus fixed, none were free to float about with "high-born damsels, under jasmine bowers." It was a more prosaic age.

The floating islands of the Chinese fishermen are also interesting. These are towed after the boats as they sail or row over the lakes and rivers. The intense economy of the Chinese mind makes every square yard of soil profitable, and here is a striking illustration. Making a raft of bamboos and interweaving it with reeds and long grass, the fisherman then covers it with soil. On this floating island he grows his onions and other vegetables, towing his garden after him as he follows his vocation up and down the river or lake. The Nile has its islands of floating vegetation. Sometimes the White Nile is entirely blocked by an enormous number of floating islands. They are largely made up of the famed papyrus. Sometimes a hut is to be seen ensconced in a corner of one of them. Navigation is often impeded by their accumulation. The River Angara, which runs out of Lake Baikal, has many islands floating on the bosom of its rapid current. Some are wooded, others low and treeless, like green blotches on the surface of the stream. On Lake Dal, in the Vale of Kashmir, are floating islands moored to the bottom by stakes. Other lakes also have their floating islands. Humboldt, indeed, remarks that they are to be met with in all zones. Darwin saw them in Chili during the memorable voyage of the "*Beagle*." Lake Tagua-Tagua, for example, is noted for its floating islands. They are formed of the entwined stalks of dead plants, among which living vegetation takes root. They are circular in form, and from 4 to 6 feet thick. As the wind blows them about these islands frequently pass from one side of the lake to another. Horses and cattle are thus sometimes carried across the lake—a unique kind of ferryboat is seen in action.

On the broad waters of the Ganges, Amazon, Congo and Orinoco, islands of matted trees float down and put forth on a perilous voyage over the ocean. The Mississippi, "Father of Waters," bears such green islets on its bosom. On one of them, perchance, young trees take root, and the pistia and nuphar adorn it with their yellow flowers. Alligators, serpents and birds seek the shelter of its seclusion. But they have embarked on a voyage from which there is no return. They are carried out to sea, and finally perish when the island sinks waterlogged to the bottom. Travellers ascending the Amazon in a canoe meet its floating islands going seawards. On one, perchance, a group of grave-looking storks regard in stony silence a party of chattering monkeys. Another carries a flock of ducks and divers sitting by a party of squirrels; while a third floats down a crocodile and a tiger-cat. When a party of four tigers was landed at Montevideo from one or more of these floating islands, the inhabitants were greatly alarmed. Wafted by the wind in its trees one of these islands may finally reach the shores of some uninhabited land, newly risen it may be from the deep. Its varied passengers alighting may colonize the new land, while its freight of seeds may spring up to cover it with vegetation. Many curious and anomalous facts in the distribution of plant and animal life, to account for which naturalists have been lavish in their creation of continents, may,

perhaps, be more simply explained in this way. In other cases the floating island of matted timber may sink waterlogged to the bottom, and help to form a seam of coal. The floating island is an object of interest to the geologist, and has been duly chronicled in Sir Charles Lyell's "*Principles*." The most notable example in this country is the well-known floating island of Derwentwater. And it is a specially remarkable one. A stranger indeed, "Did never float upon the swelling tide." It is only visible at irregular intervals, and this is, perhaps, the most curious point in its history. Every now and then it puts up an appearance, and then vanishes again for a space of from one to five years. A hot summer seems to favor its appearance, and its favorite months are July, August and September. It floats, but at the same time remains attached to the bottom by its sides. Hence, it is unable to travel over the lake as some other floating islands do. The explanation of this curious and erratic specimen is probably as follows: At the bottom of the lake is a felted mass of vegetable matter in a state of decay. The resulting gases inflate a part of the mass and raise it to the surface. The floating island of Derwentwater, in fact, is a large bubble, of which the skin is matted vegetation, rising from the bottom of the lake. As the gas gradually escapes, it sinks again to the bottom. — *London Standard*.

BOOKS AND PAPERS

EVERY one in this country who has on his mind the welfare of his fellow-men must have received with interest the announcement of the publication of two volumes upon "*The Tenement-House Problem*,"¹ edited by Messrs. Robert W. De Forest and Lawrence Veiller, both of whom have for years been conspicuous as leaders and officers of organizations devoted to the reform of tenement-house conditions. It may be imagined that these experienced and enlightened friends of the poor are wise enough to keep sentimentalism and exaggeration carefully out of their work, and their two volumes contain little but facts and statistics, clearly arranged, and furnishing of themselves all the argument needed. We cannot say that we agree with all the conclusions of the various writers who contribute to the book, and this could hardly be expected; but their opinions, even if some of them seem open to question, and, still more, the observations on which they are based are of the deepest interest.

As it is for the general advantage that such matters should be fully discussed, and that everything like misapprehension should be corrected, we venture to point out that the case against the tenement-houses of New York, as the breeding-places of tuberculosis, does not seem to be so fully made out as to justify basing upon it a demand for legislation. Two-thirds of the people of New York live in tenement-houses, and we are told by one writer, in illustration of the horrors of tenements, that eight thousand people die annually in New York of tuberculosis. If all these died in tenement-houses, and none anywhere else, there would be some foundation for a charge against the tenements; but, unless in exceptional cases, statistics, we think, do not indicate that the average mortality from tubercular diseases is greater among the tenement-house population than among the richer classes, while, as is evident from the figures given, New York, as a whole, suffers less from tuberculosis than almost any large city. Supposing the population to be, in round numbers, three millions and a half, and the annual death-rate to be twenty per thousand, which has been about the average for the past few years, the total number of deaths per annum would be 70,000. Eight thousand is only a little more than one-ninth of 70,000, so that, by this showing, the deaths in New York from tuberculosis are only about eleven per cent of the total mortality, a more favorable condition, we believe, than is exhibited by any large city except Berlin, where, curiously enough, the population is crowded into tenement-houses as bad as those of New York, but where rigorous hygienic measures, supplementing a sandy soil and good air and drainage, have now, we believe, reduced the tuberculosis mortality to about ten per cent of the whole. In most other American cities the proportion is much larger than it is in New York, ranging from fifteen to twenty per cent; and the worst city in the United States, in regard to the comparative mortality from tubercular diseases, is New Orleans, where, as we are told on page 146, "tenement-houses are practically unknown," and where poor people generally live in "small houses, with openings on all sides, with yards, and plenty of space in front." The book gives some interesting plans of the distribution of cases of tuberculosis in crowded tenement-house districts, but, as it seems to us, these indicate rather that the disease, which seems endemic in certain houses, is disseminated by the spitting of patients in the dark and neglected hallways, instead of being spontaneously generated by the darkness and lack of ventilation of the rooms.

Although we have no idea of standing up in defence of the old dumb-bell plan of tenement-house, it seems to us that its objectionable features have been rather misapprehended, and that the long, narrow and dark central corridor which forms a necessary feature of it has much more to do with its moral and physical effect upon its inhabitants than the courtyards at the sides, which, being practically always doubled, in consequence of being repeated on each side of the

¹ "*The Tenement-house Problem*." By Various Writers. Edited by Robert W. De Forest and Lawrence Veiller. New York: The Macmillan Co. 1903. Two Volumes 8vo. Price \$6 Net.

party-line between adjoining houses, afford an open space on each side of the building, 56 inches wide in the narrowest part, and about 15 feet wide in the widest part, and 50 feet long. It is true that a courtyard of these dimensions, enclosed on all sides, does not afford very abundant light, and that the air in it is often not of the best, particularly where the occupants of the rooms around it throw their slops and garbage through the windows into it; but by keeping it whitewashed and clean, and opening the hall windows to give circulation from one courtyard to the next, this feature of the dumb-bell plan is not very bad, and it is misleading to charge to it the demoralization which belongs far more to the dark and filthy public hallways. Fortunately, various architects, including particularly Mr. Ernest Flagg, have shown how wasteful of space the dumb-bell plan is, and how much more economical, as well as more attractive and more wholesome, an arrangement is with short, compact halls, by means of which space can be saved for larger exterior open spaces.

We are not sure that the practice, common to treatises on the tenement-house problem, of assuming that a dark and dirty dwelling is fatal to the morals of the people who live in it, is either justifiable or wise. Children, we are convinced, are influenced for good or evil by their material surroundings, but grown people need not be, and a good mother, however poor, can generally do something to counteract the influence of sordid surroundings on her children. Good examples of this are found among the Italians. Most of those who emigrate to this country come from Naples, where dirt, crowding and poverty are worse than in New York; yet the poor Neapolitans are, as a rule, self-respecting and thrifty, temperate, faithful to their wives, and affectionate toward their children, while the Italian children are remarkable for their sweet temper and their natural intelligence. So long ago as 1879, an official report, speaking of a colony of Italian rag-pickers in Jersey Street, said: "No more peaceable, thrifty, orderly neighbors could be found than these Italians"; yet "these Italians" had lived all their lives amid the indescribable dirt of Naples without being morally affected by it.

If it is still true, as our own observation leads us to think it is, that people of native delicacy, like most Italians, can live crowded together like cattle without developing bestial instincts, it is certainly desirable to inquire whether crowding and foul air are necessarily demoralizing, and, if not, whether some other feature of tenement-house life may not be concerned in the undeniable degradation of the New York slums. If it is found that the dark and filthy halls, which are never found in Neapolitan tenements, have a demoralizing effect, it is toward their abolition that effort should be directed; or if it is found, as is not unlikely to be the case, that bad government has more to do with the promotion of drunkenness, pauperism and vice among the poor than all other causes put together, it is against bad government that the zeal of reformers should be directed. The Tenement-house Reform Movement has had great results, but its mission is by no means concluded, nor will it be until the people of the slums, patient, humble and hard-working, are better appreciated by those to whom Providence, as some one says, has given riches because they would not be able to resist the temptations of poverty, and are assisted, first of all, in protecting the innocence of their children against bad example, next, in defending their right to labor, and their earnings from their labor, against extortion and organized violence, and, after these things, in securing health for themselves and their families through a proper provision of sunshine and fresh air.

MR. GEORGE WHARTON JAMES is so well known to every one who is interested in the Indians of the Southwest that his book¹ hardly needs praise. It is a most interesting account of a land where people live in refinement, education and all luxuries of twentieth-century civilization side by side with people whose dress, modes of living, habits of eating and sleeping, styles of food and cookery are similar to those of the subjects of Boadicea and Caractacus; a land where we find people strange, peculiar and interesting; whose mythology is more fascinating than that of ancient Greece, and may be equally ancient; whose ceremonies are more elaborate than those of a devout Catholic, more complex than those of a Hindoo Pantheist, more weird than those of a howling Dervish of Turkestan; a land where atmospheric colorings are so perfect, and so divinely artistic in their applications that weary and desolate deserts are made dreams of glory and supremest beauty, and harsh rugged mountains are sublimated into transcending pictures of tender tints and ever-changing but always harmonious combinations of color. Of all this does Mr. James write most entertainingly, illustrating the book with a quantity of admirably chosen photographs, and including descriptions of the life, customs and dwellings of the Hopi, the Navajos, the Wallapais and the Havasupais Indians. The book is full of interest from start to finish.

MONUMENTAL TOMB FOR POPE LEO XIII. — The design of the sculptor Luchetti for a monumental tomb for the late Pope Leo XIII inside the Church of St. John Lateran has been approved. It represents Pope Leo, wearing the triple crown, sitting on a throne, supported by the world, each hand extended in the act of blessing, the whole symbolizing one fold and one church. The cost of the monument is estimated at \$32,000. — *Exchange*.

¹ "The Indians of the Painted Desert Region." By George Wharton James. Boston: Little, Brown, & Company. 1903.

ILLUSTRATIONS

[Contributors of drawings are requested to send also plans and a full and adequate description of the buildings, including a statement of cost.]

COMPETITIVE DESIGN FOR THE CATHEDRAL CHURCH OF ST. JOHN IN THE WILDERNESS, DENVER, COL. MESSRS. HENRY M. CONGDON & SON, ARCHITECTS, NEW YORK, N. Y.

THE plan is the usual cathedral scheme of a cross church, its proportions being determined by the size of the lot, 250 feet square.

It consists of choir, with aisles and eastern ambulatory; nave, with aisles for passage only; transepts, from which the Lady Chapel and Chantry Chapel open; transept tower over the crossing; bell towers flanking the west end of nave and aisles; and the usual dependent buildings, as vestries, chapter-house and cloister, which differentiate a cathedral from a parish church.

On the lot to the south, which should be acquired, would be placed the Dean's and Bishop's residences and possibly a clergy-house, and also the large Diocesan House containing Convention Hall, offices for the Diocesan authorities, and guild-rooms and Sunday-school accommodations for the cathedral parish.

All these buildings would be connected with one another, and with the Cathedral by the Great Cloister.

These buildings are not shown with the present design.

The accompanying illustrations were, with the exception of the plan, originally in outline only as per the terms of the competition, but since their return have been slightly rendered to give better effect.

DIMENSIONS (INTERIOR).

Total inside length.....	227 feet.
Width across transepts.....	152 feet.
Width of nave between columns.....	45 feet.
Width of choir between columns.....	40 feet.
Width of transepts between columns.....	45 feet.
Width of aisles.....	8 feet.
Width of choir aisles.....	10 feet 6 inches.
Depth of choir from rood-screen to reredos.....	70 feet.
Height of clerestory walls above floor.....	64 feet.
Height of aisle walls above floor.....	27 feet.
Height to spring of great arches at crossing.....	42 feet.
Height to ridge of roof.....	88 feet.

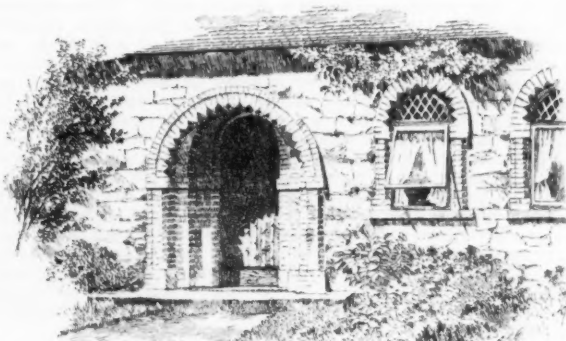
The Lady Chapel opens from the north transept, and is reached from the street by way of transept porch.

Height of walls.....	27 feet.
Length of walls.....	66 feet.
Width of walls.....	29 feet.

This design was placed fourth in order by the jury and their advisor.

WEST FRONT OF THE SAME.

OLD SCHOOLHOUSE, PELHAM MANOR, N. Y. SKETCHED BY MR. E. ELTON DEANE.



Entrance to Old School, Pelham Manor, N. Y.

OLD CHURCH, PELHAM MANOR, N. Y. SKETCHED BY MR. E. ELTON DEANE.

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PLANS AND SECTION OF THE SAME.

HOUSE FOR O. H. STORY, ESQ., CHESTNUT HILL, MASS. MESSRS. CHAPMAN & FRAZER, ARCHITECTS, BOSTON, MASS.



WHEN A MONUMENT IS NOT A MONUMENT.—Rome is in the absurd condition of possessing a monument which the municipal authorities declare non-existent. Long, long ago a monument was raised to the philosopher Spedalieri, but never unveiled, as there was a difference of opinion about the advisability of having the monument at all. So, through sun and rain, wind and hail, the poor statue stood, swathed in its dingy drapery, an eyesore and object of derision to all. Finally, in the dead of night, to put an end to the scandal and disputes, the police stripped off the old and rotten cloth, and in the morning the Eternal City found herself enriched by the ownership of a new work of art. The citizens laughed and crowded to see what had become a curiosity, but the city fathers were furious, said the police had overstepped their powers, and absolutely refused to acknowledge the existence of the monument. Florence has had a similar experience. A tablet to Gustavo Modena, in his day a celebrated actor and still more celebrated patriot, had been attached to the house in which he lived. But the authorities refused to allow it to be unveiled for fear of provoking an anti-Austrian demonstration, just in these days when public feeling is in a state of effervescence. Day after day passed, until the students made a sudden dash, and, stripping off the cloth, added another interest to the City of Lilies. The municipality here also was highly offended, and informed the citizens that the tablet does not exist. All this irresistibly raises the question, "When is a monument not a monument?" When it is in Italy!—*Pall Mall Gazette*.

THE CROSS ON THE PANTHEON, PARIS.—It seems incredible that the cross surmounting the Panthéon in Paris could weigh six English tons. The Minister of Fine Arts stated in the Chamber that it weighed 6,000 kilos, which, reduced to English quantities, would be nearly six tons. Probably the Minister includes in the weight a part of the lantern. What was said about the cost of a scaffolding to allow workmen to remove the cross being 20,000 francs is less questionable. It is strange that opposition to the cross should be so persistent when it is known to all that without the symbol the history of the temple would not be suggested. When Louis XV laid the foundation-stone in 1764 the building was intended to be a church in place of another dedicated to Saint Geneviève. In the early days of the Revolution it was declared to be a Panthéon which was to perpetuate the memory of illustrious men. Hence the inscription, "Aux Grands Hommes la Patrie Reconnaissante." In 1822 the building reverted to its original use, and another inscription was engraved. From 1830 to 1851 it was treated as a secular building, and afterwards as a church. When the decoration of the walls was undertaken the ecclesiastical history of France was to be illustrated, and the majority of the works have that object. Those desirous of the removal of the symbol should be consistent. A great many buildings in Paris are permitted to recall the Louis, Henris and Napoleons, and *fleurs-de-lis*, bees, etc., are tolerated. No work of the demolisher can prevent citizens from knowing that Paris has had a tumultuous history, and it seems no more than childishness to desire the substitution of a Gallic cock on the summit of an edifice which was so long recognized popularly and officially as a church.—*The Architect*.

STRENGTH OF PERFORATED BRICK.—Perforated bricks, with the holes crossways, and not, as is usual, through their length, are ordered, and the question is whether these will show sufficient crushing resistance to admit of their being used in place of solid brick. Cross-perforated bricks are produced on the auger machine, and they possess the great advantage of drying quicker and more equally than solid brick, but, besides this, they are burned in less time and more equally and thoroughly than solid brick. We have, however, to take care that the perforations, usually round holes, are not too large, and that they are properly placed or distributed in the brick, so that no strain is caused in drying and burning. In resistance to crushing, the cross-perforated brick is superior to the solid brick. The reason for this is that the interior of the perforated brick is dried and burned the same as the outside. The shrinkage throughout the mass is equal, and the centre of the brick is burned better than a solid brick is. A larger quantity of mortar is required to lay perforated bricks, and if there is no objection to that, then the consumer will certainly have no fault to find with them. As a set-off to this, it should be remembered that, in consequence of their lighter weight, the carriage of perforated is cheaper than solid brick. The perforated brick is also much easier to handle.—*Thonindustrie Zeitung*.

A NEW EXPLOSIVE.—The latest in explosives, according to *The Metal Industry*, is powdered aluminium, mixed with nitrate of ammonia and put upon the market under the name of "ammonal." This explosive is said to be one of the surest and safest known, as it cannot be exploded by friction or blow, while otherwise containing all requisites of an explosive. The fact that aluminium is not affected by nitric acid gives the important property to ammonal of not being subject to disintegration. As it is not affected by frost, accidents which so often occur when thawing out frozen dynamite are not to be feared. The explosion is caused by an ordinary cap. Another important property claimed for ammonal is that it is not affected by moisture.—*Consular Reports*.

ANOTHER PROCESS FOR PREPARING PEAT FUEL.—A firm in Kent, Eng., has devised an electrical process for converting ordinary peat into firm, smokeless steam coal at a moderate cost. The peat is cut and excavated by machinery, loaded into dumping cars, which convey

it to the plant, where it is packed into rotary iron cylinders. The cylinders being rotated at high velocity, the centrifugal pressure, aided by an interior beating device, expels nearly all of the eighty per cent of water in the material. Electrodes connected with a dynamo are then inserted in the cylinders in such a manner that the mass of dried peat completes the electrodes. The resistance offered by the peat, like the filament of an incandescent lamp, generates heat which carbonizes the material, producing a mass of disintegrated black globules. From the cylinders the carbonized material passes to machines, which knead it into a puttylike mass, which is then pressed into briquettes or left to dry and harden in masses, which are broken into lumps, screened and graded like ordinary coal.—*Exchange*.

COST OF GAS AND ELECTRICITY.—In a report prepared by Mr. J. W. Bradley for the Council of the city of Westminster, Eng., comparative costs are given for street-lighting by gas and electricity. This city is lighted by electric arcs and by the gas burned in ordinary flat-flame burners, in single burners with incandescent mantles, in lamps having four burners grouped together with incandescent mantles, and in Sugg high-pressure lamps with incandescent mantles. All the lamps burn about 3,900 hours per annum. The candle-power of the electric arcs is about 570. For flat-flame gas-burners, and for those with single incandescent mantles, the candle-power is about fifty. For the lamps with four-grouped burners, the candle-power is 113, and for the Sugg high-pressure lamps it is 481. The total cost per electric arc per year varies from \$110 to \$170, according to the location of the lamps. The average total cost per candle-power per year for these lamps varies from seventeen to thirty cents. For the ordinary flat-flame gas-burners of from forty-eight to fifty-eight candle-power, the total cost per lamp per annum varies from \$30 to \$47.70. The average cost per candle-power per year varies from fifty cents for the fifty-eight candle-power to ninety-five cents for the forty-eight candle-power burners. For the single-burner incandescent mantle the cost varies from \$14.45 to \$17.50. The average total cost per candle-power per year is about thirty-seven cents. For the lamps with four incandescent mantles the total cost per annum is \$66.60. The average cost per candle-power per year is about sixty-two cents. For the Sugg high-pressure lamps, the total cost per year is \$91.25, and the average cost per candle-power per year is twenty-one cents.—*Boston Transcript*.

POTOMAC RIVER MEMORIAL BRIDGE.—The Virginia delegation in Congress, backed by public sentiment in that State and in the District of Columbia, is again trying to procure the passage of a bill appropriating \$5,000,000 for the construction of a handsome memorial bridge across the Potomac River from some point near the Washington Monument to Arlington Cemetery. This project was warmly indorsed by President McKinley in his two last messages to Congress, and has the approval of the Grand Army of the Republic, which, during its annual encampment in Washington, in 1902, accepted a corner-stone for the proposed bridge, made by the local Stone-cutters' Union. The chairman of the Board of Commissioners of the District of Columbia, speaking of the proposed bridge, calls it "a memorial to American freedom." The Potomac River was the dividing-line between the North and the South during the Civil War, and a memorial such as is proposed by the bill of Senator Martin of Virginia would be a tie binding the two sections more closely together. Leading, as the bridge would, to the most famous of all national cemeteries, where thousands of Union soldiers sleep beside men who wore the Confederate gray, it has the support of public sentiment both North and South. The people of Washington take a direct interest in the bridge project because of the difficulties which now attend a trip to Arlington. By the most direct route open to them at present the journey is some miles longer than necessary. Those who oppose the bill see in it a scheme of real estate speculators to boom certain lands on the Virginia side of the river which will increase in value with the building of the bridge. There are miles of desirable residence property lining the Virginia side of the Potomac, at present unmarketable owing to the difficulty of access. The proposed bridge would open to Washington some suburbs as beautiful as surround any city in the world.—*Exchange*.

DECORATIONS FOR THE NEW MINNESOTA CAPITOL.—Mural decorations for the new Capitol of the State of Minnesota are to be painted by John La Farge, Edward Simmons, E. H. Blashfield and Elmer E. Garnsey. Mr. Garnsey has entire charge of the interior decorations for this building, the architect of which is Cass Gilbert. The decorations in the Supreme Court chamber will be done by Mr. La Farge. His four spandrel subjects will be "The Divine and Moral Law," "The Relations of the Moral Law to the State," "The Recording of Precedent in Law" and "The Adjustment of Conflicting Interests and Privileges under Law." These are well under way already. Mr. Garnsey will provide the entire decoration for the House of Representatives. The method of managing the decorations is in accordance with the best development of the ideas of mural decoration. It is intended that not only each decoration shall be beautiful, but that there shall be a definite relation between the parts of the work and between that and the beautiful building of which the decoration is to be a vital part. In order to unify and harmonize the entire work, a board of design, including the painters named, Mr. Gilbert, the architect, and Daniel C. French, the sculptor, who is providing a part of the exterior decorations, will pass upon all the designs, insuring the conformity of each individual to the best general results. This scheme is one evolved and approved by the Society of Mural Painters, of which all the artists are members.—*Boston Transcript*.

GERMAN FIREMEN AND THE OXYGEN APPARATUS.—Every fire-station in Berlin has now been equipped with an oxygen apparatus to revive persons overcome by smoke or heat.—*N. Y. Evening Post*.



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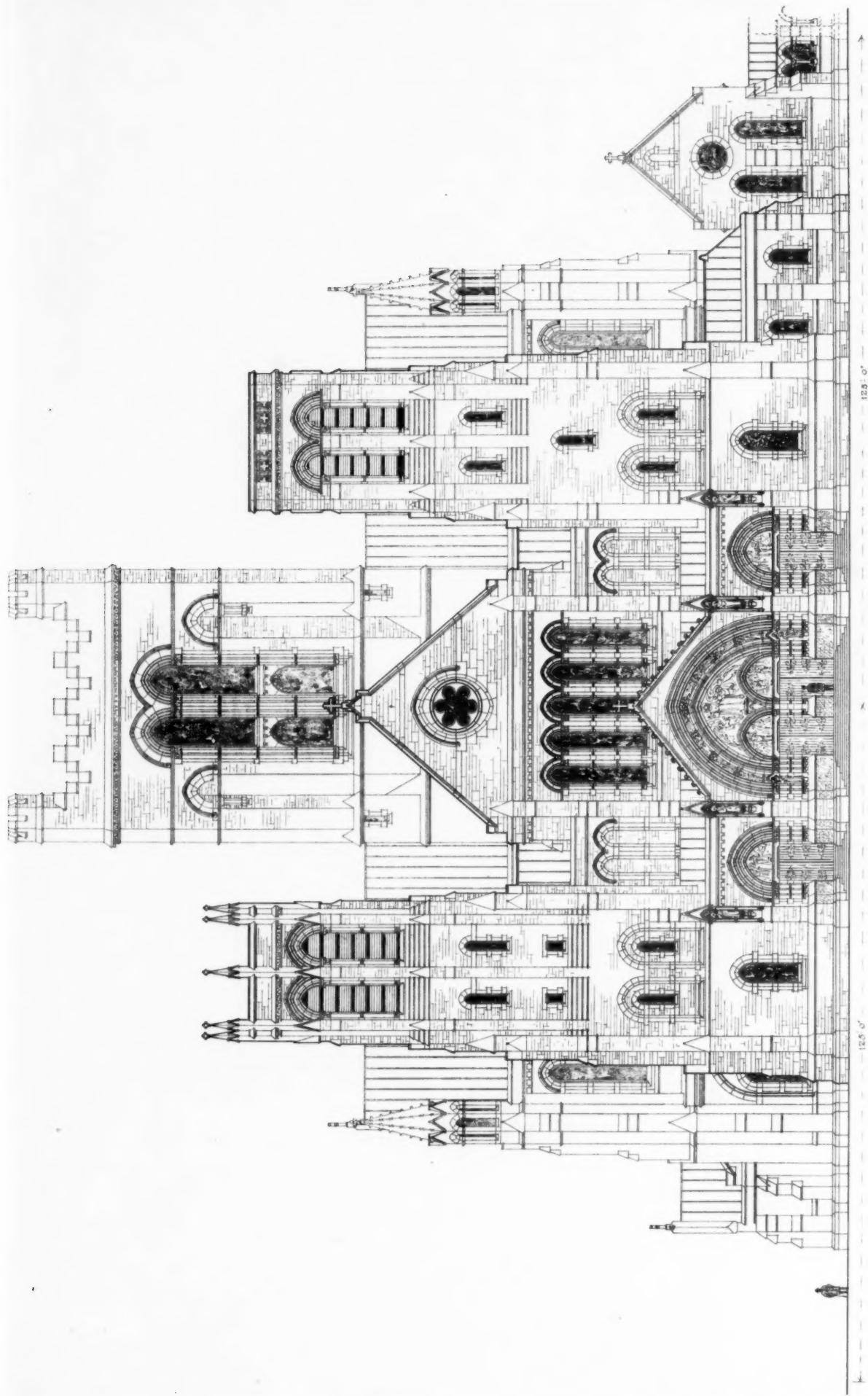


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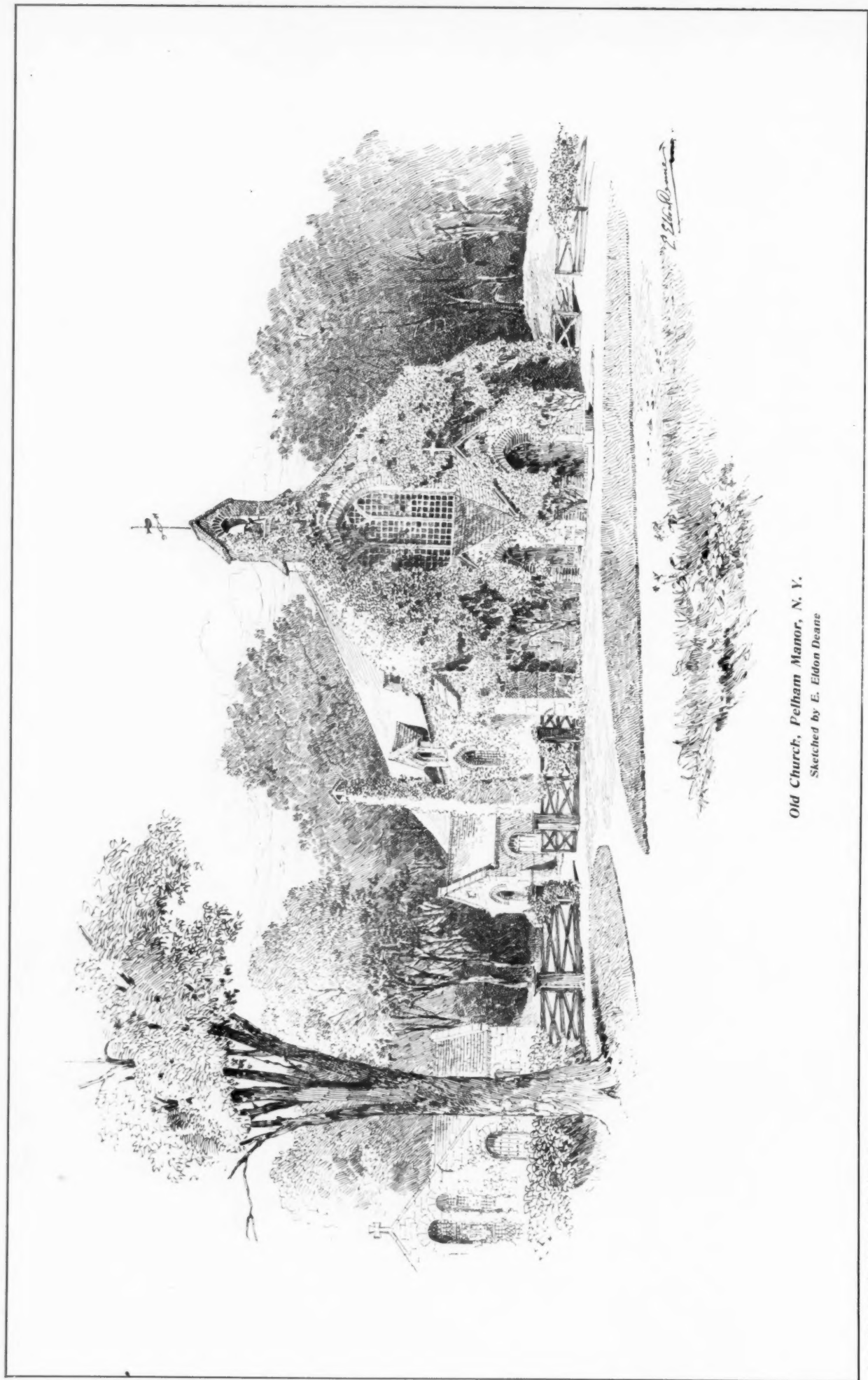
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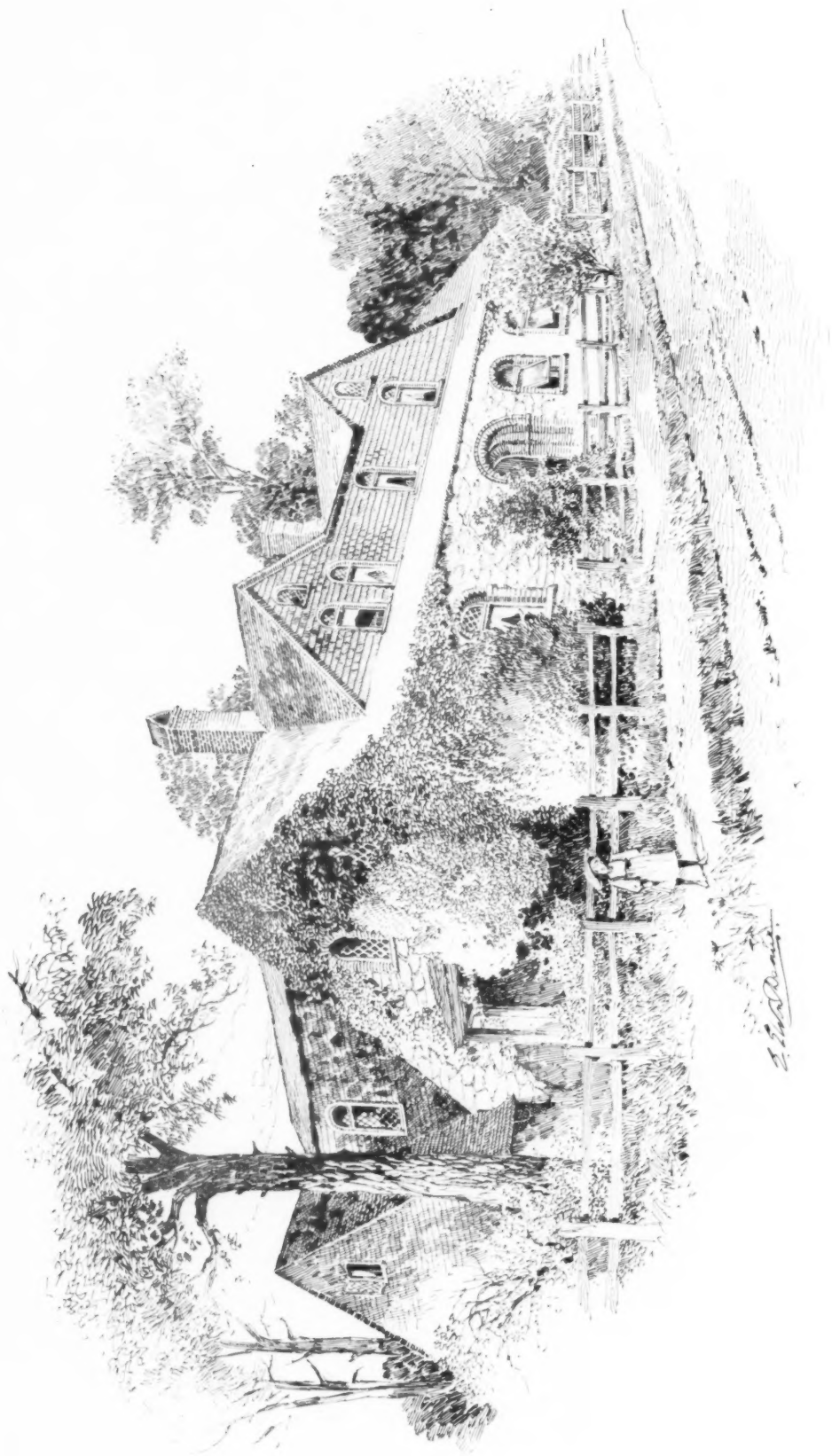
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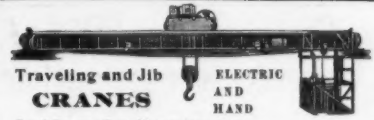
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CODE OF PRACTICE FOR SUB-ESTIMATING AND SUB-CONTRACTING

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ARTICLE I.

Obligation of Principal Contractor to Sub-Contractor.

A principal contractor is under obligation to treat upon an equal basis all estimates which he "receives" prior to putting in his own bid. Estimates must be considered as "received" when they come into a principal contractor's possession, either by his direct solicitation or by being accepted by him. The opening of a bid, knowing it to be such, constitutes receipt of the same.

A principal contractor is under no obligation to use a bid which he has not solicited, accepted, or received, but if he does not wish to use the estimate of a sub-bidder he should decline it, if proffered personally, or should return it unopened if sent to him by mail or otherwise. The retention of a bid should be construed as a receipt of the same.

A principal contractor, when making up his estimate, is not entitled to receive bids from sub-contractors if he is at the same time making himself their competitor by figuring their portion of the contemplated work. It is legitimate for a principal contractor to figure all portions of work, depending upon no one for what are usually known as sub-estimates, but it is not legitimate for him to receive bids from others for sub-work if he is himself figuring those portions independently.

ARTICLE II.

Award of Sub-Contracts.

The principal contractor having been awarded a general contract should immediately award the sub-contracts to the lowest bidder in each branch.

ARTICLE III.

Penalty for not Awarding Contract to Lowest Sub-Bidder.

A principal contractor failing to award a sub-contract to the lowest sub-bidder to whom he is under obligation as previously provided should be liable to pay damages to the said lowest bidder, in amount not less than ten per cent of the amount of the estimate.

Payment of such damages will not relieve the principal contractor from liability to discipline under provisions of Article X of the By-Laws of this Association.

ARTICLE V.

Payments to Sub-Contractors.

Unless the contracts made with sub-contractors otherwise provide, payments during the progress of the work should be made by the principal contractor to the sub-contractors upon the same basis of payment, in relation to amount of work performed, as is prescribed in the contract made by the principal contractor with the owner.

Final payment to a sub-contractor should be considered as due at the expiration of thirty days after the completion of his work and its approval by the architect or owner, unless otherwise provided by the sub-contract or agreement.

ARTICLE VII.

Obligation of Sub-Contractor to Principal Contractor.

Should a sub-contractor refuse to contract at the amount of the estimate he has given to a principal contractor who has used the said estimate in good faith, he then should be liable to the said principal contractor for damages in amount not less than the difference between the amount of the estimate which was submitted by him and the amount at which the principal contractor may be obliged to contract the work.

Payment of such damages will not relieve the sub-contractor from liability to discipline under provisions of Article X of the By-Laws of this Association.

ARTICLE X.

Bids to Architects or Owners.

When bids for separate departments of work on a building are solicited by the architect or the owner, they should be submitted with the understanding that they are direct estimates, for which direct contracts are to be made by the owner with the lowest bidder, and no other disposition of such bids should be permitted without consent of the bidder submitting the same.

Sub-bids should be given only to the principal contractors who are estimating the work in question, and should not be left with architects or owners for the inspection and information of principal contractors. Sub-contractors must understand that bids thus left with architects or owners are in great danger of losing their confidential character, and that if they so leave them they cannot claim protection or redress under the first article of this Code.

SUGGESTIONS.

Members of this Association having sub-contracts to let, or material to buy, should, as far as may be consistent with business principles, deal only with members of the Association, or at all events give their fellow-members an opportunity to compete, and then give them the preference, other things being equal.

All bidders should take cognizance of the danger they may be subjected to through the practice, so prevalent in some architects' offices, of making change in plans or specifications, or in both, during the progress of estimating. Correction of this pernicious practice can only be obtained through refusal by contractors to estimate under such conditions.

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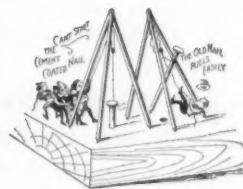
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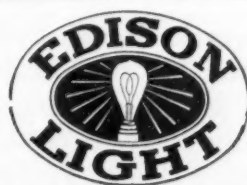
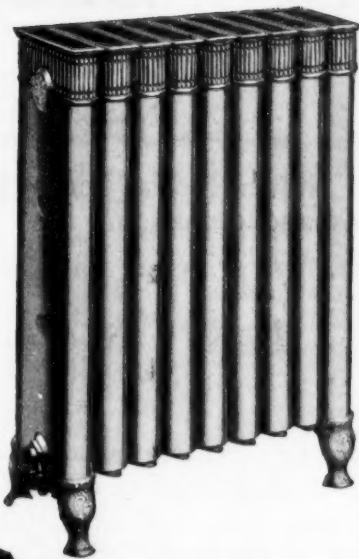
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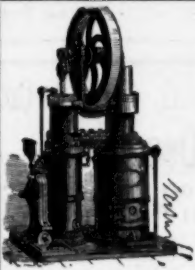
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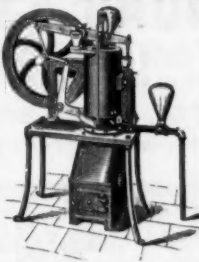
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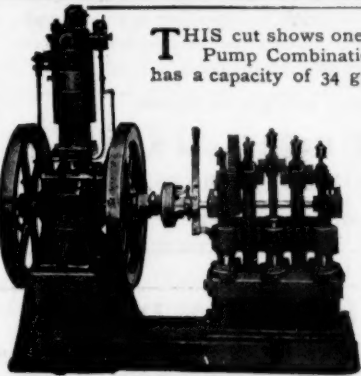
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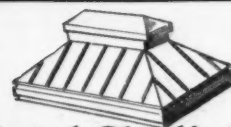
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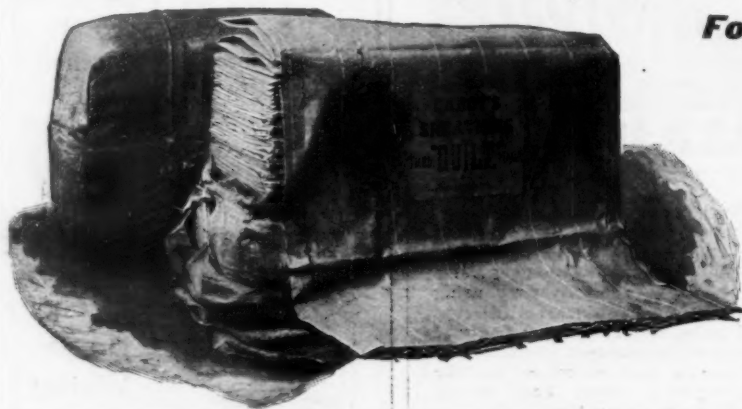
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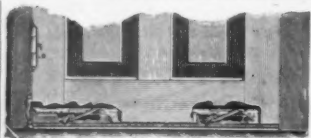
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THE partnership heretofore existing under the firm name of **Field & Slocumb**, architects, located at 48 Custom-house St., Providence, R. I., has been mutually dissolved. Each member of the old firm respectively announces that he will, individually, continue the practice of architecture at the present location, 48 Custom-house St., Providence, R. I., Rooms 32 and 33. **Fred E. Field**, **Harry A. Slocumb**. 1463

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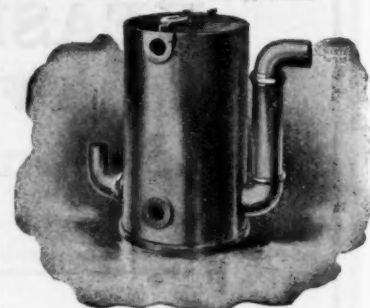
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BUILDING INTELLIGENCE.

(Reported for the American Architect and Building News.)

[Although a large portion of the building intelligence is provided by their regular correspondents, the editors greatly desire to receive voluntary information, especially from the smaller and outlying towns.]

ADVANCE RUMORS.

Altoona, Pa.—Plans have been drawn by A. E. Westover, 1033 Chestnut St., Philadelphia, for a four-story opera-house to be erected in this city by I. C. Mishler. Cost, \$100,000.

Atlanta, Ga.—The Building Committee of the First Baptist Church have selected the plans of G. L. Norman for the new edifice to be erected at corner Peachtree and Cain Sts. The building will be Italian Romanesque in architecture and will cost between \$65,000 and \$75,000 exclusive of the site.

Augusta, Me.—The Cushnoc Paper Co. has renewed its lease with the Edwards Mfg. Co., of this city, for 20 years, with the right to use the surplus water for power purposes. In the spring the Cushnoc Co. will build a brick mill as an addition to the present plant.

Bedford, Ind.—Ground has been secured by the Treasury Department for a site for a new \$50,000 post-office building here.

Boonville, Ind.—The contract for the new Warwick County Court-house has been let. The contractors will begin work March 1. The structure will be built of St. Louis buff pressed brick, with foundation and trimmings of Bedford limestone. The corridors will have floor of encaustic tile. The cost is \$63,900. Harris & Shopbell, of Evansville, are the architects.

Boston, Mass.—In the vicinity of the new Board of Trade Building, corner of Doane, Central and Broad Sts., property has recently passed into the hands of the Suffolk real estate trust, who will erect an eight-story office-building.

An eleven-story office-building is to be erected on the corner of Broad and Water Sts. by Harvard College for the London employers' liability association. Shepley, Rutan & Coolidge, architects.

The Park St. Church Committee have secured a site for a new church building in the Back Bay, and will probably build on the new site as soon as the old property is sold. This will mean a new office-building corner Tremont and Park Sts.

On the corner of Milk and Devonshire Sts., on the western side of the post-office, the Rialto Building has passed into the hands of the New England Trust Company. An architect is about to be selected for a new office-building and the old building will be torn down.

On the site of the Simmons Building, corner Devonshire, Water and Congress Sts., is to be erected an eleven-story brick and stone office-building by the Simmons Building Trust, sketches for which have already been prepared by Architects Winslow & Bigelow.

Brooklyn, N. Y.—The contract for erecting a pavilion at Kingston Ave. Hospital has been awarded to Jas. McArthur, 79 Madison St., for \$87,367.

Plans have been filed for a one-story brick synagogue to be erected at Thattford and Belmont Aves.

BUILDING INTELLIGENCE.

(Advance Rumors Continued.)

for the Congregation Ohef Scholem. Cost, \$25,000. W. Danmar, architect, 4 Belmont Ave.

Buffalo, N. Y.—The Park Theatre, to be erected on the site of the old Court St. Theatre, will cost, according to plans, \$150,000. The architects are Leon H. Lenpert & Son, of Rochester. Some of the contracts have been let and the work is partially under way.

Burlington, Vt.—A charter for a corporation to build a new opera-house will be secured soon. It is planned to have the charter provide for a capitalization of \$60,000, with the privilege of increasing it to \$100,000.

Cambridge, Mass.—The Masonic Fraternity of Cambridge contemplates erecting a building for its own use.

Canandaigua, N. Y.—The sum of \$15,000 has been pledged for the erection of a Y. M. C. A. building here.

The village is to expend \$80,000 for a new modern school-building.

Chattanooga, Tenn.—The plan for the new \$100,000 court-house for Maury County, as submitted by J. E. K. Carpenter, of New York, has been accepted by the court-house committee.

Chicago, Ill.—F. B. Abbott has completed plans for improvements for the Elgin National Watch Co. costing \$1,000,000. The buildings include a five-story addition, of fireproof construction, to the present factory and power plant, and a new factory and office structure, four and five stories, 575 feet long, and from 30 to 150 feet wide, which will be distinguished by a huge clock tower, 175 feet high.

Plans have been prepared by F. B. Abbott for an eight-story office-building, 80 feet square, on the site of the old Ogden house at the northwest corner of Franklin and Washington Sts. It is designed for the use of the wholesale drug trade, and will cost about \$150,000.

On its property at the corner of Jackson Boulevard and Franklin St., the Chicago and Northwestern Railroad intends to build a fine office-building for the accommodation of its general offices. The site is now occupied by a mercantile structure built 15 years ago. The present tenants are to vacate at once, and the building will be demolished. Plans for the new building have been prepared by Architects Frost & Granger. They provide for a fourteen-story structure covering the entire area, with foundations sufficiently heavy for eighteen stories. It will in all probability be the finest railroad office-building in the city. It will cost \$1,200,000.

The National Provision Co. will erect a three-story warehouse, 80' x 125', on Butler St., near 39th St. Cost, \$25,000.

St. Simon's Episcopal congregation contemplates the erection of a \$75,000 structure at Sheridan Park. The Roman Catholic parish Our Lady of Lourdes, will build a \$70,000 church at the corner of N. Ashland and Leland Aves. All Saints' congregation of Ravenswood has made arrangements for a \$40,000 church on Hermitage and Wilson Aves. The Rose-land Presbyterian congregation has purchased a site and will build a \$12,000 church. The Millard Ave. Presbyterian congregation will build a \$12,000 addition to its present church. St. Ita's Roman

(Continued on page xli.)

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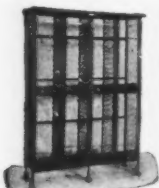
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BUILDING INTELLIGENCE.

(Advance Rumors Continued.)

Catholic congregation will build a three-story parish school in connection with its church at Magnolia Ave. and Catalpa Pl. to cost \$20,000.

It is reported that E. F. Keobler & Co. have negotiated a lease for Podrasnik & Klapperich to Natalby Bros. of the four-story building at 80-82 Randolph St., 33' x 170', for a term of seven years from January 1, at a total rental of \$70,000. The building is to be remodelled at a cost of \$15,000.

The Tilt Shoe Co. has purchased from various owners six lots, aggregating 100' x 144', with frame improvements, at the northwest corner of Huron and Kingsbury Sts., for \$24,950. The land adjoins the factory of the company on the west and is to be used for an extension of the plant. The new building to be erected will be six stories high and will cost \$60,000.

Cleveland, O. — J. H. Wade has given to the Cleveland School of Art a plot of ground just east of Wade Park. It is 225 feet front by 245 feet long. The trustees of the school will erect a \$100,000 building.

Colorado Springs, Col. — Calvin Kiessling, of Boston, has drawn plans for a \$60,000 Carnegie Library.

Columbus, O. — At a meeting of the Board of Trustees of the State University, D. W. McGrath was awarded the contract for the building of the new Physics Building at a bid of \$69,773. The new building is to be located between the Biological building and Orton Hall. It is to be three stories in height and faced with brick. It will be ready for occupancy by September 20, 1901, according to the terms of the contract.

Danbury, Conn. — A Boston firm is drawing the plans for the new Normal School. The appropriation for this building is \$100,000.

Detroit, Mich. — Robert E. Bolger, commissioner of parks, is having plans prepared for a casino building to be erected on Belle Isle during the coming season. \$100,000 has been appropriated for this purpose, although the commissioner is trying to have the amount increased to \$150,000.

The University of Michigan is going into the real estate business in Detroit, and will erect a large flat building on its lot on Woodward Ave., to cost about \$250,000.

Gladstone, N. J. — John H. Cose, of Plainfield, has

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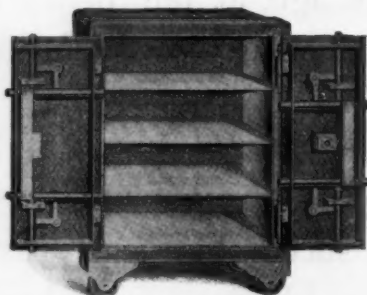
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BUILDING INTELLIGENCE.

(Advance Rumors Continued.)

secured the contract for the largest job of slate roofing ever given out in New Jersey. The work is on a barn being built on the John I. Blair estate. The structure is to cost \$50,000 and a large part of it is represented by the slating.

Gloversville, N. Y. — The Carnegie Library at this place is to be a very handsome structure. It is to cost about \$40,000, and work will begin in the early summer.

Grand Rapids, Mich. — Improvements amounting to \$100,000 are to be made the coming season to the Cody Hotel building. Work will be started in May.

Granite City, Ill. — The Lutheran Hospital Association is to erect a new hospital at 1 and 21st Sts. It will have a frontage of 105 feet, with a depth in the central part of 63 feet, and will accommodate 50 patients. The basement will be constructed of stone and the main portion of the building of brick, with Carthage stone trimmings. The roof will be of slate and red tile. The hospital will be three stories in height.

Harrisburg, Pa. — Plans for two new buildings for the State Lunatic Hospital, prepared by Addison Hutton, architect, have been placed on the boards by builders for estimates which will be opened January 12, 1901. Each will be two stories high with a basement. One will measure 148' 6" x 155' 6". Each building will be of brick and stone, fire-proof construction. The interior finish will be in red oak. There is an appropriation of \$150,000 for construction.

Havana, Cuba. — It is reported that J. A. Wood, 191 Broadway, N. Y. City, is architect for a modern hotel to be erected here. It is to be constructed of stone and steel.

Joliet, Ill. — W. Carby Zimmerman, 21 Van Buren St., Chicago, has prepared plans for a three-story department store to be erected here, at a cost of \$30,000.

Kankakee, Ill. — The St. Viator College will erect a \$25,000 Alumni Hall.

Los Angeles, Cal. — A new seven-story brick hotel will be erected on the northwest corner of Hill and 2d Sts. The estimated cost, including the site, is \$185,000. There will be 125 guest rooms, 50 bathrooms, and ample administrative rooms and public offices.

On Grand Ave., between 4th and 5th Sts., Theodore F. Curtis is planning to erect a five-story hotel. The lot, 165' x 213', is on the west side of 4th St., and commands a view of wide extent. There will be 350 guest-rooms.

On the northwest corner of 1st and Spring Sts. is to be erected a nine-story office-building. It will be a most pretentious structure.

Louisville, Ga. — When the new court-house of Jefferson County is completed, it will be one of the best equipped temples of justice in the State. The work will be finished in a year and \$40,000 will be expended in putting the new building in shape.

Louisville, Ky. — The Masonic Temple building, recently destroyed by fire, will be replaced by a modern skyscraper. Definite plans have not been completed. Dodd & Cobb, the architects, are now preparing designs which will be submitted to the owners. The building will be an office-building, extending for one block, and will cost in the neighborhood of a quarter of a million of dollars. Work will begin as soon as the ruins of the old building have been removed, and will be pushed rapidly.

BUILDING INTELLIGENCE.

(Advance Rumors Continued.)

The Realty Improvement & Securities Co. will erect a six-story flat. Cost, \$150,000.

Madison, Wis. — Supervising Architect Laird, of Philadelphia, recently held a private conference with the Board of Education. It is believed the plan for the new high school, which he considers favorably, will be adopted. The cost of the new structure will be \$150,000.

Milwaukee, Wis. — S. A. Tolman, of the John A. Tolman Co., of Chicago, will erect a seven-story mercantile building here, costing \$100,000.

Minneapolis, Minn. — There are now in preparation plans for the raising of from \$50,000 to \$60,000 with which to build a large, modern boys' department building on the lot now owned by the Y. M. C. A. This will be modeled after those built in other cities and will be a substantial beginning of a work which it is proposed shall spread until it has branches in every quarter of the city.

Newark, N. J. — Plans have been filed for the new \$60,000 building of the Eye and Ear Infirmary, which will be erected on Central Ave. The drawings were made by Architect R. W. Gibson, of New York, and provide for a four-story brick and stone fireproof structure. It will have a frontage of 70 feet and will be 59 feet in depth. The front will be faced with gray pressed brick, with Indiana limestone trimmings. The foundation walls will be of bluestone. The side and rear walls will be constructed of selected common brick.

Estimates are being received by Architect Philip Ward for a two and a half story frame double residence, to be erected at Forest Hill by the Urban and Suburban Realty Co. The building will contain all improvements. The cost will be about \$6,500.

Estimates will be received early next month for the erection of the new passenger station of the Lackawanna at Roseville Ave. The buildings will be two stories high and will measure 40' x 50'. The estimated cost is \$22,000.

Plans are in course of preparation by W. K. Schoenig & Son for a two-and-a-half-story frame residence to be erected on Lyons Ave. A frame stable will be built in the rear. J. Goeller will be the owner.

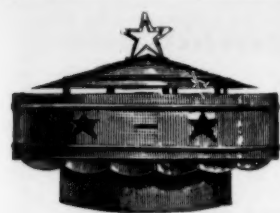
New Bedford, Mass. — The bids for the erection of the new high school have been opened by Mayor Ashley in the presence of the special committee which has supervised the drawing of the plans, and the lowest proposal was found to be that of John B. Sullivan & Son of this city, who offer to do the work for \$509,900.

New Haven, Conn. — The work of the erection of the new car barns of the Fair Haven & Westville Railroad in Filmore St., has been started by the Berlin Bridge Co. The work will be pushed as rapidly as possible, and, although no time limit is stated in the contract, it is expected it will be completed in about four months. The contract was awarded for \$85,000, and this with the amount paid for the land will make the new barn cost about \$110,000.

New London, Wis. — The erection of a five-story sanitarium, at a cost of about \$85,000, is stated to be under consideration.

New Orleans, La. — Reports state that W. P. Brown will erect a \$2,000,000 hotel on Canal St.

Newport, R. I. — On the Daley property, Washington Sq., the Building Trades Association will erect a \$40,000 building. It will be 60' x 200'.



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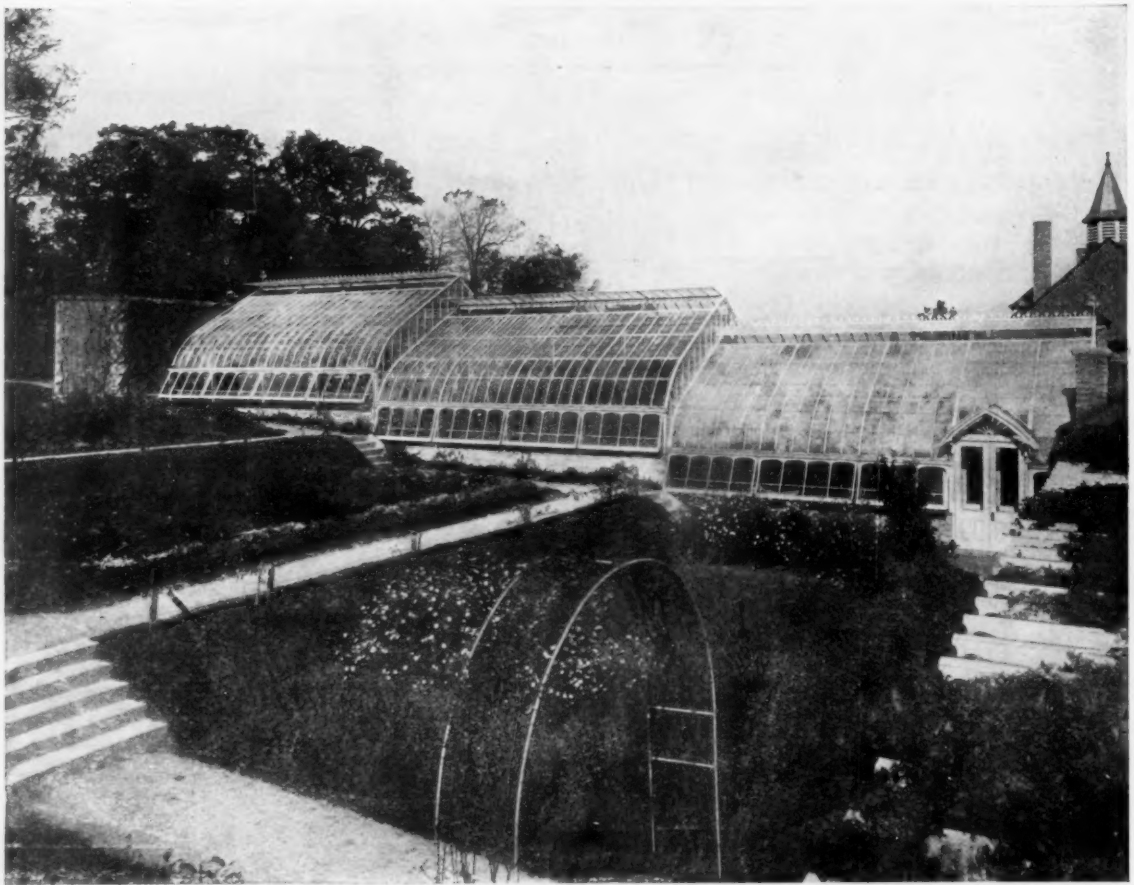
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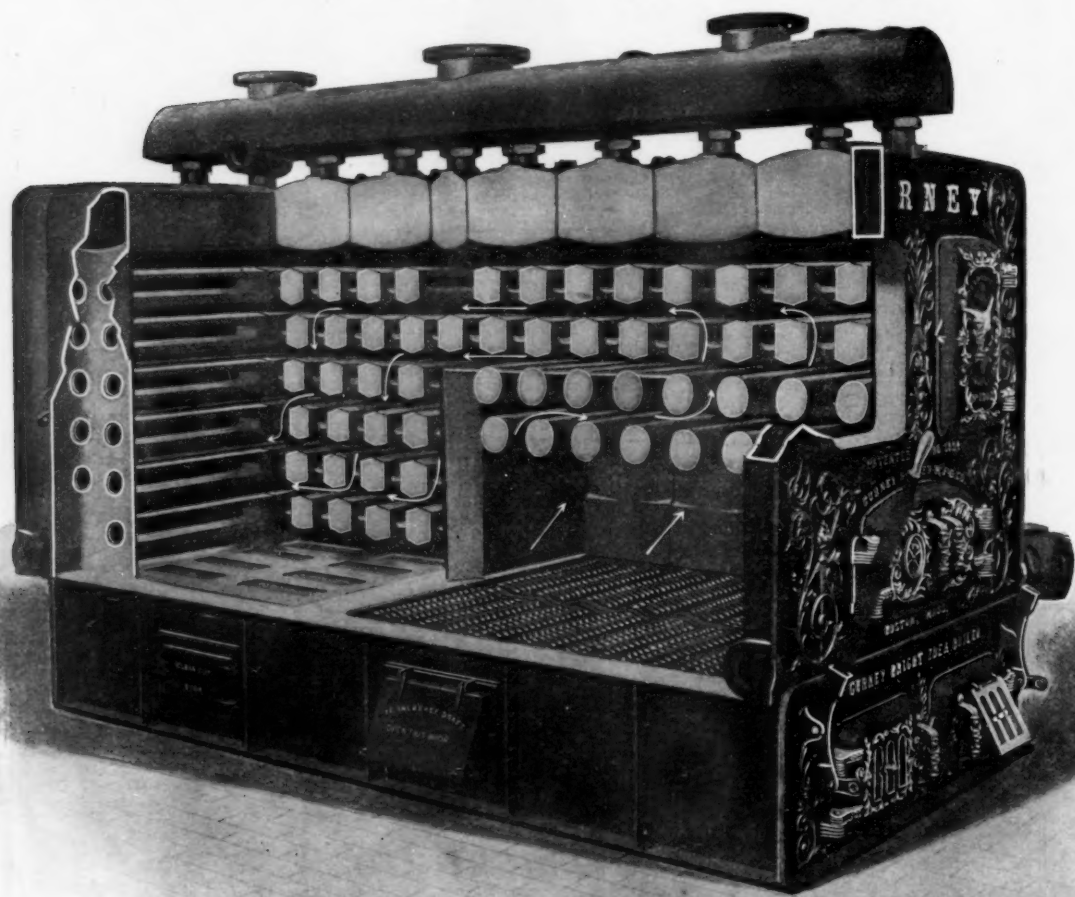


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BOSTON,

BUILDING INTELLIGENCE.

(Advance Rumors Continued.)

Newton, Mass.—The erection of the new Normal Training School building, after plans by J. F. Alexander & Son, of Lafayette, will be started the 1st of April. It will be of pressed brick and stone, 92' x 121' in dimensions, and in the Romanesque style of architecture.

New York, N. Y.—The contract for the new 69th Regiment armory has been awarded to the J. D. Murphy Construction Co., for \$606,000. The armory will be situated on Lexington Ave. and will cover the entire front of the block between 25th and 26th Sts.

The old Trinity Building is to be demolished at once and work on the new structure begun. It is to be twenty stories high, costing in the neighborhood of \$2,000,000. Francis H. Kimball is the architect.

Plans by Architect A. N. Allen have been filed with the Building Superintendent for a new twelve-story fireproof hotel to be erected opposite the site of the proposed new Brunswick Hotel at Nos. 12 to 14 E. 27th St., for C. F. Rogers. The structure will have facades of brick, terra-cotta and limestone. The frontage on 27th St. will be 75 feet and on 28th St. 50 feet. The cost is estimated at \$800,000.

Arrangements have been made for the raising of the Loomis house, at No. 19 W. 34th St., and the erection on the site of a twelve-story business building.

Oklahoma City, Okla.—The dedication and laying of the corner-stone of the Masonic Temple at this place occurred recently. The building is to have a 50-foot front, is 140 feet deep and will be four stories high. The front will be of Joplin pressed brick.

Orange, Mass.—The New Home Sewing Machine Co. is planning to build the largest building next year that it ever built. It will be 60' x 25', four stories, and of brick. Work will begin early in the spring.

Oxford, N. Y.—It is reported that Hamilton College has received another \$100,000 to provide for the erection of two more new buildings.

Philadelphia, Pa.—John W. Rush has taken out a permit to build 36 two-story brick dwellings, each 15' x 25', on 10th and 11th Sts., near Moyamensing Ave., for John C. Gallagher. The operation will cost \$64,800.

Pittsburgh, Pa.—The Century Architectural & Engineering Co., 309 Fourth Ave., is preparing plans for 4 steel, brick and terra-cotta apartment-houses, to be erected at Rural and Euclid Aves., at a total cost of \$120,000.

Pocantico Hills, N. Y.—John D. Rockefeller's new mansion at this place is to cost about \$350,000, and \$650,000 is to be expended on laying out the grounds.

Racine, Ill.—Coats & Burchard have made plans for 2 five-story factories, 105' x 330' each, to be built for the Mitchell & Lewis Carriage Co., of Chicago, at a cost of \$250,000.

Seattle, Wash.—A fourteen-story steel-frame office-building is to be erected at 2d Ave. and Cherry St. Cost, \$600,000.

Sheridan, Wyo.—It is proposed to erect here a \$100,000 court-house. Several sets of plans have been submitted.

Syracuse, N. Y.—The city will appropriate \$55,000 for the Public Library next year, as compared with \$30,000 this year.

Tacoma, Wash.—The Northern Pacific Beneficial Association has acquired land for the site of a \$100,000 railway hospital. The Tacoma hospital will be for the benefit of the Pacific coast employees of the company, and will serve to fill a long-felt want among them. The building will be constructed of either brick or stone and will be modern throughout, containing at least 50 beds.

Wahoo, Neb.—The Board of County Commissioners of Saunders County has awarded the contract to draw plans and specifications for the new \$35,000 court-house to Fisher & Lawrie, architects, Omaha.

Waltham, Mass.—The proposed plans of Blakeslee & Andres, of Boston, for the new city-hall call for a three-story structure of brick and limestone. Cost, \$159,000.

Washington, D. C.—The price fixed for the site of the new office-building for the House of Representatives is \$741,000. The structure will cost between \$3,000,000 and \$4,000,000.

Plans have been submitted to the Board of Directors of the Y. M. C. A. for the new \$300,000 building.

Webster City, Ia.—A building is to be erected in this city to be known as the Kendall Young Memorial Library. Cost, \$34,000.

West Springfield, Mass.—The new round-house in process of erection for the Boston & Albany Railroad Co., will cost \$125,000, and will accommodate 44 locomotives.

BUILDING INTELLIGENCE.

(Advance Rumors Continued.)

Wheeling, W. Va.—The council is considering the proposition to erect a \$75,000 Carnegie Library.

Wilmington, Pa.—Subscriptions for the new Y. M. C. A. building, to cost \$150,000, were opened on December 21st.

Winnetka, Ill.—W. A. Otis, 175 Dearborn St., Chicago, has drawn plans for a school to be erected here, at a cost of \$25,000.

APARTMENT-HOUSES.

Chicago, Ill.—Lake Ave., Nos. 3625-33, 2 three-st'y bk. aparts., 43' x 72'; \$40,000; o., Kristenstein Bros.; a., W. Alloway.

Cottage Grove Ave., Nos. 5333-39, 2 three-st'y store & apart. buildings, 50' x 60'; \$40,000; o., C. A. Carlson; a., A. A. Fuller.

Kenmore Ave., Nos. 1987-89 & 1995-97, 2 three-st'y aparts., 50' x 67'; \$52,000; o., A. J. Pruitt and C. W. Moore; a., A. G. Krieg.

COMPETITIONS.

GOVERNMENT BUILDINGS.

[At Montevideo.]

Prizes are offered for the best sets of plans for new Government Buildings here. For further particulars, apply to Henry S. Northrop, 40 Cherry St., New York City. 1463

PROPOSALS.

ROADS.

[At Fort Mansfield, R. I.]

Sealed proposals will be received at office of Constructing Quartermaster, New London, Conn., until January 15, 1904, for construction of macadamized road between Fort Mansfield and Watch Hill, R. I. Information furnished on application. CONSTRUCTING QUARTERMASTER, 27 Granite St., New London, Conn. 1463

Treasury Department, Office of the Supervising Architect, Washington, D. C., January 5, 1904. Sealed proposals will be received at this office until 3 o'clock P. M. on the 23d day of February, 1904, and then opened, for the construction (except heating apparatus, elevator, electric wiring and conduits) of the U. S. Post-office and Custom-house at Burlington, Vermont, in accordance with the drawings and specification, copies of which may be had at this office, or the office of the Postmaster at Burlington, Vt., at the discretion of the Supervising Architect. JAMES KNOX TAYLOR, Supervising Architect. 1464

PROPOSALS.

ALTERATIONS.

[At Fort Morgan, Ala.]

Sealed proposals will be received until January 20, 1904, for constructing extension to and alterations in guard-house here, excepting steel, wrought and cast iron work. Specifications and plans furnished on application. A. D. RAYMOND, Q. M. 1463

PAVING.

[At Belleville, Ill.]

The Board of Local Improvements of the city of Belleville, Ill., will receive bids for paving with brick and setting stone curbing on January 20, 1904, for W. Main St. and S. Illinois St., also for paving with asphalt and constructing combined granitoid curb and gutter on Race St., 2d St. and 3d St. Plans and specifications can be seen at the office of the City Clerk of Belleville, Ill. FRED J. KERN, President B. L. I. 1463

PUMPING AND STORAGE PLANT.

[At Fort McKinley, Me.]

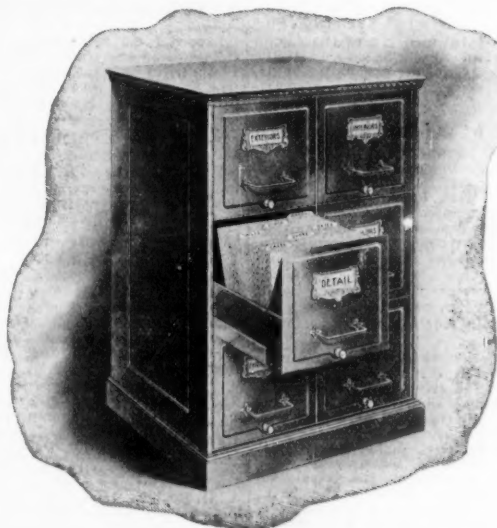
Office of the Constructing Quartermaster, U. S. A., 185 Middle St., Portland, Me. Sealed proposals will be received at this office until January 22, 1904, for the construction of a pumping and storage plant at Fort McKinley, Me. Information, specifications and blanks furnished on application. CAPTAIN A. W. YATES, Quartermaster, U. S. A. 1463

STONE BUILDING.

[At Chillicothe School, O. T.]

Department of the Interior, Office of Indian Affairs, Washington, D. C. Sealed proposals will be received at the Indian office until January 19, 1904, for furnishing the necessary materials and labor required to construct and complete an addition to the boys' dormitory and a laundry, both of stone, and with plumbing, electric light and steam heat, at the Chillicothe School, O. T., in strict accordance with the plans, specifications and instruction to bidders, which may be examined at this office, and at the school. For further information apply to S. M. McCowan, superintendent, Indian School, Chillicothe, O. T. W. A. JONES, Commissioner. 1463

Treasury Department, Office of the Supervising Architect, Washington, D. C., December 29, 1903. Sealed proposals will be received at this office until 3 o'clock P. M. on the 11th day of February, 1904, and then opened, for the construction (except heating apparatus) of the U. S. Post-office and Court-house, Waterloo, Iowa, in accordance with drawings and specification, copies of which may be had at this office or the office of the Postmaster at Waterloo, Iowa, at the discretion of the Supervising Architect. JAMES KNOX TAYLOR, Supervising Architect. 1463



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PROPOSALS.

SCHOOL.

[At Narberth, Pa.]

Bids will be received January 18 by the School Board for erecting a two-story brick school. Willis G. Hale, architect, 1524 Chestnut St., Philadelphia. DAVID J. HUNTER, Sec'y. 1463

STEEL WORK.

[At Washington, D. C.]

Sealed proposals will be received at the Bureau of Yards and Docks, Navy Department, Washington, until January 16, 1904, for furnishing all and erecting part of steel work for building 116, navy yard, Washington, D. C. Approximate quantity, — pounds. Plans and specifications will be furnished by the chief of bureau upon deposit of \$5 as security for their return. MORDECAI T. ENDICOTT, Chief of Bureau. 1463

HEATING, VENTILATING, MECHANICAL AND ELECTRICAL EQUIPMENT.

[At Camden, N. J.]

Office of the Camden County Building Committee, Court-house, Camden, N. J., December 22, 1903. Sealed proposals will be received at the office of the Camden County Building Committee until 2 o'clock P. M., on Monday, the 1st day of February, 1904, and then opened, for the mechanical and electrical equipment, including boilers, heating and ventilating system, elevators, engines, electric generators, motors, electric wiring, conduits, etc., to be installed in the Camden County Court-house, at Camden, N. J., in accordance with the drawings and specifications, copies of which may be had on and after December 28, 1903, by application at the office of the architect, Rankin, Kellogg & Crane, 1012 Walnut St., Philadelphia, Pa. All applications must be accompanied by a certified check, in amount \$100, which will be held by the architects until return of the drawings and specifications, upon receipt of which the amount of certified check will be returned less the sum of \$15, which will be retained as a charge to cover cost of duplication and printing. Camden County Building Committee, IRVING BUCKLE, Chairman. 1464

PROPOSALS.

HYDRO-ELECTRIC STATION.

[At Walla Walla, Wash.]

Proposals will be received until February 15 for the proposed \$250,000 hydro-electric station on Walla Walla River for the Northern Western Gas and Electric Company. SAMUEL STORROW, engineer, Douglas Building, Los Angeles, Cal. 1463

JAIL AND RESIDENCE.

[At Towner, N. D.]

Proposals for erecting a jail and sheriff's residence, including steam-heating apparatus, steel and iron work, will be received until January 25 by J. CHRISTIANSEN, county auditor. 1463

PORTLAND CEMENT.

[At Fort Wool, Va.]

Engineer Office, U. S. Army, Room 2, Custom-house, Norfolk, Va. Sealed proposals for furnishing and delivering Portland cement, broken stone, sand and lumber, at Fort Wool, Va., will be received here until January 16, 1904. E. EVELETH WINSLOW, Capt. Engrs. 1463

CONSTRUCTIONAL IRONWORK.

[At Fort Morgan, Ala.]

Fort Morgan, Ala. Sealed proposals will be received until January 20, 1904, for constructional ironwork, cages, cells, etc., for guard-house here. Specifications and plans furnished on application. A. D. RAYMOND, Q. M. 1463

LIBRARY.

[At Old Town, Me.]

Sealed proposals will be received at this office until the 1st day of February, 1904, for the construction of a public library building, according to drawings and specifications made by Albert B. Ross, architect, 542 Fifth Ave., New York City, copies of which may be had on request to the President of the Trustees at his discretion and are on file at the office of the architect. 1464



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. . . 1895. . .

SECTION 1. No Member should enter into
partnership, in any form or degree, with any
builder, contractor, or manufacturer.

SECTION 2. A Member having any ownership
in any building material, device or invention,
proposed to be used on work for which he is
architect, should inform his employer of the
fact of such ownership.

SECTION 3. No Member should be a party to
a building contract except as "owner."

SECTION 4. No Member should guarantee an
estimate or contract by personal bond.

SECTION 5. It is unprofessional to offer draw-
ings or other services "on approval" and
without adequate pecuniary compensation.

SECTION 6. It is unprofessional to advertise in
any other way than by a notice giving name,
address, profession, and office hours, and
special branch (if such) of practice.

SECTION 7. It is unprofessional to make altera-
tions of a building designed by another archi-
tect, within ten years of its completion,
without ascertaining that the owner refuses
to employ the original designer, or, in event
of the property having changed hands, with-
out due notice to the said designer.

SECTION 8. It is unprofessional to attempt
to supplant an architect after definite steps
have been taken toward his employment.

SECTION 9. It is unprofessional for a Member
to criticize in the public prints the professional
conduct or work of another architect except
over his own name or under the authority of
a professional journal.

SECTION 10. It is unprofessional to furnish de-
signs in competition for private work or for
public work, unless for proper compensation,
and unless a competent professional adviser
is employed to draw up the "conditions" and
assist in the award.

SECTION 11. No Member should submit draw-
ings except as an original contributor in any
duly instituted competition, or attempt to
secure any work for which such a competition
remains undecided.

SECTION 12. The American Institute of Archi-
tects' "schedule of charges" represents mini-
mum rates for full, faithful and competent
service. It is the duty of every architect to
charge higher rates whenever the demand for
his services will justify the increase, rather
than to accept work to which he cannot give
proper personal attention.

SECTION 13. No Member shall compete in
amount of commission, or offer to work for
less than another, in order to secure the work.

SECTION 14. It is unprofessional to enter into
competition with or to consult with an archi-
tect who has been dishonorably expelled from
the "Institute" or "Society."

SECTION 15. The assumption of the title of
"Architect" should be held to mean that the
bearer has the professional knowledge and
natural ability needed for the proper invention,
illustration and supervision of all building
operations which he may undertake.

SECTION 16. A Member should so conduct his
practice as to forward the cause of profes-
sional education and render all possible help
to juniors, draughtsmen and students.

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"Review of Reviews"	"The most interesting of all American publications in the field of architecture."
"The Nation"	"One of the most important American works on architecture."
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"Building News" [London]	"Beautifully printed and well delineated."
"Irish Builder" [Dublin]	"Of superior excellence and great usefulness."
"Journal of the R. I. B. A." [London]	"We can only hope the publishers will continue the series."
"N. Y. Tribune"	"A peculiarly fascinating and instructive work."
"N. Y. Evening Post"	"Grows in interest with every succeeding number."
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