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DECORATION

238 TREMONT ST.

CONSTRUCTION

BOSTON MASS.

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THE report of the special Grand Jury which has been inquiring into the Iroquois Theatre fire, while in the main sensible and satisfactory, has none the less its curious features and one of them so singular that it might be held to be purely and solely American. "In fixing the liability," says the jury, "our first inquiry was necessarily to ascertain upon whom rested the responsibility of furnishing the apparatus necessary to extinguish fire." The use of the adverb "necessarily" seems to require explanation and justification; but, admitting that both could be given, the inference to be drawn from the jury's statement is clearly that it is the unavoidable destiny of a theatre to burn and hence it is the paramount duty of owners, lessees or managers to have fire-apparatus at hand, whether the stage has scenery or the parquet has stalls. So far as having at hand a few buckets of water to extinguish the flaming skirt of a ballet-dancer, perhaps the jury's reasoning is sound; but to hold that a theatre must, before all things, be equipped with a powerful fire-apparatus well manned seems, in view of what we moderns know about incombustible building and fire-resisting methods and materials, like promulgating a rather antiquated belief. Still, acting on its stated programme the jury finds indictments for "manslaughter" against the manager, the business-manager and the stage-manager. Next, it finds that "the city ordinances with respect to the inspection of theatres" were not complied with and so brings indictment for "palpable omission of duty" against the Building Commissioner and a Building Inspector. This seems to us to be clearly inadequate and suggests that the jury was not indisposed to use the whitewash-brush, and such intention on their part seems to be indicated by the specious reasoning they advance for holding the mayor of the city absolved from all responsibility in the matter.

UNDER the well understood fiction of the common law, that no man can be held blameless for not knowing every law that may affect his actions, there is no good reason, perhaps, why the three managers should not be indicted for manslaughter, if any one can feel that anything is to be gained by still further harrowing their feelings. But if the private individual is held to be bound to know the laws, so, too, are the officials of the Building Department, and more than that, they are bound to have not merely a constructive knowledge of such laws but an actual and intimate knowledge, since they have taken oath to enforce them, and to be enforced laws must be known by the enforcer. How, then, the persons guilty of the greater crime can be indicted in a lesser degree than those whose criminality was obviously smaller can be understood only by the jurymen. The explanation probably lies in the fact that the jury felt it desirable to minimize, so far as possible, the responsibility of the municipality, having an eye to

the certain bringing of suits against the city and the known fact that claims in the amount of tens of millions of dollars are at this moment overshadowing the city treasury in the shape of "sidewalk damage" suits. Possibly the jury would have liked to go farther and hold all the city officials blameless, but the members evidently realized that the public was in no mood to tolerate such flippant treatment. We have no grudge against the Mayor of Chicago, but we do sincerely regret that he has escaped indictment. The only palliation of what now must remain a mere wanton waste of hundreds of presumptively useful lives would have been the realization that, because of it, some real and lasting good had been accomplished. It would have been a grand thing for civilization to have it established that the highest executive authorities could be held personally responsible, both criminally and in the way of civil damages, for the non-enforcement of the laws they were sworn to enforce. Just as it is certain that the last case of capital punishment will not prevent the next murder, so it is sure that in a year or so stage-managers will be just as careless and building-inspectors just as ignorant and inefficient; but if it might have been determined that the mayor of a city could be held personally responsible for infractions of the law, a permanent improvement in the conditions of urban life would have been won.

THE Classic conundrum *quis custodiet ipsos custodes?* is to receive a new solution in Chicago where the City Council has authorized the Mayor to appoint a special committee of three to investigate the workings of the Building Department. While it would seem as though the mayor normally must have the power to appoint such a committee of his own motion, he will doubtless be glad to conform to the resolution of a coördinate branch of the municipal government. But, as the committee is to be selected from the Board of Aldermen, a body whose rectitude and morality is not always above suspicion, we question whether the investigation will be productive of the best results. The value, the propriety, the necessity of investigating the action of municipal officials is beyond question, but it is also beyond question that such investigations should be conducted by impartial and unofficial inquirers. Real reforms have oftenest resulted from the efforts of a citizens' reform movement acting through committees of disinterested private persons, serving without pay under the stimulus of an aroused public indignation. But such independent public effort is only occasional and sporadic and is generally undertaken in the spirit that stimulates those who take part in a forlorn hope. It would seem as if our form of political government might be easily improved if these independent citizens' investigations could be made to form a permanent part of it. A well-meaning mayor could always find capable, intelligent and public-spirited citizens willing to serve on such investigating boards without pay, and different committees conducting different examinations could do the work expeditiously, honestly and without imposing too great a burden on the members of any given committee. But the investigating of one official by another, even if that other be attached to the legal branch of the government, smacks too much of collusion and concealment, in the light of the history of municipal government in this country.

THOSE miracles of flimsiness with the aid of which the builders of the last generation were wont to erect their high buildings—six or eight stories high—have long since given place to substantial scaffoldings designed on scientific principles, and with their several parts carefully computed and adjusted by competent engineers. It is seldom nowadays that a building is seen enshrouded in a close network of hemlock boards and three by-four spruce scantling, shaken by every breeze and trembling under the footfalls of the mechanics forced to risk their lives upon them. Nothing better typifies the advance that the art of building has made in this country than the difference between the former unsubstantial scaffolding, costing a few hundred dollars, built on the spot and destroyed there on the completion of the job, and the present substantial central scaffolding that has cost ten or twenty thousand dollars, which is part of the contractor's permanent

plant and is used over and over again. Midway between the two systems come the lashed scaffoldings, long in use in Europe and for a still longer time in Japan, which embrace the possibilities of handiness, safety and continuity of useableness, and it is very strange that a method so long known and so good should never have won a foothold in our practice. Further, a serious accident in Chicago last week makes one wonder whether the use of rope lashings might not even yet be adopted to advantage in our modern scaffolding. If the sudden and total collapse of the great central interior scaffolding, more than a hundred and fifty feet high, used during the construction of the dome of the United States Post-office in that city was really caused, as at first suggested, by the breaking or dropping out of some important bolt, accidentally left improperly secured, it seems plain that if the joints had been made with lashings and not with bolts the accident would have been avoided.

**A**T this writing the collapse of the steel framework of the Hotel Darlington on West 46th Street, New York, Tuesday afternoon, has all the air of being due to sheer criminal carelessness on the part of the owners and contractors. The framework, which had reached the height of eleven out of the twelve intended stories, gave way, owing, it is supposed, to the overloading of the two upper floors; and in its fall not only killed several persons in the new building itself, but also others in the Hotel Patterson, adjoining, which was partially crushed by the falling masses of metal. As it is alleged that "repeated violations" of the law have been filed with the Building Department—a fresh one the day before the accident—against the owners and builders of the structure, the Allison Realty Company, the *lex talionis* is likely to be rigidly enforced against it, and the public will be keen to see that this is done, since the continued prosecution of the work in face of these formal complaints will surely suggest to every one the existence of "graft" and "pull" which involve not only the Realty Company but the Building Department as well.

**I**T is evident that this very unusual winter is to be followed within a very few weeks by an equally extraordinary but much more disastrous early spring, and those on whom responsibility rests should already be preparing to apply such preventives or remedies as modern knowledge may suggest. The spring freshets everywhere are likely to be very severe, and owing to the deforestation of hillsides in many places this water is sure to come down with unusual rapidity. The sudden pressure and passage of such large volumes of water would bring evils enough to those living and having business interests in river valleys, but as the situation will be greatly complicated by the manner in which the ice "goes out," it would seem to be the duty of engineering bodies and public officials everywhere to consider whether the condition of the streams in their neighborhood can be made less dangerous by aiding the forces of Nature in any way or at any time. The use of explosives after ice-jams have formed is common enough, but it seems possible that these dangerous natural dams might be prevented now and then by watchfulness and prompt action. At the best, the daily papers will soon be filled with accounts of wrecked dams, destroyed mills and bridges, and houses and their occupants swept away and swallowed up in the icy floods.

**T**HE burning of the Wisconsin State-house at Madison on the twenty-seventh ultimo, makes one more chance for the display of that complacent selfishness that, under the guise of State pride, leads architects to protest against the admission of alien architects in competition, causes labor unions to "resolve" that the structures must be built only by label wearers, natives of the soil, and induces material-men to demand that none but local materials shall enter into the building. Even if all these demands shall be conceded, it must be granted that the new building is likely to be satisfactory, if we may take as samples of possible accomplishment the library buildings at Milwaukee and Madison, although we believe these happen to be the work of the same designers. If there is anything of a spirit of enlightened public emulation in the State, it may be fanned into a state of ardent excitation by calling to mind that there is not far away, at St. Paul, a very successful building, the capitol of a sister and not materially more wealthy State, which it would be just as well to surpass if possible.

**T**HE Central Soapmakers' Union, having voted that each cake of soap made must henceforward bear the imprint of the union 'label,' now offers a large reward for the discovery of a process that shall make soap insoluble, to the end that the 'label' may not be destroyed and the right of the Soapmakers' Union to be held next neighbor to the Almighty may be beyond dispute." It does not seem improbable that we may find in the morning paper any day some such statement as the above, as it would be no more extravagant a position for Labor to take than that asserted by the National Building Trades Council of America, which is demanding that a "union label" shall be affixed to every building in the country, and has "adopted" a bronze label, fourteen inches long, for business and public buildings and one of aluminium, five inches long, for dwelling-houses. The only thing that is surprising in this demand is its simple unbusinesslikeness. Why be content with one label to a building? why not call for one upon each brick and shingle and so earn enough by their enforced sale to building owners to keep the Union treasury always full to the brim? Or why not join hands with the soapmakers, and, in place of bronze and aluminium, demand labels of the new insoluble soap? Soap labels though insoluble would certainly weaken the buildings and so produce decay and cause later employment of good union labor. It would but be following in the steps of the union bottle-blowers who are pledged to break every bottle that is found in their way—all "for the good of the trade."

**I**T is a great pity that what there is of good—and there is much—in the union movement should be discredited by such constant mistakes as this label campaign, of which the most certain effect is to cause genuine and constant irritation in the minds of the general public, and the public is not to be constantly irritated with impunity by any one. This demand by the National Building Trades Council of America—whatever that high-sounding body may really be—is advanced on the plea that the label will make it plain that the building has been erected by "thorough mechanics earning fair wages" and that it will be "the best guaranty that the building is safe, substantial, and in a sanitary condition." Architects at last have no misunderstanding as to the real quality of union labor and would know, and make known to others, that the union label on a building inevitably meant that dilatory methods had been adopted during building operations to the consequent increase of cost without any equivalent gain in real value to the estate, and that, more than probably, it meant workmanship slighted, hurried or abandoned and oversights forgotten in order that the sacred hours of labor might not be overstepped by a second's effort. Owners of estates would know that the presence of the label would seriously depreciate the selling value of their property and would hasten to add the bronze or aluminium label to the stores of the nearest junk shop. The effort to introduce the union label as a bit of "building material" is merely silly; but then, too, many of the efforts of unionized labor are merely silly, symptomatic perhaps of the epoch.

**P**EOPLE cannot but watch with interest the outcome of the projected new East River bridge in New York. There seems obviously something in the situation that needs explanation. The proved neglect of the old East River Bridge and the consequent disquieting accidents certainly justified Mayor Low in putting the Bridge Department into new hands. His selection of Mr. Lindenthal met with almost universal approbation in professional circles and the work carried on and prepared by that official during his term of office has been no less warmly approved; but as soon as Tammany is again in power the bridges are put back into the hands, very largely, of the men who were displaced by the reform administration. This may be a judicious course; but when one recalls that one of Mr. Lindenthal's pet projects was the substitution of eye-bar cables for spun-wire cables, and further recalls that during the Lexow, or a later, inquiry it was revealed to the public that there was a close business connection between the family of Boss Croker and the Roebeling family, who are largely interested in making wire cables, it is not difficult to surmise why the Bridge Department was put back essentially under its former control. When it is observed how instantly the eye-bar plan is thrown out and wire suspension cables insisted upon, cause and effect seem plain in view.



AT the date of writing last month, no conclusion had been arrived at, as to where the blame should be laid for the Iroquois disaster. Six or seven weeks have passed since then, and though the horror of the thing has abated, because the human mind is not capable of remaining at such high tension for so long, still the hideousness of the whole matter yet remains with us, and so all the inquiries have been thorough and far reaching.

First came the work of the coroner's jury, which was accomplished while every one clamored for vengeance and the public were not capable of very dispassionate judgment. This spirit did not enter into the work of the jury, and, generally, their verdict was considered fair and just, eight men being held to the grand jury as responsible for the disaster. First of these was the Mayor of the city, Mayor Carter Harrison, the jury declaring that his "tendency to shirk responsibility is the cause of a weak course and inefficiency in the City-hall administration." Following his indictment was that of Will J. Davis, president of the Iroquois Theatre Company and manager of the theatre, held responsible for neglect in not seeing that the theatre was properly constructed and properly equipped. William H. Musham, Chief of the Fire Department, was next on the list and he was held responsible for not seeing that the theatre was equipped with fire-apparatus as required by the ordinance and with not properly instructing fireman William C. Sallers in his duties.

Following Musham was George Williams, Building Commissioner, held responsible for allowing the Iroquois Theatre to be opened when not completed and without having made a thorough inspection of the structure and its equipments.

Edward Laughlin, Building Inspector, was judged guilty of gross negligence in reporting the theatre "O. K.," when it was not properly furnished and equipped. Following these indictments were three others, that of William C. Sallers, house fireman at the theatre, James E. Cummings, stage-carpenter at the theatre and William M'Mullen, operator of the flood-light.

The fact that Benjamin Marshall, the architect, was not indicted shows that, in the main, the actual city building ordinances were complied with, and when violated it was generally in matters pertaining to the equipment of the theatre, rather than the actual construction. That the building was fireproof there has been no question, as stated in last month's letter. That the floor plan was altogether wise might at least be open to discussion.

The points that have been most severely criticised were, first, the very unsatisfactory outline of the lot, in the shape of the letter L, on which the building was erected, which almost of necessity compelled that the main foyer and exits should be at right angles to the auditorium. No direct exits were possible and the occupants of seats at the farther side were obliged to cross the entire auditorium to reach the regular stairways and corridors. This naturally resulted at the time of the fire in terrific crowds at these main exits from the main floor and balconies. This unfortunate arrangement was most horribly emphasized by the frequent insertion of two or three unexpected steps in the corridors. At one point in this main exit from the first balcony four such steps occurred, upon which, in the mad rush in the dark, people stumbled and fell. Also at this same point the stairway from the upper balcony came upon this landing, the result of this combined objectionable arrangement being the most horrible loss of life at any one place in the building, one hundred and seventy-four bodies being found at this spot. Another frightful point and a great mistake in the plan was in the exit from the upper gallery. What appeared to be the main passage towards the street, some 10 or 12 feet wide, fine and broad in general effect, instead of continuing in this manner to the street, as required by law, in reality gradually narrowed down to about 3 feet wide, terminating in a small flight of steps leading to the manager's office. The door at the bottom of these steps, at the time of the fire, was closed and locked. People rushed along this corridor only to fall down the steps and be piled in a mass against the locked oak door. So high was this stack of bodies that one man crawled over them, broke the transom over the door and let himself down on the other side. To be sure, a small staircase led from this suite of offices, to which the closed door should have given access, but in its narrowest place it was only 2 feet, 2 inches wide, and could never have served as a practical exit, as demanded by law. On the farther side of the auditorium were numerous French-windows, leading out onto iron fire-escapes in the alley. In order, however, not to disfigure the decoration there was no sign indicating their character. Moreover, they were all more or less concealed, even when the lights were on, by velvet draperies. Consequently very few appreciated their nature and object. The theatre employés either criminally or ignorantly failed to open them, so that the very few that were finally wrenched open by the panic-stricken prisoners in the dark, availed to serve anything like the number of persons that they should. The whole arrangement at

these exits seemed most criminal. The sashes themselves were unusually heavy and solid and fastened with the regular espagnolette French-window fastening, quite unfamiliar to the ordinary person, and even when familiar none too easy to operate quickly. Even with the French window itself once opened, heavy shutters still barred the way. They in their turn had a rather complicated latch, little known to the average person. Still worse, when finally thrown open, the shutter, standing straight out, stopped the passage of people coming down the fire-escape from above, so that many were crowded off and fell to the alley below.

In the interior of the theatre, the stage was completely denuded of all material that could be burned, and as one looked from the stage into the body of the house, it seemed very evident that the flames, unchecked by the asbestos curtain or any other contrivance, rolled out into the house and were especially drawn upward to the great ventilator, nearly over the centre of the balcony. All the upholstery was charred and burned, as seen from the stage. If, however, one viewed the seats of the parquette from the rear, the upholstery, except in the first few rows, was entirely uninjured. This clearly shows the direction from which the flames came. On the stage itself the reflectors of certain side-lights stood out at right angles to the proscenium-arch, back against which they were supposed to fold, when not in use. Upon one of these, ten or fifteen feet up, the asbestos curtain evidently caught and so entirely failed to accomplish the object for which it was put in. That the curtain was of asbestos there can be no question, as numerous fragments of it were strewn about in front of the stage and in the orchestra pit. On the stage there appeared to have been absolutely no fire-appliances, not even a hose properly connected and in working order, much less any sprinkling system. The only means provided to fight fire was a patent chemical fire-extinguisher. When, however, the fire started, it was above the head and impossible to reach with the chemical. All testimony shows that the most rudimentary precautions against fire would have been all that was necessary to have stopped the blaze, showing again the same criminal negligence or stupidity as in the fire-escape exits. In planning the building a very large ventilator over the stage was arranged for the very purpose of allowing the flames to escape upward, directly through the roof, the heat automatically opening the construction. Workmen, however, had never entirely completed this ventilator and when left it had been held closed by strong pieces of wood cut to fit. This ventilator being closed, the flames naturally rushed out over the auditorium and out towards the other ventilator till finally the intense heat broke considerable of the glass in the stage vent and the flames escaped in that direction.

As stated above, the fire-proof character of the building from the structural side has been most thoroughly demonstrated. A little plaster here and there has fallen off, portions of wire-lath are occasionally exposed and patches of plaster show signs of disintegration, but nothing is at all serious and nothing that could not be easily repaired or replaced. In fact the insurance is said to have been already adjusted at not far from \$30,000 and the intention is now reported to be to repair and refinish the building and open again as a theatre, although with a different name. At one time it was hoped that some valuable experiments might have been made in such a manner as to reproduce the conflagration itself by burning excelsior and other inflammable materials placed upon the stage. It was found, however, impossible to carry out this scheme owing to the objections of underwriters on the adjoining buildings.

The main impression produced upon one in visiting the building and going over the testimony is that the work had been too much crowded at the end, and a host of minor but very essential details left unfinished. A most frantic endeavor was made to give the effect of a finished building, at the time of opening, and a permit was then obtained and the house formally opened. After that, apparently, no effort or attempt was made to complete the unfinished details, nor in any way to provide for the safety of the patrons.

All expert advice by the different committees spoken of in last month's letter has been given freely and has greatly facilitated the work of the coroner and grand jury in the way of classifying witnesses, etc. The work of these special experts has seemed to aid in formulating and crystalizing general opinions so that more just views and conclusions could be arrived at, where at first all was confusion and excitement.

The grand jury on the 20th of February finished its work and brought in indictments: four of the eight men who were indicted by the coroner's jury and one new name came into the grand jury's indictment. Manager Will J. Davis, Thomas J. Noonan, treasurer of the theatre, and James E. Cummings, stage-carpenter, were charged with manslaughter, because they all had actual knowledge of the condition of the theatre and all had equal authority to purchase fire-apparatus and did not. Against Building Commissioner Williams the charge stood for misfeasance, as was also the case with Building Inspector Edward Laughlin.

In the report which accompanied the indictments the jury did not exonerate the city official from a certain amount of blame. It reads:

"While the indictments returned in a measure express our judgment and censure, we cannot refrain from saying that this awful visitation of grief and sorrow upon this community, made the more impressive by the pitiful rehearsals before us, might have been spared by greater vigilance and fidelity to duty on the part of public officials and by prompt and strict enforcement of the laws."

Regarding the failure to indict the Mayor himself, the grand jury explained that he personally had not received any report of the violations of the building laws at the theatre and consequently "the contingency, therefore, upon which his liability would arise, never happened, as far as the jury were able to ascertain." In regard to the indictment of the Building Commissioner the report further says:

"That the city ordinance with respect to the inspection of theatres for the purpose of determining their safety and whether they were equipped with the appliances required for extinguishing fire were not complied with, was fully evidenced, and that such inspection devolved primarily upon the Commissioner of Buildings is clearly manifest.

"In the case of the Iroquois Theatre he neither inspected it nor caused it to be inspected, and personally approved its license after it had opened. To say nothing of the palpable omission of duty required of him in any other respect, his failure to make such inspection is enough to justify the indictment we have returned against him for misfeasance and palpable omission of official duty."

As stated in last month's letter one of the local papers here organized a commission composed of architects, engineers, building contractors and fire-insurance specialists to look into the other theatres and places of amusement to find in what measure they conformed to or violated the city building ordinances.

Their work has been very full and thorough, and their tabulated report a matter of considerable interest. Not one of the thirty-five playhouses conformed to the laws in all particulars. In just what particular they failed to comply was interesting to note. In regard to the demand for an asbestos-curtain nearly all large downtown theatres comply: the Auditorium, Chicago Opera-house, McVicker's, the Grand Opera-house, the Great Northern and the Illinois all have asbestos-curtains, the Garrick alone failing in this particular. Not one of the theatres, large or small, had the automatic sprinkler demanded by law. The Illinois, the comparatively new theatre under the same management as the Iroquois and designed by the same architect, complied in more particulars to the law than almost any theatre in town, except perhaps the old McVicker's theatre, which fails to comply in numerous particulars connected with the fireproof construction.

That none of the theatres was above reproach is known from the fact that immediately after the Iroquois fire they were all ordered closed by the Mayor.

This enforced period of rest for the theatres has been one of "Sturm und Drang" for the city fathers. They have been attempting to remodel the city ordinances, to make them so ideal that in six months they can all be absolutely ignored, as far as their enforcement is concerned, and still shall be so framed as to make every house of entertainment in the city a place of safety in case of a fire or panic, or rather a place where a fire or panic could never occur. As is usual after such a horrible accident, due to gross carelessness and neglect of duties on the part of public officials and those in authority around the theatre, the tendency has been to rush off in the other direction and make the laws so strict that no existing playhouse could ever conform to them and no future one could ever afford to comply with them.

Most of the theatres have now been allowed to open, temporary concession having been made to them till they can gain time to fit themselves to comply with the demand. Most of them have the notice hanging out on the street, "gallery closed."

#### CONCLUSIONS AND SUMMARY OF COMMITTEE APPOINTED TO INVESTIGATE CAUSES LEADING UP TO IROQUOIS THEATRE CATASTROPHE.

CHICAGO, ILL., JAN. 8, 1904.

HON. CARTER H. HARRISON, MAYOR OF THE CITY OF CHICAGO:—

Sir, — In compliance with your request of the 31st ult., to make a thorough examination of the Iroquois Theatre and of the causes leading up to the terrible disaster of Wednesday, December 30, 1903, we have made a careful investigation; have examined many witnesses, and beg to submit herewith an outline of our conclusions and summary of the same, together with a copy of the testimony we have taken.

We find the primary cause to have been sparks or heat from an electric-arc projector, spot or flood light, igniting draperies back of proscenium arch some distance above stage floor.

We further find that fire extended, on account of lack of adequate means at hand to extinguish it, the "kilfyre" proving ineffective, and there being provided no vertical stand-pipes containing water under pressure and connected with hose on hose-racks at convenient locations on flies and bridges, no automatic sprinklers, and no hooks which could have been used to tear down the burning portion of the scenery.

We further find that the fire spread to auditorium in consequence of the fire-curtain not operating effectively, because of delay in attempting to operate same until fire had obtained some headway; it may have been obstructed by some projection or on account of defective operating devices and in consequence of friction against brick proscenium-wall due to expansion of air or gases resulting from burning scenery and stage doors being opened. There was no outlet opened at top of stage to permit escape of smoke, other gases

and flames and secure an upward draught on stage side of proscenium-wall, the ventilator being closed and the automatic opening skylights which were provided for this purpose being prevented from operation by fastenings of wire and props. Exits providing outlets for smoke and gases near rear of auditorium at a height above proscenium-arch, drew the heated smoke, other gases and flames toward the people through the auditorium to these outlets. The gases produced by the fire, being highly heated and thus made much lighter than the cold outer air, were forced upward by the inrush of the air through stage door, and, finding no opening above stage, were forced into auditorium and compelled to find escape at the top of the house, following natural laws, the action being similar to a large old-fashioned open fireplace with the flue closed, proscenium-arch corresponding to the fireplace opening and the space over the stage to the walls of the flue.

We further find that the loss of life was due:—

First:—To panic, coupled with the fact that exits were not designated; steps were found placed at door openings, and numerous doors were locked or bolted with devices not familiar to the general public; all exits were not manned; independent gallery stairs, required by law, were closed against exit by a dead-locked door at the foot of top flight. The arrangement of these stairs was of faulty construction as to width, pitch, turns and railings. The outer iron alley shutters, not being opened and swung back against the wall before the performance, were opened later during panic, and prevented people from continuing down the fire-escape, on account of the cross-bars getting caught on the railing of the fire-escape, thus effectually blocking the passage. It should be noted that while, in the main, stairways of ample width were provided, some of these at least were confusing in arrangement to excited people whose natural inclination would be to leave the house by the same exits used on entering, the audience being admitted through one entrance only on each floor. It might also be stated that ample exit provisions were made, and that the doors in same were bolted with bolts which could have been operated from the auditorium side by any one without the use of keys, but that the public did not understand their use and the ushers did not have time, or were not properly drilled, or neglected to open a number of them.

Second:—Asphyxiation, due to first hot blast of smoke and gases from stage fire.

Third:—On account of exits being blocked as a result of people falling; and on account of the fact that fire-escapes from upper exits passed lower exits out of which flames were bursting.

#### SUMMARY.

##### I. What was primary cause of Iroquois Theatre building fire?

(a) Sparks of heat from an electric projector, spot or flood light, igniting draperies back of proscenium arch about twelve feet above stage-floor.

##### II. Why did fire extend?

1. No adequate means at hand to extinguish same.

(a) The "kilfyre" provided proved ineffective.

(b) The absence of vertical stand-pipes containing water under pressure provided and connected with hose on hose-racks at convenient locations on flies and bridges. No automatic sprinklers.

(c) The absence of hooks which could have been used to tear down the burning portion of the scenery.

##### III. Why did fire spread to auditorium?

1. The fire-curtain did not operate effectively; the descent was probably interfered with by some projection.

(a) On account of delay in attempting to operate same until fire had obtained some headway.

(b) On account of insufficient provision for effectively operating same.

(c) On account of air pressure producing friction against brick wall, due to expansion of air or gases resulting from burning of scenery.

(d) Stage doors leading to outer air were open.

2. There was no outlet open at top of stage to permit escape of smoke and other gases and secure an upward draught on stage side of proscenium-wall, the ventilator being closed and the automatic-opening skylights provided for the purpose were prevented from operating by being fastened with wire and props.

(a) Exits providing outlets for smoke and gases were provided at rear of auditorium at a height above proscenium-arch, drawing the heated smoke, other gases and flames over and toward the people through the auditorium to these outlets. These outlets were some of the gallery or upper balcony exit doors. The gases produced by the fire, being highly heated and thus made lighter than the cold outer air, were forced upward by the inrush of the air through stage doors, and, finding no opening above the stage, were forced into auditorium and compelled to find escape at the top of the house, following natural laws; in other words, it acted precisely as an open-grate fire would act when the flue is closed.

##### IV. What caused the loss of life?

1. Panic.

(a) Exits were not designated.

(b) Steps in front of, or in, door openings.

# THE AMERICAN ARCHITECT AND BUILDING NEWS

ADVERTISERS' TRADE SUPPLEMENT

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## SLEEP, ELLIOTT & KING.

CONCERNING THEIR WORK IN CONCORD CITY HALL AND ELSEWHERE.

In the most interesting buildings of Europe we are especially impressed by the beautiful plaster work of the interiors.

The art student is enraptured with the exquisite enrichment in plaster in the Florentine and Venetian palaces, the dignity of the work in the Italian Cathedrals and stately Gothic of Northern Europe.

In these buildings the modeller has been closely allied with the architect to get the true inspiration of his work, and in buildings whose details will be admired, perhaps, for ages after they cease to exist, the architect has done some or all of the most important modelling.

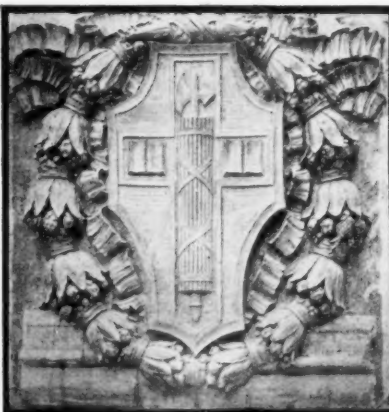
There is a growing interest in this country in plastic art; it may be partly due to the inspiration from the effects attained by work of this kind on the different exposition buildings more than any other reason, but there is now more work being done in public and private buildings than ever before, and no office-building now seems complete without at least some enrichment in the entrance hallways.

With this increasing demand and knowing fully the manner by which the best results can be obtained, the Sleep, Elliott & King Co., of Boston, aim to work in every way with the architect to carry out the style and true spirit of feeling the building may be designed for, whether church, theatre or banking-room. As the business of this firm increases, it is appreciated, that as they do the entire work direct from the architects' drawings to its completion in the building the original instructions cannot be misinterpreted by the architect not being in direct contact with the work from the start to the finish, which is of inestimable importance on difficult work. Their business has been developed on artistic principles, yet by systematizing their work they keep constantly in touch with the mechanical requirements of the work in the buildings, and we do not hesitate to say in referring to their work in many buildings that they are keeping pace with the times in their line of work.

The extent of the business of this firm may not be generally known. In the city of Providence alone they can refer to their work in three banks, two theatres and the public library, besides works in hotels and private residences. In Boston they did plain and ornamental plasterwork in the Majestic

theatre, ornamental plaster in the Hollis and Globe theatres, and more or less work in the Keith's and Colonial theatres. They also refer to some very excellent work in hotels and residences in this city and vicinity.

They are now executing work for the Ray Memorial Library in Franklin, Mass., for Messrs. Rand & Skinner, architects; St. Ann's School, Worcester, for J. W. Donohue, architect; Portsmouth Savings Bank, Portsmouth, N. H., for Messrs. Clark & Howe,



architects; and the Concord City Hall for Messrs. Warren, Smith & Biscoe, architects.

The accompanying cuts are of the work for the proscenium arch ornamentation for the Concord City Hall. The centre ornament illustrated is about 8 feet in diameter and leaf is of the base of arch in the same scale. They are doing this work for Messrs. Mortenson & Holdenson, decorators.

## ROOFING-TIN DE LUXE.

THE real aristocrat of roofing-tins is "Taylor Old Style." This tin has a long and honorable ancestry. It has been sold continuously for seventy-four years by one house, the oldest house in the business of making roofing-tin in America.

The United States Census Reports for 1900 give to the N. & G. Taylor Company the credit for making the first sheet of roofing-tin ever made in this country. That tin was "Taylor Old Style." It was made by dipping a sheet of black plate into the tin mixture until a very thick coating of the mixture had adhered to the plate. This mixture was not squeezed off by rollers, as in the case of ordinary tin, so that it forms an unusual protection against the weather.

"Taylor Old Style" tin is made to-day by the N. & G. Taylor Company in the same way, though quicker methods are used for other brands of roofing tin.

The most remarkable thing about "Taylor Old Style" tin is the actual record that it has made. Authentic instances of its constant exposure to the weather without deterioration for fifty years are occurring every day.

In this connection it is interesting to note the following letter:—

KANSAS CITY, MO., Jan. 2, 1904.

N. & G. TAYLOR CO.:—

Gentlemen,—I received a circular letter from you giving a record of tin used at Independence, Mo. For your information I will tell you of some of your "Old Style" tin that beats that Independence tin all hollow. Mr. Walter Vanstone of this city told me not long ago that he assisted to remove an "Old Style" roof of your make that had been on fifty years. This was in 1869, thirty-four years ago. After removing the tin, it was discovered to be in such splendid condition that it was retrimmed and put on again, and from what the relator told me, it is on yet.

This was at Pottsville, Pa. The building was used for a plumbing establishment and was rented to one C. L. Foster in 1869, owner unknown. Roof was a standing seam. Mr. Vanstone, who told me, is a man whose veracity is beyond question. If you trace this down, it may be of interest to you. The roof was a standing seam. Cordially,

FRANCIS J. PLYM, Architect.

Apparently from this letter "Taylor Old Style" tin has lasted continuously for eighty-four years. This is the inference from the way the letter is worded. We are investigating the matter to see whether this is true, or whether the tin has lasted only fifty years. Even in that case it would be a longer record

than has ever been shown by any other roofing tin.

That is its one claim to recognition by architects and builders: its durability.

Every man who builds a house knows that the cost of putting the tin on is more than the cost of the tin. He realizes that a few cents' difference in the cost of the tin is small so long as the tin will stay on as long as the building will last. He knows that this is true of "Taylor Old Style" because "Taylor Old Style" has been manufactured for such a long time that it has had a chance to "make good."

The N. & G. Taylor Company publish each month an interesting little house organ, entitled "The Arrow," which they are very pleased to send free of charge to all architects and builders. While its real mission is that of exploiting the virtues of "Taylor Old Style" tin, it talks shop in such a way that most people find it worth reading.

If there is any reader of this paper who would like to receive a copy, and who is not on the mailing list, the N. & G. Taylor Company will be glad to place his name there.

N. & G. TAYLOR CO.,  
PHILADELPHIA, PA.

#### BUILT BY WOODBERRY.

DEDICATION OF A LARGE THREE-MANUAL ORGAN IN THE METHODIST TABERNACLE, BROOKLYN.

THE new \$8,000 organ in the Methodist Tabernacle, on Manhattan Avenue, near Noble Street, Brooklyn, dedicated December 17 of last year, was built by Jesse Woodberry, of Boston. It is a three-manual organ, of the electro-pneumatic type that has given such satisfaction wherever Mr. Woodberry has placed them and for which he makes strong claims on account of durability.

The completion and dedication of this new organ was a very successful ending of a very successful year for Mr. Woodberry, and we understand the outlook for 1904 is exceedingly promising, that he has within range of his aim several other good "shots" which he expects to bring down, though he is not inviting competing sportsmen by revealing their whereabouts.

Mr. Woodberry's big four-manual instrument which he placed in a New Hampshire church four years ago offers proof of the lasting qualities of the electro-pneumatic action. Although it contains every possible "convenience for getting out of order"—echo organ and all—its owners declare that not a valve has ever faltered nor a contact failed to come to time; while the tuning and regulating bill, which is frequently a yearly cost of at least \$100, has amounted to only \$75 in the whole four years.

Mr. Woodberry has been for a long time at work perfecting a self-playing internal attachment for pipe organs, to be used with perforated rolls, especially desirable for private residences, a description of which he has promised for the *American Architect* very soon. At his factory, nearly completed, he has a very elaborately finished organ with self-player attachment; the case is of polished mahogany of handsome design, with front pipes of block-tin, bright finished; it has one hundred and sixteen notes and can play the accompaniment and solo at same time. It is considered by all who have seen and heard it to be the most perfect combination of house-organ ever produced, and in the course of a few weeks it will be ready for inspection and hearing by architects, musical people and others interested.

The latest contract obtained by Mr. Woodberry is for the new electro-pneumatic, two-manual organ to be built for the Methodist Episcopal Church, Melrose, Mass., from designs by J. William Beal, architect.

#### A FEW THINGS WORTH CONSIDERING.

THERE is hardly a house built nowadays but has its veranda and the veranda has become a very important part of the house. The material used in the veranda should be just as good as is used in building the house, as they are put up to stay and should last many years. Poplar or whitewood is one of the best woods for this purpose as it works smoothly, takes paint well and stands exposure to the weather.

We use the best poplar and turn out our goods in the best possible manner and have had many years' experience in the manufacture of veranda work and furnish goods that are first-class in every respect.

There are many cheap-priced columns put on the market made out of cheap woods and in a cheap manner, and it is well to consider the quality of the goods before you buy. The goods that are cheapest in price are not usually the cheapest in the end.

There is nothing better than the built-up or staved column when it is properly made and properly taken care of, but as a column is exposed to all kinds of weather and constant changes in the atmosphere, they must be well manufactured in the first place and then must be kept painted.

We have had many years' experience in the manufacture of staved columns and think we are making them just as good as they can be made, and we think our work in all parts of the country will bear us testimony.

You cannot expect the cheap-priced staved columns that are made out of thin lumber (in many cases not thoroughly dry), and in a cheap manner, to stand very long exposure to the weather. All of our staved columns are primed one coat before leaving our factory to protect them.

Staved columns should not be exposed to bad weather before they are put in place, for if the inside of the column is exposed to moisture it is likely to cause the joints to open.

We manufacture the best staved-up column on the market.

These "built up" columns are staved-up out of 2-inch, 2½-inch or 3-inch lumber and with 14 to 30 staves to the column, according to the size and style, and we carry on hand a stock of dry, thick poplar plank for making these staved columns. The lumber is thoroughly kiln-dried and the staves are joined together by tongue and groove glued joints running the entire length of the stave, which makes a perfect joint and one that will stand. Our staved columns will not open in the joints.

All columns from 8 inches to 12 inches in diameter are made from 2-inch lumber, 14 staves to each shaft, which admits of the stock finishing full thickness and gives a good, strong, substantial column and enables us to make the turn-outs, fillets and neck mould on the shaft.

We can furnish White Pine Columns in sizes from 7-inch to 12-inch shaft, but they cost more than the Poplar Columns as the lumber is much more expensive.

We make a specialty of large columns 18 inches to 36 inches in diameter, 18 to 26 feet long, and carry on hand 3-inch clear

poplar 18, 20, 22 and 24 feet long for making staves for large columns.

We manufacture hand-carved Wood Capitals of any size or style and also carry a full line of Composition Capitals.

We furnish Columns and Capitals for interior work as well as exterior.

We make a specialty of this business and have a fully equipped factory and the best of facilities and manufacture first-class goods.

Write us for prices, giving sizes and specifications.

THE C. T. NELSON CO.  
COLUMBUS, O.

#### TIN ROOFS.

PHILADELPHIA, PA., Feb. 23, 1904.

TO THE EDITORS OF THE AMERICAN ARCHITECT:—

Gentlemen,—A number of witnesses of the recent fire at Baltimore have called our attention to the fact that tin roofs were instrumental in preventing the still further spread of the flames and that even in the fire belt, the buildings roofed with tin held out much longer than those covered by any other kind of roofing material. Composition tar and gravel roofs literally burst into flames, from the intense heat, before the fire reached them, and in distant parts of the city, the greatest trouble from the sparks carried by the wind was with roofs of this character, those covered with tin requiring almost no attention.

It is significant, that profiting by this experience, the architects in charge of new construction at Baltimore are, in the majority of instances, calling for tin to be used on the roofs, and as these buildings are to be of a permanent character, the "Taylor Old Style" brand is naturally the first choice, as being the most durable roofing tin that can be made.

We think the above facts are of sufficient general interest to your readers to warrant mention in your columns, although, of course, you will always understand that you are entirely at liberty to publish such items or not, as you may see fit, without causing any prejudice on our part. Believe us,

Very truly yours,  
N. & G. TAYLOR CO.

#### NOTE.

THE Chicago and Northwestern Railway give the traveller to the West and Northwest the perfection of train service with their *Six Fast Trains*. The "Overland Limited" in less than three days to California. The "Chicago & Portland Special," three days to Oregon and Washington. The "Colorado Special," one night to Denver. The "Northwestern Limited" to St. Paul and Minneapolis. The "Duluth Fast Mail" to the head of the Lakes. The "Copper Country Express" to Calumet, Marquette and Lake Superior points. Favorable rate and diversity of route round trip tickets to Pacific Coast on sale daily. For tickets, sleeping-car reservations, maps and full information, call or write J. E. Brittain, General Agent, 300 Washington St., Boston, Mass.

#### BOOKS:

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(c) Numerous exit doors being locked or bolted with devices not familiar to the general public.

(d) All exits were not manned.

(e) The independent gallery-stairs required by law were closed against exit by a dead locked door, at foot of top flight. The arrangement of these stairs was of faulty construction as to width, pitch, turns and railings.

(f) The outer iron alley shutters, not being opened and swung back against the wall before the performance, when opened later during panic, prevented people from continuing down the fire-escape on account of the cross-bars getting caught on the railing of the fire-escape, thus effectually blocking the passage.

**Note:** It should be noted that, in the majority of cases, stairways of ample width were provided, but these were, to excited people whose natural inclination would be to leave the house by the same exit used in entering, confusing in arrangement. It should also be noted that ample exit provisions were made and that the doors in same were bolted with bolts which could be operated from the auditorium side by any one, without the use of keys, but that the public did not understand their use and the ushers had not been drilled or instructed, and neglected to open a number of same.

2. Asphyxiation.

(a) First blast of smoke, gas and flame from stage.

3. Burning.

(a) On account of exits being blockaded as a result of people falling.

(b) On account of the fire-escapes from the upper alley exits passing lower exits out of which flames were bursting.

[Signed by the officers of the Builders' Club; Chicago Architects Business Association; Builders' Exchange; Mason Builders' Association, and Chicago Chapter of the American Institute of Architects.]

#### ORNAMENTAL STONES.<sup>1</sup>

**O**F the pure silicious minerals used as ornamental stone there are the crystalline transparent forms of silica, the pure colorless rock-crystal, the purple amethyst, the yellow citrine, the brown cairngorm and the pink rose quartz, together with the amorphous, translucent or opaque forms, the white chalcedony, the red carnelian, the deep reddish-brown sard, the green chrysoprase and the olive-green plasma. The banded variety of chalcedony is agate; when the bands of color lie in even planes it is termed onyx; or, with alternating bands of red and white chalcedony, sardonyx. For purposes of ornament, the color of most of these stones is frequently modified by staining, a process practiced even in the time of Pliny. In moss agate and mocha stone the moss-like markings are due to manganese oxide. Of the opaque variety, jasper, there are several forms, ribbon jasper, with the colors in stripes, Egyptian jasper found in rolled pebbles, with the brown colors in concentric zones, and bloodstone or heliotrope, a jasper of deep green color with blood-red spots. Quartz, either fibrous or with some enclosed fibrous body, constitutes a variety of cat's-eye, which has a peculiar lustre. The so-called crocidolite, which first came to Europe from Cape Colony in 1870, is a fibrous form of quartz of rich brown color. It was formerly exceedingly rare, but is now obtained in considerable quantities. In 1901 the production was 3 tons, valued at £150. The brilliantly spangled aventurine is quartz with disseminated particles of mica.

Brazil is the principal source of supply of amethysts. Recently an immense amygdaloidal cavity lined with amethysts was found, surpassing anything of the kind previously known. It measured 33 feet in length, 16½ feet in width and 10 feet in height, and weighed about 35 tons. It was put together to form the amethyst grotto that was one of the attractions of the Düsseldorf exhibition of 1902.

The centre of the agate-cutting industry is at Oberstein in Germany, where the river Idar in its descent to the Nahe presents a succession of falls through a distance of twenty-four miles and supplies power for some sixty polishing works. Precious and semi-precious stones are received for polishing from all parts of the world, and the development of the industry has necessitated the use of steam-engines and electric-motors in place of the water-power originally employed. The agates are ground on sandstone wheels; the workman lying horizontally presses the agate against the grindstone, obtaining purchase by pressing his feet against a block fixed to the floor. An important branch of the industry is the preparation of blanks for cutting onyx cameos in Paris and Italy. The cameos are usually cut on stones that have layers of different colors, so that the design appears in white on a red, brown or black ground.

The finest example of sardonyx cameo is in His Majesty's collection at Windsor Castle. It measures 7½" x 5½", and is cut upon a rich Oriental sardonyx of four strata. It is a contemporary portrait of the Emperor Claudius. The ground is in the dark brown stratum, the laurel wreath and front of the cuirass in the honey-brown and the head and hair in the white. The whole is surrounded by a raised border enriched with moulding cut in the thickness of the stone. The most important cameo in existence is the "Gemma Augustea" in the Art Historical Museum in Vienna. It is cut upon sardonyx of two layers, the figures being cut in the bluish-white

layer, while the dark forms the background. It measures 7½" x 8½". The design represents Tiberius before his splendid triumph, 12 B. C., descending from his chariot with Germanicus standing at his side to present himself to his father Augustus, who is seated with the emblems of Jupiter by the side of the goddess Rome. The figures at the base represent captive Germans and Roman soldiers erecting a trophy. The process of cameo-cutting and some of the best examples have been described by Mr. J. B. Marsh and by Mr. C. Davenport. The celebrated so-called Mexican onyx, the occurrence of which has been described by Mr. W. Eassie, is in reality an aragonite stalagmite. This rich ornamental stone is largely quarried.

**Jade.**—Under the name of jade are included two minerals, nephrite and jadeite, closely similar in appearance and properties. It was found by Damour in 1865 that the former is a silicate of alumina, lime and magnesia, and the latter a silicate of alumina and soda. These tough minerals are mostly found in detrital deposits. Even now but a few localities are known where they occur *in situ*. In Europe the only one is at Jordansmühl, in Silesia, where nephrite forms narrow veins in serpentine. In East Turkestan it was worked by fire-setting, and it occurs in considerable quantities in Siberia. The most remarkable specimen of jadeite known is a Mexican adze with a grotesque human figure carved on its face. It weighs 229 ounces, and is now in the New York Museum. It has been described by Mr. G. F. Kunz, who, in a recent paper, discusses the question whence the jade so highly prized in Mexico and Central America by the primitive people was obtained. The problem is of great interest to archaeologists, and its solution might give to the world a beautiful ornamental stone.

**Amber.**—Since the times of the Etruscans, the Greeks and the Romans, amber has been obtained from East Prussia, which is still the chief source of supply. The Prussian Government has a monopoly of the industry. The fossil resin was first found washed up by the water from a submarine bed of Tertiary age, extending along the shores of the Baltic to Cromer on the Norfolk coast. This sea amber is characterized by the fact that it has no weathered exterior. After storms, large quantities are washed ashore and collected. It is also collected in nets, and since 1869 divers have been successfully employed by the Königsburg firm of Stantien & Becker to collect amber from the bottom of the sea and to dig it out. More than twenty large steam dredgers are in use raising the material from a depth of seven to eleven yards. Quarries are also worked near the seashore, and every year a large proportion of the amber production is obtained in this way. The grayish-blue sandy clay, known as blue earth, containing the amber, is opened up by quarrying and by ordinary mining. The principal workings are about mid-way between Memel and Dantzic, the largest mine being at Palmnicken, where the blue earth is 16 feet thick. The mine galleries have a total length of 150 miles, and the annual yield of amber is about 200 tons. The amber is separated from the enclosing earth by washing on coarse screens with a powerful jet of water. The cleaned amber is finally sent to Königsberg, where it is sorted for the market into nearly a hundred different varieties. The flat pieces of amber are turned for smokers' requisites, and the round pieces cut in facets or worked into beads for bracelets and necklaces. The pieces of amber can be softened in boiling linseed oil, and the cloudy specimens rendered clear. The small impure amber is used for the manufacture of varnish. The total annual consumption of the world of crude amber represents a value of about £150,000. Many imitations of amber are manufactured, and compressed amber, or ambroid, made by compressing small pieces at great pressure and high temperature is largely utilized. The income derived by the Prussian Government from the amber industry amounted in 1811 to £1,100 annually, and rose in 1895 to £85,500. The mineral is State property, but as a matter of fact, the working and sale was leased to the firm of Stantien & Becker for many years. On July 1, 1899, the Prussian Government purchased the whole of the works of this firm, and started to mine and trade on the State account. The purchase price was £487,500.

**Other Ornamental Stones.**—Among other ornamental stones are the comparatively soft green malachite (carbonate of copper) and the azure-blue lapis lazuli, a complex combination of silicate and sulphate, which was formerly powdered and washed to make the ultramarine of the artist. The richer varieties are used in mosaic, and for costly vases and jewelry. Steatite, or soapstone, is used by the Chinese for carving figures. Jet, a variety of lignite, the gagates of the ancients, is largely used for mourning ornaments. In England jet mining is not pursued as a regular occupation; in the cliffs near Whitby a little burrowing is done in stormy weather when agricultural work is difficult.

**The Rare Earths.**—In the early days of chemistry the term "earth" was applied to certain substances now known to be oxides of metals, which were distinguished by being infusible at a high temperature. On account of the scarcity and infusibility of the oxides of the cerium and yttrium groups, the old term is still made use of, and they are known as the "rare earths." From the discovery of yttria by Gadolin in 1784 until recent years, these rare earths were solely of chemical interest. When, however, the system of incandescent gas-lighting, invented by Auer von Welsbach, came before the public in 1886, the rare earths at once acquired industrial importance, and eager search was made for minerals containing them in all parts of the globe. Briefly described, Welsbach's process consists of impregnating a cotton tube with a solution of the nitrates of the rare earths, while the upper end is further impregnated with a

<sup>1</sup> Extracts from a lecture by Bennett H. Brough, delivered before the Society of Arts.

strengthening solution. The chief sources of the rare earths are the minerals allanite, orthite, gadolinite, xenotime, euxenite, yttriotantalite, fergusonite, tyrite, cerite and zircon. Although the standard works on mineralogy give a long list of localities at which specimens of these rare materials have been found, the supply is very limited, and they are in consequence very expensive. Moreover, they do not contain appreciable quantities of the most active element for incandescent gas lighting purposes, thorium. The chief source of thorium is monazite, a mineral occurring in large quantities in Brazil, Norway, the Ural, Carolina and Canada. Monazite is an anhydrous phosphate of the rare earths cerium, lathanum and thorium. It was first discovered in 1823, and it was subsequently found to be identical with numerous new minerals discovered in various localities and receiving various names. The name that has survived was given to it by Breithaupt, in 1829, from the Greek verb meaning to live alone, owing to the fact that at Mount Ilmen, in Siberia, it was met with in solitary tabular prisms. The translucent crystals are of a red or yellow color, with a hardness nearly equal to that of felspar, and a specific gravity of 46 to 53. They vary in size from microscopic dimensions to 5 inches in length, in the case of those found in Amelia County, Va. Irregular masses of monazite showing crystalline structure, and weighing 15 to 20 pounds, and rounded masses weighing 12 pounds, have been found at the mica mine of Villeneuve, in Quebec. The mineral contains 20 to 29 per cent of phosphoric acid, 28 to 37 per cent of ceria, 14 to 31 per cent of lathana, 0 to 18 per cent of yttria and 2 to 18 per cent of thorium. Monazite, or its varieties, is met with in many places. It usually occurs in granite. These deposits, however, have chiefly a mineralogical interest. Those of commercial value represent the product of the decomposition and disintegration of rocks that originally contained monazite. The first monazite sands to be utilized were obtained by the eminent mineralogist, Mr. W. E. Hidden, in considerable quantity in 1879, in the gold placers of Carolina, in association with platinum. In 1884, Hidden succeeded in inducing the Welsbach Light Company to experiment with monazite, with a view to extracting from it the rare earths it contains, and substituting thorium for zirconia in the manufacture of the mantles for incandescent gas-lighting. The Brazilian deposits occur as beach sea sands, and their concentration has been effected by the action of the waves. In the pegmatite dykes of southern Norway, monazite occurs in large crystals. In the United States the workable deposits of monazite sands are confined to Carolina, and cover an area of 1,600 to 2,000 square miles. Their thickness varies from 1 foot to 2 feet, and their monazite contents are very variable, ranging from an infinitesimal proportion up to 1 to 2 per cent. The mining of monazite consists merely in washing the sands in sluice boxes, similar to those employed in alluvial gold mining. The sluice boxes measure 8 feet in length, 20 inches in width and 20 inches in depth. Two men work at a box, one charging the gravel on a perforated plate at the upper end, and the other working the contents up and down with a fork or perforated shovel so as to cause the lighter sands to float off. The boxes are cleaned out at the end of the day's work. Magnetite, if present, is eliminated from the dried sand by treatment with a large magnet. Many of the heavy minerals, such as zircon, rutile, corundum, garnet, etc., can be completely eliminated. A cleaned sand containing 65 to 70 per cent of monazite is considered of good quality. According to Mr. H. B. C. Nitze, from 20 to 35 pounds of cleaned monazite sand per man is a good day's work. The cost of labor is 3s. per day. In South Carolina better methods of mining and cleaning are used and a richer product is obtained. Various classes of sand are produced, the best containing 85 per cent of monazite. The South Carolina production, however, represents only a small proportion of the output of the United States, for the mines are much less important than those of North Carolina. In some exceptional cases it is possible to extract with profit the monazite from the containing rocks *in situ*. For example, in Cleveland county, North Carolina, at the Phifer mine, hillside mining is resorted to in the case of a micaceous gneiss in which crystals of monazite occur. The production of monazite is very irregular, but at the present time the market easily absorbs all that is produced. The highest price recorded was in 1887, when it was 1s. per pound, but it fell suddenly to 2½d. At the present time prices vary from 2d. to 4d. per pound, with a proportion of thorium varying from 2 to 6 per cent. The production of the United States in 1901 was 748,736 pounds, valued at £11,852. The production of Brazil was 1,643 tons, valued at £23,937. The production in Australia, Siberia and Norway is considerably less.

## BOOKS AND PAPERS

COMTE DE VOGÜÉ'S remarkable book on the architecture of Central Syria has waited a generation for its complement. The American expedition, carried through at the cost of a number of American gentlemen, on a larger scale than that of MM. de Vogüé and Waddington, and provided with appliances that were unavailable in 1892, has not only re-examined the ground gone over by

them, but extended its operations farther, recording a great series of monuments that are not included in the earlier work, bringing back a treasure of architectural descriptions, drawings and measured plans, and many hundred photographs. It was none too soon to undertake this work. Already many of the monuments described by M. de Vogüé, hardly molested except by earthquakes during twelve centuries, have since his journey been despoiled by the Arabs of to-day, or pulled down for the sake of their materials. Happily Mr. Butler's re-examination bears witness to the care, accuracy and judgment of his predecessor's descriptions, so that we are not only assured of their truth in many cases by the mouth of two witnesses, but are confirmed in our confidence in cases where his report is the only testimony that we can ever have. It gives great satisfaction to find that the admirable drawings of M. Duthoit, from which the plates in the French report were made, are on the whole as trustworthy as they are skilful and graphic; and we need not too greatly lament that the first expedition had to get along without a photographer.

M. de Vogüé studied the most conspicuous towns and a considerable share of the most important buildings; but there remained a great mass of new material ready to Mr. Butler's hand,—fresh towns, fresh buildings in towns before examined, fresh details in buildings before described, on which he brings to bear a training in the best archaeological methods, a keen eye, a good judgment both in selecting and in interpreting; and though the tangled history of architectural development in Syria is yet by no means cleared up, its main outlines and a great many points of detail have been made plainer than before by his researches.

Inland Syria, like Phœnicia before it, was the meeting ground of many influences, political, commercial and artistic. But the aspect of it which we see here was singularly limited, of rapid growth and sudden decline, with neither an early past nor a very long maturity. Of ancient Antioch, the great capital built out of nothing by Seleucus, fire, conquest and earthquake have left us practically no remains. The lesser cities of inner Syria bear witness in their ruin of an instantaneous extinction. The country is studded with them, small, compact, incomparably well-built, as distinct and thick-set as in a populous Swiss canton, in the Pays de Vaud for instance. Clear dates are singularly numerous among the monuments, to show that their history lies between the first century after Christ and the seventh. They stand now, or did when M. de Vogüé found them, like Pompeii, though not buried, but as if they had been abandoned in a panic, and for the most part without mark of pillage or violence, except for the shaking of earthquakes, and the slow ravage of the weather.

Students of architecture know the character of that of Central Syria. Its interest lies in two conspicuous things—in its intermediate position between Classic art and Mediæval art, and in its picturesque inventiveness. As we look over the memorials of it in the books of M. de Vogüé and Mr. Butler we are in constant surprise at the lightness with which it wore the bonds of Classic style, the freedom of invention with which it developed variations from that style, tending progressively for three or four centuries in much the same direction as moved later the great transformation from Classic to Romanesque in western architecture. It is notable that the guiding factor was the same in both movements—the impulse to substitute a stone construction for one of wood, in the West for the sake of permanence, in the East for mere lack of wood. In both cases it led to the substitution of the arch for the lintel; but in the one case to the use of the vault, spanning broad areas, in the other to stone flagging over narrow intervals. In details the two developments are strikingly similar; we seem hardly to miss the germs of any forms of the Romanesque except the manifold recessing of door and window openings and the grouping of nook-shafts that went with it. The church at Rawehia, one of the latest in the Syrian series, even shows the beginning of the system of grouped piers that went with vaulting. But a thing that sets the Syrian architecture and its divergence from Classic originals absolutely apart from the corresponding transformation in the West is that there is no decadence here. Instead of passing through such an interim of pitiable decline as intervened between Pagan art and Christian in Europe, and yet without following the current of Byzantine art in the Eastern Empire, it set out unhesitatingly on a vigorous evolution as sure-handed as that from Gothic to Renaissance. Here, however, the progress was not from freedom to restraint, in subservience to a fashion, but from formality to the liveliest invention, under the influence of every-day use and the adaptation of material, just as the mediæval builders worked. Then, in the full blaze of its development, it was blown out like a candle.

Its most striking characteristic is that it was, more absolutely perhaps than any other that we know, a stone architecture. The country, early stripped of its forests, was mostly treeless and rocky. Among the northern mountains, though timber enough was procurable to roof and floor the buildings, it was sparingly used; but in the South every part, even to doors and standing furniture, was of stone, and the whole structure of the buildings, though the stone was an intractable basalt, was adapted to this material, wrought with great freedom of design and fineness of workmanship. It is striking to a modern eye to find these innumerable tiny cities, with everything on a small scale—streets, squares, houses, public buildings, almost like children's play-houses,—yet built and finished in material that is to us a sign of luxury, and with a lavishness of labor and substantial completeness in details that modern men hardly

<sup>1</sup> Part II of the Publications of an American Archaeological Expedition to Syria, in 1899-1900. Architecture and Other Arts, by Howard Crosby Butler, A.M. Published by the Century Co. New York, MCMIII.

allow themselves even at their richest; as if these were the homes of universal opulence, as if poverty or narrow means had no place in them.

So resolutely lithic is this architecture that, though limestone abounds in the northern part of the country, the use of mortar is carefully shunned whenever it can be. The stonework is carefully wrought to close joints, fitted like carpenter's work, and laid dry, though there is evidence that in many cases inner surfaces were primed with a fine coating like those of a Greek temple or stoa. Small arches are cut out of lintels or coursed masonry, as we have seen them in Athens; larger ones were laid dry in close-cut voussoirs, as were the semi-domes that regularly cover the apses of the basilican churches. Only in the basalt region, where the intractable stone, hard and fragmentary, resisted a purely lithic construction, and in the less important buildings, was the masonry laid in mortar. There is, to be sure, a marked exception in the Syrian Philippopolis, the modern Shoba, or Shehba, a Roman city, built in the third century after the Roman fashion by the Roman Emperor Philip, and in a few buildings here and there where the effort to cover a hall or church with a dome, at Bosra for instance, led to the use of a Roman concrete construction.

The avoidance of mortar must have come, it would seem, of a positive repugnance or contempt, of a piece with the old Greek habit of building. It coheres with the fact that the fundamental forms of the architecture as a whole are Greek, at least in origin, and the political facts that the Greek dynasty of the Seleucidae had ruled the country for some centuries before the date at which these buildings begin, and that, whatever Oriental elements were mingled in it, the civilization of Syria, and even its current language, at the Christian era, were essentially Greek. Antioch, the first city in Syria, and next in the world to Rome in wealth and luxury, which had given to Christians the name by which the world has known them, and which in Constantine's time contained, as we are told, a hundred thousand of them, was as thoroughly Greek as Alexandria, or any Greek city of that day. Whatever may have been the action of Oriental influences on Syrian architecture, or whence derived, we are led to believe that it represents to us at once the last phase of Greek building that we can identify, and the earliest of Christian.

Mr. Butler has done his work remarkably well. He has studied his buildings with a keen eye and excellent judgment, and illustrated their architecture with generous knowledge, archaeological and historical. Without assuming to make clear the intricacies of its origin, he has added to our previous knowledge, and his comment is illuminating. His work carries conviction of care, accuracy and discretion, exercised under what must have been difficult conditions. His readers are seriously handicapped by lack of a map, which, as we have heard, has been kept back by delay in preparing the first volume of the Report. The make-up of the book is good in its kind—that kind which the ambition of archaeologists to make their publications monumental has fastened upon us. There is a carefully written text, illustrated with a liberal selection of interesting photographs, well constructed plans, and occasionally skilful restorations. Although there are no large plates the book takes the shape of a burdensome quarto. The dogma of American printers that half-tones and line-plates compel a heavily clayed paper, and the unnecessary size of the page, have made a volume that the reader takes up with reluctance, reads with difficulty in spite of its large type, and lays down with relief. The pride of the learned makes the way of the student hard.

## ILLUSTRATIONS

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

THE BLACKSTONE MEMORIAL, KENWOOD, CHICAGO, ILL. MR. S. S. BEMAN, ARCHITECT, CHICAGO, ILL.

THIS building, recently presented to the city as a branch library in memory of her husband by Mrs. T. B. Blackstone, is built of Concord granite and in exterior dimensions measures 60' x 110'. Its relatively large cost, \$250,000, is accounted for by the character of the workmanship, the fact that the structure is fireproof, and the materials used of somewhat unusual character. Thus the main doors and window frames and the finish about the ends of the book-stack divisions are of bronze, the floors of mosaic and furniture and finish of mahogany.

Moreover great care has been taken with the color decorations, and unusual pains have been expended on securing proper lighting for the decorations in the dome both by day and by night, so that this work, the result of the skill of Mr. O. D. Grover, might attract as deserved attention as the pleasing lunette decorations in the rotunda.

ROTUNDA OF THE SAME BUILDING.

A COMPETITIVE DESIGN FOR THE CATHEDRAL OF ST. JOHN IN THE WILDERNESS, DENVER, COLO. THE F. E. EDBROOKE ARCHITECT CO., ARCHITECTS, DENVER, COLO.

PLAN OF THE SAME.

COMPETITIVE DESIGN FOR THE CITY-HALL, DRESDEN, SAXONY. HERR J. REUTERS, ARCHITECT.

THIS plate is copied from *Architektonische Rundschau*.

Additional Illustrations in the International Edition.

LUNETTE DECORATIONS IN THE BLACKSTONE MEMORIAL, KENWOOD, CHICAGO, ILL. MR. O. D. GROVER, PAINTER:—

"ART."

"LABOR."

"LITERATURE."

"SCIENCE."

## NOTES AND CLIPPINGS

A NEW TRAVELLING-SCHOLARSHIP.—Provision has been made by the Society of Beaux-Arts Architects for establishing a travelling-scholarship, to be won by competition and to carry with it a two years' course in architecture at the Ecole des Beaux-Arts in Paris.—*Exchange*.

THE FIREMAN, THE STANDPIPE AND THE CELLAR.—An alarm of fire had been turned in from a Twentieth Street box the other day, and the first engine that responded got down to business at once. The fire was on the fourth floor of a big office-building, which was equipped with standpipes. Congratulating themselves that it was not necessary to drag the hose upstairs, the firemen made fast their line to the standpipe, and the engine pumped at full pressure. "Hurry up with the water," the men on the fourth floor yelled to the engineer of the steamer. A few minutes later an excited individual ran up from the basement. "What you do mit my cellar? You have more as two feet of water already," he said. The disgusted firemen then realized that the standpipe had been left open in the cellar, so that all the water forced in by the engine had gone down instead of up.—*N. Y. Evening Post*.

RAILROAD SNOW-SHEDS.—A new and greatly improved style of snow-shed has lately been introduced with success on some of the railroads penetrating mountainous regions. Among the many difficulties encountered by the early railroad builders of the West was the heavy and long-continued snowfall in the Sierra Nevada Mountains of California. The history of the invention of the snow-sheds by the engineers of the Central Pacific is already well known, and reference has frequently been made to the developments made, as a result of experience with the peculiar conditions, which could not easily have been foreseen. The snow-sheds, extending from Blue Cañon Station almost to Truckee, were first built, as naturally suggested itself, with steep roofs, and section somewhat resembling an ordinary house, but it was later found that the unbalanced weight of the snow on one or the other side, especially on side-hill work, caused continual trouble by throwing them out of line down hill. The next step was to anchor the snow-sheds back to the side-hill with heavy rods attached to the framework of the shed and sulphured or otherwise secured to the rock or earth of the cut. It was found, however, that the snow would melt from beneath the rods, and on the adjacent ground and roof of the shed, so that the entire mass, many feet deep, would hang upon the rods, bending them down and pulling the sheds in towards the bank, throwing them out of line in a direction opposite to that which occurred when there were no rods. This brought about a still further development, that of extending the roof, where it was practicable, into the adjacent banks, forming a shed which prevented the wedge of snow piling in between the building and the bank. Much shed of this character is still in use over the high Sierras. This was found to be of such advantage that it suggested the present typical shape, which is that of a flat roof, making the top of the shed somewhat wider than the bottom, so that the melting wedge of snow, between the structure and bank, falls away from the side of the shed instead of pressing against it, and the weight upon the base is increased to prevent overturning. This form of roof necessarily brought the roof covering down closer to the locomotive stacks and increased the danger of fire during the dry summer season. To obviate this hazard, deflectors are attached to the smokestacks of the mountain locomotives for the purpose of throwing the sparks to the sides instead of straight up against the roof of the snow sheds. These deflectors are so hung that they can be thrown to one side of the stacks when the engines are not in the sheds. But there still remained the danger from brush and forest fires, which cause most of the trouble, although the right-of-way is kept clear of all brush and trees. On the Central Pacific there are thirty miles of continuous snow-sheds, and others in isolated spots bring the total up to about thirty-three miles, along the Sacramento and Truckee section. Travellers are well acquainted with the famous chain of snow-sheds over the Sierra range. The sheds are built right up to tunnel portals so that trains pass from shed into tunnel and out into shed again, over the thirty-three miles course, without going into the open. With the advent of the snow-plough it was presumed that the sheds could be ultimately done away with, but near the summit of the Sierra Nevada Mountains the tracks are subject not only to blockade from snow but also from avalanches containing rocks, trees, etc., carried along with the sliding snow, against which the snow-plough is of no avail. During long continued snow storms only the snow-ploughs could use the tracks to the exclusion of traffic, as the deep cuts would fill behind the ploughs almost immediately. Therefore it seems impracticable to dispense with the snow-sheds, in this section of the country, in which the snow lies upon the ground, in some years, from November to June.—*Boston Transcript*.

**A CONCRETE-STEEL LIGHTHOUSE.**—A concrete-steel lighthouse has just been built by the Russian Government at Nicolaieff to light the canal which joins that town to the Black Sea. It has a thin circular shaft about 110 feet high, which has a diameter of about 6½ feet at the top and straight sides slightly battered to a point about 40 feet above the base, where the batter increases, and the sides are curved so as to widen to a diameter of 20.7 feet at the base. This shaft is set on a circular cup-like foundation 8 feet deep with a horizontal footing 28.2 feet in diameter. The side walls of the foundation are battered, and within them there is a circular space 19.7 feet in diameter which is filled with earth and covered by the reinforced concrete floor of the shaft. The shaft is surmounted by a cylindrical chamber 14.8 feet in diameter inside and 9.8 feet high, with reinforced concrete brackets carrying the overhanging floor. On top of the chamber there is a domed lantern about 6.8 feet in diameter and 13 feet high. The shaft is made without interior divisions, floors or bracing, and contains only a spiral staircase reaching to the upper chamber. The construction throughout of foundation, shaft, chamber, lantern and stairs is of reinforced concrete made in the proportion of 661 pounds of Portland-cement, 14 cubic feet of coarse sand and 28 cubic feet of washed gravel. The reinforcement in the shaft consists of horizontal circular ¾-inch steel rods about 1 foot apart vertically and ¼-inch vertical rods about 9 inches apart wired together at intersections and spliced by short pieces lapped and wired over the joints. The foundation walls are reinforced by rods in the vertical and battered faces and horizontal tie pieces. The footing, which is 30 inches deep, is reinforced by ¾-inch horizontal rods at right angles to each other near the upper and lower surfaces. The brackets supporting the floor of the upper chamber are made integral with the walls of the shaft and the floor, and have their under sides curved to form mouldings. They are reinforced by horizontal and inclined rods wired to the vertical rods in the shaft and by vertical and diagonal rods wired to those in the upper and lower flanges of the brackets. The walls and roof of the chamber and lantern are reinforced with simple vertical and horizontal rods. The lighthouse was proportioned for a wind pressure of 15 pounds per square foot of the surface. All the reinforced rods were painted with cement grout before being bedded in the concrete. It is stated that the reinforced construction cost 40 per cent less than a corresponding one entirely of brick or entirely of metal. The brick lighthouse would have weighed 1,365 tons against 460 tons which this one weighs. — *The Architect*.

**ONE RESULT OF "THE RAILROAD BEAUTIFUL."**—Over a half million women annually get free bouquets at Niles, Mich., where a railroad company has just rebuilt its hothouse on a scale that doubles its former capacity. It matters not whether it be midwinter or the blistering months of summer, there is a fragrant shower of cut flowers at this pretty country station as soon as a train stops. The new building is one of the most extensive and substantial that has ever been erected for the purpose. It not only holds a never failing supply of flowers for the tiny bouquet for the women folks, but in it are stored thousands of plants that in the spring are shipped to every part of the system to be used in beautifying station grounds. The hothouse is composed of a main building, from which lead two wings, one 70 and the other 40 feet long. The glass roofs are 20 feet above. The framework of the entire building is of steel, the glass roofs shed the water into steel gutters and the entire plant is heated by a capacious battery of boilers in the basement of the main building. At the south end of the building is a palm-house, the glass of which is 30 feet in the air. In the second story of the main building is a storeroom and a great basin, in which fertilizer in liquid form is kept. In the building there is 10,000 feet of glass. In one bed built on a steel frame, underneath which steam-pipes are coiled, there are 4,000 geraniums, which is only a part of the supply of this variety. The carnations run up into the thousands. There are sweet peas from bushels of seed, and violets of all the colors that ever bloomed. In different parts of the roomy structure are found snowy oleanders, yellow asters, purple phlox, heliotrope, tiger lilies, dahlias, azaleas, coleus, and everything to delight the gaze of every one fortunate enough to behold the sight. More than a decade ago the officers of the Michigan Central conceived the idea of raising enough flowers to enable them to throw in the lap of each woman passenger, be she of high or low degree, a boutonniere of cut flowers. An employe in uniform bearing a basket filled with the favors passes through the train distributing the fragrant bunches. The men do not count in this matter, and must be content to see the women enjoy the gift. The entire floral department of the road as well as the hothouse at Niles is under the charge of John Gipner, an experienced florist, who has presided over the department since its inception. — *Chicago Record-Herald*.

**AZTEC EXPLORATION.**—An interesting story of life among the Peruvians and the relics of the now extinct Aztec race was told recently by G. P. Simpson of Regent's Park, London, who has travelled around the world as a mining capitalist and roamed over the Americas many times during the past thirty years. He has just returned from an extensive trip through South America, exploring the vast resources of that continent of the future. "In my travels in the Americas I think the most interesting thing I saw anywhere was that part of Peru in which the Aztecs originally lived and exerted their influence upon the neighboring tribes and nations, until Pizarro finally came in the sixteenth century and wiped out their civilization forever. Their remains have been explored and thought of now for more than a hundred years, and the romance of their rise and fall is still fresh to the tourist, who ever first seeks relics of the people the Spaniards conquered. Rising in the twelfth century, so it is said, they progressed to a wonderful state of civilization, building some of the finest roads in the world, tilling the soil and expanding their power constantly by an army that fought

with bows and arrows. Finally came Pizarro with his mailed soldiers, who Christianized the Peruvians with fire and sword. Of course this is all old that I have been telling you, older than the peopling of America, the story, in brief, of the most advanced primitive people of the two continents. The application lies in the fact that when in Peru I saw many of those relics which still remain to remind the traveller of the tale of long ago. I think that the most interesting and peculiar things I saw were the burial relics. Travellers and explorers have sought them for so long that it is very difficult to find them now, but along a part of the coast not often frequented the party found many evidences of the Aztecs. We started to digging one day where we were told by the natives that we might find some of the bones of their ancestors. Digging away, we found, several feet beneath the sand, bones and entire skeletons in a wonderful state of preservation as a result of the peculiarly dry soil, there being no rains there. The Aztecs did not bury their dead incased in any covering, but threw them into the hole that had been dug in this way. More interesting and more expressive of veneration were the relics in the shape of pottery which had been deposited with the bodies centuries before. There were huge water-jars of crude shapes, but neatly carved with some emblem of the trade which they had followed in life. In this way, though many generations had descended from those who had been buried there, we found clear inscription of their calling, of what they did in the world. And is not that all that we shall ever be remembered by? What's in a name? Wauchos was the name given to this class of relics. The jars, when the individual was buried, were filled with water by his family, so that he might not become thirsty on the journey to the other side. Legend tells us of the crude sort of religious ceremony that was said over the grave, and as I saw those bones and peculiar relics being brought out of the grave, I thought how, perhaps hundreds of years ago, these bones might have taken part in the life of a time that is as crude to us as ours will be centuries hence. But the idea that was of greatest interest to me was that of these people realizing that the greatest thing to be remembered by was the occupation, what the buried really did in the world. Leaving the graves and carrying the relics, some of which I have with me now, we came to a part of the old fortification which 600 years ago the Aztecs built to defend themselves against the other tribes of the Andes and later against the warriors of Pizarro. They were white and bleached, 40 feet high, and wonderfully preserved. Over these they had battled with their enemies, at first subduing and then subdued. Besides this, we saw the fine roads made by the Aztecs, which are as good to-day as they were when they were made. The race of the Aztecs has passed away forever now, but there will come a time some day, and not so many generations distant, when there will grow up a new race to take possession of the wonderful resources of that vast region not only in Peru, but Central and South America. I mean the United States. The little mean and pettifogger nations will quarrel on, commercial interests becoming greater meanwhile, until some day it will become necessary for a stronger hand to keep the peace of the hemisphere. The United States will control the continent." — *New Orleans Picayune*.

**VENTILATION OF THE HOUSES OF PARLIAMENT.**—Although Dr. Arnott and others had expounded the laws of ventilation and the vital necessity of their observance, it was not until the Houses of Parliament were in course of construction that a systematic effort was made to carry out a great scheme of warming and ventilation on scientific principles. Dr. David Boswell Reid had the courage to propose about 1839 that all the chimneys in the new building should be dispensed with, and all the smoke and vitiated air from every room carried into towers or shafts in which large furnaces were to cause an upright draught. Similar shafts were to convey cold air for dispersion. Unfortunately Dr. Reid was appointed superintendent in 1840 without any consultation with the architect, or any arrangements about the scope of their respective duties. Dr. Reid was to have about a third of the building under his special control. Disputes arose, and Joseph Gwilt was appointed arbitrator. He came to the conclusion that the fireproof character of the building was endangered by Dr. Reid's vertical flues, and he recommended that the architect should exercise his legitimate authority, with liberty to call in experts in ventilation and heating. Among those who gave their aid were Professor Faraday and Mr. Goldsworthy Gurney. It was not to be expected that an undertaking which opened so inauspiciously should attain perfection. The knowledge of the diversity of the systems was quite enough to make members feel that heating and ventilation were defective and to magnify the inconvenience which followed. The reports of the different investigations into the subject might be said to form a library. But the knowledge disseminated in that way has been attended with advantages. Few, however, have the courage or the time to undertake a study of ponderous blue-books. An abstract or epitome of the volume relating to the inquiry of the select committee in 1903 is issued by Messrs. Hickson, Ward & Co. In about thirty pages the opinions and conclusions of a great many experts are given. It is needless to remark that the information relates to other buildings as well as the Houses of Parliament. The subject is one on which we cannot receive too much information, for the vitality, not only of our legislators, but of the public in general, largely depends upon the character of the ventilation which is found in buildings which they occupy even temporarily. — *The Architect*.

**LOSS OF HEAT BY STEAM-PIPES.**—The heat lost by radiation from bare pipes containing steam at 100 pounds pressure has been estimated by Professor S. P. Thompson to be that of about two tons of coal a year for each 10 square feet of pipe-surface. Another experimenter has found that eighty-eight per cent of the loss is prevented by the best mica covering, but that asbestos covering is much inferior to mica, and cements are less effective still. — *Exchange*.

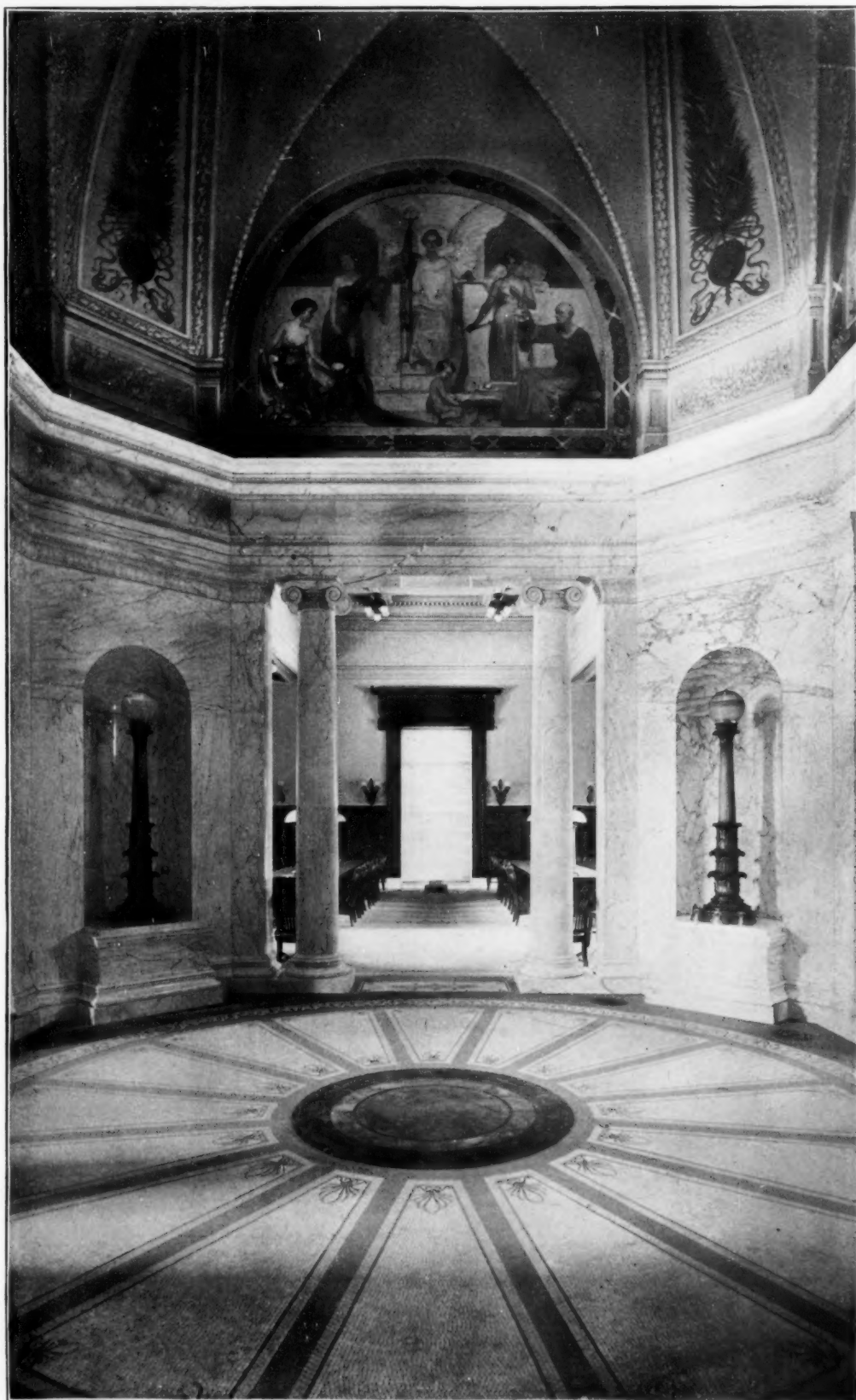




*The Blackstone Memorial, Kenwood, Chicago, Ill.  
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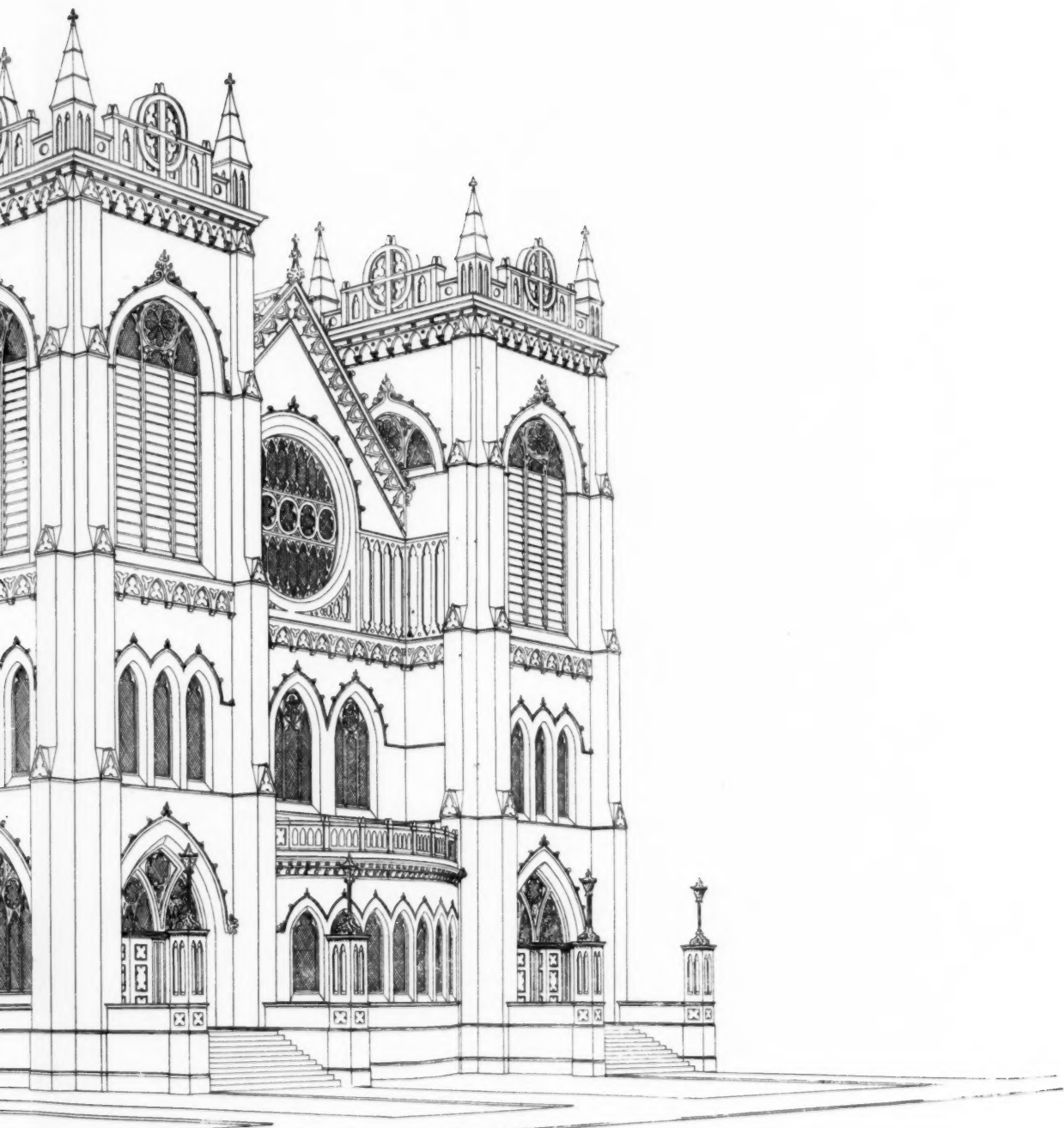
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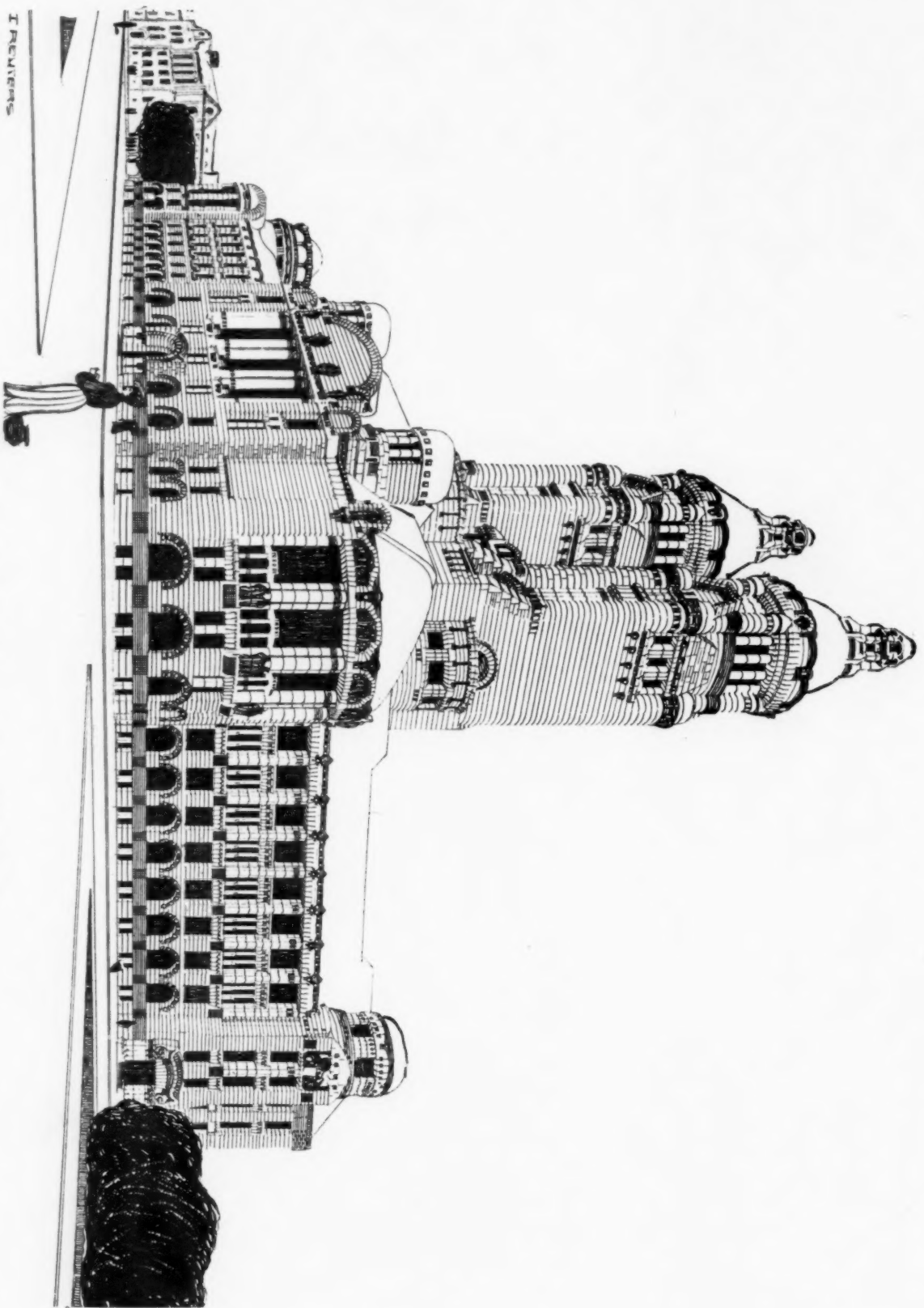
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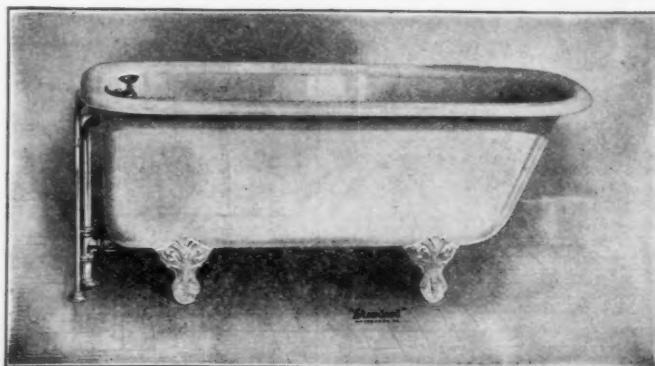


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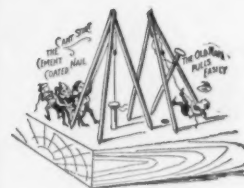
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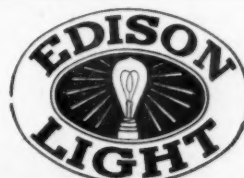
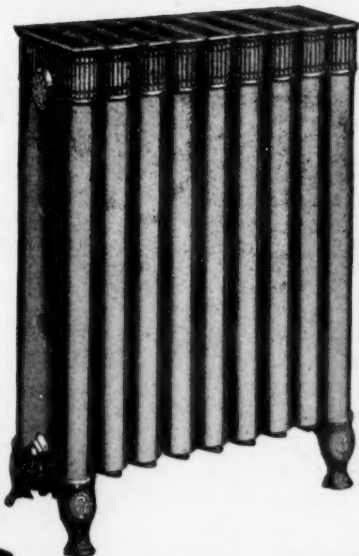
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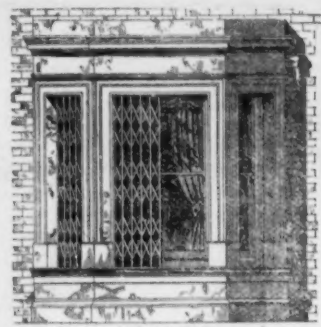
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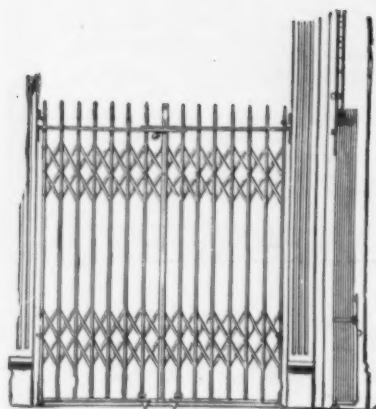


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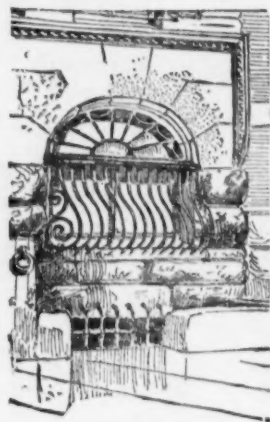
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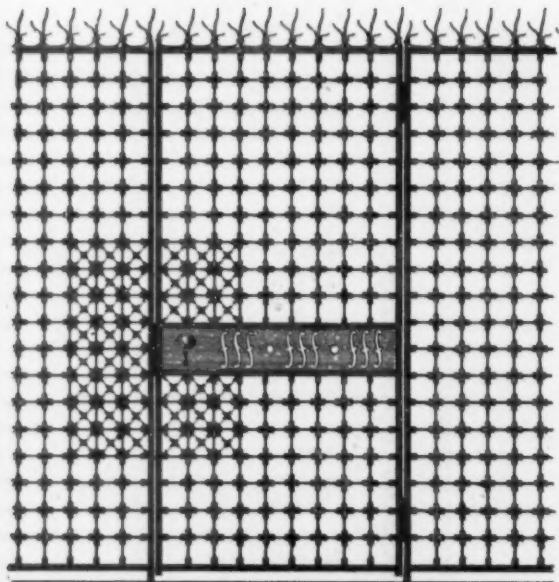
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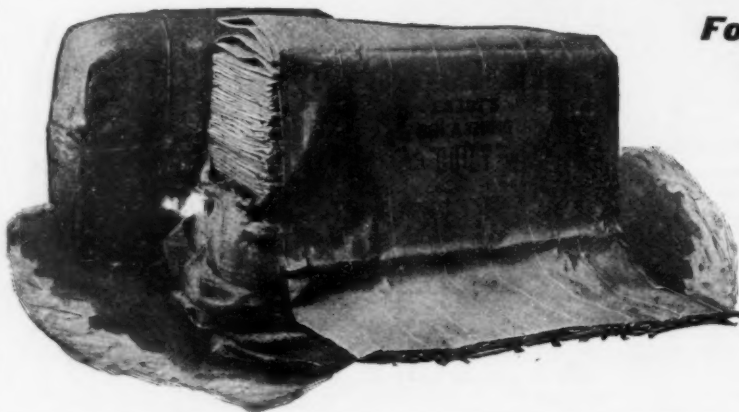
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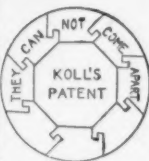
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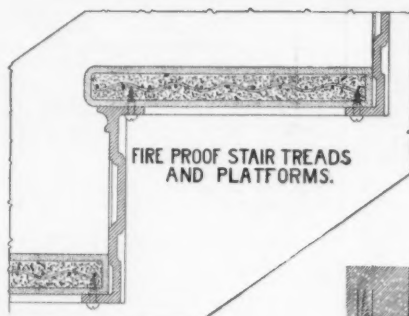
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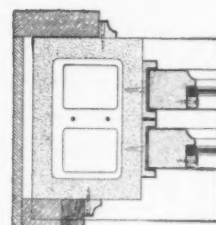
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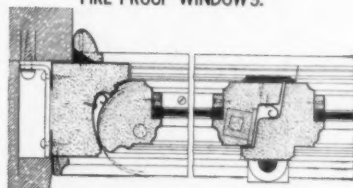
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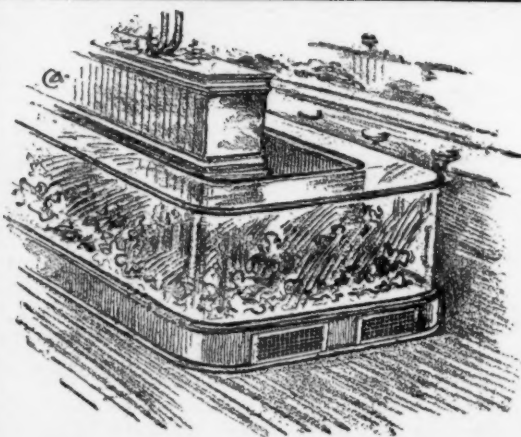


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### New Advertisements.

E. THIELE (New York, N. Y.), Portland Cement, Page xii.

See last or next issue for the following advertisements:—

American Tin Plate Company.  
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## ARCHITECTS' REMOVALS, Etc.

THE office of Joseph M. Darling, Fall River, Mass., formerly located at 49 Bedford St., has been removed to 41-49 Bennett Building, 51 N. Main St.

JOHN GALEN HOWARD & D. EVERETT WAID, architects, have dissolved partnership. Mr. Howard is professor of architecture in the University of California and will make Berkeley, Cal., his home. Mr. Waid will continue the New York practice and retain the offices at 156 Fifth Ave.

THE new firm of Temple Burrows & McLane has opened an office in the McManus Building, Davenport, Ia. Messrs. Burrows & McLane have, for a number of years, been connected with the architectural department of the University of Illinois. The new firm requests that its name be added to the list of architects, from which material men take addresses, as it is desirous of obtaining late catalogues.

D. H. BURNHAM & CO., architects, will on March 15, 1914, move their offices in Chicago from 4142 The Rookery, to 1417 Railway Exchange Building, corner of Jackson and Michigan Boulevards. Permanent telephone 4145 Harrison. 1471

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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.

Allston, Mass.—Ground has been staked out for the new Washington-Allston school buildings. The plans by Stickney & Austin show a structure three stories high, of brick and stone and to contain fourteen rooms. Its cost above the land will be \$115,000. The location is at Brentwood and Athol Sts.

Atlanta, Ga.—G. L. Norrman, 845 Equitable Building, is preparing plans for the First Baptist Church to be erected at Peachtree and Cain Sts., at a cost of \$65,000.

Baltimore, Md.—The Maryland Casualty Co. has selected the design of Parker & Thomas for the new office-building to be erected at North and Fayette Sts. It has been decided to erect a ten-story office-building, 40' x 210', of an ornate style of architecture. The architects have already submitted preliminary sketches, and will work their draughting department day and night in order to get out the detailed specifications for contractors to make their bids. The new building will cost about \$500,000.

William G. Nolting, architect, estimates that about \$50,000 will be the cost of repairing damage to exterior walls of Baltimore court-house.

Bethlehem, Pa.—The Beethoven Maennerchor, of this place, is contemplating building a new concert hall, to cost \$20,000.

Bettendorf, Ia.—The town council will erect a jail.  
Beverly, Mass.—Rev. J. J. Howard, pastor of St. Catherine Roman Catholic Church of Athol, has purchased a site in the centre of the town and is planning to erect a \$40,000 church edifice.

Boston, Mass.—At a recent banquet of the Y. M. C. A. it was announced by Hon. Eugene N. Foss that the new building for the Association is to be much larger than the present one. He said that the site of the structure has been selected, but as the deal has not been completed at this time, he does not yet care to say where the location will be. The new building will cost between \$750,000 and \$1,000,000. A generous amount has already been pledged for the construction.

The Boston Club is negotiating for the purchase of the site of the Methodist Episcopal Church, on Bromfield St., on which they will build a club-house.

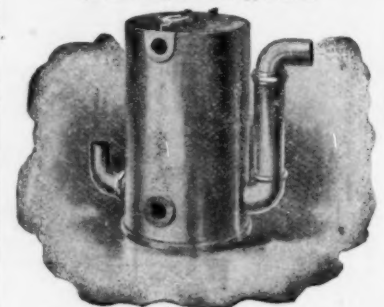
Brandon, Man.—Architect Marshall is preparing plans for a two-story and basement club-house, brick and stone, to be erected here for the Brandon Club. Cost, \$12,000.

Bristol, Tenn.—The National Bank of this city has decided to erect a handsome bank building here, which, it is estimated, will cost \$90,000.

Burlington, Vt.—J. J. & J. F. Whalen, of this city, will erect a new theatre on the foundation in the rear of the Strong Building on Main St., at a cost of \$60,000. The plans have been drawn by F. L. Austin and work on the building will begin at once.

The trustees of the University of Vermont have decided to erect the new medical college building on the site of the old structure, which was destroyed by fire some months ago. The work of tearing down the ruins of the old structure will be commenced as soon as spring opens, and by the time this is com-

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## BUILDING INTELLIGENCE.

(Advance Rumors Continued.)

pleted, plans for the new building will have been perfected. The new building will be erected at a cost of \$100,000.

Cambridge, Mass.—Harvard College may be the recipient of a \$1,000,000 endowment for a Carnegie Library. The University is willing to pledge itself to carry out the usual agreement under which all Carnegie libraries in this country have been erected; namely, that enough money will be raised by alumni to ensure the constant care and service necessary for such an institution. The library at Harvard is so large that part of its rich treasures cannot be housed anywhere so as to be accessible to students. Some of the most desirable treasures have never been removed from their packing cases, on that account. The new structure would hold all the libraries connected with the college and the different university schools, including the law school. The building would be one of the largest at Harvard.

Cedar Rapids, Ia.—Plans are under consideration for an addition to the Taylor School.

Plans for a five-story fireproof building to be known as the Allison Hotel have been prepared by Uehling & Linde, 120 Wisconsin St., Milwaukee, Wis. Cost, \$150,000.

Charlton, Ia.—Plans are being prepared for a two-story fireproof building for the county farm, 86' x 92'.

Chicago, Ill.—A three-story apartment-house is to be erected in Sheridan Park from plans drawn by Architect Frank V. Newall, 78 La Salle St. It will be constructed of pressed brick and stone and will extend over an area of 55' x 150'. Cost, \$45,000.

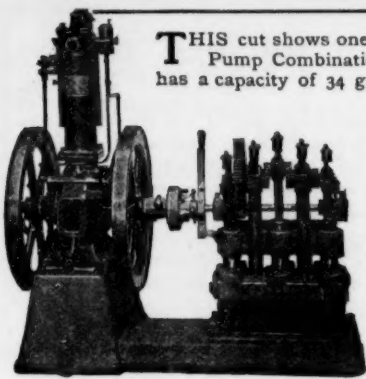
It is reported that a large modern twelve-story fireproof building is to be erected at 111 to 119 Plymouth Pl., to be devoted to the publishing and printing business.

Cleveland, O.—A power building of ten floors and a sixteen-story skyscraper have been planned by the Republic Building Co., incorporated at Columbus with a capital of \$500,000. Work on the power building will be commenced as soon as the weather permits. The building will be located on land now leased on Euclid Ave. close to the business centre, and will be designed to accommodate light manufacturing and members of the printing trade and the allied industries. Plans are now being drawn and it will be a substantial structure, fireproof and of heavy material. Plans for the skyscraper have not yet been drawn, but land has been secured. This building will also be located on Euclid Ave.

Columbus, O.—The Columbus Savings and Trust Co. have leased from the Monypenny estate the northeast corner of High and Long Sts., and on April 15 will commence the erection of a fourteen-story building. The structure will be 62½ feet by 187½ feet and will cost \$400,000. It will be of the most modern construction. The lower floors will be used as a home for the bank and the other floors for office purposes. The plans for this structure were prepared by Architect Packard.

Corydon, Ia.—The School Board is considering the erection of a \$12,000 building.

Davenport, Ia.—At a recent meeting of the School Board it was decided to accept the plans of Clausen



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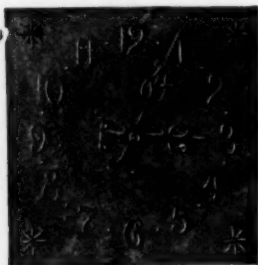
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### BUILDING INTELLIGENCE.

(Advance Rumors Continued.)

& Burrows for the new high-school building, provided it may be erected within the limit of \$175,000. The building will be one of the finest in the State, the general plans calling for a construction of pressed brick trimmed with stone. In case the present plans will exceed \$175,000 in cost of construction, it is thought that several of the items may be scaled down so as to come within the required limit.

**Decorah, Ia.**—Plans have been completed by Architects Turnock & Ohrenstein, of Chicago, Ill., for a hotel to be built here. The new structure will cover an area of 110' x 115'. will be three stories high, and will cost about \$100,000.

**Dover, N. H.**—The plans of A. T. Ramsdale, of this city, have been accepted for the new High School, to cost \$50,000.

**East Orange, N. J.**—At a meeting of the School Board it was decided to recommend the adoption of a resolution by the East Orange City Council appropriating \$78,000 for the building of the proposed school at William St. and Greenwood Ave.

**Elizabeth, N. J.**—Rumor states that the Roman Catholic Society of this city has decided to erect a hospital here at a cost of \$150,000.

**Fort Ethan Allen, Vt.**—New buildings involving an expense of \$150,000 will be erected here this summer by the government. A new guard-house, new bakery, new oil shed, stables for the band, quartermaster's stables, and stables to replace the ones burned over a year ago will be among the new structures.

**Gloversville, N. Y.**—L. C. Holden, 1133 Broadway, N. Y. City, has plans for an extension to be erected at the Nathan Littauer Hospital, in this city, at a cost of \$25,000.

**Greensboro, N. C.**—It has been decided to erect an \$80,000 dormitory at the Normal and Industrial College, this city, which will replace the one recently destroyed by fire.

**Greenwich, Conn.**—A handsome private residence will be erected here for Edward A. Converse, 139 Broadway, N. Y. City. The building will be two and a half stories high, measuring 50' x 150', and will cost about \$100,000. A two-story stable, 50' x 120', will be erected in connection with the residence. The latter will be constructed of stone, elaborately finished in hardwood.

**Griencell, Ia.**—Plans have been prepared by Hallett & Rawson, 615 Walnut St., Des Moines, for a \$50,000 library building to be erected at the Iowa College.

**Hanover, Pa.**—Rumor states that Mrs. Gabriella Smith, of this place, will build a beautiful Catholic Church at Midway, a suburb of Hanover, as a memorial to her brother, the late Vincent O'Bold, of McSherrytown. The church will cost \$35,000, and will be completed next summer.

**Hudson City, N. J.**—An architect has been selected and plans are being drawn for a magnificent edifice which will replace the present wooden Roman Catholic Church of St. Nicholas at Central Ave. and Ferry St. The cost will be in the neighborhood of \$100,000. Work, it is expected, will begin in the spring.

**Iowa City, Ia.**—Butler Bros., of St. Paul, have been directed to substitute Bedford limestone for facing the federal building, at an increased cost of \$2,500.

### BUILDING INTELLIGENCE.

(Advance Rumors Continued.)

**Jersey City, N. J.**—Ground has been broken for the new Emory M. E. Church at Bergen and Balmont Aves. Work on the church will be pushed as rapidly as possible. The new building, which will cost in the neighborhood of \$60,000, is to be completed in about a year, and will be one of the finest church edifices in the State.

**Little Rock, Ark.**—C. L. Thompson, Arkansas Building, is preparing plans for a five-story brick business building, 90' x 140', which J. E. Skillern will erect on Scott St., between Markham and 2d Sts.

**Los Angeles, Cal.**—An expenditure of \$200,000 is contemplated in the erection of an up-to-date hospital in this city. The new building is to be erected at E. Washington and Trinity Sts. on a lot running through to 20th. The structure will be 130' x 180', three stories and basement. It will be of Classic design, the central structure of the Corinthian order and the two ends Ionic. The material used will be blue brick and terra-cotta stone.

**Michigan City, Ind.**—Plans have been made by Krehhoff & Rose, architects, of Milwaukee, for a building for O. L. Nierner. It will be two-story, 35' x 110', on concrete foundation, common and pressed brick, Bedford stone and composition roof. Cost, \$25,000.

**Milwaukee, Wis.**—The plans of Uehling & Linde were adopted at a recent meeting of the Statutory Committee on the School Board, providing that the architects would guarantee to keep the cost within \$58,000. The plans call for a steel and concrete structure which will be fireproof throughout. The architects guarantee that the cost will not go beyond the appropriation.

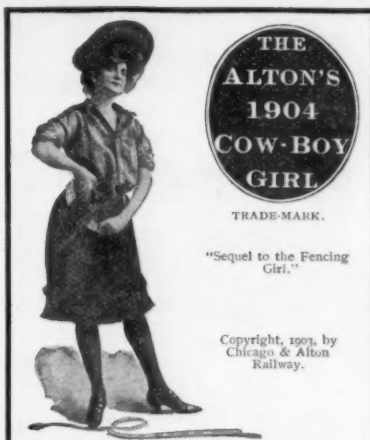
**Minneapolis, Minn.**—Plans are being prepared by Bertrand & Chamberlin, architects, for the Unique Theatre to be erected on Hennepin Ave., adjoining the Masonic Temple for J. E. Rogers. It will be 62' x 160', two stories and basement. The front will be of ornamental terra-cotta, iron and plate glass. The cost will be \$50,000.

A new residence is to be erected on Blaisdell Ave., near Franklin, for Mr. Burdick at a cost of \$20,000. It will be of pressed brick and terra-cotta trimmings. Kees & Colburn are the architects.

**Newport, R. I.**—Cahn & Cross, the lessees of the Newport Opera-house, who recently purchased land on Broadway and Equality Park, have notified the occupants of the houses on their property to leave, as they intend to start building operations as soon as the weather will permit the opening of the ground. It is understood that a modern fireproof theatre is to be erected on this land, with stores and a hall, and that it is hoped to have the place completed in time for occupancy in the fall.

**New York, N. Y.**—It is reported that Senator Elsborg's bill, authorizing New York City to appropriate \$1,250,000 to enlarge the Metropolitan Museum of Art building has passed the Senate. Not more than \$500,000 can be spent in any one year.

The directors of the Manhattan Eye and Ear Hospital believe that by selling the property now occupied at 41st St. and Park Ave. they would obtain enough money to purchase a larger site in a less valuable location, and have a balance large enough to build the greater part of a modern hospital with at least 100 per cent greater capacity



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### BUILDING INTELLIGENCE.

(Advance Rumors Continued.)

than the present one. "One plan considers using the money obtained from the present site for endowment, which, added to the hospital's endowment of \$171,000, of which only the income is available, would largely defray running expenses in new and larger quarters. To this end a year ago a director of the hospital and his family offered \$50,000 for a building fund on condition that \$150,000 more be raised by January 1, 1904. The friends of the institution increased their efforts, and were met with a generous response from a woman who would add \$50,000 more. Of the \$100,000 remaining only \$15,000 has been raised, and that includes a contribution from every physician on the staff. While the time limit has expired, the donors have extended their offers, 'on condition that ground is broken within the year for a new hospital.' The directors have accordingly placed the present site on the market, and have invited contributions to make secure the new building. Failing this, they will feel compelled to curtail the work."

A press report states that the School Board has on hand \$2,800,000 in the building fund, all of which will be expended on work now under way. This work was delayed by strikes, a fact that will make the expenditure in this year about \$15,000,000, while the new building estimates amount to only \$12,000,000. The estimated cost to build on sites under way is \$5,712,000, and the new buildings for Manhattan to be erected if the money is obtained, are to be at Eldridge and Forsythe Sts., Madison and Jackson Sts., Livingston and Pitt Sts., No. 238 E. 47th St., 3d Ave. and 41st St., Avenue A and 89th St., 7th Ave. and 119th St. and 1st Ave. and 117th St.

Plans have been prepared by Architect David Stone for the new business building which is to be erected at the northwest corner of Warren and Greenwich Sts. for the West Fargo Express Co., at present at 61 Broadway. The plans show a six-story building, measuring 76' x 92', of brick and stone and iron, to cost about \$150,000. All construction work and material will be let in one contract.

A home for the Aged People will be built by the Society of the Daughters of Jacob at 303 and 304 Broadway. The plans drawn by Architects Bernstein & Bernstein, 72 Trinity Pl., provide for a four-story building, measuring 50' x 100'. The new building will be brick and stone construction, and will cost about \$50,000.

Architects Clinton & Russell have prepared plans for the new 71st Regiment Armory, which is being erected at 34th St. and 4th Ave., at a cost of \$750,000. It will be the most elaborate structure ever erected for military purposes in this city and it is intended to be not only the home of the 71st, but the headquarters of all the troops in this city, and the central station of the Signal Corps, from which it may communicate in time of war or riot.

Plans for the new theatre which Oscar Hammerstein is to build in 42d St., adjoining the American Theatre, have been filed. It will be a four story structure of brick and terra-cotta. Estimated cost, \$175,000.

**North Highlands, Ga.**—Capitalists in Columbus and the North propose building a \$250,000 cotton-mill here. E. N. Clemence, of Columbus, Ga., formerly treasurer of the Eagle and Phenix mills of that city, is promoting the new enterprise. Construction work will begin very soon.

**Oakland, Cal.**—Architects Fuller & Fletcher, of Albany, N. Y., have completed plans for the new Young Men's Christian Association building which is to be erected at the corner of 14th and Jefferson Sts. in this city at a cost of \$200,000. The plans are for a six-story and basement brick and stone building in the Romanesque style of architecture. The association expects to begin work on it in the early summer.

**Racine, Wis.**—The County Insane Asylum, which was burned recently with a loss of \$115,000, is to be rebuilt without delay.

**Seattle, Wash.**—Eitel Bros. will erect a six-story building at 2d Ave. and Pike St., the cost of which will be \$100,000.

Plans have been filed for the four-story addition to the Colman Block in this city, and a permit for



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#### BUILDING INTELLIGENCE.

(Advance Rumors Continued.)

the improvement has been issued. The additional stories will be built of brick and stone, and will cost \$150,000.

Springfield, Ill. — Rumor states that W. J. Bryan will erect in this city, as a memorial to his father and mother, a library, to cost \$25,000.

St. Joseph, Mo. — The St. Joseph Board of Education will hold a meeting to determine the amount of money actually needed to improve the school property of the city.

St. Louis, Mo. — The city authorities and the Wabash Railroad are planning to beautify the Laclede Ave. entrance to Forest Park by enlarging the present bridge over which the Wabash tracks cross the main drive. The Wabash officials are willing to stand a portion of the expense, which, it is estimated, will be between \$20,000 and \$30,000. The work will be got under way at once and the bridge finished it is expected by the opening of the Fair.

Story City, Ia. — A new school-building to cost \$22,500 is contemplated.

St. Paul, Minn. — The wholesale hardware firm of Farwell, Ozmun, Kirk & Co., are contemplating the erection of a nine story warehouse, at a cost of about \$400,000.

Syracuse, N. Y. — The Wells Brothers Co., of New York, has the contract to build the proposed new Onondaga County court-house. The structure will be of buff limestone and will occupy an entire block bounded by Montgomery, Cedar, S. State and E. Jefferson Sts. It will cost about \$1,000,000 exclusive of site. The site has been cleared and the building must be completed in twenty months. Excavations will begin at once.

Viroqua, Wis. — It is stated that Andrew Carnegie has offered this city \$10,000 toward the erection of a public library.

Walsenburg, Col. — Out of nine bidders a Pueblo firm has been awarded the contract for the erection of a two-story stone court-house with basement at this place. The firm of Friedhoff & Hoefel, of Pueblo, were found to be the lowest in their estimates of the cost of the building. Their bid was \$42,500.

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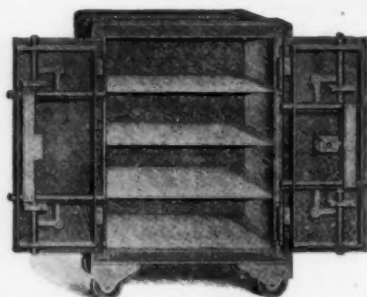
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(Advance Rumors Continued.)

Wellesley, Mass. — Pres. Caroline Hazard, of Wellesley College, has announced that the trustees have voted to erect a second dormitory of the group already begun. The three alumnae trustees, Mrs. North, Mrs. Thompson and Mrs. Merrill, have been appointed a special committee to consult with President Hazard, Miss Hill and the architect on plans for a gymnasium building, which will be begun immediately.

Winthrop, Mass. — The new house to be erected by the Winthrop Yacht Club on the site of the one recently destroyed by fire will be a three-story frame building. The plans are by Willard M. Bacon, 27 Kilby St. It is intended to have the new house ready for occupancy in three months. It will be complete in every arrangement and will cost between \$18,000 and \$20,000 above the land.

Worcester, Mass. — The graduates of Holy Cross have started the work of raising funds for the proposed Alma Mater building at the college. The building is planned to cost about \$100,000 and contain in addition to 100 private rooms, six or eight class-rooms.

Rev. Joseph F. Hauselman, S. J., president of Holy Cross College, has announced that the plans for the new dormitory submitted by the architectural firm of McGinness, Sullivan & Walsh, of Boston, have been accepted. The new structure is to be called Alumni Hall, and is to be built at an approximate cost of \$100,000.

#### PROPOSALS.

Treasury Department, Office of the Supervising Architect, Washington, D. C., March 2, 1904. Sealed proposals will be received at this office until 3 o'clock P. M. on the 19th day of April, 1904, and then opened, for the construction (except heating apparatus, electric wiring and conduits) of the U. S. Post-office at Leadville, Colorado, in accordance with the drawings and specification, copies of which may be had at this office or at the office of the Postmaster at Leadville, Colorado, at the discretion of the Supervising Architect. JAMES KNOX TAYLOR, Supervising Architect. 1472

Treasury Department, Office of the Supervising Architect, Washington, D. C., February 24, 1904. Sealed proposals will be received at this office until 3 o'clock P. M. on the 30th day of March, 1904, and then opened, for furnishing miscellaneous machinery complete in place for the U. S. Post-office, Court-house, etc., building at Chicago, Illinois, in accordance with drawings and specification, copies of which may be had at this office or at the office of the Superintendent at Chicago, Ill., at the discretion of the Supervising Architect. JAMES KNOX TAYLOR, Supervising Architect. 1472

Treasury Department, Office of the Supervising Architect, Washington, D. C., February 25, 1904. Sealed proposals will be received at this office until 3 o'clock P. M. on the 6th day of April, 1904, and then opened, for the low-pressure steam-heating apparatus, complete in place, for the U. S. Custom-house, Court-house, Post-office, etc., at Memphis, Tenn., in accordance with drawings and specification, copies of which may be had at this office or at the office of the Superintendent at Memphis, Tenn., at the discretion of the Supervising Architect. JAMES KNOX TAYLOR, Supervising Architect. 1472

#### PROPOSALS.

##### SCHOOL-BUILDING.

[At Milwaukee, Wis.] The Statutory Committee on School Sites and Plans will receive until March 15, 1904, at 10.30 o'clock A. M., competitive sketch plans and outline specifications for the construction and erection of a public school building on Cass St., between Pleasant and Brady Sts., in the First Ward of the City of Milwaukee. The right is hereby reserved to the City of Milwaukee to reject any or all plans and specifications that may be submitted. All plans and specifications must be based upon general requirements for school-houses, as determined by the Statutory Committee on School Sites and Plans, and on file in the office of the Board of School Directors. A copy of such general requirements will be furnished upon application. CORNELIUS CORCORAN, CHARLES J. POETSCH, H. O. R. SIEFERT, JEREMIAH QUIN, C. S. OTJEN, Statutory Committee on School Sites and Plans. 1472

##### CHURCH.

[At Yankton, S. D.] Sealed proposals will be received until March 29, at 4 P. M., 1904, and be opened at the office of L. B. French, Chairman of the Board of Trustees, for the erection of a church building for the First Congregational Church, at Yankton, S. D. Plans and specifications can be seen on file with C. W. Lay, Yankton, S. D., or with Turnbull & Jones, architects, Elgin, Ill., also at the office of the Builder's Exchange, St. Paul. It is the intention to award the contracts to the lowest responsible bidder, but the right to reject any or all bids is reserved. Bids will be read and marked "Proposals" addressed to C. W. LAY, Secretary of the Building Committee, Yankton, S. D. 1474

Treasury Department, Office of the Supervising Architect, Washington, D. C., February 25, 1904. Sealed proposals will be received at this office until 3 o'clock P. M. on the 7th day of April, 1904, and then opened, for the low pressure steam heating apparatus, complete in place, for the U. S. Court-house and Post-office building and extension, Greensboro, N. C., in accordance with drawings and specification, copies of which may be had at this office or at the office of the Superintendent at Greensboro, N. C., at the discretion of the Supervising Architect. JAMES KNOX TAYLOR, Supervising Architect. 1472

Treasury Department, Office of the Supervising Architect, Washington, D. C., February 25, 1904. Sealed proposals will be received at this office until 3 o'clock P. M. on the 11th day of April, 1904, and then opened, for the construction (including heating apparatus, electric wiring and conduits) of the U. S. Post-office at Champaign, Illinois, in accordance with the drawings and specification, copies of which may be had at this office or at the office of the Postmaster at Champaign, Illinois, at the discretion of the Supervising Architect. JAMES KNOX TAYLOR, Supervising Architect. 1472

Treasury Department, Office of the Supervising Architect, Washington, D. C., February 25, 1904. Sealed proposals will be received at this office until 3 o'clock P. M. on the 14th day of April, 1904, and then opened, for the construction (except elevators, heating apparatus, electric wiring and conduits) of the U. S. Court-house and Post-office building at Lincoln, Nebraska, in accordance with the drawings and specification, copies of which may be had at this office, or at the office of the Custodian at Lincoln, Nebraska, at the discretion of the Supervising Architect. JAMES KNOX TAYLOR, Supervising Architect. 1472

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### PROPOSALS.

Treasury Department, Office of the Supervising Architect, Washington, D. C., February 29, 1904. Sealed proposals will be received at this office until 3 o'clock P. M. on the 18th day of April, 1904, and then opened, for the construction, including plumbing, heating apparatus, electric wiring and conduits, of the U. S. Post-office and Court-house at Deadwood, South Dakota, in accordance with drawings and specifications, copies of which may be had at this office or the office of the Postmaster at Deadwood, S. D., at the discretion of the Supervising Architect. JAMES KNOX TAYLOR, Supervising Architect. 1472

Treasury Department, Office of the Supervising Architect, Washington, D. C., February 23, 1904. Sealed proposals will be received at this office until 3 o'clock P. M. on the 23d day of March, 1904, and then opened, for the installation of two hydraulic lifts in the U. S. Post-office at Butte, Montana, in accordance with the specification, copies of which may be had at this office or at the office of the Superintendent at Butte, Montana, at the discretion of the Supervising Architect. JAMES KNOX TAYLOR, Supervising Architect. 1471

Treasury Department, Office of the Supervising Architect, Washington, D. C., February 20, 1904. Sealed proposals will be received at this office until 3 o'clock P. M. on the 5th day of April, 1904, and then opened, for the construction (except heating apparatus), of the U. S. Post-office at Yankton, South Dakota, in accordance with drawings and specification, copies of which may be had at this office, or at the office of the Postmaster at Yankton, S. D., at the discretion of the Supervising Architect. JAMES KNOX TAYLOR, Supervising Architect. 1471

Treasury Department, Office of the Supervising Architect, Washington, D. C., February 20, 1904. Sealed proposals will be received at this office until 3 o'clock P. M. on the 4th day of April, 1904, and then opened, for the construction of the extension to the U. S. Post-office at Burlington, Iowa, in accordance with drawings and specification, copies of which may be had at this office, or at the office of the Custodian at Burlington, Iowa, at the discretion of the Supervising Architect. JAMES KNOX TAYLOR, Supervising Architect. 1471

**HOSPITAL.** [At Whipple Barracks, A. T.] Office Constructing Quartermaster, Whipple Barracks, Prescott, A. T. Sealed proposals will be received here until March 15, 1904, for furnishing the labor and material for the construction, plumbing, gaspiping, heating and electric-wiring of brick hospital. Plans, specifications and other information in this office, and in the offices of the chief Q. M., San Francisco, Cal., and Denver, Col., and constructing quartermaster, Fort Leavenworth, Kan. CHARLES C. WALCUTT, JR., constructing Q. M. 1471

**CEMENT.** [At Ohio River.] U. S. Engineer Office, Wheeling, W. Va. Sealed proposals for furnishing and delivering about 37,000 barrels of American Portland cement for dams Nos. 13 and 18, Ohio River, will be received until March 18, 1904. Information furnished on application. GEO. A. ZINN, maj., engr. 1471

**CELLS.** [At Stevenson, Wash.] Proposals will be received until April 4 for installing cells in county jail. A. FLEISCHHAUER. 1472

**STONE.** [At Columbia River, Oregon and Washington.] U. S. Engineer Office, Portland, Ore. Sealed proposals will be received here for 240,000 tons (more or less) stone for extension of jetty at mouth of Columbia River, Oregon and Washington, until March 11, 1904. Information on application. W. C. LANGFITT, maj., engr. 1471

**GARBAGE PLANT.** [At Atlanta, Ga.] Proposals will be received by the undersigned committee until March 25 for furnishing material and labor to construct and erect a garbage crematory plant for the city of Atlanta. Specifications and plan of ground will be furnished on application to the undersigned committee. Address all communications to C. W. Strickler, 1026-7 Empire Building, Atlanta, Ga. C. W. STRICKLER, et al., committee. 1472

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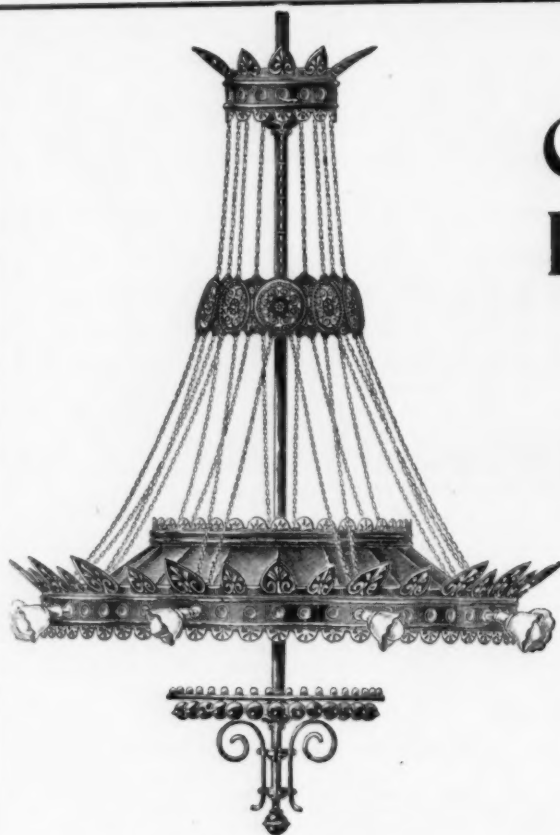
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Associated Expanded Metal Co., New York.  
National Fireproofing Co., Pittsburg, Pa.  
**FIREPROOF LATHING.**  
Hayes, Geo., New York.  
**FIREPROOF SHUTTERS.**  
Kinnear Mfg. Co., The, Columbus, O.  
**FLOOR POLISH.**  
Butcher Polish Co., Boston.  
**FOUNDRY EQUIPMENT.**  
Northern Engineering Works, Detroit, Mich.

