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greatly simplify the examination and passing of plans, and, in case of violation of the laws, would at once fix the responsibility for it; and a professional surveyor, with only a limited district in his charge, would, at a glance, perceive matters which needed his attention; while, under the present system, everything in the way of actual inspection is left to ill-paid subordinates who, to say the least, do not usually owe their appointment to their scientific knowledge of construction or their conspicuous integrity.

WE have received a copy of the programme of competition for the soldiers' monument in Philadelphia, with request to comment upon it. The principal objection which we have heard made to the conditions of the programme is that the prizes offered are inadequate, only three thousand dollars having been appropriated to pay five prizes, in a competition for a structure to cost nearly half a million dollars. Of course, it would be desirable to offer more adequate premiums, but if the programme is carried out in good faith, we do not think that the profession has much to complain of. Although it is not positively promised, as it should have been, that the competitor awarded the first place shall be employed to carry out his design, it is agreed that the award shall be exclusively entrusted to a jury of architects and sculptors, selected by the T-Square Club and the Philadelphia Chapter of the Institute; that the winner of the first prize shall be recommended for employment at a remuneration of five per cent on the cost of the monument; that the award of the jury shall be published in the newspapers, and that the jury shall decide whether it is necessary, in consequence of the youth or inexperience of the successful competitor, to associate with him an experienced architect.

AS the execution of the work is really the first prize in an architectural competition, the assurance that this will be given to the successful competitor is all that is usually required, the inferior prizes serving very little purpose except to attract a host of feeble competitors, who have no hope of winning the first place, but who think that fortune may perhaps throw some small premium in their way. It is true that, to secure that undivided care of a man of the highest ability which is necessary to the complete artistic success of the monument, the commission offered should be ten per cent on the cost, according to the usual practice in private monumental work, instead of the five per cent which is sufficient for buildings of similar cost; but it is too early, in this country, to expect municipal authorities, held by public opinion to strict account for their expenditure of the taxpayers' money, to be as liberal to artists as they would be in foreign cities. Of course, it is possible for the municipal authorities of Philadelphia to imitate the cool effrontery of those of New York, and, after securing the services of confiding architects, to ignore their solemn promises; but it is unnecessary to attribute to them in advance the desire to follow the example of the Tammany braves, and, to us, the programme appears to have an air of sincerity.

THE action of Congress, in appointing a professional Commission to prepare a plan for the improvement of the city of Washington, has already borne good fruit, in the interest which the proceedings of the Commission have awakened, not only among members of the Government, but throughout the country. It is hardly too much to say that the probability of the management of Washington by real-estate brokers, to suit their private interests, is already eliminated, and the city seems to be, at last, in a fair way to reach something like the ideal which our forefathers had in mind in laying it out. For the convenience of the public, the Commission has arranged for the preparation of two models, at a tolerably large scale, one showing the city in its present condition, and the other representing the scheme which the Commission advises, both of which are to be placed in a room in the Corcoran Art Gallery. Many thousands of people, undoubtedly, will see these models during the coming winter, and the effect of them in opening the eyes of the community to what can be done by trained skill in beautifying a city is likely to be of the greatest value.

AS the time for the assembling of Congress approaches, all business interests look anxiously for indications as to the probability of changes in the tariff. If President McKinley had lived, there is no doubt that, with his expressed convictions on the subject, and his unrivalled tact in persuading others to help him in carrying them out, he would, during the present Congress, at least have prepared the way for the abolition or modification of the most oppressive portions of the tariff, or for the adoption of important treaties of reciprocity. With the new President, no one seems to be able to make any predictions in regard to the future. We are assured by the principal champions of high protection that President Roosevelt does not agree with his predecessor in regard to tariff-reform, and that, for the present, at least, there is no probability of any change, or of the adoption of any reciprocity treaties whatever. On the other hand, it is evident that there is a great and increasing demand for tariff revision in the manufacturing districts which have profited most by protection, but now find the protective tariff not only unnecessary, but unfavorable to the expansion of their business; and while President Roosevelt is not likely to be influenced by political expediency in opposition to his own convictions, he is an accomplished scholar in political economy and history, and such men are, as a rule, disposed to employ the machinery of government with great caution for the furtherance of private interests. It seems, therefore, probable that, while violent changes will be avoided, certain reforms in tariff legislation will receive the support of the Administration, and, so far as the temper of Congress can be judged in advance, will, with that support, be successfully passed.

THE overturn in municipal administration in New York might, perhaps, be taken advantage of to remodel the service of the inspection of buildings, to the advantage of the community, by the adoption of the London system of dividing the city into a considerable number of districts, each under the sole charge of a district surveyor, who should be a professional architect, and before whom all plans for work in his district should be brought for approval. In London, many architects of high reputation are, or have been, district surveyors, and the law provides that no one shall receive the appointment unless he has been examined and found competent by the Institute of British Architects. It would hardly be possible for the district surveyor to do all the actual inspection of new buildings within his district, but each might have an inspector for his district, responsible to him, and required to report to him. Some such organization as this would

SCULPTURE in this country has suffered a great loss in the death of Adolph Robert Kraus, of Boston. Mr. Kraus was a German by birth and education, and distinguished himself so highly in his profession at home that he was in receipt of a pension from the German Government for conspicuous merit as an artist. Coming to this country in 1881, he gained recognition and admiration from the comparatively small public to which the fine-arts are anything more than a name, together with a share of such employment as the country affords to sculptors. One of his earliest works in Boston was the effective Massacre Monument on the Common; and he was also represented at the Chicago Exposition and elsewhere. He was particularly noted, however, for his portrait-statues and busts, many of which he executed for people in and about the city.

THE death of Kate Greenaway brings up recollections of what was, perhaps, the last manifestation of the possibilities of English art, an art which, at its best, suggests such boundless purity and sweetness that its ordinary productions seem all the more intolerable by comparison with what we know it to be capable of. The critics have attempted to trace Miss Greenaway's work to imitation of the Pre-Raphaelites, to Blake, to Stothard and Reynolds, but it does not seem very well established that she copied from any of these, and her drawings certainly do not show any intentional imitation even of Stothard's cherubs, much less of the lanky dyspeptics of the Pre-Raphaelite school. On the contrary, her pictures, or, rather, sketches, for they are nothing more, breathe, as neither Stothard's nor Blake's ever did, the very atmosphere of English childhood, clumsy, perhaps, in comparison with Italian grace, but honest, innocent and lovable. Even the style of her drawings, colored in flat washes, was probably less a concession to the decorative tendency of modern art than the result of a perception that the delicacy of childish movement and expression could best be communicated by suggestion, and that, as in so many other things, elaboration was dangerous to sentiment. Even her flat washes, however, included much art. The soft greens of the grass, the colors of the calico gowns and those of the daisies among which her children played, all served to enhance the innocent freshness of their faces. Very possibly the combinations of color were unintentional. In all good art, the sentiment in the mind of the artist directs him unconsciously in the selection of the lines and colors which will best express that sentiment; and, in Kate Greenaway, her love for the simplicity and innocence of children, inspiring a hand and eye well trained to obey the impulses of her mind, produced works which, unambitious as they were, will make her name long famous in the history of English art.

THE movement in favor of the protection of citizens against conspiracy has advanced another step in the issue of an injunction in Chicago restraining the Custom Clothing-Makers' Union and its officers and members from sending letters, circulars, telegrams or telephone messages to any retailers, clothing-dealers or labor unions, saying that a certain firm of clothing-manufacturers in Cincinnati had refused to allow its employees to organize, or adopt the union label, or was unfair in other ways to organized labor. The injunction was issued on the petition of a Cincinnati firm, asking that the Clothing-Makers' Union might be restrained from attempting to injure its business by sending circulars to its customers. This order, which, having been issued by the United States Circuit Court, will serve as a precedent in all cases which concern citizens of two different States, is, perhaps, of even more importance than the recent decisions of several State courts prohibiting the "persuasion" of "scabs" by strikers. If the labor champions cannot set their followers to beating and threatening men who do not belong to the unions, and cannot try to take away the business of employers who will not help them, how are they to keep working-men within their fold? Discipline is already difficult in the unions, the members of which show a diminishing disposition to abandon a comfortable living in obedience to arbitrary orders, and an increasing inquisitiveness as to the disposition which is made of the money received from the heavy union dues; and if the law deprives the "champions" at once of the services of the "persuasive" ruffians under their control, and of the timid employers who can be coerced by threats of boycotting, it is difficult to see how their influence can be maintained.

THE recent decisions of the courts, holding that striking workmen cannot lawfully interfere with the business of their former employers by intimidating, threatening or "persuading" the workmen engaged to take their places, have reached a vulnerable spot in a system which has been built up on terrorism, and the labor leaders seem to be unable to contain their rage at seeing the foundation of their power shaken beneath them. Naturally, some of them are defiant, and, for a time, are likely to carry their followers with them, as has been the case at Ansonia, Connecticut, where the President of the Carpenters' Union, after deliberately violating the law by "persuading" a man to leave the employ of a certain foundry company, was nominated for the mayoralty of the city, and elected. As he is under bonds to answer to the charge of criminal conspiracy, and is to be tried after his term as Mayor begins, the citizens will enjoy the rather novel spectacle of their Mayor in the dock of a criminal court, even if he does not leave this for the cell of a prison. It is hardly necessary to say that demonstrations of this kind are not to be considered dangerous. The men who clamor now about the violation of their right to "expostulate" with "scabs" who happen to fall in their way on a dark night may, very possibly, be themselves "scabs" before long, and the freedom of citizens to earn a living for themselves and their children without molestation will then have a different look to them.

ONE of the most complete specimens of a labor monopoly pushed to its extreme limit is to be found in the window-glass manufacture in this country. Not long ago, the American Window-Glass Company, a powerful trust, conceived the idea of driving the independent concerns out of business by interfering with their men; and, in the pursuit of this benevolent purpose, it made friends with the head of the Glass-Blowers' Union, who, by a series of judicious strikes, succeeded in closing, if we are not mistaken, every window-glass manufactory outside of the trust. In return for this favor, the American Window-Glass Company is said to have distributed five thousand shares of its stock among members of the Glass-Blowers' Union, in what proportion is not stated, and to have assisted it in establishing a monopoly of the trade unequalled, perhaps, since the Middle Ages. The number of "pots" operated by the American Window-Glass Company is, in round numbers, twenty-eight hundred, while the Glass-Blowers Union has only twenty-two hundred members, so that the demand for men is greater than the supply, and, in order to perpetuate this condition, admission to the union can only be obtained with great difficulty. Most of the members are said to be Belgians, and, as a special favor, a Belgian who wishes to join may, if he is acceptable to the members, be received, on payment of an initiation-fee of five hundred dollars. Except under such circumstances, no new members are admitted, except blood-relations of the present members. It need hardly be observed that, under these conditions, both the monopolies, that of the masters and that of the men, are, for the present, flourishing. How long the prosperity will last is another question. So far as the men are concerned, they seem to be pursuing in this country the tactics by which the same men have already destroyed the window-glass trade in their own land; and the American Window-Glass Company, which, a few months ago, was threatened with serious competition, is not likely to keep the business to itself indefinitely.

IT is interesting to learn that a German company has obtained a concession for a railway in Mesopotamia, and is now making surveys for the road, which will pass over the ancient caravan-route between Asia and Europe, with stations, among others, at Bagdad, Nineveh and Babylon. The German interests in Asia Minor, where some fifteen hundred miles of railway already exist, are important, and the plan for uniting the present system with a line which is intended to reach the Persian Gulf, and, ultimately, the Indian railway system, by the way of Beloochistan, looks, commercially, very promising. A bridge across the Bosphorus has long been contemplated, and the completion of such a bridge would make it practicable to travel by land, without change of cars, from Calais to the extremity of India and Cochin China. As the land journey would be much shorter and less expensive than the present route by Brindisi and the Suez Canal, it is presumed that a large part of the immense traffic between India and England would take this route. The road, which is to be known as the Bagdad Railway, should also have a large local traffic, the region which it traverses being inhabited by twenty million people, who are, just now, prosperous and enterprising.

THE EFFECTIVENESS OF THE TARSNEY ACT.¹

THE Act of Congress approved February 20, 1893, known as the "Tarsney Act," is, as its title indicates, an act authorizing the Secretary of the Treasury to obtain plans and specifications for public buildings to be erected under the supervision of the Treasury Department, and providing for the local supervision of the construction of these buildings. The law is very short and most simple in its requirements. It provides that the Secretary shall, at his discretion, obtain drawings by competition among architects under such conditions as he may prescribe, payment to be made for professional services out of the appropriation for the respective buildings. No less than five architects are to be invited to enter each competition, and the general supervision of the work is to continue in the office of the Supervising Architect of the Treasury Department, he to be the representative of the Government in all matters connected with the erection and completion of such buildings, to receive proposals, award all contracts, disburse all moneys, and to perform all duties which now pertain to his office, except the preparation of drawings and specifications and the local supervision of the construction. The drawings are at all times to be subject to such modifications as may be directed by the Secretary of the Treasury.

It will be seen, therefore, that there is nothing objectionable in this Act as far as it goes, provided proper regulations are made under which it may be enforced, and as the regulations now in force lay down in detail the manner in which competitive drawings are to be received and the work carried out, it is necessary to take up these regulations in order to discuss the effectiveness of the law itself. These regulations may be briefly summarized as follows:—

At least five architects of good professional standing who are citizens of the United States shall be invited to submit plans, drawings, etc., to be passed upon as to merit by a Commission consisting of the Supervising Architect and four architects or experts in the construction of buildings.

The office of the Supervising Architect is to furnish data and information as to cost and requirements, the successful architect to be retained to prepare plans and locally supervise the building, receiving for his services 5 per cent upon the cost of the work.

The Department agrees to make a selection if a suitable design be submitted, but reserves the right to reject all plans, if, in the opinion of the Commission or the Secretary of the Treasury, none such has been submitted.

Each competitor is to submit a detailed estimate of cost.

Competitors forfeit all privileges who shall violate any of the conditions governing the competition or seek to improperly influence any of the Commission.

No member of the Commission to have any interest whatever in any design submitted, and no employé of the Treasury Department to be allowed to enter the competition.

The manner in which drawings are to be forwarded is prescribed; the use of any distinguishing mark is forbidden, the identification of drawings to be by the enclosure of a sealed envelope containing the name of competitor; the Commission is required to place out of competition any drawings as to which the conditions of the regulations have not been observed; make selection in order of merit; and it is stipulated that the selection of a design by the Secretary of the Treasury and its subsequent approval by him, the Postmaster-General, and the Secretary of the Interior, shall be final and conclusive.

Designs of unsuccessful competitors are to be returned to them immediately upon the award.

Should the architect selected be an incompetent or improper person, the right is reserved to remove him, he to receive proper compensation.

The successful architect is to revise his drawings as required and then proceed with the working-drawings. If any changes are required in these he is entitled to extra compensation, but no changes are to be made without written authority from the Secretary of the Treasury.

The architect, at his own expense, when required to do so by the Secretary, is to make such revisions and alterations in the working-drawings and specifications of such building as may be necessary to ensure its proper construction within the limit of cost as fixed.

The architect's commission is to be computed upon the sum of money expended for the actual cost of construction as ascertained by contracts awarded, not including furniture, light-fixtures and electric-light plant.

Compensation of 5 per cent to be in full payment of all charges for full services, inclusive of travelling and other expenses; to be paid as the work progresses, in the usual way; and until the actual cost of the building can be determined the fee will be based upon the proposed cost.

The Department provides a competent Superintendent of Construction, whose qualification shall be passed upon by the architect.

The architect to furnish for the use of the Department a set of tracings of all working-drawings and revised competitive-drawings, two copies of the specifications and one copy of detailed estimate of cost, the office of the Supervising Architect to furnish all necessary duplicates of plans and copies of specifications.

The Supervising Architect receives all proposals for contracts to

be awarded and determines the manner in which the contracts are to be let; payment for work of construction being made monthly at the rate of 90 per cent of the work actually executed and in place, upon vouchers certified by the architect and countersigned by the Superintendent of Construction.

All contracts except for exigency expenditures are to be advertised for thirty days.

In closing it is stipulated that further details necessary to properly carry out the regulations may be arranged by the Supervising Architect, provided they do not conflict herewith, and that these regulations are to be subject to modifications and change at the pleasure of the Secretary of the Treasury.

All Tarsney-Act competitions are carried out at present under these regulations, and after reading them carefully it is impossible for any member of the profession not to feel that the tribute which the President of the Institute in his last annual address paid to the present Secretary of the Treasury was most timely and well-deserved. Credit is also due to the Supervising Architect, by whose advice the Secretary has doubtless been guided, but everything rests with the Secretary, and it is not always that a layman, however willing he may be to follow the directions of his attorney or physician, is willing to be guided by the advice of his architect. In this particular case the commencement has been remarkably good, but when we consider what it might have been under other conditions, and how Government architecture has suffered in the past, the question arises whether some movement should not be inaugurated to make the Supervising Architect an officer of the Government rather than the chief of a bureau. For many years to come the Government will be called upon to erect buildings in all parts of this broad land, post-offices, custom-houses, army posts, naval stations, etc., and it would certainly seem that their construction is a matter of sufficient importance to be placed under one head. Whether this may best be done by means of a Department of Public Works, or by placing them under the Treasury Department and making the Supervising Architect an assistant secretary, I do not pretend to say. To return, however, to the Tarsney Law, it seems to me that the efficiency of the Act depends chiefly upon the regulations for its enforcement, and the present regulations, broadly speaking, leave little to be desired. Whether the law might be amended by including the regulations is a question. Under the present Secretary of the Treasury this is certainly unnecessary, and any future Secretary who is in sympathy with good architecture and proper architectural practice would, doubtless, follow the present methods. Should any future Secretary be more inclined toward political methods than architectural progress, he could, doubtless, find means to evade the law even though the regulations form part of it.

There are certain points in the present regulations, admirable as they are, which may be mentioned as calling for revision and improvement. The manner of selecting the competitors is naturally a matter of first importance, and, while not prescribed, has been made the subject of more or less discussion. I regret to say I cannot for my part concur in the recent suggestion that the Commission of experts shall have a voice in such selection. The nature of their duty calls for absolute freedom from interest in any competitor, and it seems to me that this freedom might be to an extent impaired by adding the selection of competitors to the duty now performed by the Commission. Personal experience, while considering the acceptance of an appointment to act on a commission to pass upon a list of competitors and select an architect, has demonstrated to me that the members of such a commission are subjected to much annoying importunity and pressure, which would not be the case were they to have nothing to do with the selection of competitors. The lists as made up by the Department hitherto have been fairly representative, making due allowance for the necessity of recognizing local men, a necessity which it would be most unwise to ignore if we expect the law to continue in operation.

The suggestion has been made, and I believe it came originally from the Supervising Architect's office, that those architects who have been successful in winning important Government competitions be privileged, in addition to the regular number of competitors selected, to enter such subsequent competitions as they may desire. This plan, however, was not considered feasible by the Department, but it would certainly appear that architects who have shown their ability not only to win Government competitions, but to successfully carry out the work, should be given a reasonable chance to continue in the service. This might be done by adding to a list of ten competitors selected in the regular way two architects who have previously qualified as described. As the number of buildings completed under the law increases, the number so added might be increased to five, making fifteen competitors in all. Attention is drawn to this point for the reason that there appears to be a disposition on the part of certain members of the profession to take the view that such architects as have been successful in Tarsney-Act competitions should stand aside in order to increase the chances of those who have not been successful or have never competed. This scarcely seems to be a broad view. I take it that the Government, in establishing a system of competitions, is not inspired with a desire to distribute work for the benefit of architects, but to improve the public service; and should it accomplish this purpose the profession of architecture will greatly advance in public estimation, which is more to be desired than an equal distribution of public work. Some such arrangement as above suggested will still permit a majority of competitors to be new men, and will give the Government the advantage

¹ A paper by John Hall Rankin, A. A. I. A., read at the Thirty-fifth Annual Convention of the American Institute of Architects, held at Buffalo, October, 1901.

of whatever experience has been gained by those who enter the competitions by reason of previous satisfactory service. To use the words of a distinguished architect, in writing upon the merits of such a plan, "it provides a certain reward of merit for faithful service and an encouragement for those already in the service, in the hope that they may have for future employment."

Paragraph 18 provides that the architect's commission is to be computed upon the sum of money expended for the actual cost of construction as ascertained by contracts awarded, not including furniture, light-fixtures, and electric-light plant. The significance of this is that the furniture, light-fixtures and electric-light plant are usually paid for out of a separate appropriation, and not that under which the building is erected, and the selection and purchase of this equipment comes under the direct supervision of the chief clerk of the Treasury Department, neither the Supervising Architect nor the architect of the building having anything whatever to do with its selection. It is not to be expected or desired that the architect should receive a commission upon work that he does not perform, but it is very greatly to be desired that this work be placed under his direction, where it properly belongs. Under the present arrangement light-fixtures are apparently selected without regard to the design or architecture of their surroundings, and they are frequently utterly incongruous and unsuitable. The result of this will probably be that the architect, in preparing his lighting-scheme, will, in order to do away with fixtures as far as possible, resort to ceiling-lights and individual lamps, thereby increasing the number of lamps required and also the cost of maintenance.

The furniture question is a painful one. The architect, after having spent time and thought upon the interior finish and wood-work of the building, must stand aside powerless while furniture and carpets of most inappropriate character are placed in his most carefully finished rooms. I have in mind an instance where furniture, counters, glass, partitions, etc., of that particular oak known to furniture men as "Golden," were placed in rooms handsomely finished in mahogany, and the result was anything but satisfactory.

Paragraph 19 provides that the 5 per cent commission shall be in full payment for charges for full services inclusive of travelling and other expenses. The question of travelling-expenses in connection with Government work has been variously discussed, and, while it has been finally settled by the Secretary of the Treasury, every member of the profession will probably agree that the architect should receive such travelling-expenses as a matter of right. Leaving that phase of the question out entirely, however, it would seem evident that the interests of the Government demand that the architect be not required, in the supervision of work, to take into consideration the expense of his visits in addition to the discomfort of travel. The value to the owner of close personal supervision on the part of the architect is beyond question, and as the amount of such supervision must necessarily rest entirely with him, all obstacles tending to operate against a frequency of visits should be removed. Their effect is bound to be felt no matter how conscientiously the architect endeavors to remain uninfluenced by them.

The exact relations between the architect and the superintendent of construction are not covered by the regulations, and there may arise conditions under which it will be necessary to have the authority of the latter distinctly defined, although this matter can doubtless be more intelligently handled after the law has been longer in operation.

I believe that no comparison between the cost of plans, specifications and supervision, as furnished by the Supervising Architect's Office, and as furnished by architects doing work under the Tarsney Act, has ever been made, and such a comparison would be both interesting and instructive. I suggest that the Executive Committee endeavor to secure such comparison if it be possible. It should be understood, however, that if under the present rules providing for the operation and support of the Supervising Architect's Office the same percentage for the support of that office be taken from appropriations for the Tarsney Act buildings as for those done directly by the Supervising Architect's Office, proper allowance be made for this in the comparison. I have not felt at liberty to inquire individually into this matter and have no knowledge as to whether or not the rules so operate. If they do, the fact might properly be brought by the Executive Committee before the Secretary of the Treasury and the Supervising Architect, who will undoubtedly at once see the injustice of such a practice. The expense to the Supervising Architect's Office of a building done under the Tarsney Act is most trifling unless some extraordinary contingency arises, and only the expense actually incurred by the office should be chargeable to the appropriation for the building under this law. It may be that this is done, but the question has arisen in my mind and it seems a matter of more or less interest to the profession.

In the short time the law has been in operation it has been demonstrated that under it a building may be satisfactorily erected in practically as short a time as in private practice. Of course, to do this the architect must adapt himself to, and sometimes anticipate, the regulations and routine of the Department. But it is certainly not unusual for the architect in private practice to encounter strange conditions, and often his success depends upon his ability to successfully handle them. Judging from experience, I should say that the greatest danger to the continued successful operation of the law, under the present regulations, is to be feared from the architect himself after his selection and the award of the commission to him to proceed. The present policy of the Department appears to be to

leave matters largely in his hands; his discretion is given even wider scope than is usual in private practice, and his recommendations are promptly accepted and adopted when accompanied by any reasonable explanation. He selects all material, and his selection is approved except in cases where the experience of the Department has shown the material selected to be objectionable. There are certain rules, however, the necessity for which, from the Government's point-of-view, must be recognized, that he must not attempt to ignore or override, or he will find his path a thorny one. Should he discover, for instance, after the award of contracts, that his drawings omit certain necessities, such as a beam here or a column there, a letter to the Department explaining the omission, accompanied by a proposal and a recommendation that it be accepted, will usually go through without question, as omissions and even errors, while unfortunate, are to be expected. Should the architect, however, in deference to his natural dislike to call attention to an error upon his drawings, attempt to supply the omission in any other way, he will immediately find himself in trouble. Any change in drawings without the authority of the Secretary is likely to bring on difficulties which might easily be avoided by proper care. A safe rule in carrying on Government work is to conduct all business with the Supervising Architect's Office by letter, and each letter should be so written that when filed away with an endorsement, and, if necessary, a reference to an enclosure or drawing, it will make a complete record, and one that will be plain to any clerk in the office who may have to look the matter up months or even years after. This would seem to be not only a reasonable, but a simple rule, and it undoubtedly is, although it is surprising how much care is required at first to carry it out in all cases. Equally reasonable is the requirement that the architect be able to answer intelligently inquiries of the Department regarding the work or any portion of it, and he has no ground for complaint if his failure to do so causes dissatisfaction. The Supervising Architect and his various chiefs are always willing to give information as to the workings of the office, and it ought to be quite possible for the architect to adapt himself to the slight changes necessary in his office-routine for harmonious coöperation. I have no hesitation in saying that the first Tarsney-Act building done by our office, and completed the latter part of 1898, was one of the most satisfactory operations we have ever carried out, and as it was the first building completed under the law there was practically no precedent to guide either our office or the office of the Supervising Architect. While it was not large, the fact that it was completed within a year, to our satisfaction, and, I believe, to the satisfaction of the Government, is evidence that the Tarsney Act, in spite of defects, is both effective and practical.

COLORING AND DECORATING THE PAN-AMERICAN EXPOSITION.

AT a joint-committee meeting of the National Sculpture Society and the National Society of Mural Painters of New York, held in March, 1900, Mr. John M. Carrère, Chairman of the Board of Architects, explained the wishes of the Pan-American Exposition Company and that of the architects regarding the sculptural adornment and proposed coloring of the Exhibition. He explained the plan of the grounds and buildings, waterways, etc., and requested that the sculptors and painters select the committee or person who should take charge of the sculpture and the coloring of the Exposition, and asked that the painters and sculptors collaborate with the architects toward the beautifying of the Exhibition. Subsequently, the National Sculptural Society and the National Society of Mural Painters selected Mr. Karl Bitter and myself as the persons they thought capable of carrying out this work. The Board of Architects endorsed the selection, and, in due course, Mr. Bitter and myself were appointed Directors of Sculpture and Color, respectively, and became practically members of the Board.

Personally, I considered this action a very important step in advance. The architects, sculptors and painters were placed more nearly upon the same plane or platform than I had ever known them to be before, and I was forcibly reminded by the words of Mr. D. H. Burnham, Director of Works of the World's Columbian Exhibition, when presenting the medals to the builders of the fair on Dedication Day. He urged that the architect, sculptor and painter work together, and the growth of the allied arts would surely follow.

At a meeting of the Board of Architects held in Buffalo in the latter part of April, the question of color was brought up and fully discussed. Mr. Peabody, of Peabody & Stearns, architects, of Boston, had carefully planned and colored the drawings for the Horticulture group, and brought to Buffalo a number of small models of portions of these buildings which were colored in a fashion which seemed to him a proper treatment. The architects had agreed that the Exposition buildings should be designed to receive color, and the style of architecture mentioned as the most fitting for the purpose was Spanish Renaissance. At a later period I think this was changed to free Renaissance, which permitted the introduction of Italian, German and French Renaissance.

The desire of the Exposition Company and the Board of Architects was to highly color the Exposition buildings. Therefore, when I was asked about color I was prepared to say that I thought the buildings should be treated in some shade of warm white for the wall-surfaces,

¹ A paper by C. Y. Turner, Director of Color, Pan-American Exposition, read at the Thirty-fifth Annual Convention of the American Institute of Architects, held at Buffalo, October, 1901.

and the ornamentation should be highly enriched with color. The Board of Architects adopted this suggestion and added to it that I should carry on the coloring of the Exposition "in consultation with the individual architect." With this idea in view, returning to New York I took up the matter and laid out a general plan for coloring the Exposition.

Mr. Peabody had practically set the pace. As Director of Color there was no choice other than to continue as the architects had planned, treat the buildings as they had designed them, and do my best to harmonize sixteen important buildings designed by seven different minds, each having an opinion and preference of his own which I must consider, and I must make as pleasing a picture as possible in the selection of color for the details and some choice in general tonality.

The buildings have hip-roofs at an angle of 30 degrees, covered with tile. All the walls and other surfaces are made of staff and plaster; therefore I had three great elements to deal with: the sky, which would be blue with floating clouds; the buildings, with red roofs and warm gray walls; and the earth, with the grass, trees, statuary, landings, etc., of green and white.

With authority from the Director-General I established in New York an office where the drawings and models were prepared. A score of draughtsmen were kept busy transferring to white paper (an unfortunate necessity) the elevations and details which in time were colored. Over two hundred drawings were made, some of them very large.

Remembering the resolution of the Board of Architects that my work must be carried on "in consultation with the individual architect," I addressed letters to each one asking them to write me how they would prefer their building should be treated. In many cases I received replies. Some of them visited me. In every case where it was possible I obtained an expression of their wishes and arranged my scheme of color so as to, as far as possible, meet their views, and when the drawings were ready they were shown to the individual architect, criticised by him, and corrections made when necessary until he said the coloring was to his satisfaction.

My first step was to make a small sketch in color of the whole Fair, and then I took an enlargement of the bird's-eye-view executed in Mr. Carrère's office by Mr. Bosworth, and colored it. I was convinced that something larger and more in detail to arrange the scheme intelligently was necessary. Therefore I applied for permission to have made a model of the various buildings to scale. In due course of time this was accomplished, and a model was executed and erected in the studio, which covered a space of 12 feet by 16 feet. This model was made to scale of one-sixteenth of an inch to the foot, and all the buildings were colored and changed as was deemed necessary until a harmonious result was arrived at.

During the preparation of my first sketches I attended a meeting given by the Sculptors' Society, which had for its object an explanation of the manner in which they would suggest the buildings and grounds should be treated sculpturally, and Mr. Bitter outlined his general plan, which was very interesting and ingenious.

Mr. Bitter's plan, as near as I can remember, was that he believed the Exposition should be a lesson for the public, and that the sculpture upon the buildings should convey, as far as possible, the purpose for which each building was erected, and suggest the character of exhibits which they would contain.

He proposed to treat the sculptural groups about the Government Building in such manner as to suggest man in his primitive state, and the Horticulture group portraying the natural resources of the earth. Here the battle of life which man has ever waged with the elements begins. We find, as we progress up the grounds, the result of his labors in the Machinery and Transportation and Electricity buildings shown on one side, and Liberal Arts and Agriculture on the other, suggesting the result of his struggles. The restaurant and the entrances to the Midway and the Stadium suggest amusements and games. The Electric Tower, the crowning achievement of man, is dedicated to the great waterways and the power of Niagara, which is utilized to generate the current which will run the Exposition. Without going into the detail of Mr. Bitter's plan, it seemed to me a very logical and proper treatment of the Exposition, and that it was wise for me to pursue a similar course in the color-treatment, so that I might in this way carry out a general scheme which was indicated in the plan of the grounds, buildings and sculptural arrangement. Taking it for granted, then, that as we enter the grounds from the Park through the forecourt, the causeway bids welcome to the visitors and the countries taking part in the Exposition, and we would come upon the elementary conditions, that is, the earliest state of man suggested on one side and primitive nature on the other, I concluded that the strongest primary colors should be applied here; as we advance up the grounds, the colors should be more refined and less contrasting, and the tower, which is to suggest the triumph of man's achievement, should be the lightest and most delicate in color. Thus, it was my effort to try to carry out in color the same thought which Mr. Bitter was following in sculpture.

Since I wished in some way to emphasize the great power which was being used to run the Exposition, the beautiful emerald-green hue of the water as it curls over the crest of Niagara Falls seemed to me a most fitting note to carry through the Exposition, and, therefore, I adopted it, and have endeavored to carry this color on some portion of every building.

In the Tower I have given it marked emphasis and have made the general scheme here ivory-white, green and gold.

This, then, was my general plan or scheme, and my wish has been to do all that was possible to express this idea and be in harmony with what I believed the architects and sculptors wished to say through their respective arts.

The small model when colored could give only the tints of the body of the buildings and the roofs with some slight suggestion of towers and pinnacles, doorways, etc. It was necessary, therefore, to be more explicit. The drawings of each building were taken up and colored in detail, first the elevations and then the great doorways, towers, corner pavilions, entrances, finials, and all parts which might be treated.

During various conversations with the architects, painters and others who were interested in the Pan-American Exposition, I had gained the impression that the style of architecture was Spanish-American, and that it was the desire of the Board of Architects as well as the Exposition Company that the buildings should be treated in brilliant colors, and that a suggestion of Spanish treatment of architecture in coloring should be given. I, therefore, looked this matter up and tried to familiarize myself with the manner of their treatment, and started out with the idea that I should pursue this course and produce a result which should resemble as near as might be work of that period.

The Horticultural group has orange as a basis for the color of the body of the building. On the Government Building a warm yellow was selected for the plain surfaces. For the Temple of Music I have used red, quite pure, as the foundation-color; for Ethnology, an orange; for Machinery and Transportation Building, green is the basis, and opposite it across the Court, Liberal Arts Building is a warm gray. The Electricity and Agricultural buildings are in different shades of light yellow, while the restaurant and entrances to the Stadium have a French-gray as the basis, with a lighter shade of the same tint on the Propylæa. In the Horticulture group we used blue and white largely in the ornamental portions of the panels, pilasters, spandrels, etc., relieved now and again by brighter shades of rose and deep yellow. The Government Building was planned to have mild gray for the structural portions to relieve the yellow, and in this building, where it is possible, the green note is introduced in the sashes and doors, blue on the dome, and gold on the smaller domes. Blue-green on the dome of Music Hall, and repeated again on Ethnology Building. On the Machinery and Transportation Building, red, yellow and green are introduced in the great doorways, corner pavilions, and also distributed through the towers, while blue and gold play a large part in the detail work of Liberal Arts Building, especially the ceilings of the colonnades and east and west entrances, as well as in the great pediments of the north and south entrances. The yellow of Electricity Building is relieved by gray trimming, and the green doorways are elaborately enriched in their ornament with delicate shades of the prevailing tones used throughout the Exposition. The Agricultural Building is warmer, and there are blue, yellow and ivory, with stronger notes of red and green in the entrances. The restaurants are ivory and French gray, sash are painted green, minarets and pinnacles tipped with gold. The Propylæa, which curves across the north end of the grounds, has a wide-open arcade, and its panels enriched with brilliant red surrounding the white statues. The panels above are bright yellow, while the ceilings are blue and the trellis above is made strong violet. Violet occurs again at the arched entrances. The Railway Transportation Building is French-gray with green roof, while the Stadium, one of the most imposing buildings of the Fair, is gray, with pale blue-green sash and doors. The Electric Tower is very light ivory, and is enriched in the capitals, brackets, finials, stars, pinnacles, with gold, and is crowned with a gilded figure of the "Goddess of Light." The panels have the brightest fresh blue-green we could make, suggesting the water as its curves over the crest of Niagara. The statuary throughout the grounds is treated in white, and it is my belief that it will be a pleasant contrast and make the color more apparent. Lamps and urns were treated as green bronze, verte antique. Flag-staff bases are treated in similar vein, except the greater ones, which harmonize with the buildings in their immediate neighborhood—cool at the north end of the grounds, ivory and green, and red, yellow and blue at the south. The great piers at the causeway are soft warm gray, suggesting Caen-stone or some such kindred material, with bronze at intervals. The pergolas are treated in bright colors, the lower third of the columns being orange or red, and the upper two-thirds light stone-color, with brown beams, blue ceiling and green roofs. The notes of green, gold, ivory, blue and red are distributed throughout all the buildings, so that it can be said, as some one remarked to me, "I see you are using the Pan-American colors on the buildings—red, white, blue, green and yellow." The buildings in the Midway, or Vanity Fair, are treated with more liberty, but similar in general tone of color to the main portion of the Exposition. The State buildings and other concessions about the grounds have considerable latitude in treatment, held in check only when something startling is suggested. The Woman's Building, which is a remodelled country club-house, has been painted soft, quiet green. All the canal banks, bridges and embankments have soft graystone color, with little or no enrichment other than the architectural design.

Of course, many flags and banners are distributed on the buildings of the countries taking part in the Exposition, adding gayety and liveliness to the scene. Awnings at the landings and pergolas are treated with bright striped goods, to harmonize with the buildings adjoining, and floats, boats, gondolas, etc., have all received their colors.

This is the first time to my knowledge that a general scheme of color has been undertaken and carried out in any exposition, and it is my sincere hope and belief that the result will warrant the time, labor and money expended upon it, and give great pleasure, and will influence similar work in the future.

The interior decorations conform in general plan to the exterior coloring of the buildings, relating, as far as possible, to the exhibits contained therein.

The appointment of Miss Adelaide J. Thorpe as assistant-director of interior decoration, in November, 1900, marked the beginning of the draping and decorating of the interior of the buildings.

She believed that a much more attractive treatment of the interior of the buildings might be carried out than that which has been the custom heretofore in exhibitions, by the use of banners, bunting, cartouches and tapestries, and making use of portions of the exhibits.

Therefore, at the request of the director-general, she prepared a series of designs which were so happily conceived and so clearly explained to the Executive Committee by her that her scheme was immediately adopted and the necessary money appropriated to carry them out.

All the designs for this branch of the work were prepared under her personal supervision, including flags, tapestries and hangings, as well as the Pan-American flag which she designed, and were ultimately placed in the buildings under her direction.

One feature of the interior decorations reflects much credit upon her business ability and management. She interested the exhibitors to such a degree in the tapestry decorations she had planned to place above the 20-foot line that they gladly paid for the privilege to use them as exhibits, so that they serve a double purpose, and she was able to show a handsome balance to the credit of the Exposition Company above all costs.

The Machinery and Transportation Building is decorated in two shades of yellow. A great number of bright-colored flags are so used that the effect of the building is kept in gold and red of varying degrees. The yellow draperies are attached to the beams which bound the skylight, and are so drawn back to a level with the eaves as to make long, sweeping lines running in the direction of the roof without concealing the construction of the rafters and trusses. Through the centre, attached to the ridgepole of the skylight, are large clusters of colored buntings arranged like great chandeliers. These continue around the entire building, making a brilliant row of color which emphasizes and echoes the many tints among the exhibits. At a number of places above the 20-foot line are placed large tapestry-paintings that represent materials and scenes upon railroads and waterways and in factories, relating to those exhibits which are beneath them, forming a series of decorations upon the wall-surface, and giving masses of color to spots which would otherwise be bare and monotonous.

In the Electricity Building light shades of green and violet bunting are used. Everything in this building in the way of decoration is kept very light to avoid interference with the electrical display. Violet and green form the most agreeable combinations which show electric-light to advantage. Here, too, tapestry-paintings are used, notably in the central portion of the building, where the draperies are carried up to the centre, filling the entire dome.

In the Agriculture Building the colors used are intended to suggest autumn and spring. The use of strong yellow and light yellowish-green predominates, and, because of the number of South American countries represented in this building, their flags are distributed very freely, adding much red and yellow, with large spots of green. Here, too, the cartouches are used, with coats-of-arms of the countries taking part in the Exhibition, as well as the tapestry-paintings illustrating the exhibits. The construction of this building lends itself very happily to the decorations. The walls are also covered with green burlap.

The use of gold, blue and white in the Manufactures and Liberal Arts Building keeps the effect there rather quiet. There being such a multitude of booths of great variety, it was deemed wise to restrain the interior decorations and strive for a quiet effect. Here seines have been used in decorating, and form part of an exhibit at the same time.

In the Bazaar Building, where there also occurs great variety in the character of the exhibits, green, white and gold were used in the draperies which are festooned among the rafters of the roof.

The entire walls as well as the ceiling of the Graphic Arts Building have been covered with olive-green burlap, making a very pleasing background for the variety of exhibits of the graphic arts.

Maroon burlap has been chosen for the Mines Building, because it was thought this would be the best surrounding for the exhibits.

In the Horticulture Building a great deal of care has been taken to keep the color-tones as light as possible by the use of white and green and artificial leaves. Festoons and clusters are gathered about the trusses and rafters, and along the beams are draperies radiating from the domes to the trusses below. Flowers and plants have been clustered about the posts, and the great figure of the "Goddess of Light" has been placed in the centre of the building, surrounded by palms, which give the key-note of green and white to the building.

In the Acetylene Building old rose and white as a combination, with a little green, have been used, this being deemed by the exhibitors the best combination of color to display their light to advantage.

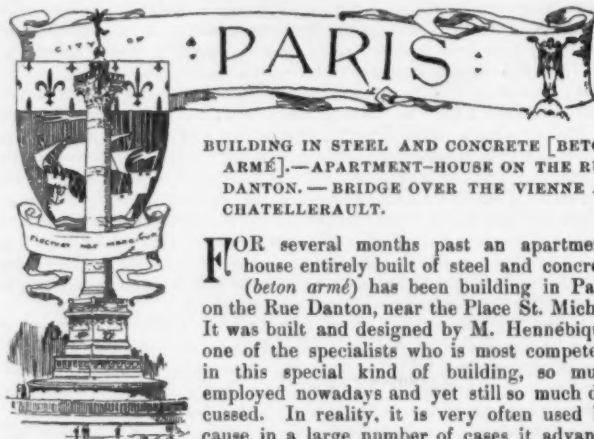
In the distribution of flags about the grounds and buildings, great

care has been taken to have the stronger colors massed at the south end and the cooler light shades in the neighborhood of the Tower, to conform with the general scheme of color and not mar the effect. Of course, the flags of the various countries taking part in the Exhibition have been distributed throughout the grounds and the buildings.

If it is necessary and wise to decide upon a style of architecture and adopt a scale of proportions for a group of buildings, it is equally necessary and proper to consider the color and the surroundings. The choice must be made to have much or little color, light or dark, party-colored or not. There will be much space or little, with or without foliage, a city or country house, public or private buildings, and must be designed with these facts clearly understood in advance.

The color of the buildings in part or whole must be considered early. I think it absolutely necessary that the architect, sculptor, colorist and landscape-architect should begin the work of preparation simultaneously, and plan jointly, instead of being called in at the eleventh hour to light, plant, adorn with sculpture, and color structures which others have planned; in many cases not fully realizing the possibility of the situation. Each profession can lend its knowledge, aid and experience to the making of the whole.

A man whose thoughts are chiefly occupied with architectural forms, construction, proportion, style, etc., cannot know as much about color as another who devotes his entire attention to this phase of art. No more can either of them fully realize the sculptor's attitude. The landscape-architect is better fitted to look after the distribution of objects in the scene because this receives most of his attention. Are not all of these elements essentially necessary to the ensemble, and should they not be considered at the inception of any enterprise, such as a group of buildings at an exposition? Surely, the landscape-gardener, sculptor, colorist-decorator and architect should be brought in consultation at the very beginning!

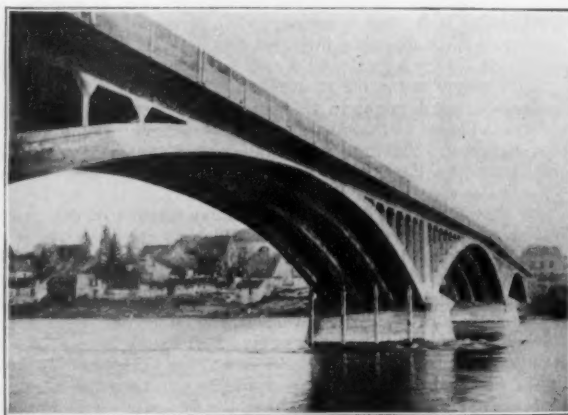


BUILDING IN STEEL AND CONCRETE [BETON ARMÉ].—APARTMENT-HOUSE ON THE RUE DANTON.—BRIDGE OVER THE VIENNE AT CHATELLERAULT.

FOR several months past an apartment-house entirely built of steel and concrete (*beton armé*) has been building in Paris on the Rue Danton, near the Place St. Michel. It was built and designed by M. Hennébique, one of the specialists who is most competent in this special kind of building, so much employed nowadays and yet still so much discussed. In reality, it is very often used because in a large number of cases it advantageously replaces iron, stone and other materials; it allows of giving less thicknesses for equal resistance, and even greater. It presents valuable advantages from the point-of-view of equality of expansion between cement and iron, so that the combination of the two materials wears as if it were constituted of one and the same element, hence there is no reason to fear dislocations and deformations.

The *beton armé* finds, then, a practical application in constructions which demand high resistance: beams, floors, reservoirs, vats, tuyaux, conduits of large size, vaults, etc. At the Petit Palais des Champs Elysées, all the floors were of *beton armé* with a bearing of 14 metres for the beams, and tests were made up to 1,500 kilogrammes per square metre, — a considerable weight.

Beton armé is, nevertheless, very much discussed. If one willingly



accepts its theoretical good qualities, many constructors and engineers express certain reservations as to its practical application. The most serious criticism that one can make concerning this kind of construction is the very high degree of perfection which is demanded in the fabrication of its elements and in their application. One of

the secrets of construction in well-made *beton armé* is to establish a perfect intimacy, first between the pieces of iron and the concrete, and next between the different elements of the concrete itself. One can always procure metal of good quality, but the preparation of cement-mortars is a delicate operation, and demands not only cements of superior quality—which are easily secured by purchasing only brands of acknowledged reputation—but also sand which is not unsuited to the purpose. Whatever may be the value of the cement itself, if the sand is clayey, or contains gypsum or magnesia, the mortar resulting from its use is open to suspicion and is likely to alter at the end of a certain time. The ramming of the concrete, poured in successive layers, ought to be done without interruption, without the employ of much force, but steadily and for a long time. In the case of steel-and-concrete floors, we can see how delicate the construction becomes and how it demands special care. The value of such a floor remains doubtful up to a certain point, since it depends on an element difficult to manufacture and upon the ramming, which is more or less variable according to the muscular force and energy, or the good will of the workman. To these objections it can be replied that there are several houses to-day which, making a specialty of steel-and-concrete buildings, are willing to guarantee the perfection of their workmanship.

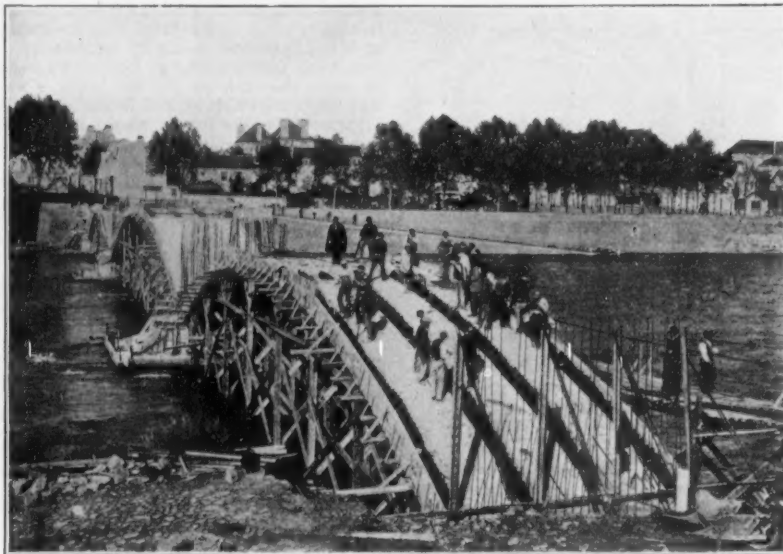
But the new apartment-house built by M. Hennébique offers an open field for several observations. First, as to general aspect: this grand monolithic structure, without joints, built of refractory material, all being of gray tone, lacks elegance and charm in spite of the fineness of its mouldings and profiles. And yet the designer took great pains to give his façades a certain richness of decoration by means of certain applications of ceramic-work and by introducing bay-windows and other projections which more or less happily break the monotony of the ensemble.

From a practical point-of-view, how many inconveniences a steel-and-concrete building presents, if it is one intended for habitation, and especially for habitation by tenants who, according to their several tastes and needs, may have the inclination and desire to modify some of the arrangements! In the case of the ordinary fireproof floor, nothing is simpler than to make an opening in it by breaking out the fireproof filling built between the beams, and running in a header. But, in a steel-and-concrete floor, it is not always known how the beams run, and one might be obliged to apply to the original builder, which, of course, would not always be easy to do; or, in other cases, one must proceed experimentally, which would be a difficult and costly operation. The making of new joints would always be an extremely delicate operation. The same sort of difficulty arises should it be undertaken to cut a new doorway through a partition, and the simple act of driving a picture-nail becomes a real labor, while to hang curtains demands the use of drills and the soldering in place of the necessary fixtures. Such inconveniences as these, which seem at the first glance of slight importance, must, nevertheless, often cause a very real friction in the routine of daily life. Per contra, this style of construction allows the proprietor to refuse to make any of the alterations suggested by his tenant.

The house in the Rue Danton is, then, an interesting example from the point-of-view of building in steel-and-concrete; but from the artistic and practical point-of-view there are objections to make to it,

and it is allowable to believe that concrete-construction does not lend itself easily to everything. The number of occasions where it can be applied is not open to dispute, and, moreover, are quite numerous enough to assure the success of the method.

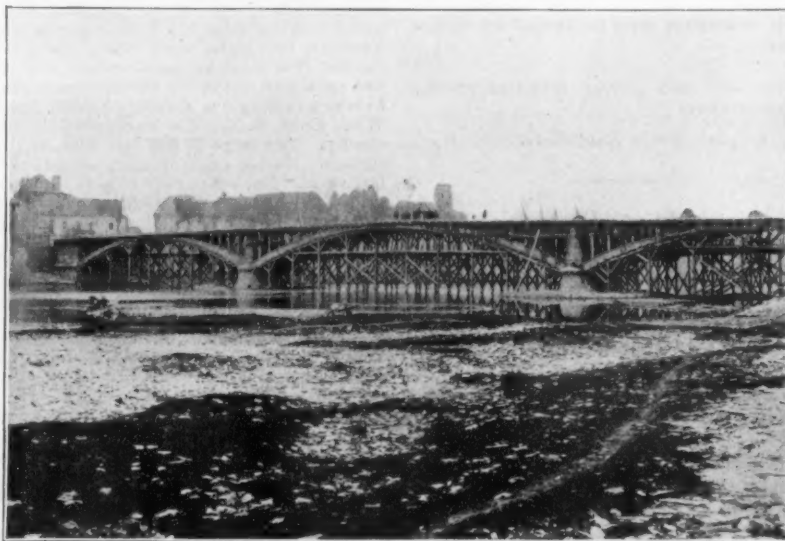
The city of Chatellerault made, about a year ago, an interesting experiment in this material. A bridge made entirely of *beton armé* was thrown over the Vienne: this is the first bridge, we believe, of such importance built out of such material. It has a total length of 144 metres, and is composed of three bays the arches of which are segmental. The central bay is 50 metres wide and has a rise of 4.8 metres; the two others have a span of 40 metres with 4 metres rise. The width is 8 metres, of which 5 metres go to the roadway. We will show presently by figures that the practical and economical results are wholly satisfactory. But, as in the case of the house in the Rue Danton, we must make certain reservations in regard to the decorative and architectural effect of this bridge. And, in the first place, it is very much to be regretted



that the designers sought, through simulating stonework joints in the cement-coating, to give the bridge the air of being built of stone. They were able to give such slight thicknesses to all the elements of this bridge that, if at first sight one should suppose it built of stone, one would at once feel doubtful as to its solidity. Never could a bridge of stone be executed in these dimensions! The central arch, in spite of its 50-metre span and its rise of 4.8 metres, has only .7 of a metre between its intrados and the surface of the sidewalk above, at the crown; for a metallic bridge, it would have been necessary to have a depth at the crown of at least 1.3 metres. The piers also have their thickness very much reduced; they measure 4.5 metres at the base, 2.5 at the springing of the arches, and only 1 metre at the top.

One of the advantages of working in *beton armé* is the ability to push the work rapidly; it is because of this that all the coarse work of the bridge at Chatellerault could be carried out in thirty days. The centres were struck only four months after the beginning of the laying of the foundations. The result of removing the centres was the very slightest of deflections, so slight as to be altogether negligible, and this is a very important fact. It is to be remarked, moreover, how this operation, which is so delicate a one in dealing with masonry, becomes simple in the case of *beton armé*. The deflections

due to the structure taking its bearing under its own weight is so slight that it is quite needless to have recourse either to jack-screws or to sand-boxes, such as are usually employed in striking centres. Moreover, very often the wood composing the centring, kept damp during the laying of the concrete, and then being sheltered, does not delay to dry out, and the shrinkage which results at this time is enough to compensate for all the deflections which the work would undergo under its own weight. It results, therefore, that long before the centres are struck, in the greater number of cases, the



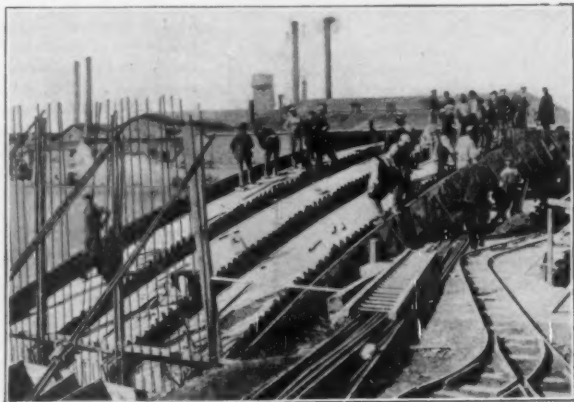
structure has no longer a bearing on the false-work.

Experimental tests have given results wholly satisfactory: those with dead-weight have been carried on under a load of 800 kilogrammes to the square metre for the roadway, and 600 kilogrammes for the sidewalks. The deflection noted for these weights was 10 millimetres for the central arch and between 4 and 5 millimetres for the land arches, whereas the schedule of the contract simply

demanding that the deflection should not exceed 50 millimetres for a weight of 400 kilogrammes to the square metre.

The tests under live-loads were carried out by the aid of several experiments, of which the most important was the passage of a steam-roller weighing 16 tons: the deflection noted in the central arch in this case was 44 millimetres at the crown.

Tests were also made by marching 250 men over the bridge in step, and also at the quickstep. We know how serious such a test as



this is, since, in the ordinary crossing of bridges other than those in masonry, it is customary to make troops break step. These tests, then, were conclusive for the bridge at Chatellerault.

The bridge cost 175,000 francs, and it has been computed that a bridge of iron would have cost 250,000 francs. So steel-and-concrete bridges are economical. It is regrettable that certain sacrifices were not made for the sake of giving the structure a more decorative air, even if it were confined to the balustrade of the parapet, which is worked out in iron only, but following a design which is altogether too simple and commonplace.

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 COURT-YARD: "HOMESTEAD," LENOX, MASS. MESSRS. McKIM, MEAD & WHITE, ARCHITECTS, NEW YORK, N. Y.

REAR VIEW: "HOMESTEAD," LENOX, MASS.

THE GRENVILLE ARMS, BAY HEAD, N. J. MR. WILSON EYRE, JR., PHILADELPHIA, PA.

[The following named illustration may be found by reference to our advertising pages.]

DAS KÜNSTLERHAUS, MUNICH, BAVARIA. PROF. GABRIEL SEIDL, ARCHITECT.

This plate is copied from *Architektonische Rundschau*.

[Additional illustrations in the International Edition.]

HOUSE OF ALBERT C. BURRAGE, ESQ., COMMONWEALTH AVE. AND HEREFORD ST., BOSTON, MASS. MR. CHARLES BRIGHAM, ARCHITECT, BOSTON, MASS.

DETAIL: "HOMESTEAD," LENOX, MASS.

PAVILION OF MINES AND METALLURGY;—THE DAHOMY BUILDING, PARIS EXPOSITION OF 1901.

THE PERMANENT ART-GALLERIES IN THE CHAMPS ELYSÉES, PARIS, FRANCE: THE PETIT PALAIS, M. CHARLES GIRAULT, ARCHITECT.—THE GRAND PALAIS, MM. THOMAS, DEGLANE AND LOUVET, ARCHITECTS.

ENTRANCE PORTICO: GRAND PALAIS DES CHAMPS ELYSÉES, PARIS, FRANCE. M. DEGLANE, ARCHITECT.

THE DEMIDOFF TOMB;—STREET OF TOMBS, CEMETERY OF PÈRE LACHAISE, PARIS, FRANCE.

NOTES AND CLIPPINGS

FAMOUS ENGLISH CHIMES.—The "Great Paul," at our Metropolitan Cathedral, weighs nearly seventeen tons. Sometimes an interest is given to a clock by its bells being visible and being struck by hammers which are wielded by special mechanically-worked figures. The introduction of figures into clocks is by no means a new one, as is instanced in this country by the knights in armor who used to strike the hours at Wells Cathedral with their battle-axes. In the celebrated clock at Strasburg, among a host of figures, a presentment of Death is allowed to strike the hour on the bell, using a human bone for the purpose. The real work of striking in large clocks is done by a special part quite separate from the timekeeping portion. In the mechanism, the most important arrangement is a barrel after the fashion of that in a music-box, while outside the framework is placed a wheel with slots at varying intervals corresponding in length with the time taken up in striking one, two, three, and so on, up to twelve. The chimes of the Westminster clock have been repeated far and wide. The hour-bell is, of course, "Big Ben," which originally weighed sixteen tons, and cracked. When recast the weight was decreased by about two tons, and the bell has been cracked for the second time this many years. The quarter-bells range from about four to a single ton, and are in very good tune. The hour-bell of the Royal Courts of Justice, with its attendant quarters, collectively weigh five tons, and yet can barely be heard, so great is the traffic that runs beneath them. The Doncaster, or Scarborough, chimes are practically the same, but they do not sound at the hour. For chiming tunes a carillon machine, in addition to the clock, is a necessity. The tunes which can be successfully played depend upon several conditions. First of all, the most suitable music is that which goes smoothly on its way, and in which the same note is not required to be repeated too quickly. The number of bells available is, however, the most important consideration; if there are enough of these, by the substitution of one barrel for another a great variety of airs can be produced. Among secular tunes "Home, Sweet Home," "Caller Herrin," and the "Old Folks at Home" are often chosen. The chimes of the old Royal Exchange, among other things, played "There is nae Luck about the House," and we may recall the fact that, when the historic building was burned, in 1838, and while the flames were at their height, the bells rendered the melody and then fell with a crash among the blazing ruins. As a rule, seven tunes are arranged on a barrel, six being secular and one sacred, suitable for six week-days and a Sunday. At Sligo Cathedral, for instance, a tune is played four times during the day on the nine bells, and as the carillon is furnished with seven barrels, a different tune is provided for seven times seven, or forty-nine, days. At Worcester, where there is a splendid peal of bells, thirty-five tunes are played; Manchester Town-hall has twenty-one bells, and thirty-one tunes are provided. Several London churches still enliven their surroundings with their chimes—for instance, St. Giles's, St. Bride's, St. Dionis's, and St. Clement Dances. The clock at the last-mentioned building is peculiar, inasmuch as it strikes the hour twice, once on the tenor, or largest, bell of the peal, and then on a small bell at the very top of the tower.—*English Illustrated Magazine*.

BLACK MARBLE FOUND IN ARIZONA.—What is believed to be possibly the most valuable deposit of marble in the world has just been discovered near old Fort Bowie, in southeastern Arizona, by L. R. Legier, who located the great Colorado marble-deposit in Gunnison County many years ago. The marble at Bowie is in the foothills of the Chiricahui Mountains, close to the ruins of the old fort. Its main ledge is over 1,000 feet wide, in various grades, and about 3 miles in length. A streak of pure white marble 75 feet wide runs the full length of the ledge, and every color is represented. Most of the stone is said to be better than the imported Italian marble, and far superior to that from Vermont, the grain being closer and firmer and the marble much harder. The most valuable part of it is in a ledge of black marble. The supply of this in the United States has always come from Egypt, Ireland and Belgium, although a small deposit was found recently near White Oaks, N. M. The black stone at Bowie is of a peculiarly fine quality. The ledge is 300 feet wide and 2,000 feet in length on the surface. Marble exists in other parts of Arizona, in many localities in large quantities, but usually in such inaccessible spots that it cannot be placed on the market. Large deposits have been found in the Santa Rita and Catalina Mountains, and in several places in Yuma County and along the Verde River, but in most instances the stone is inferior and "off color," having been injured, probably by an early disturbance of the earth's surface. At Bowie, however, the stone is unshaken. The Southern Pacific Railroad is preparing to build a branch to the deposit, 10 miles from its main line. It is intended to lay down the marble at Guaymas, whence it can be sent around "the Horn" and laid down in the Eastern market at a cost that will enable it to compete on even terms with the imported stone.—*N. Y. Evening Post*.

TO RAISE AZOF SEA.—A special to the New York *World* says: The Czar has just sanctioned a remarkable engineering project—the raising of the surface of the water of the Sea of Azof 14 feet 8 inches by building a dam near Kertch 9 miles long. In the wall immense sea-gates are to be made for the passage of ships. There will also be outlets for the superfluous water. The cost will be about \$25,000,000, the interest on which will be paid by ships trading to the Azof.

ATTEMPT TO TRANSPLANT A HUGE OAK-TREE.—An effort is to be made to remove a large red-oak tree from the wildest section of Arkansas to Forest Park, St. Louis, without injuring it. The tree is 160 feet high and 12 feet in diameter at the base. A double tramway will be built from the tree to the river, where it will be floated and towed to St. Louis. It is estimated that this will occupy six months.—*Exchange*.



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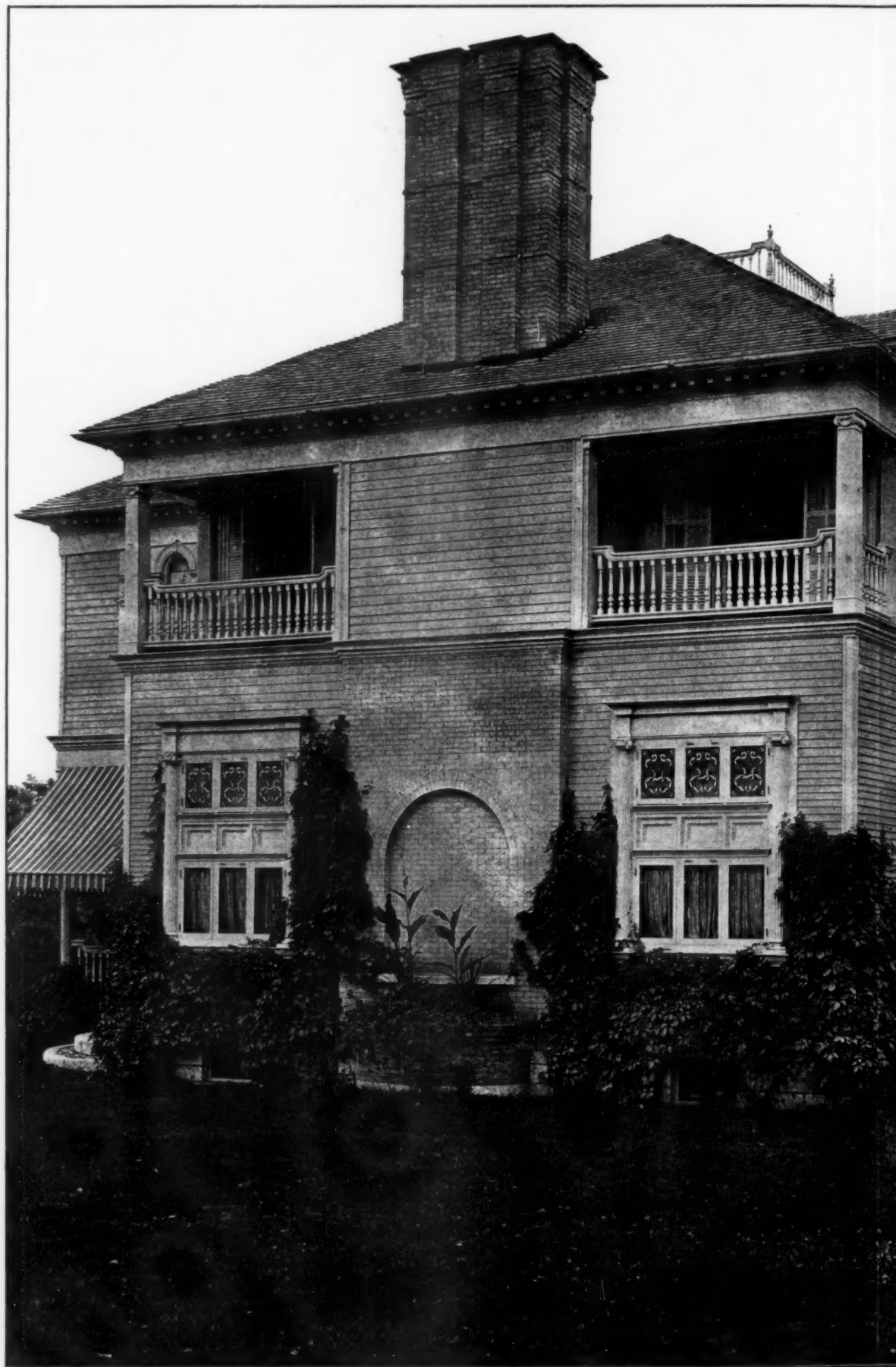
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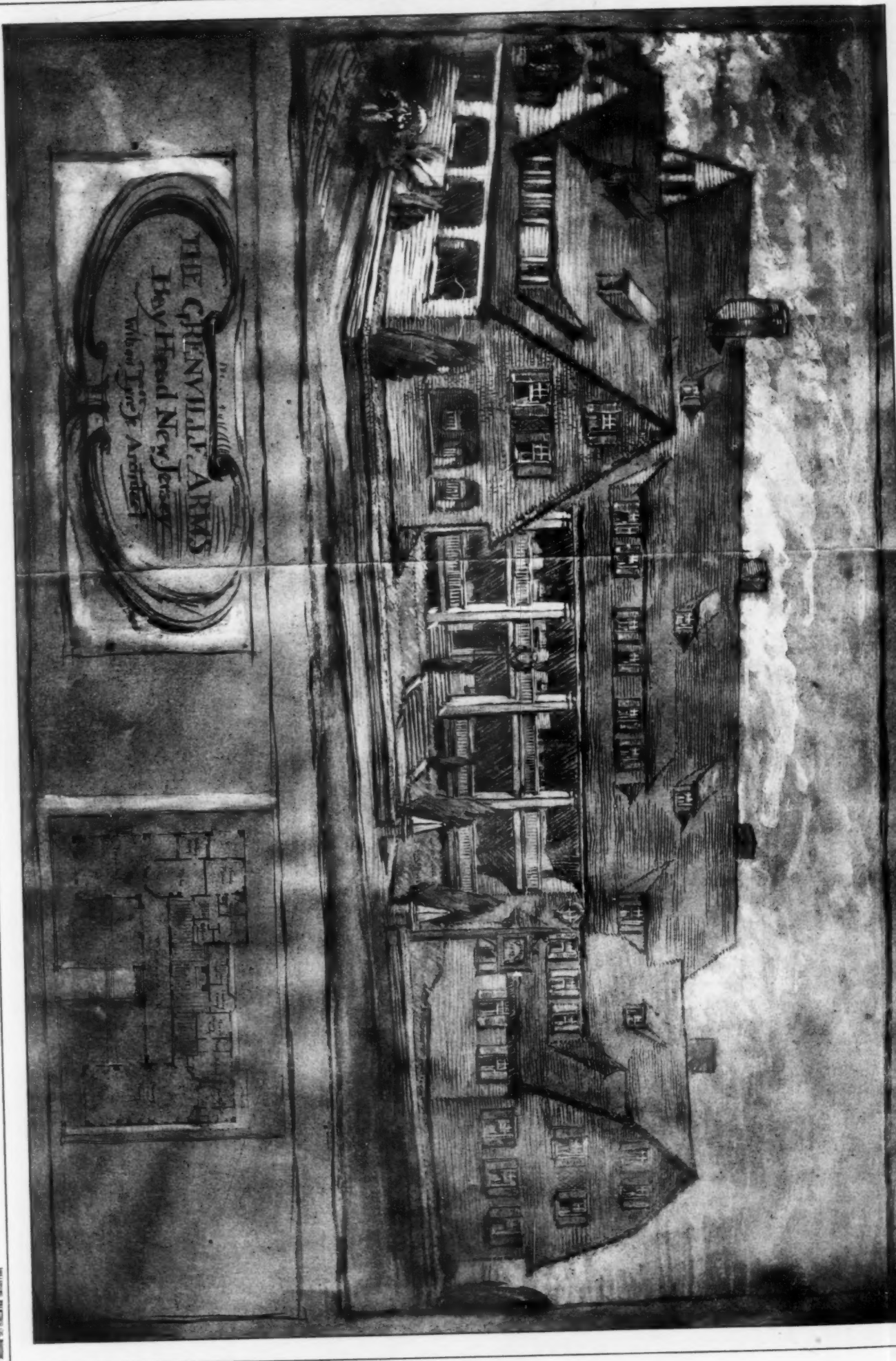
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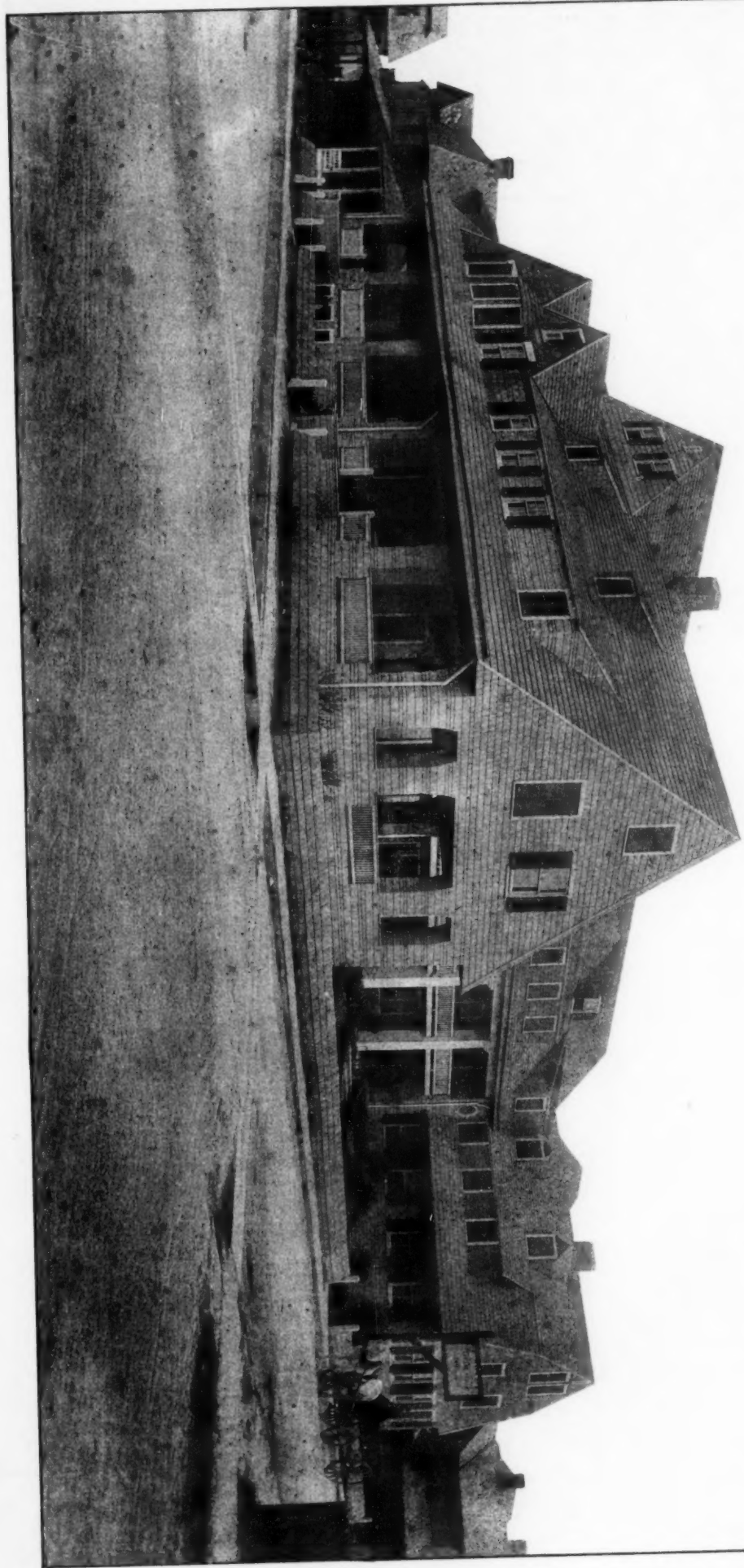
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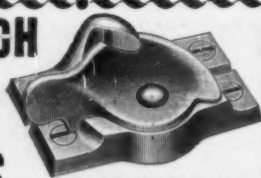
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and others.	

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King's Chapel, Boston, Mass.	Date 1749
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Christ Church, Alexandria, Va.	" 1767
Christ Church, Philadelphia, Pa.	" 1727
St. Paul's Chapel, New York, N. Y.	" 1764
Old South Church, Boston, Mass.	" 1729
First Church, Hingham, Mass.	" 1681
St. John's Chapel, New York, N. Y.	" 1803
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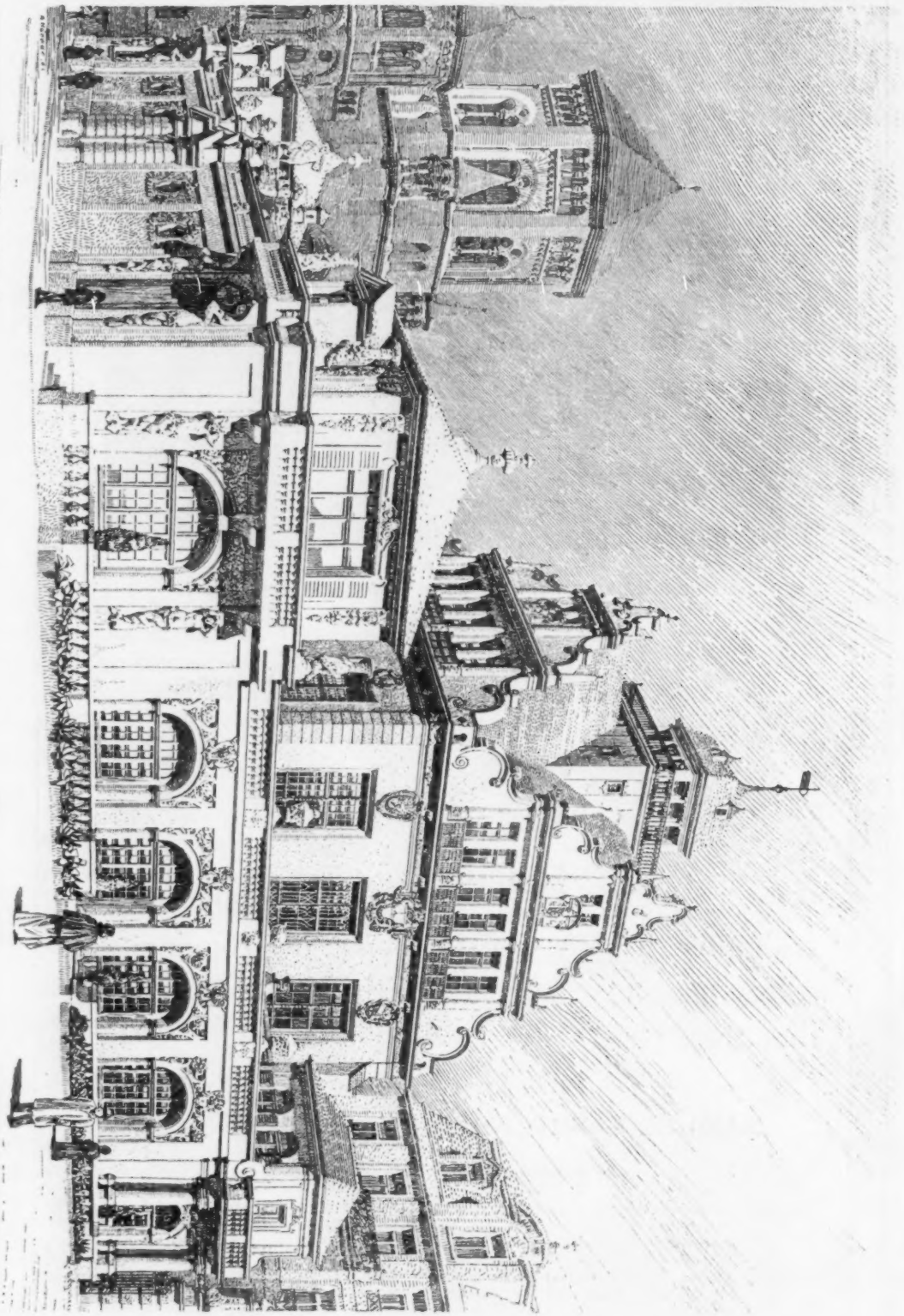
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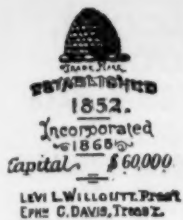
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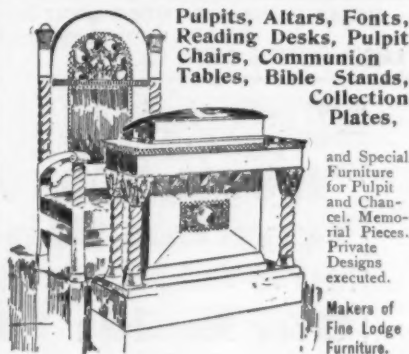
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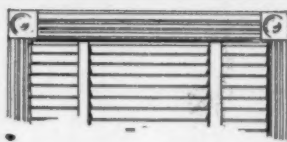
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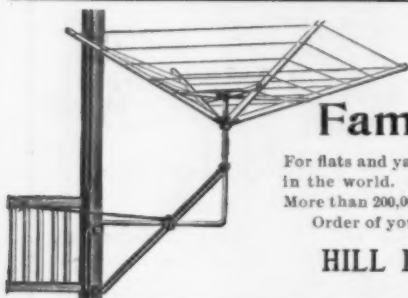
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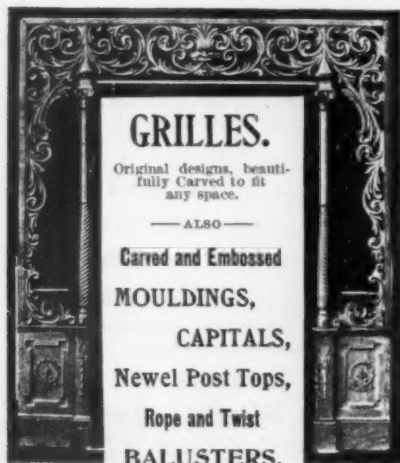
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Important Litigation Relating to Magnesia Covering Patents

THE KEASBEY & MATTISON CO., the owners of the patents for magnesia covering, have commenced a suit in the United States Circuit Court for the Southern District of New York against the Philip Carey Mfg. Co., George D. Crabbs, J. E. Breese, Schoellkopf, Hartford & Hanna Co., J. F. Schoellkopf, Jr., James Hartford, W. W. Hanna, C. P. Hugo Schoellkopf and Jesse W. Starr, to restrain the defendants from making and selling magnesia covering for boilers and steam pipes containing more than 50 per cent of magnesia, and especially coverings containing 85 per cent magnesia.

The Bill prays for a preliminary writ of injunction, to be continued during the pendency of the suit, and upon the final determination thereof to be made perpetual, and also demands an accounting and damages.

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BUILDING INTELLIGENCE.

(Advance Rumors Continued.)

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Dickeyville, Md.—The Ashland Mfg. Co. will erect a building for new power plant equipment. The structure will be two stories high, 46' x 52', of brick and stone.

Escanaba, Mich.—It is stated that a new Catholic church will be erected at a cost of \$35,000.

Greenville, Pa.—A \$20,000 city-hall will be erected here.

Hazleton, Pa.—It is said that the erection of a \$20,000 church will shortly be begun by the Italian Roman Catholics.

Indianapolis, Ind.—The contract has been awarded J. G. Pierson & Son for constructing the six iron and brick buildings for the Newcastle Bridge Co. on Beecher St. The buildings will cost \$50,000.

Iowa City, Ia.—Liebbe, Nourse & Rasmussen, 724 Walnut St., Des Moines, have completed drawings for a three-story high school to be erected here, at a cost of \$75,000.

Jacksonville, Fla.—Plans have been drawn by Lockwood & Co., 131 W. Forsyth St., for the new St. John's Church; cost, \$50,000.

Kalamazoo, Mich.—It is reported that the State Agricultural Board has ordered plans and specifications for a \$50,000 laboratory.

Kansas City, Mo.—A seven-story steel office-building, 87' x 142', will be erected at 10th St. and Baltimore Ave. by S. N. Dwight, Galena, Kan.; cost, \$250,000.

Knoxville, Tenn.—The Knoxville Iron Works are to erect a \$500,000 plant.

Lancaster, Pa.—The trustees of the Henry G. Long Asylum propose constructing a home for indigent women.

Lawrence, Mass.—Dwight & Chandler have completed plans for the proposed hospital buildings; cost, \$100,000.

Lehighton, Pa.—Report states that a glass company has been organized with a capital of \$500,000. The Board of Trade has donated 35 acres as a site for a new factory.

Lexington, Mass.—Fourteen three-story brick and stone cottage houses measuring 76' x 138', will be erected next spring at an aggregate cost of \$75,000, from plans furnished by Cooper & Bailey, 95 Milk St., Boston. H. P. Cummings, builder, 178 Devonshire St., Boston, has the contract.

Lockport, Ill.—The directors of the Illinois Pure Aluminum Co. will expend, it is said, \$50,000 in improvements to its factory buildings during the coming year.

Louisville, Ky.—Edwin H. Ferguson, president of the Kentucky Refining Co., will erect a \$100,000 three-story residence on 3d Ave.

Plans have been prepared by Dodd & Cobb, Equitable Building, for a stone and brick residence, costing \$100,000, to be erected by Samuel Ferguson.

The Polytechnic Society has signed contract for the demolition of the old library building and the erection of new structure on its site. Mason Maury, architect. Greiner & Sons, contractors. When completed the value of the property will be \$350,000.

Ludington, Mich.—Justus S. Stearns has purchased a site on Hamlin Lake, near this place, and will erect thereon a three-story brick summer hotel, to cost about \$25,000.

Lynn, Mass.—The First Church of Christ Scientist has bought the house and lot at 12 Broad St., once the residence of Mrs. Mary Baker Eddy, the head of the Christian Science movement. A church meeting will be held to decide whether to preserve the house as a memorial to Mrs. Eddy, fitting it up and making such alterations necessary to answer to purpose of a meeting place, or whether to tear down the old house and erect a new church which will provide the Christian Scientists of this place with a suitable place of worship. Mrs. Eddy has had nothing to do with the recent purchase, but it is probable that when the society commences to build or renovate, that she will give a generous contribution.

Macon, Ga.—Alex. Blair, 673 Cherry St., has prepared plans for a \$20,000 residence to be built for Wallace McCaw.

Manchester, N. H.—It is stated that by the will of the late Eline R. Balch, the city has been left \$250,000 to found a hospital, which will be known as the "Balch Hospital."

BUILDING INTELLIGENCE.

(Advance Rumors Continued.)

Marshallberg, N. C.—A \$25,000 brick structure will be built at the Graham Academy. Rev. C. M. Levister, principal.

McKeesport, Pa.—Jas. N. Wampler will erect a four-story brick business building on 5th Ave., to cost about \$40,000.

Milwaukee, Wis.—The erection of a \$50,000 natorium and branch library has been favorably voted upon by the city council.

Report states that the Holy Assumption Catholic congregation has secured a site in West Allis and will erect a \$50,000 church and later a school-house. It is stated that the Capuchin Fathers have had plans prepared for a \$50,000 church to be erected on 2d and Barleigh Sts.

Mobile, Ala.—Plans have been prepared by Stone Bros., New Orleans, La., for a brick and terra-cotta department store building, to be erected by L. Hammel & Co., at a cost of \$60,000.

Moline, Ill.—Harry W. Jones, 916 Lumber Exchange, Minneapolis, Minn., has prepared plans for the \$37,000 Carnegie library building.

Monroe, Mich.—F. H. Banlet and Wm. D. Southwick, of Detroit, propose building an 800-ton beet sugar factory here to cost \$600,000.

Montgomery, Ala.—The plans of Architect Lockwood have been accepted for a new \$60,000 edifice for the First Baptist Church.

Neenah, Wis.—A public library and opera-house will be erected here at a cost of \$45,000. Andrew Carnegie has donated \$10,000.

Newark, N. J.—Wm. E. Lehman, 224 Market St., has completed plans for an eight-story fireproof apartment-house, 50' x 100', which Leschziner & Co. will erect at Lincoln Park; cost, about \$100,000.

Plans have been drawn by Hurd & Sutton, Prudential Building, for a seven-story apartment-house to be erected by C. & P. Broderson, High St. and Breinthal Pl., at a cost of \$80,000.

New Brunswick, N. J.—The Board of Freeholders is stated to have approved plans for a new jail, to cost \$40,000.

New Haven, Conn.—A press report states that Yale University will expend about \$150,000 in a building to be known as the Lamson Lyceum.

Newton, Mass.—The sum of \$64,000 has been appropriated by the city for a new school-house. Address Mayor Pickard.

New York, N. Y.—Ceremonies attending the laying of the corner-stone of the building of the Chamber of Commerce, at Liberty St. and Liberty Pl., were held recently.

Report states that William Waldorf Astor has had plans prepared for a nine-story apartment-house costing \$2,500,000, to occupy the entire block bounded by Broadway and West End Ave. and 78th and 79th Sts. The construction will not be hurried, as the intention is to have the building ready about the time the underground rapid transit road is completed.

Plans have been filed at the Department of Buildings by Oscar Rowinson, architect, for a seven-story brick hotel, to be built by M. A. C. Levy at 11 E. 32d St. The building will cost \$80,000.

Niagara Falls, N. Y.—The Odd Fellows of this city are reported to have in contemplation the erection of an Odd Fellows' Home to cost about \$20,000.

Norfolk, Va.—Carpenter, Breese & Ferguson have drawn plans for a \$50,000 edifice to be erected by the Second Presbyterian Church.

Norman, Okla.—A new university has been started here to be known as the Oklahoma University, and a \$90,000 building is already under way. The campus has 60 acres which are being beautified by an eastern landscape artist.

Norristown, Pa.—The Morgan Brick Co., recently organized with a capital of \$50,000, will build a plant for the manufacture of brick.

North Tonawanda, N. Y.—The New York Central will erect a \$30,000 depot here. J. P. Bradford, Supt. Western Div., Buffalo.

Omaha, Neb.—A press report states: "A company of business men plan the erection of a large market house to cost complete \$400,000. The city council seems to think, however, that the city should own such a project, and an ordinance is before that body for a market-house to be erected on Jackson St., between 11th and 12th Sts."

Onalaska, Wis.—It is said that P. Hohenadel Co. contemplates establishing a canning plant here costing about \$50,000.

BUILDING INTELLIGENCE.

(Advance Rumors Continued.)

Paducah, Ky.—Andrew Carnegie has offered this city \$35,000 for a public library.

Paris, Ky.—It is reported that the Bourbon courthouse, which was destroyed by fire recently, causing a loss of \$130,000, will be rebuilt. It is proposed to use the plans of the former building with some changes in the interior arrangement.

Philadelphia, Pa.—Report states that George C. Boldt will erect a hotel on the southwest corner of Broad and Walnut Sts., to cost about \$1,000,000. John T. Windrim, 1107 Walnut St., will probably prepare the plans.

James J. Munday will put up 13 two-story brick dwellings, each 15' x 54', on the east side of 12th St., below Indiana Ave., in the 37th Ward, to cost \$32,500.

A new three-story building, 42' x 52', is to be added to the carpet factory of Hirst & Roger, on E. Allegheny Ave., below Kensington Ave. It will be of slow-burning construction. Architects, Hales & Ballinger.

C. W. Macfarlane is about to add 6 three-story mansard roof dwellings, each 16 1/2' x 53', to his operation at Baltimore Ave. and 43d St. They will be built in pairs, and will cost \$30,000.

Robert Crane has secured a permit to build the new \$35,000 factory at 1809 and 1811 Filbert St. for the Crane Ice Cream and Dairy Co., of which he is secretary and treasurer. John R. Wiggins is stated to be the contractor for the building, which will be four stories high, 42' x 117 1/2'.

Antonio Danoto will build a \$12,000 two-story stable, 21 1/2' x 320', at 935-39 S. 9th St., for Pedro Iannizzelli.

Pittsburgh, Pa.—Report states that revised plans have been made by Rutan & Russell, First National Bank Building, for the \$50,000 library building, to be erected at Washington. Same architects will shortly receive bids for the five-story stone addition, 26' x 240', to cost \$200,000, to the Duquesne club-house. They will also prepare plans for the \$25,000 brick and stone public bath-house, to be built at 35th and Butler Sts. for the Public Wash House and Bath Society.

H. O. Cameron, People's Gas Co., Tradesman Building, has the contract for erecting 12 residences in Wilkins Pl. for the Security Investment Co., Westinghouse Building. They will cost \$50,000.

The American Bridge Co., New York, has secured the contract for constructing a bridge over the Monongahela River, for the Wabash Railroad Co.; cost, \$725,000.

A press report states that plans have been completed for 40 seven-story warehouses, to cost about \$10,000,000, to be erected on land bounded by Penn Ave. and the two rivers, for the Estate of Mrs. Mary Schenley. W. A. Herron & Son, local agents.

Reading, Pa.—The Citizens' Bank proposes to erect a ten-story building at a cost of \$100,000.

Saginaw, Mich.—A building, to cost \$50,000, will be built by the Y. M. C. A.

San Diego, Cal.—The Masonic Temple Association has been formed, and will erect a Masonic temple at 5th and C Sts., costing about \$100,000.

San Francisco, Cal.—William Moser & Son, 14 Grant Ave., have plans for a five-story pressed brick office-building for Henry Kahn; cost, \$70,000.

Plans have been drawn by Hemenway & Miller, Hearst Building, for a six-story brick office-building to be erected on Sutter and Trinity Sts. A. Aronson, owner. Cost, \$80,000.

San Juan, Porto Rico.—It is stated that Andrew Carnegie has offered this city \$100,000 for a public library.

Sewickley, Pa.—It is stated that a \$25,000 hospital will be erected here. W. L. Clause, chmn. com.

Sheridan, Wyo.—The Masonic Order of this city expects to erect a brick and stone Masonic Temple.

Spokane, Wash.—Cutler & Malmgren have completed drawings for a three-story pressed brick and terra-cotta business building for Henry White, at a cost of \$50,000.

Plans have been prepared for a church for Our Lady of Lourdes Catholic Society to be erected at Madison St. and Riverside Ave. It will be 60' x 150', of granite and brick and will cost complete \$60,000.

Springfield, Mass.—The Industrial Institute, it is stated, will erect a mechanic arts high school, at a cost of \$90,000.

Stanford University, Cal.—Plans have been completed for a building to be erected at the University for the departments of mechanical, electrical and

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BUILDING INTELLIGENCE.

(Advance Rumors Continued.)

civil engineering. An appropriation of \$50,000 is reported to have been made to begin work with.

St. John, N. B.—It is stated that this city will accept Andrew Carnegie's gift of \$50,000 for a library under the usual conditions.**Stockton, Cal.**—An ice plant to cost \$75,000 will be built by the National Ice Co. It will have a capacity of 50 tons daily.**St. Paul, Minn.**—Plans have been made for the car shops for the Great Northern Railroad Co. to be built near the Dale St. bridge. The buildings will be of steel and cement, have truss roof, and will cost \$500,000.**Oscar Beyer, 56 Fifth Ave., Chicago,** has completed plans for the six-story brick and stone storage building, to cost \$300,000, to be built on Minnesota St. for the Theodore Hamm Brewing Co.**A three-story warehouse, 44' x 124',** will be erected at 9th and Howard Sts., for the Thomas Davis Real Estate Co.; cost, \$25,000. John Field, contractor.**The Board of Education have purchased a site** for a school-building in the 5th Ward, corner of Toronto Ave. and Jefferson St. The new building will be two-story brick, containing 12 rooms; cost, \$35,000.**Texarkana, Ark.**—The Kansas City Southern Ry. Co., it is stated, will erect a \$25,000 passenger and freight depot here.**Topeka, Kan.**—It is reported that Washburn College has received a gift of \$50,000 for the erection of an astronomical observatory.**Tatra, Ind. Ter.**—Charles S. Dorn, Neosho, Mo., has been awarded the contract for erecting a \$30,000 brick and stone business building for F. E. Turner, after plans by McKibban & McKibban, Muskogee.**Villanova, Pa.**—Plans have been made by Bailey & Truscott, 423 Chestnut St., Philadelphia, for a granite, stone and steel residence costing \$150,000, to be erected by W. L. Austin, care of Baldwin Locomotive Works, Broad and Spring Garden Sts., Philadelphia.**Walkerville, Mont.**—A \$25,000 school-house will be erected here.**Walla Walla, Wash.**—Report states that the Washington Lodge, Independent Order of Odd Fellows, and Columbia Lodge, Knights of Pythias, have under consideration the erection of a \$40,000 building.**Washington, D. C.**—Col. Edward V. Morrell, Philadelphia, Pa., has let the contract to Thomas Leeds, 12th and Race Sts., Philadelphia, for erecting a \$50,000 stone residence in this city after plans by Jos. M. Huston, Witherspoon Building, Philadelphia.**Wheeling, W. Va.**—The German Fire Insurance Co. will erect a seven-story office-building on Market St.; cost, \$50,000.**Wilmington, O.**—W. L. Kramer, Findlay, has drawn plans for a \$15,000 addition to the high school at this place.**Youngstown, O.**—It is reported that a steel company with \$2,000,000 capital is being organized by H. C. Frick and others.**Ypsilanti, Mich.**—E. W. Arnold has been commissioned to prepare plans for a \$50,000 science building for the State Normal School here.

ALTERATIONS AND ADDITIONS.

Brooklyn, N. Y.—Claxson Ave., cor. Park Pl., three-story bk. extension, 64' x 64', Home for Aged Men; \$45,000; o., Sarah J. Hollinshead, 255 Henry St., trustee; a., Lord & Hewlett, 16 E. 23d St., N. Y.**Woodstock, Vt.**—Alterations & additions to three-story fr. & bk. dwell., shingle roof, combination heat; \$9,000; o., Mrs. L. Richmond; a., Louis S. Newton, Hartford; b., E. F. Phelps, Lebanon, N. H.

CHURCHES.

Boston, Mass.—Roxbury St., No. 149, Ward 18, one-story bk. chapel, 34' x 47', pitch roof, steam; \$12,000; o., St. Luke's Home; a., Cram, Goodhue & Ferguson.

CLUB-HOUSES.

New York, N. Y.—Seventy-sixth St., No. 540, three-story bk. club-house, 40' x 70'; \$48,000; o., Everett P. Wheeler, 21 State St.; a., Howell & Stokes, 47 Cedar St.

EDUCATIONAL.

Boston, Mass.—Stratford St., Ward 23, two-story fr. school, 30' x 50', pitch roof, furnace; \$20,000; o., Emmanuel Church; a. & b., G. W. Mitchell, W. Roxbury.

FACTORIES.

Attleboro, Mass.—Two-story fr. factory, 40' x 350'.

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(Factories Continued.)

gravel roof, steam; \$20,000; o., E. A. Sweeney; a., Karl H. Hyde.

HOTELS.

New York, N. Y.—Fifty-second St. and Fifth Ave., eighteen-story bk. hotel, 100' x 125' 5"; \$2,000,000; o., Stewart H. Chisholm, 35 Wall St.; a., William C. Hazlett, 1133 Broadway.**Revere, Mass.**—Three-story fr. hotel, 75' x 130', comp. roof, steam; \$60,000; o., John M. McMahon, Crescent Beach; a., R. A. Watson, 1140 Columbus Ave., Boston.**Swampscott, Mass.**—Five-story fr. hotel, 50' x 363', comp. roof, steam; \$30,000; a., T. M. Sargent, 41 Tremont St., Boston; c., Titus & Poor, Lynn.

HOUSES.

Arlington Heights, Mass.—Two-story fr. dwell., 27' x 46', shingle roof, hot water; \$5,500; o., L. F. Bridgman; a., E. A. Snow, 8 Exchange Pl., Boston. 2½-story fr. dwell., 30' x 43', shingle roof, hot water; \$5,500; o., Mrs. A. L. McLellan; a., E. A. Snow, 8 Exchange Pl., Boston.**Boston, Mass.**—Harvard St., No. 35, Ward 20, two-story fr. dwell., 26' x 46', pitch roof, furnace; \$5,000; o., W. Oliver; a., C. A. Russell; b., J. E. Bishop, 431 Harvard St., Dorchester.**Cambridge St. and Allston Heights, Ward 25,** three-story fr. dwell., 37' x 40', flat roof, furnace; \$6,000; o., Teresa F. McKee; a., G. H. Ingraham, Charlotte St., nr. Bradshaw St., Ward 20, two-story fr. dwell., 30' x 36', pitch roof, furnace; \$6,000; o., A. C. C. Hill; a. & b., D. J. McKay, 45 Fowler St.**Harvard Ave., nr. Harvard St., Ward 20,** 2 three-story fr. dwells., 27' x 57', flat roofs, furnaces; \$10,000; o., Margaret McAuley; a., D. A. McAuley, 7 Claybourne St., Dorchester.**Bay State Road, four-story bk. & st. dwell., 48' x 70',** copper roof, hot water; \$100,000; o., Dr. Chas. Wells; a., Peters & Rice, 812 Pemberton Building, Quincy St., No. 435, Ward 20, three-story fr. dwell., 25' x 41', flat roof, furnace; \$5,000; o., a. & b., J. D. McKay, 7 Warner St., Dorchester.**Seaver St., No. 274, Ward 21,** two-story fr. dwell., 41' x 42', pitch roof, furnace; \$7,000; o., H. M. Whiting; a., J. T. Greene, 12 Pearl St.**Harlem St., nr. Glenview St., Ward 20,** two-story fr. dwell., 30' x 48', pitch roof, furnace; \$5,500; o., a. & b., J. Scott McLearn, Bowdoin Ave., Dorchester.**Newcastle Road, nr. Hobson St., Ward 25,** two-story fr. dwell., 26' x 42', pitch roof, furnace; \$5,000; o. & b., Brooks Walker, 11 Mountford St.; a., G. E. Parsons, 850 Tremont Building.**Charles St., No. 101, Ward 11,** four-story bk. dwell., 21' x 70', flat roof; \$10,000; o. & b., H. Tarlinsky, 7 Arlington St.; a., F. A. Norcross, 110 Tremont St.**Shirley St., nr. Norfolk St., Ward 17,** three-story fr. dwell., 21' x 44', flat roof, stores; \$5,000; o., Max Scheffreen; a. & b., N. D. Scheffreen, 137 Lauriat Ave.**Spencer St., No. 95, Ward 20,** three-story fr. dwell., 24' x 48', flat roof, stores; \$5,000; o., W. S. Drake; b., Wm. McAuley.**Mellen St., Ward 24,** two-story fr. dwell., 32' x 44', pitch roof, furnace; \$6,000; o. & b., W. M. Rice, 23 Colonial Ave., Dorchester; a., D. A. McAuley.**Brooklyn, N. Y.**—E. Twenty-fifth St., nr. Voorhies Ave., two-story & attic fr. dwell., 27' x 40', shingle roof; \$5,000; o., G. Lauter, 781 Greene Ave.; a., B. Driesler, 1432 Flatbush Ave.**Surf Ave., nr. W. 23d St., two-story fr. dwell., 31' x 64',** gravel roof; \$5,200; o., Lillie Michaelis, W. 8th St., nr. Surf Ave.; a., H. Brinkerhoff, Neptune Ave. & W. 17th St.**E. Seventeenth St., nr. Church Ave., two-story & attic fr. dwell., 26' x 42',** shingle roof; \$6,000; o., J. C. Sawkins, 81 Church Ave.; a., A. D. Isham, 220 Broadway, N. Y.**Bay Sixteenth St., nr. Park Ave., two-story & attic fr. dwells., 24' x 34',** shingle roofs; \$6,000; o., P. J. Van Note, Bay 35th St. & Crosey Ave.**Church Ave., cor. E. 11th St., two-story & attic fr. dwell., 28' x 34',** shingle roof; \$5,000; o., Dean Alvord, Albemarle & Marlborough Roads; a., J. J. Pett, 186 Remsen St.**Dumas Ave., cor. E. 19th St., two-story & attic fr. dwell., 32' x 40',** shingle roof; \$9,000; o., G. E. Boynton, 322 E. 17th St.; a., A. D. Isham, 220 Broadway, N. Y.**E. Eighteenth St., nr. Avenue A., two-story & attic fr. dwell., 32' 6" x 35',** shingle roof; \$6,300; o., Lizzie M. Moore, 1809 Beverly Road; a., J. S. Kennedy, 44 Court St.**Cambridge, Mass.**—Huron Ave., 2½-story fr. dwell., 41' x 45', hot water; \$10,000; o., J. F. O'Brien; b., D. D. Twoomy.**Howard St., No. 6, three-story st. & bk. dwell., 25' x 60',** furnaces; \$5,800; o., Annie V. White; b., F. O. White.PASSAIC ROLLING MILL CO.,
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Boston, Mass.—Washington St., Nos. 262-68, and Water St., Nos. 2-14, eleven-st'y bk. office-building, 40' x 49' x 92', flat roof, steam; \$150,000; o., A. P. Loring and P. Dexter, trustees; a., Everett & Mead, 60 Devonshire St.
State St., Nos. 122-32, Ward 6, four-st'y bk. office-building, 42' x 72', steam; \$30,000; o., J. D. Case et al., trustee; a., Peabody & Stearns.

New Haven, Conn.—Three st'y & base. bk. building, 63' x 103', gravel roof, furnace; \$40,000; a., L. W. Robinson, Exchange Building; c., D. G. Carinshall.

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Lake Terrace, Ward 6, stable, 24' x 50', stoves; \$2,400; o., U. B. Merrill; b., D. Hurley.
Upland Road, Ward 2, one-st'y stable, 41' x 61', hot water; \$4,000; o., J. L. Richards; a., S. J. Brown; b., H. F. Ross Co., Newtonville.
New York, N. Y.—Gardner Ave., nr. Maspeth Ave., one-st'y fr. stable, 17' x 60', gravel roof; \$1,032; o., Malvoline Oil Co., 11 Broadway, New York; a., W. B. Wills, 17 Troutman St.

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Brighton Ave., cor. Linden St., Ward 25, one-st'y fr. store, 18' x 54', flat roof, stoves; \$2,500; o., Gamaliel Bradford; a., O. F. Smith, 70 Kilby St.

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Boston, Mass.—Chardon St., No. 62, Ward 8, five-st'y bk. warehouse, 41' x 85', flat roof; \$35,000; o., George Willcomb; a., Winslow & Bigelow; b., Whidden & Co., 43 Milk St.
Commercial St., Nos. 316-18, nr. North St., Ward 6, three-st'y bk. warehouse, 30' x 33', flat roof, stoves; \$12,000; o., D. J. Kane, 93 Charter St.; a., F. A. Norcross; b., M. Milane.

MISCELLANEOUS.

Boston, Mass.—Deer Island, eight-st'y bk. structure for House of Correction, 210' x 336', slate roof, steam; \$400,000; o., City; a., J. Warren Gould, 1 Somerset St.

New York, N. Y.—Albany Ave., cor. Winthrop St., two-st'y bk. observation pavilion, 40' x 65', Spanish tile roof, steam; \$22,000; o., Dept. of Charities, etc., N. Y.; a., Th. Engelhardt, 905 Broadway.

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COMPETITIONS.

mitted on or before March 3d, 1902. Competition open to any architect who is a citizen of the United States. Copy of a printed programme will be furnished on application to GAVIN NEILSON, Clerk of Committee on Soldiers' Monument. 1357

PROPOSALS.

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[At Zion City, Ill.]

Sealed bids will be received until November 23 for constructing a steam power station. REV. JOHN ALEXANDER DOWIE. 1351

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[At Sullivan's Island, S. C.]

Sullivan's Island, S. C. Sealed proposals will be received here until November 23, 1901, for constructing one barrack and one administration building. Information furnished on application. DAVID PRICE, Q. M. 1351

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

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

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

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

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

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

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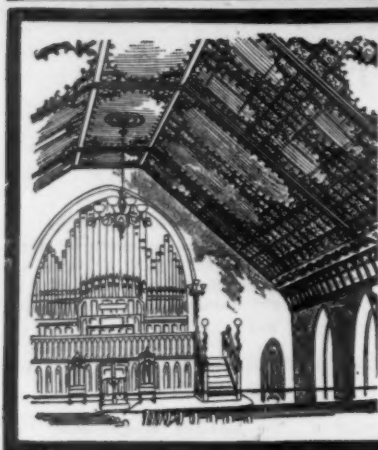
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SECTION 13. No Member shall compete in amount of commission, or offer to work for less than another, in order to secure the work.

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

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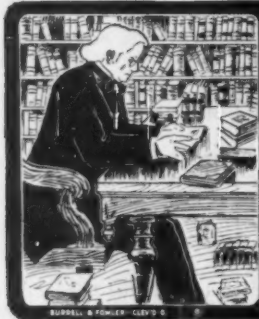
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ARCHITECT'L ORNAMENTATION.

Lombard & Co., A. P., Boston

ASPHALT.

Neuchatel Asphalte Co., New York..

ASPHALT ROOFING.

Warren Chemical & Mfg. Co., N. Y.

AUTOMATIC SPRINKLER.

Internat'l Sprinkler Co., Phila., Pa...

BLINDS (Venetian).

Burlington Venetian Blind Co., Bur-

lington, Vt.....

BLUE PRINTS.

Moss, Chas. E., Boston.....

Spaulding Print Paper Co., Boston.....

.....(eow)

BOILER (Steam and Hot-Water).

Walker & Pratt Mfg. Co., Boston...

BOILERS (Side-Feed).

Gorton & Lidgerwood Co., New York.

BRICKS (Red Oxide).

Wisconsin Graphite Co., Pittsb'g, Pa.

CALIFORNIA REDWOOD.

Carlisle, Pope & Co., E. A., New York.

CAPITALS.

Lombard & Co., A. P., Boston.....

CAPITALS (Carved).

O. T. Nelson Co., The, Columbus, Ohio

CARVING.

Lombard & Co., A. P., Boston.....

Waddell Mfg. Co., Grand Rapids, Mich.

CEMENT.

Alsen's Cement Works, N. Y.....(eow)

Atlas Cement Co., New York.....

Thiele, E., New York.....

CEMENT PAVING.

Stamsen & Blome, Chicago, Ill.....

CHLORIDE ACCUMULATOR.

Electric Storage Battery Co., Phila-

delphia, Pa.....

CLOTHES-DRYER.

Hill Dryer Co., Worcester, Mass.....

COMPOSITION ORNAMENT.

Lombard & Co., A. P., Boston.....

CONDUCTORS.

American Steel Roofing Co., The,

Cincinnati, Ohio.....

CONSERVATORIES.

Lord & Burnham Co., Irvington-on-

Hudson, N. Y.....

CONTRACTING.

Flynt Building & Construction Co.,

Palmer, Mass.....

CONTRACTOR AND BUILDER.

Rutan, William L., Boston.....

CORDAGE.

Samson Cordage Works, Boston.....(eow)

CREOSOTE STAINS.

S. Cabot, Boston.....

CUTLER PAT. MAILING SYSTEM.

Cutler Mfg. Co., Rochester, N. Y.....

DEAFENING QUILT.

Samuel Cabot, Boston, Mass.....

DECORATORS.

L. Haberstroh & Son, Boston.....

DOORS.

Kinnear Mfg. Co., The, Columbus, O.

DOORS (Interior Finish).

Carlisle, Pope & Co., E. A., New York.

DRAUGHTSMAN.

E. Eldon Deane, New York.....

ELECTRIC SIGNALS.

Elevator Supply & Repair Co., New

York.....

ELEVATORS, ETC.

Morse, Williams & Co., Philadelphia.

Whittier Machine Co., Boston.....

ENGINES (Hot-Air).

Rider-Ericsson Engine Co., New York.

FAUCETS.

Union Brass Works, Boston, Mass...

FILING DEVICES.

Art Metal Construction Co., James-

town, N. Y.....

FILTER.

Loomis-Manning Filter Co., Phila., Pa.

Seafie & Sons, Wm. B., Pittsb'g, Pa.

FIREPROOF DOORS.

Kinnear Mfg. Co., The, Columbus, O.

FIREPROOFING.

Johnson Co., E. V., Chicago, Ill.....

FIREPROOF LATHING.

Hayes, Geo., New York.....

FIREPROOF SHUTTERS.

Kinnear Mfg. Co., The, Columbus, O.

FLOOR POLISH.

Butcher Polish Co., Boston.....

FLUSHOMETER.

Kenney Co., The, New York.....

FLUSH-VALVE.

Peck Brothers Co., Chicago, Ill.....

GALVANIZED IRON.

American Sheet Steel Co., New York

GATES.

Wm. R. Pitt, New York

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GRATES, ETC.

Wm. H. Jackson & Co., New York...

GREASE (Graphite).

Wisconsin Graphite Co., Pittsb'g, Pa.