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CONTENTS.

SUMMARY: —
"*Topical Architecture.*" — The Growth of Boston. — The Effect of Foreign Traffic on the City's Growth. — Fall of the Price of Iron in Great Britain. — Honesty between Colluding Bidders. — Mr. Alexander Doyle, Sculptor, and the Statues of Horace Greeley. — How French Architects are protected against the Pauper Architects of America. — The Aluminothermic Method of Reducing Metals. — Close of the Paris Exposition 41
ITALIAN CITIES. — XIII: BOLOGNA. — II. 43
DIFFUSION OF LIGHT. — I. 46
BOOKS AND PAPERS. 48
ILLUSTRATIONS: —
United States Post-office, Kansas City, Mo.—Bolognese Palaces. — Boston Highlands M. E. Church, Boston, Mass.
Place Louis XVI, Nantes, France. — A Memorial Porch: No. 141 West 11th St., New York, N. Y.
Additional: No. 27 East 20th St., New York, N. Y. — Part of the New National Museum, Munich, Bavaria. — Metalwork, — XVI: Post and Railing, No. 24 East 57th St., New York, N. Y. — Metalwork, — XVII: Post and Railing, No. 6 East 8th St., New York, N. Y. — Model of Statue of Mr. Cecil Rhodes. — Panels at Base of the same Statue. 48

IT is so simple and easy a thing to *start* an architectural journal that we have had a natural hesitancy in transforming "*Topical Architecture*" from an occasional publication into a monthly periodical, lest its name should be added to the long list of architectural publications that have started but have never progressed beyond the speedily reached graveyard of mistaken ventures. Starts are so easy to make that we could start a new architectural journal with every month in the year, each distinctly different from the *American Architect*, and from all others, and each offering the prospect that at last the longed for and perfect thing had been born. "*Topical Architecture*" will be simply and purely an architectural publication, appealing to the eye and senses more than to the brain; it will not seek its income in the advertising field, and will not be a vehicle for the outpourings of architectural writers. We believe it will deserve the support of the profession, else it would not be allowed to start, and we also believe the profession should feel they ought to give it the modest support it seeks.

ONE hardly realizes the growth of cities except by an effort of memory, and a little reflection is necessary to appreciate the changes which have taken place in Boston within a comparatively short period. Fifteen or sixteen years ago Boylston Street was lined with dwelling-houses, and was traversed by a few horse-cars, one every quarter of an hour, if we remember rightly, some on their way to Brookline, through Huntington Avenue, and others, by way of Dartmouth Street, to the South End. The Harvard Bridge had not then been opened to street-car traffic; the Beacon-Street Boulevard was incomplete, and the beautiful and populous Brighton quarter of the present day was a quiet and rather despised suburban village. Now, although no violent revolution in conditions has taken place, the same Boylston Street is encumbered with what is almost a continuous double string of electric-cars, and the newspapers publish plan after plan for relieving the "congestion" of traffic in it. The diversion of a portion of the Cambridge travel through it, on the opening of the Harvard Bridge, was the first important change, and the completion of the Beacon Boulevard made another considerable addition to the Boylston Street traffic, but, as usually happens in such cases, these two additions brought with them others, still more important. The owners of the dwelling-houses on Boylston Street, finding that it was becoming a great thoroughfare, converted their houses into handsome stores. These attracted customers from other places than Brighton and Cambridge, and cars now run through Boylston Street to Dorchester, South Boston and other quarters, to accommodate them. Meanwhile, people in search of houses, finding Brighton and Brookline conveniently connected with the best part of the city, settled there in great numbers; so that, from all these causes, the street-car business has grown until it has become unmanageable. Now, to add to the congestion, the new Symphony Hall, the largest and most beautiful concert-hall in the city, accommodating about four thousand persons, has just been opened, and Horticultural Hall and Chickering Hall, accommodating, probably, as many more, will soon be completed. When these are done, there will be, nearly every evening and Saturday afternoons, for at least eight months in the year, six to eight thousand persons to be transported to and from these halls through Huntington Avenue and Boylston Street or Massachusetts Avenue. This number will more than comfortably fill two hundred electric-cars, and, as no one will be willing to wait more than half an hour for a car, an addition to the present traffic of something like two hundred cars in each direction, in the space of half an hour, or at the rate of about seven cars a minute, must be looked for at the most crowded time of the day. It is not surprising that architects and real-estate agents, who are accustomed to study such conditions, view the prospect with some alarm, and make frequent suggestions for meeting the inevitable difficulty. Our readers will remember Mr. Atkinson's well-studied and thoroughly architectural scheme for a new street southward from Copley Square. This, although probably the most carefully-matured plan yet proposed, is unlikely to be adopted, on account of its cost, and the changes, which can hardly be long delayed, are likely to take the form of widening the present streets, particularly Providence, Eliot and Kneeland Streets, which would give a route from Copley Square to the Summer Street Terminal nearly parallel to Boylston Street, and relieve the latter of some of its traffic.

WHILE Boston and its suburbs have been filling up with new inhabitants, its commerce has grown in a way still more remarkable. Fourteen years ago, if we are not mistaken, after the loss of the "*Oregon*," the Cunard Company discontinued its line of steamers between Boston and Liverpool, and for a considerable period not a single steamer left Boston regularly for any foreign port, the reason given being that no freight could be secured in Boston for the return trip. Now there are eleven regular lines of steamships, connecting Boston with Liverpool, Glasgow, Bristol, London, Hamburg and Copenhagen. If it were not for the obstructions in the harbor, which are, however, the object of a feeble attempt at improvement, the foreign trade of the city would undoubtedly be much greater, for, although more freight is offered than the steamers can take, the largest ships are obliged to sail with only about two-thirds of their full capacity, in order to get safely over the shallows in the channel. What this great change indicates for the future of Boston it is impossible to say. At present, all the foreign business is done with foreign ships; but there are indications that American ship-building and sailing will soon be relieved of the legislative burdens which have oppressed it for thirty years, and as soon as these two occupations cease to be confined to favored monopolies, it may be presumed that Boston, which foreign merchants have found a desirable port, will be found equally so by the Americans who will, as soon as they are permitted to do so, make a vigorous attempt to secure their share of the world's trade.

THE course of prices of iron is still downward, and the market in Europe has now broken sharply. In England, a reduction of thirty per cent was made in a few days at the beginning of the month; in Belgium, where iron is made very cheaply, the demand has fallen off, so that the mills, as a rule, are operated only four days in the week; and in Germany, where economy of manufacture is studied to the utmost, and where, in consequence, prices are generally low, large concessions are made to effect sales, the manufacturers of bolts and rivets, for example, having made a reduction of twenty-five per cent from their schedule. Meanwhile, American iron, which, we must remember, is still sold much cheaper abroad than it is at home, is finding its way everywhere. The American Bridge Company has contracted to build shops for the North German Lloyd Steamship Company, at Bremen, and it is said that the bridges for the Uganda Railway, in Africa, are to be built by American contractors.

A DELIGHTFUL municipal case came recently before the Pennsylvania courts. The city of Philadelphia advertised for sale the old iron in the former municipal gas-works. Two men, Blakey and Samuel, put in for it a joint bid of nine thousand dollars. Another man, named Barrett, hearing of this, offered them four thousand dollars to withdraw their bid. They did so, and Barrett paid the four thousand dollars to Samuel, and put in himself a bid of two thousand dollars. This

was the highest, and apparently, the only bid made, and the iron was sold to him. Later, a corporation, the Girard Iron and Metal Company, heard of the transaction, and protested; and, finally, the contract with Barrett was set aside, and the iron sold to the Girard Company, for about seventeen thousand dollars. Meanwhile, Samuel, who had received the four thousand dollars from Barrett, had forgotten to divide it with his partner, Blakey, and the latter sued to recover his share, but has just been defeated, on the ground that the law will not interfere in the quarrels of parties to a dishonest or improper transaction.

THE two Greeley statues in New York, one in front of the *Tribune* Building, and the other in Broadway, at Thirty-third Street, have been the subject of an interesting lawsuit. After the death of Mr. Greeley, Mr. Whitelaw Reid, who succeeded him as editor of the *Tribune*, consulted with other friends of the deceased in regard to the erection of a suitable memorial. A committee was appointed, subscriptions solicited, and a few thousand dollars raised. At this point the panic of 1873 occurred, and the committee discontinued its labors. Meanwhile, Mr. Reid had received, as a personal matter, two sums of one thousand dollars each, to be used in his discretion for the purpose of doing honor to Mr. Greeley's memory, and the *Tribune* had invited small subscriptions, and had received, in all, about nine hundred dollars. In 1881, when the committee had been eight years idle, Mr. Reid, without calling for the money still in the hands of its treasurer, took the two thousand dollars which had been put in his hands, to be used in his discretion, and the nine hundred dollars sent to the *Tribune*, and, adding nearly eleven thousand dollars out of his own pocket, contracted with Mr. J. Q. A. Ward for the statue now standing in front of the *Tribune* building. In 1887, when the original committee had given no sign of life for fourteen years, one of its members, Mr. Niles, attempted to get it together again. Only one other member, General Cochrane, responded to his call. Both of them, according to the evidence, approved the action taken six years before by Mr. Reid in regard to the funds in his own hands, but thought it necessary to do something with the money which the committee had collected fourteen years previously, and which, naturally, could now neither be returned to the donors, nor applied to any other purpose. Mr. J. Q. Howard was added to the committee, and two years later, in 1889, a contract was made by these three, as an "Executive Committee," with Mr. Alexander Doyle, for the erection of the statue now standing at Thirty-third Street. The work was duly carried out, but Mr. Doyle understood that he was entitled to receive, as a part of his pay, the subscriptions which had been placed in the hands of Mr. Reid, and used by him in connection with the Ward statue. Mr. Reid thought differently, and Mr. Ward brought suit for the money. The case has now been decided, after three trials, by the Court of Appeals, in favor of Mr. Reid. The questions involved are so technical that a layman could hardly venture to form an opinion about the matter, and we can only regret that Mr. Doyle should have been put to so much expense in the unsuccessful prosecution of what he undoubtedly believed to be an honest claim.

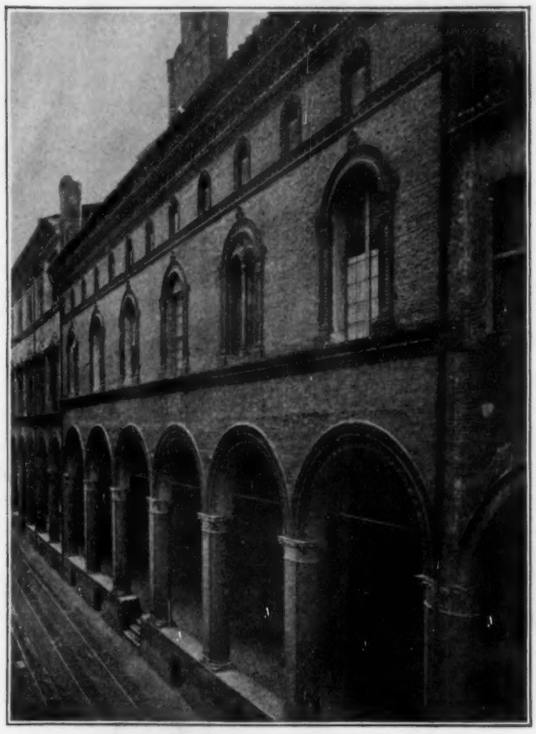
AMERICAN and English architects are occasionally called upon to do work in France, and it may be well for them to be reminded that the statutes of France place restrictions upon them in such cases. The declared policy of the French law is "to protect French workmen against the competition of foreign workmen on French soil, in the same way that the customs laws protect the national industry against the invasion of products of foreign origin." With this view, it is now required that every foreigner who arrives in France with the intention of carrying on there any profession, commerce or industry shall, within a week after his arrival, file, at the mairie of the commune in which he resides, a declaration of his purpose, and receive a certificate of "immatriculation." This certificate must be shown when required, and if the foreigner changes his residence, he must, within two days after his arrival at his new abode, bring it to the mairie at his new residence, to be inspected and stamped. Even if he only intends to stay in France a short time, the same formalities must be gone through, and, if he makes repeated professional visits, a new certificate must be obtained at each visit. Any infraction of these laws is punished with fines, or imprisonment, according to the gravity of the offence, and any person, whether a French citizen or not, who knowingly employs a foreigner not provided with a certificate of immatriculation, or who, employing a person known to be a foreigner, fails to ascertain whether he possesses the required certificate, is also liable to punishment.

M. LEON GUILLET gives, in *Le Génie Civil*, a well-written account of the new "aluminothermic" processes for reducing metals from their oxides, welding rails and pipes, and so on. Every one who has experimented with flash-lights knows that aluminium, in fine powder, is explosive when mixed with a highly oxidized substance, like chlorate of potash, or even when diffused in the air, but every one does not know that the temperature developed in the combustion of aluminium is extremely high. It is this circumstance which makes aluminium valuable in metallurgy. If some aluminium, in powder or small grains, is mixed with iron ore, and ignited, an active combustion takes place, and a button of iron is formed in the crucible used for the operation, covered with a scoria of alumina. The same effect is produced with chromium, and many other metals, and, as there is a commercial demand for certain of these, the process is likely to be found useful in manufacturing them. In practice, a mixture of aluminium and metallic oxide is not easily ignited, and a primer is used, consisting of aluminium powder mixed with five times its weight of pulverized binoxide of barium. A little of this priming powder, which is highly explosive, and must be handled cautiously, is scattered on top of the mixture of aluminium grains and metallic oxide which it is desired to reduce, and which is first placed in a plumbago crucible, lined with magnesia, and a lighted match is then thrown on it. The priming powder takes fire, with a slight explosion, and, in burning, kindles the less inflammable mixture under it; and the combustion goes on until the mineral is reduced. The slag obtained in the ordinary working of the aluminothermic process consists of an intensely hard corundum, or emery, so much harder than ordinary emery that even the diamond does not scratch it; but there seems to be no reason why, with pure materials, it could not be obtained in transparent crystals, colored in the same way, and with the same substances, as natural rubies and sapphires. It is said that the slag crystallizes, but in crystals so small that they are useless in jewelry; but it might not be difficult to increase their size. Meanwhile, the simple mixture of aluminium grains and iron-ore affords a means for producing high temperatures which is of great value. By surrounding the ends of a broken rail with a sheet-iron case, tamped with sand, bringing the ends together with clamps, and pouring in the molten contents of a crucible filled with the aluminium-iron mixture and lighted with a little priming-powder and a match, the metal can be welded together again so strongly that the rail will break again elsewhere, rather than at the joint; and, particularly in railway management, a heating material so portable and so efficient will have many applications.

IT is a matter for sincere regret that the great Paris Exposition of 1900, now closed, has not been financially successful. It was not expected that the sale of entrance-tickets would cover the expenses, the indirect profit from the sale of postage stamps, railway transportation and so on being counted upon to make up the balance; but, this year, the sale of tickets has been small, and, presumably, the indirect receipts have been proportionately so. At the last Exposition, in 1889, twenty million admission tickets are said to have been sold, bringing in about four million dollars. How many have been sold this year is not yet known, but less than half of those issued have been disposed of, and, owing to the peculiar manner in which they were issued to subscribers, in blocks with a lottery-ticket attachment, the price has been regulated by competition among the subscribers, and has, we think, never gone above thirteen or fourteen cents, while the great majority of the tickets have been sold for five or six cents each. This, of itself, would affect the receipts disastrously, and the extremely hot weather in Paris in July, the alarm caused by the fall of the bridge over the Avenue de Suffren in May, and the political disturbances caused by foreign wars, seem to have combined to keep visitors away from Paris. The result will probably deter the Parisians from holding any more expositions for many years to come, but they should have the credit of having carried out this one with an energy and magnificence, and in a spirit of fairness and courtesy to all persons concerned, which deserve grateful remembrance.

ITALIAN CITIES.[1] — XIII.

BOLOGNA. — II.



Palazzo, Fava.

BOLOGNA still contains a considerable number of churches whose merits are quite secondary, an enumeration of which would have little interest, particularly at a distance. But we must point out the Church of the Madonna di San Luca,[2] situated at about an hour's

Palazzo Malvezzi-Campeggi. Andrea and Giacomo Marchesi, Architects.

distance from the city, as it presents the peculiarity that one approaches to it by a portico which, on setting out from the city, unrolls itself through a length of five kilometres, over irregularities of the site which rise hillock above hillock.

The museum of Bologna is one of the most important in Italy, not only because of the number of paintings which it contains, but also and especially because it encloses the richest collection of paintings of the Bolognese school, derived from the churches and convents suppressed at the end of the last century. And finally, it possesses Raphael's "St. Cecilia," which is not only the finest painting by the master of Urbino, but one of the most beautiful paintings in the world.

The University, which contains five faculties and enrolls some five hundred students, is one of the most ancient scholastic monuments; after the famous University of Salerno, it is the one which has had the longest existence, as it was founded in 1119. It was in this university that Galvani made the great discovery which opened the age of electricity. It was also at the University of Bologna that, in 1315, the first corpse was dissected by Mondini. At certain epochs the courses of this institution were attended by ten thousand students. To-day the surgical clinic of Bologna is the first in rank in the kingdom. Before and during the Renaissance, several chairs at this university were occupied by women, who taught with much success philosophy, law, anatomy and mathematics. In the fourteenth century, Novella, celebrated for her talent as much as for her beauty, succeeded to her father, and, according to the chronicles of the times, was obliged to lecture behind a curtain in order that the charm which her beauty exercised over the audience might not distract

Door of the Two Giants: Palazzo Bargellini.

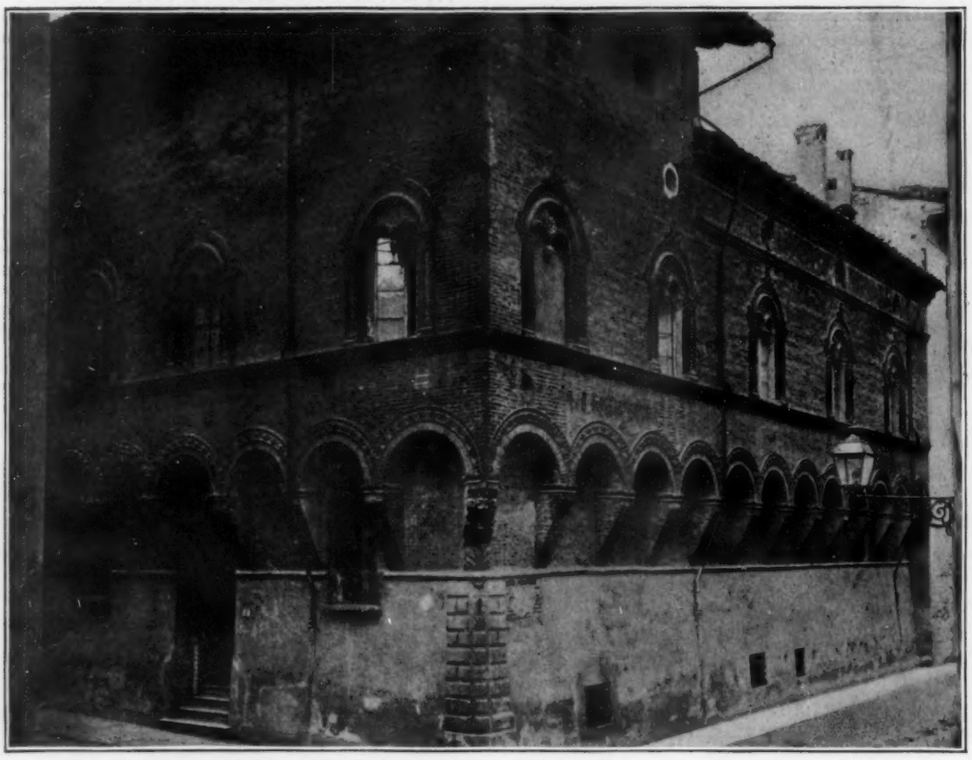
them from her discourse. In the closing years of the last century, Clotilde Tambroni taught Greek here, and it was at the same time that Gaetana Agnesi gave instruction in mathematics at Milan.

To architects Bologna offers a wide field of studies because of the unusual number of palaces which adorn it, belonging to different epochs and presenting peculiarities of the most varied and most opposed styles. The Palazzo Albergati, built after the designs of Baldassare Peruzzi, dates from the commencement of the sixteenth century. It is quite simple, and the sobriety of its lines, which do not escape a certain harshness, give it a clear and luminous air. The façade of the Palazzo Bevilacqua, a work attributed to Bramantino, is grand and imposing, with an exterior skin of hard stone, cut to a diamond face, which covers it like a cuirass. But what is most particularly deserving of remark about this building is the portico of the quadrangular court-yard, which consists of two orders of canellated Corinthian columns, supporting full-centred arches, in the style affected by Bramantino.

The architecture of the Palazzo Fava is distinguished for its originality of design, the first story being supported by arches resting on square piers crowned by short, stumpy capitals in the Byzantine style; we find also a reminiscence of this style in the ornaments which bound the arcades. The windows, also full-centred, are in perfect harmony with the portico which bears the first story. The rooms of this first story are enriched with paintings by the three Carracci, and represent the principal scenes of "*The Æneid*." The Palazzo Malvezzi-Campeggi, with certain differences in the ornament, is conceived in the same style as the one just mentioned, but the

[1] Continued from No. 1295, page 21.
[2] See *American Architect* for October 20.

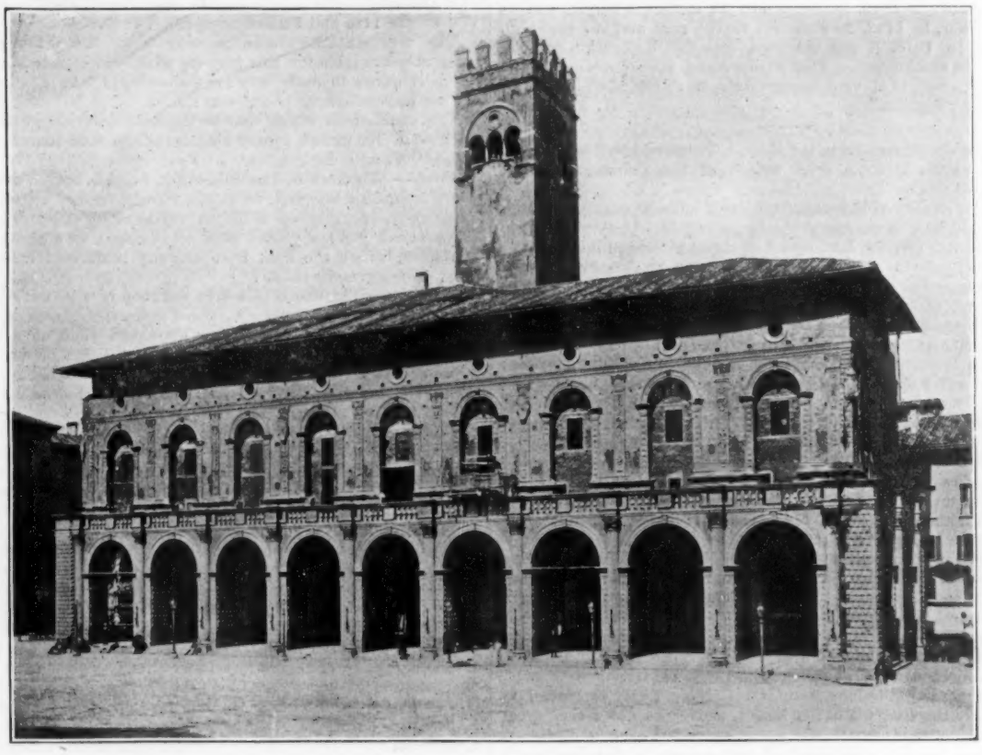
arcades of the windows are designed with a greater purity and without the Byzantine affectations; the columns are of the Doric order. This palace also has a very remarkable court-yard. The Palazzo Malvezzi-Medici shows us all the characteristics of the seventeenth century, with a lower row of windows crowned by curved mouldings, while the upper row is treated with right-lined tympana. The "House of the Carracci" takes us several centuries back into the past, to the time when Gothic architecture was being married to the Roman. The single story, the arches of whose twin windows have a slight tendency toward the pointed form, rests upon corbels overhanging the ground floor. It is one of the most imposing and most severely simple of the works of architecture of the early centuries left in Bologna. In passing, we might notice the "doorway of the two giants" in the Palazzo Bargellini, as well as the modern savings-bank building and the Palazzo Petruzzi, built after the designs of Andrea Marchesi. The Palazzo Publico, whose construction was begun in the thirteenth century and finished two centuries later, is one of the rare buildings in Bologna where the pointed arch



The Casa dei Carracci.

Palazzo Publico: XIII-XV Centuries.

triumphs. The Palazzo del Podestà, which belongs to the same time, merits attention because of its rather forbidding robustness, and the square tower crowned with crenellations which surmounts it.

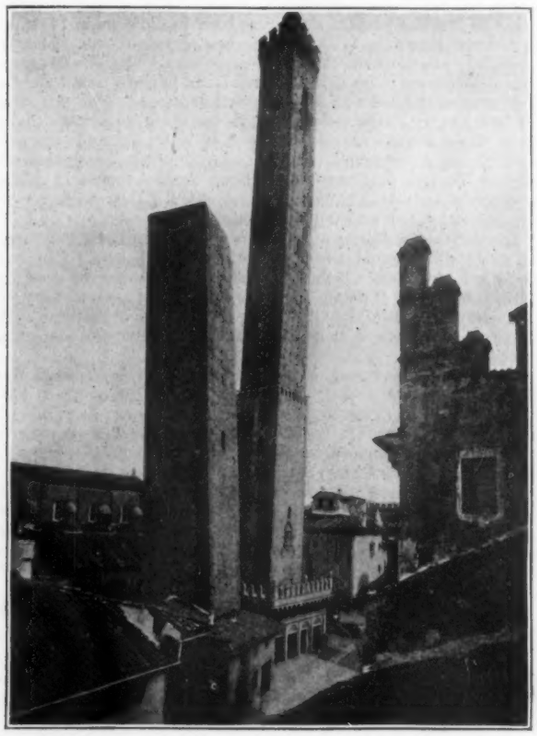


Palazzo del Podestà: XIII Century. Facade by B. Fioravanti.

One must not pass through the public place without casting a glance at the colossal "Neptune," by Giovanni di Bologna, which ornaments the fountain, and upon the equestrian statue of Victor Emmanuel, by the Sculptor Monteverde, to-day a senator. Amongst the monuments which relate to modern history should also be mentioned the statue of Joachim Murat, brother-in-law of Napoleon, King of Naples, who was shot in 1818 at Pizzo di Calabria.

Statue of Murat in the Certosa. Vincenzo Vela, Sculptor.

Finally, I ought to mention, before stopping, the two monuments which attract attention at Bologna through their singularity; these are the tower of the Asinelli and the Garisenda tower, which rear themselves side by side like two sisters, and which offer, like the tower of Pisa, the peculiarity of not being erect upon their bases. The tower of the Asinelli, built in 1105 by the family which bore this name, is 89 metres in height and has an inclination out of the



The Garisenda and Asinelli Towers. XII Century.

perpendicular of 1.16 metres. After the terrible earthquake of 1779, this inclination had not varied. There was found, however, a slight increase in the inclination by a new observation taken in 1813. The Garisenda, built in 1110, measures only 49 metres in height, and its inclination was, in 1762, 2.59 metres to the east and .97 metre to the south. In 1815, it was observed that this inclination had increased by 48 centimetres. This phenomenon, apparently due to the sinking of the soil, is of very ancient date, as Dante alludes to it in a song in his "*Inferno.*" H. Mereu.

The following extract from the Boston *Transcript* makes a proper addendum to M. Mereu's brief record of the famous women of Bologna: —

"In the University of Bologna, from the Middle Ages down, women have been allowed to occupy professional chairs. It is pleasant to learn that in this city the intellectual qualities of women had full and effectual recognition. The first of the women professors of whom we have any knowledge is Bettisia Gozzadini, who was born about the beginning of the thirteenth century. Our knowledge of this remarkable woman is rather hazy, and some authors have even questioned her existence. Litta, in his work entitled '*Celebrated Families,*' in treating of the tradition relating to Gozzadini, writes: 'She would never dress as a woman, nor use the needle, but devoted herself wholly to the study of law and became most learned. She lectured in the public studio (or University) and frequently in the public squares, on account of the immense number of listeners.'

"Tradition has preserved the memory of another woman whose beauty appears to have been as great as her intellectual qualities. Novella, the daughter of the jurisconsult Giovanni d'Andrea, was born in 1312, and while still a young woman was accustomed to give lectures at the University in the place of her father, when illness or other pressing matters prevented him from attending. But according to one account, she appeared in the professor's chair with her face covered by a veil, so as not to distract the attention of her hearers by her extraordinary beauty. Another account relates that she sat behind a curtain which concealed her charms from the young men who listened to her lectures on law.

"It is recorded that Dorothea, daughter of Giovanni Bocchi, lecturer in moral philosophy and practical medicine, continued to teach publicly the students of her father, and there was a very great concourse of them.

"A record is also mentioned of two women of the fourteenth century, very learned in Greek and in Latin. Bettina Sangiorgi taught Greek, and Viovanni Bianchetti, 'a woman,' writes Ghirardacci, 'illustrious for her splendid virtues, who, besides being possessed of beauty and grace, not only spoke elegantly in the Latin tongue, but likewise, to the great surprise of many, reasoned in the German and Bohemian languages.'

"Laura Maria Caterina Bassi was born in Bologna in 1711, and received the laurea in 1732 — at the age of twenty-one. She was immediately placed upon the list of professors. She was the theme of all conversation; the private diaries and journals and letters of the citizens were filled with her glory and greatness. She was called to assist at every *conversazione*, and to maintain philosophic theses, such as those she maintained in the Aldrovandi palace in the presence of Cardinal Acquavira. In her twenty-seventh year she married Giuseppe Veratti, professor of physics. She continued to occupy her chair of universal philosophy, and after a time took up the subject in which her husband was interested.

"Maria Gaetana Agnesi at ten years of age knew Latin and Greek well enough to enable her to translate a mythology. Her book '*Analytic Institutions,*' which was quite remarkable for the time, was published in 1748. It obtained for her the chair of analytic geometry in the University, to which she was called by Pope Benedict XIV, himself a Lambertini of Bologna. She taught there for more than forty-eight years.

"Another whose renown is widespread was Anna Morandi Manzolini, who obtained a chair of anatomy in the University in 1760, with the charge of modelling anatomical preparations in wax. Her work in this line brought her much fame, and she was sought after by the faculties of other universities. But she remained steadfast to Bologna, and died there in 1774.

"The eighteenth century was a period when the women lecturers of Bologna flourished. The fame of the three just recorded animated many another to follow in their paths. Among those who made a name were Maria dalle Donne and Clotilde Tambroni, both Bolognese. The latter was elected professor of Greek literature in 1792, and was deprived of her chair five years after because she would not take the oath to the French Republican authorities. In 1800 she was restored to her place, which she occupied for eight years."

Thames-mud Fuel. — A new fuel has been patented in London. Thames mud, street-sweepings and London sewage are treated chemically and compressed into briquettes which burn rapidly, leaving 25 per cent of firm ash. Street-sweepings, with 5 per cent of cheap chemicals, are also sterilized and made into blocks for the same purpose. A fuel closely resembling coal, the manufacture of which costs less than $2 per ton, and which burns satisfactorily, has also been made. The rapid increase in the price of British coal has stimulated the wits of the inventors over there. — *Exchange.*

DIFFUSION OF LIGHT. — I.

TWO public tests of the diffusion of light were given at the Walker Building of the Massachusetts Institute of Technology, Boston, on the 11th and 12th of September, 1900.

The representatives were present of all the different types of glass now available for this purpose which were tested, having been specially asked to make any suggestion or to take any exception to the methods adopted. None was made.

The conclusions which may be deduced from these tests, with a window twelve inches square serving as the sole source of light in a large hall with dark ceiling, are: —

First. — Windows of the customary height, but of one-third the width commonly adopted, when glazed with ribbed or suitable prismatic glass, will give on a bright day as much effective light as the full width of window glazed with plane glass; on a cloudy day or in a position where the light from the sky is derived from a limited area, even a greater ratio.

Second. — Windows of the type common now in mills, workshops or schoolrooms, now fitted with plane glass, if reglazed in the upper half only with ribbed or prismatic glass, will yield on a bright day more than fifty per cent excess of effective light, or on dark days a larger ratio. If reglazed down to, but not including, the lower panes (in which we advise plane-glass), the increase in effective light will be much greater.

Third. — Whether or not the increase of effective light will be as great in a room now fully lighted by the customary number of windows of plane-glass as in this hall lighted with a single twelve-inch window has not yet been determined, but it has been proved in mill practice that the light is much improved in quality and is rendered much more effective, both near to and far away from the windows.

In reviewing the photographs presented by Mr. Norton, a very great contrast will be observed between the very dark, even black, impression from the plane-glass and the very white impression of the diffused light from the ribbed or prismatic forms. This impression must be taken with some reservation, bearing in mind that but one window twelve inches square was used to light a large hall. If photographs were taken in a room already well lighted by numerous windows of plane-glass, then in the same room with the windows reglazed for diffusion, the contrast of white and black would be lessened, but the change in the impression would yet be a true measure of the increase in the effective light in the different parts of the room. We have as yet had no opportunity to take such photographs, but hope to be given one. If any of our members near Boston should decide to reglaze the upper sash in a room now fairly lighted with plane-glass, a notice is requested before beginning, in order that Mr. Norton may take photometric measurements of the light under present conditions and after the change.

At the meeting September 11th, the following remarks were made by me: —

Prismatic forms of glass and ribbed glass have been working a diffusion of light ever since they were made use of for glazing. The prismatic glass used has been mostly in fancy forms, but the ribbed glass has been used in the doors and windows of lavatories and other places, instead of transparent glass, to my own knowledge, more than forty years. Wherever such use has occurred light has been diffused or deflected. Prismatic forms of glass have been in use for the diffusion or deflection of light for more than fifty years in the decks of ships, especially over cabins. Here is one of the forms of prismatic glass, which has been used as a paper-weight by Mr. George Hayes, of New York, builder of skylights, for twenty-eight years, having been previously in use over a ship's cabin.

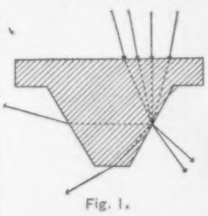


Fig. 1.

It follows that, if any claims for letters-patent for the diffusion or deflection of light by the use of any type or form of prismatic glass have ever been granted, such claims or patents are now of no effect and may be wholly disregarded in a general dealing with this question. Special designs may be registered or patented as designs or forms capable of being applied to the deflection or diffusion of light, and also methods of framing or glazing; but these claims may be set aside as of no general effect or importance.

My own attention was called to this matter in the year 1883, when I inspected a large number of the modern English cotton-mills. I found them glazed with rough plate-glass of rather poor quality, the common glass of England being very inferior to our own, from lack of an abundant supply of sand of good quality. On asking the reason, I was told that the light within was more uniform and better. To my surprise this appeared to be true. The interior of the mill had the aspect of diffused light. It was also claimed that the extra thickness of the glass also served a useful purpose in maintaining more uniform conditions of temperature.

This fact led me to reason on the subject. I looked into the construction of the Fresnel lens, in which, as you are aware, a combination of lenses and curved surfaces concentrates the rays of light in a single, far-reaching beam. I reasoned that if by one set of angles or curves the rays of light could be concentrated, then by reversal, light could be diffused. I consulted the principal glass-makers and experts, suggesting the manufacture of panes of glass with one face

in prismatic shape laid out by computation for the deflection and diffusion of rays of light when set vertically in the windows of a factory. I learned that the first-cost of the plant for making such glass would be about five thousand dollars. I learned that the glass would be very costly, would require special methods of framing or sash and glazing; and that, under the conditions of a factory or workshop, it might be very difficult to keep the glass clean if the prisms were on the inside, and in a smoky or dusty factory-town it might be even more difficult to keep the prisms clean if they were placed on the outside. I concluded that if I were to attempt the introduction of such very costly methods for the general glazing of a factory, my own light as an adviser would be speedily extinguished.

I did not like to give up the idea, and I next gathered as many examples as I could find of window-glass of different types — fancy and prismatic glass, corrugated glass, curved glass, ribbed glass, rough plate and plane. Here are the types of glass which I collected. I placed these examples in charge of Mr. Charles W. Hinman, then gas-inspector, instructing him to take photographic images of the light, which he did, placing a bright Argand gas-burner on one side of a slit about two inches by one-half inch. He submitted the photographs to me, which I now present to you.

This test disclosed the fact that for ordinary use in glazing factory, workshop or school-room, the best results would be attained by the use of the ribbed glass in true curves, inverse and obverse, twenty-one ribs to the inch, which has since been known as the "factory-ribbed," recommended by myself. Several of our members were induced to try this method of glazing, giving very favorable reports. We at first placed the ribs horizontally, but the line of bright light deflected towards the eyes of the workman may become injurious, and, although the diffusion from horizontal lines is a little better and more effective, the plan of setting is now to place the ribs vertically.

Having tested the theory in practice in a few cases, it now became expedient to bring the matter to a scientific basis and to prove to my scientific friends, who have treated my theory with absolute incredulity, that it was well grounded. They have treated my suggestions with polite discredit, having apparently assumed that I thought the quantity of light might be increased by the method suggested, when, in fact, my first hypothesis was limited to a better diffusion of the light transmitted. I therefore made the arrangements for the first tests made by Mr. Norton at the Massachusetts Institute of Technology. The last scientific observer who viewed the results a few days since, being thoroughly convinced by his own observation, exclaimed, "Why did not some donkey think of this before?" reminding me of another little invention of which a friend remarked that it was "so simple that nobody but a fool would ever have thought of it." These little accidental discoveries are sometimes of considerable importance, even when made by one who has no exact knowledge of the science which he applies.

Yet, this subject of diffusion of light by ribbed and prismatic forms of glass had been made a study, theoretic and practical, by two physicists of very high repute, resulting in the introduction of the Holophane glass shade, now represented by the Holophane Glass Company, No. 1 Broadway, New York. The effect of this shade, when put upon a Welsbach or powerful electric light, is as startling and as effective as the use of the same types of glass in windows. I have suggested to the Holophane Glass Company to make a bowl-shaped shade that may rest upon the font of a Bradley & Hubbard standard kerosene oil-lamp, deflecting light upon the book or paper, casting a very full light upon the ceiling and thence reflecting it, while at the same time throwing the heat away from the head of the reader toward the upper part of the room.

This theory being tested empirically in a few cases between 1884 and 1892 led to the organization of several different companies for promoting the diffusion of light, each of which has of late been urging the adoption of its method, with a view to profit. These undertakings, in competition with the ribbed glass rolled in large sheets, first recommended by the undersigned, began with prismatic glass of very perfect quality, but of necessity cast in small plates, involving heavy expense in framing and glazing. Under the gradual competition which has arisen, rolled glass in large sheets of prismatic form with sharp angles, corrugated glass and other types are now offered at very moderate cost in competition with the improved ribbed glass now in the market. In view of the large number of competitors and the claims made by the representatives of each, it became expedient to make this final test of their relative merits, in order that the members of the Associated Factory Mutual Companies might be put in possession of all the information that is in the power of their agents, the officers of the several companies, to give them. The representatives of the various types of glass now about to be tested are present and are urgently requested to make any suggestions by which the tests may be made more complete and impartial.

It will be made plain in Mr. Norton's report that, while the adoption of the factory ribbed glass will serve the general purpose of diffusion as well as, if not better than, any other type, especially in view of its low relative cost, yet it is now evident that there are many places where the prismatic forms will be more effective, either in the rolled plate or in other instances, as in canopies, in the finest types of cast glass.

In closing windows against fire, either the "Maze" or the ribbed wire glass may be adopted, assuring safety and at the same time improving the light within.

Care should be exercised in setting thick wired glass in metal frames. The lower edge must, of course, bear directly on the frame. The sides and top should be fitted loosely, so that the differential expansion and contraction of glass and frame may not crack the glass.

At present no general rules can be established, but if any of our members desire expert assistance, the services of Mr. Norton may be availed of at moderate charge, including expenses, so far as such work may be consistent with his duties at the Massachusetts Institute of Technology. Applications for such special service may be sent to any of the Factory Mutual Companies or to the Bureau of Inspections. After a little study our special inspectors will be prepared to advise on this matter. In many cases where there is any doubt, a plan and elevation, showing the relation of adjacent buildings, the width of alleys, etc., with points of compass, may enable us to advise what type of glass to use, without the necessity of a special visit. Applications of this kind will be referred to Mr. Norton, and will be subject to a reasonable charge on his part for such consultation.

It seems rather singular that there is no record, as far as I know, of any previous effort to take advantage of this principle of diffusion of light in glazing vertical windows and improving the effective light of the factory, the workshop or the schoolroom. A few years ago an effort was made to introduce prismatic glass, in order to gain improvement in the lighting of city shops and offices. This undertaking originated in Chicago, with parties whose names are unknown to me. On coming into competition with the ribbed glass, these parties attempted to throw ridicule upon our methods and to discredit Mr. Norton and myself, even by writing very impertinent letters to the officers of the Massachusetts Institute of Technology, where these tests were made. I am informed that the parties then undertaking this work have either failed or have ceased to be a factor in the case.

It will be observed that, although these tests have always been made in these buildings, as the present tests are now being made, neither the corporation nor the professors of the Institute of Technology have anything to do with the matter. The use of this room and other rooms has been granted for the purpose of making the tests, and Mr. Norton is wholly in the service of the Factory Mutual Companies, represented by myself.

This opportunity has been offered to the makers of every type of glass of which we can get any knowledge. Some have contributed not only the glass, but towards the expense of these tests. Others have contributed the glass; others have omitted to take any part, but examples of their glass have been obtained and will be presented. We shall not indicate to you in any way any distinction among the representatives whose glass will be tested; each type will speak for itself. The records will be made by photograph and photometer, and when our final report is made we hope to make it exhaustive; yet there may be one type of glass to be made as the result of what we have discovered.

It may be judicious to glaze each horizontal set of window-panes (from one to six rows in the ordinary factory window) with glass that will deflect all the rays that fall on each horizontal line to a different section of the ceiling. This can be done, as will presently appear, to a distance of over 60 feet from the window. We may thus throw all the rays of light upon the ceiling, securing diffusion by reflection, doing away with all window-shades, and also, perhaps, removing the objection which obtains to the deflection of light on the line of the eyes of the operative. We may be able to place the lines horizontally and yet not bring any glare of light on the level of the eye. One of the advantages claimed in the English mills, in the use of the rough plate-glass, was the removal of the need of window-shades, which are somewhat hazardous in case of fire, spreading fire rapidly. Our glass is so clear and our atmosphere so much more translucent, that this hope has not been justified by the use of ribbed glass in this country.

We feel very sure that certain types of corrugated or prismatic glass, if not already made, may be made for the special purpose of glazing or reglazing the upper sash in school-rooms of 28 feet from window to wall, by which the rays of light may be deflected to the ceilings, which may be kept white. The light may then be reflected from the ceiling to the desks, without any danger of any strong lines of light injurious to the eyes being thrown upon them. If this can be accomplished, no cloth shades will be needed, even on the south side.

In the study of the science of diffusion of light it has become apparent that there are two phases of the question, each of which must be considered according to the conditions.

In the isolated factory constituting the majority of the works dealt with in the Factory Mutual System, the area around the factory virtually gives a hemispherical source for the diffusion of light, and in such cases that type of glass which works a sufficiently effective diffusion at the least cost is the one to be selected. On the other hand, in dealing with windows on narrow streets, alleyways or in basements, as in crowded streets, the majority of instances call for special treatment, with a view to deflection as well as diffusion. Another type at higher cost may be rightly adopted. Hence the need of special consideration being given to each aspect of the building, according to its position and the relation of the windows to large or limited sky area.

It may be judicious in all cases to glaze the lower row of panes in factory, workshop and school-house windows with plane-glass, so

that the unpleasant impression of not being able to look out may not be given. It has sometimes been suggested that some portion of each window should be of plane-glass for hygienic reasons, upon the ground that "sunlight transmitted through plane-glass has a greater hygienic value than that which is refracted through a denser medium."

The roughened glass of various types is not a "denser" medium. The glass only diffuses or deflects the rays of light. The hygienic value of this diffusion in its effect upon the eye, when the plates are rightly adjusted, cannot be questioned. It has also been observed that the heat of the sun is diffused, as well as the light, making the warming of the room more uniform. There is yet much work to be done on this line of observation.

Measures are being taken to establish permanent apparatus for testing plates and showing the diffusion of light in the laboratory of the Bureau of Inspections, 31 Milk Street, Boston, where any member may observe the results.

This apparatus will be very simple and of small cost. If any members or experimenters desire to set one up for their own use, the diagrams will be supplied. It may happen that such an apparatus should be set up in print-works, color mills or dye-works, for testing glass in its influence on colored work, as well as in diffusion, as it is necessary to use the whitest glass in such works, the dark greenish tinge vitiating the colors in the work.

I hope these facts will secure attention from School Committees and Superintendents. The light in school-rooms should be wholly on the left of the pupils, and the present customary area, 32 feet in length and 28 feet in width, is a very bad form for lighting effectually on the inner part of the room from plane-glass. It also occurs to me that the effect of diffusion of light, probably of heat also, upon the growth of plants, perhaps preventing scorching, might well be tested by the owners or occupants of greenhouses.

Proofs of the text of this report have been submitted to the representatives of each type of glass tested or named, with the request that any exceptions should be taken or suggestions made, to which suitable attention would be given. No exceptions have been taken, but some verbal changes, making the text more clear, have been adopted. Respectfully submitted, EDWARD ATKINSON.

BOSTON, MASS., October 8, 1900.

[To be concluded.]

BOOKS AND PAPERS.

PRACTISING architects, even more than students and draughtsmen, will appreciate the value of this periodical.[1] For successful office-work, it is an absolute necessity to have plenty of good examples of plans, architectural features, and details of all kinds, ready at hand, not necessarily for copying, but for "feeding the mind" by a variety of suggestions. All architects have books and photographs for this purpose, but they cover only a small part of the field, and it is a laborious process to make them practically serviceable. In the portfolios of plates of "*Topical Architecture*," on the contrary, will be collected and classified many thousands of illustrations of the best work, ancient and modern, in such form as to be instantly available at the drawing-table. For example, suppose an office to be called upon, at short notice, for a set of competition drawings. The plans are hatched, after consideration, we may say, of a portfolio of plans for similiar buildings from the collection of "*Topical Architecture*," and the draughtsmen are set at work on the elevations and sections. To show bad or unstudied detail would be to lose the competition; the books and photographs in the office library afford but a scanty selection, while, even supposing all the draughtsmen to be capable of designing beautiful detail, it is impossible to give the necessary time to it. In this emergency the file of portfolios of "*Topical Architecture*" is applied to. The two numbers of "Capitals," which cost, to subscribers, twenty-five cents each, supply one hundred and sixteen examples of the most beautiful Renaissance capitals in the world, well drawn, and immediately available for use. Other features are adapted from the same source, and the drawings are completed with sure and elegant detail in far less time than it would take for the draughtsmen to furnish them with questionable ornament of their own invention. Moreover, as only the best examples are admitted, the taste of the men using them is refined; and, after the competition is won, the work of studying the detail for execution is better done in consequence. Keeping this important use of the work in mind, the editors have classified their subjects in such a way that additional portfolios of examples in each class, when issued, are immediately placed and indexed with the class to which they belong; and they believe that, with the material so made available, there are few offices in which "*Topical Architecture*" will not save its cost many times over every year.

ILLUSTRATIONS.

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

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[1] "*Topical Architecture*." Classified Architectural Motives and Details. Published monthy by the *American Architect and Building News* Co. Price $3.00 per year.

BOLOGNESE PALACES.

SEE article "Italian Cities" elsewhere in this issue.

BOSTON HIGHLANDS M. E. CHURCH, BOSTON, MASS. MR. WALTER J. PAINE, ARCHITECT, BOSTON, MASS.

THIS church, which has cost about $25,000, will seat six hundred persons. The stonework is of seam-faced granite, while walls and roof are shingled.

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PART OF THE NEW NATIONAL MUSEUM, MUNICH, BAVARIA. HERR GABRIEL SEIDL, ARCHITECT.

TO-DAY the Prince-Regent of Bavaria will open the new National Museum, to which has been transferred the important collection of Bavarian antiquities, till now imperfectly housed in the building in the Maximilienstrasse. That building, founded by King Max II, and adorned with the pretentious motto "Meinem Volk zu Ehr und Vorbild," has long been found inadequate, and, moved by the scientific spirit which has so powerfully affected all German educational institutions of late years, the Government has now completed a building which is sure to have a wide influence upon the construction of future museums all over the world.

The architect is Herr Gabriel Seidl, who built the important Annakirche in the town; but the systematic conception of the arrangement, as well as the details of it, has been the work of Prof. Rudolf Seitz, in conjunction with Dr. Graf, the Director of the Museum. It is interesting to learn that the total cost of the building amounts to about 4,000,000 marks, or £200,000; no great sum for a very solid building of two floors, containing no fewer than 100 rooms. The style is the present nondescript which one finds in so many German buildings of the sixteenth century, where mediæval high-pitched roofs and round turrets come into quaint juxtaposition with doors and windows suggested by Italy. The fine and isolated position is in the new part of the town adjoining the Englischer Garten, not far from the Eastern Railway station.

I have said that there are no fewer than 100 rooms, which implies that the objects are shown in comparatively small detachments. The leading principle is that the rooms on the ground floor should show, in strict chronological order, Bavarian life at different epochs, from the little circular room which, in its architecture and in its contents, recalls the tenth and earlier centuries, down to the blue-and-gold magnificence of the late King Louis. In the early rooms, the sense of architectural evolution is greatly helped by the fact that the various castles of the Bavarian crown have contributed ceilings, windows, etc.; and in many cases the rooms have been planned specially to receive these. One ceiling, from the Castle of Dachau, is of particular splendor and beauty; but several of the earlier ones, though less elaborate, are even more interesting from the historical point-of-view. If the Museum is less rich than the Louvre or South Kensington in objects of the highest artistic importance, it contains an almost endless number of specimens, large and small, of the domestic art of the country in all ages; of wardrobes, caskets, iron utensils, beds, tables and chairs, the supply seems inexhaustible, and nearly all are in their original state.

The ironwork, the ivories, and the tapestries, the product of many successive centuries, are specially abundant, and many of the examples are extremely fine, though, of course, only a small proportion of the tapestries are of Bavarian manufacture. Perhaps one obtains the best idea of the metal-work when one passes to the upper floor, where the rooms are arranged on a different principle. Downstairs, each room contains the varied productions of an epoch; upstairs, each contains a special class of objects — wood-carvings, arms, or textiles — carried through several epochs. The large room given up to wrought-iron work is one of the best examples: in this art Bavaria has always been distinguished, and is so to-day; and such a specimen as the screen from a church in Regensburg is quite worthy of comparison with the famous gates in South Kensington. In the department of armor and arms the swords of the fifteenth and sixteenth centuries are not less fine, and much more numerous, than those in the Wallace Collection. — *London Times Correspondence, September* 25.

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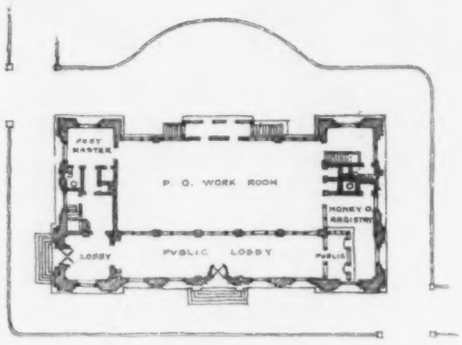

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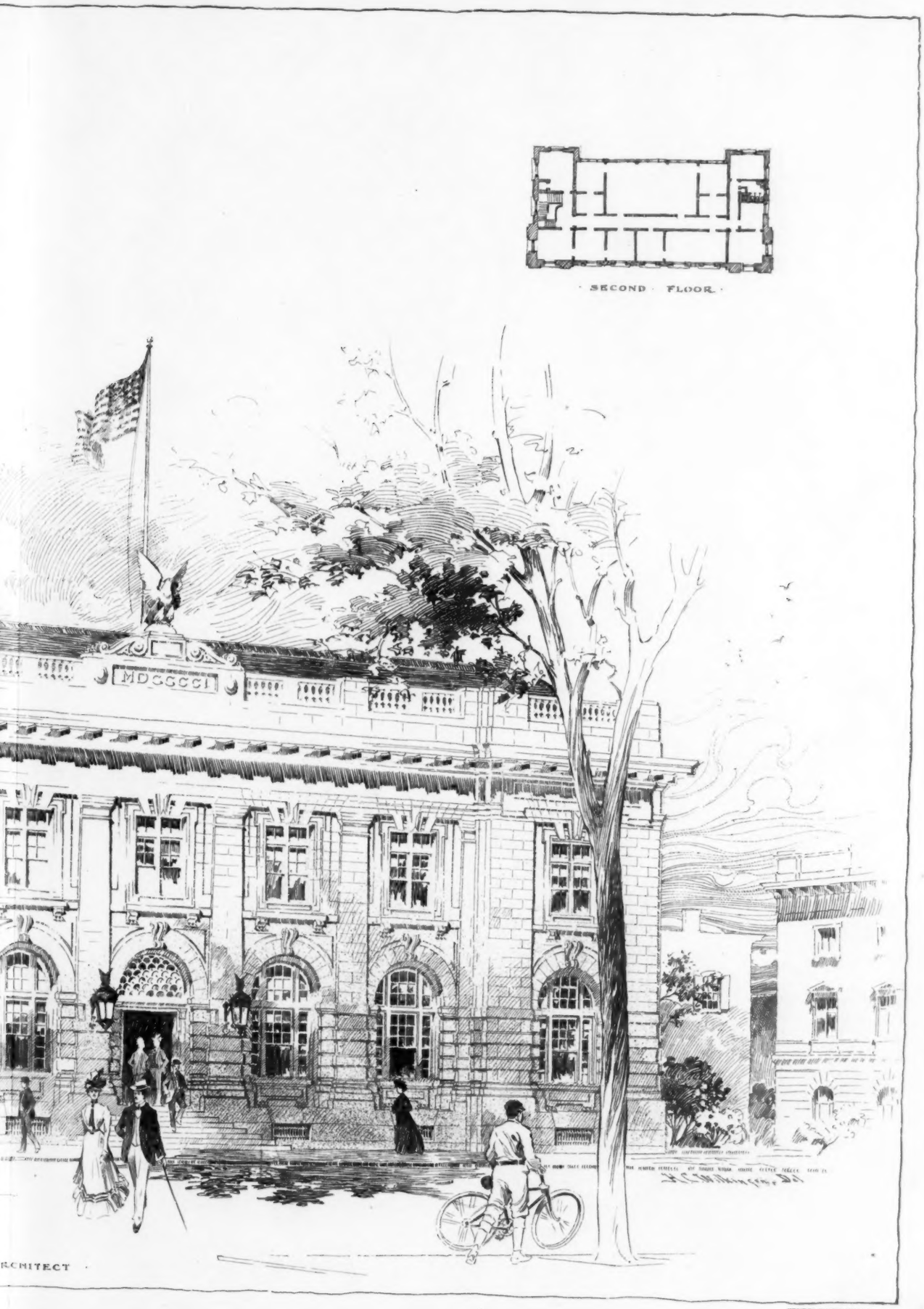
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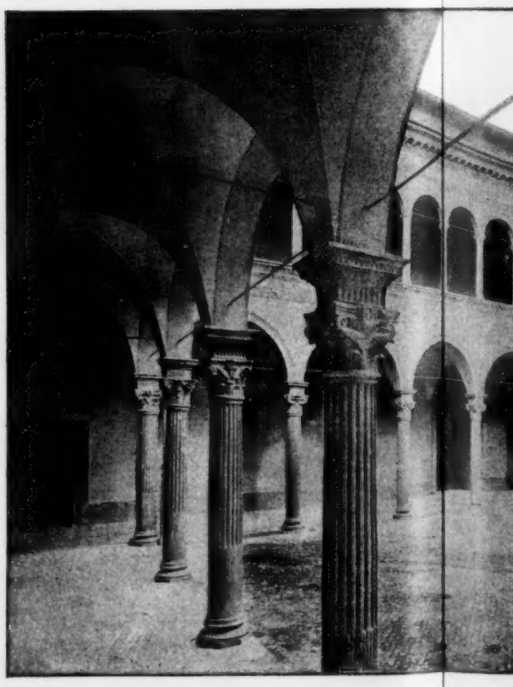

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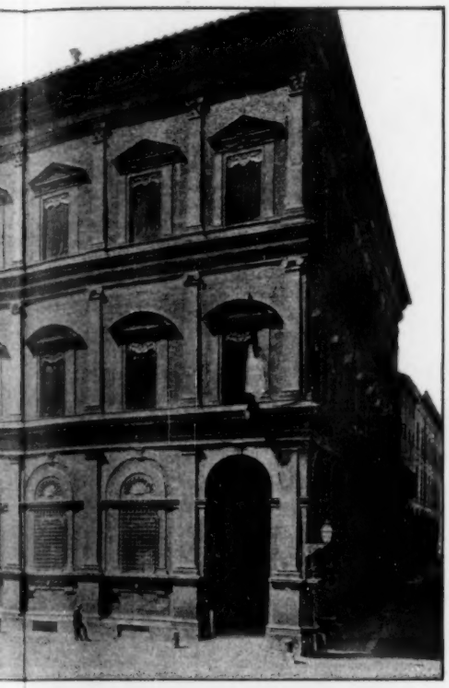

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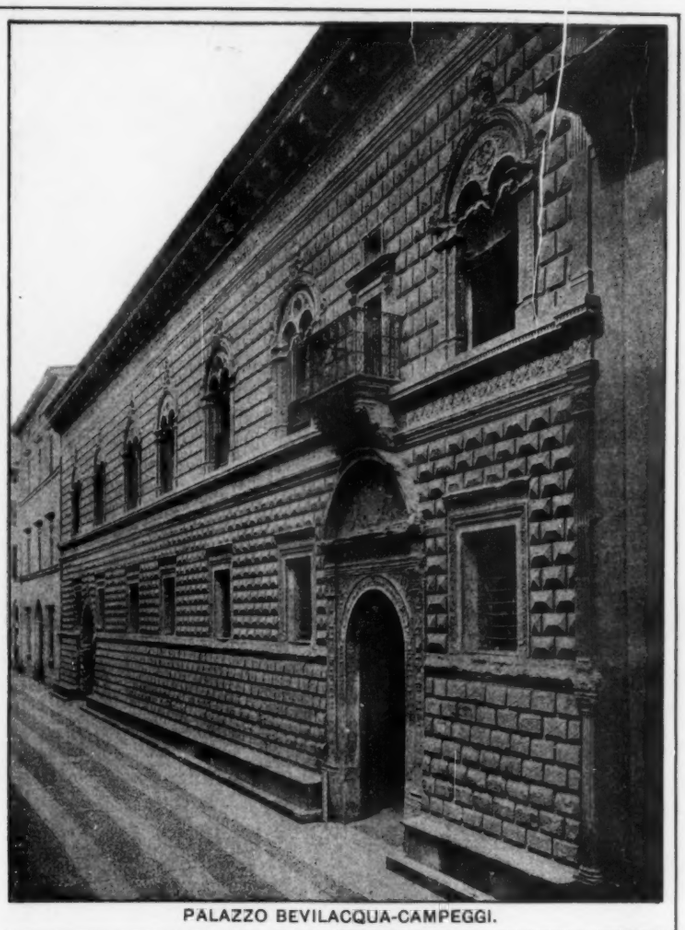

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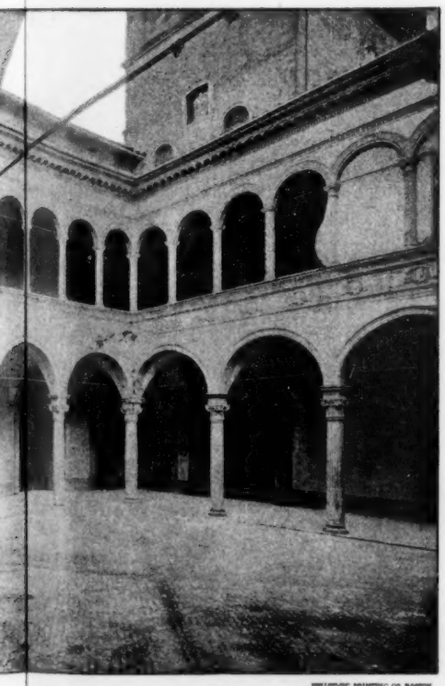

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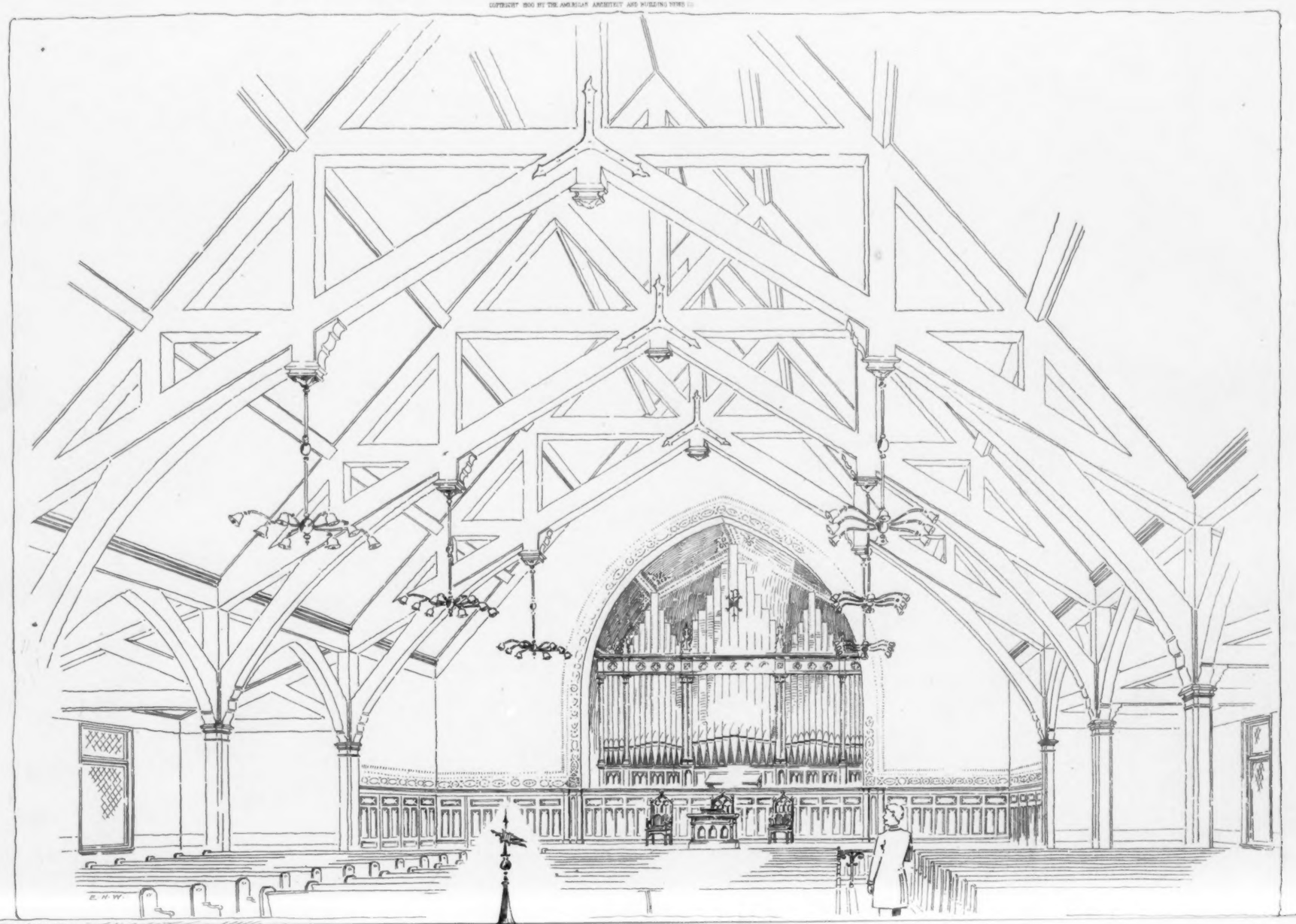

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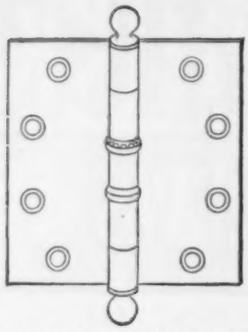

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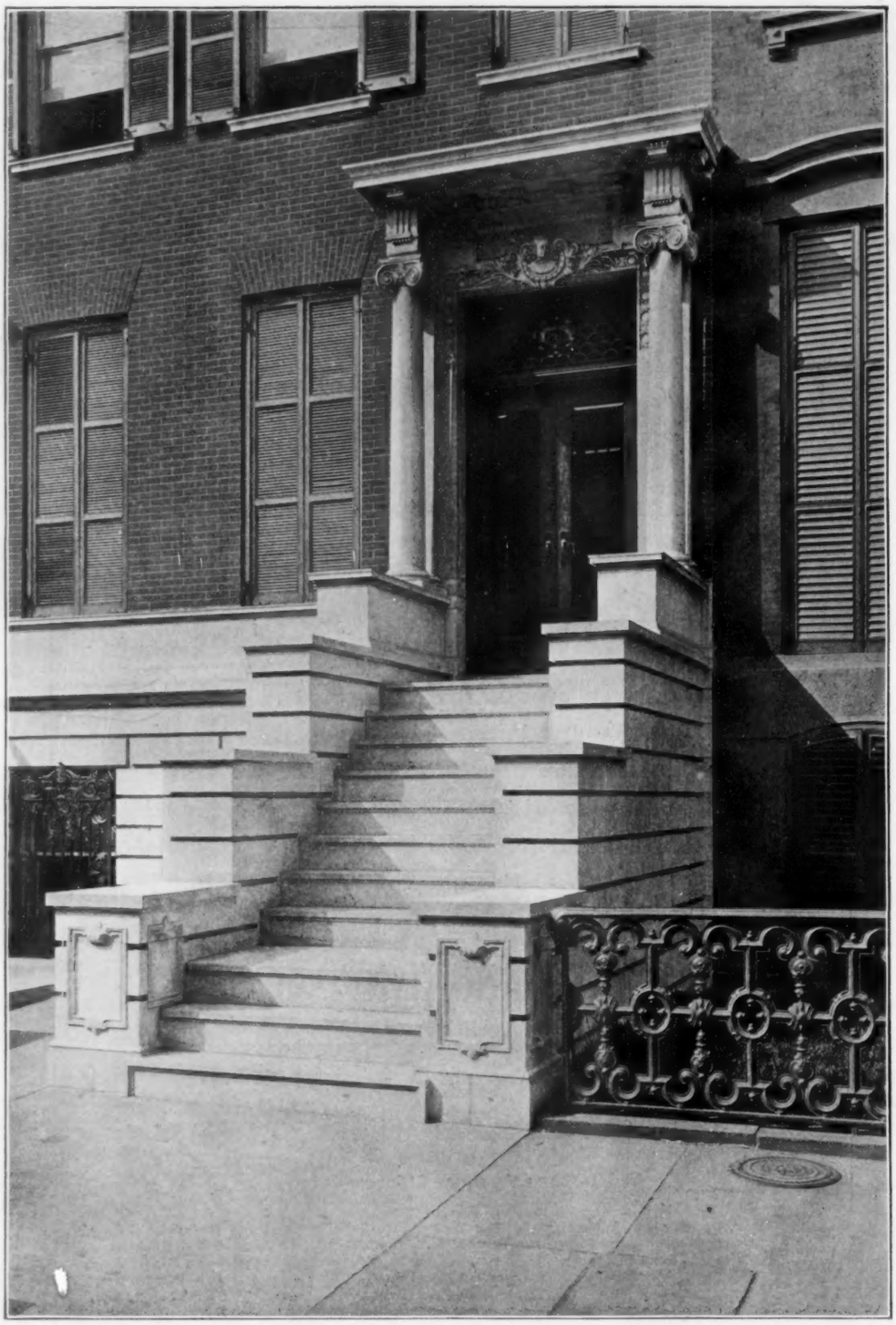

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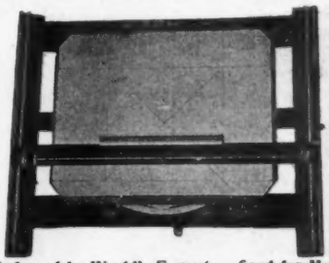

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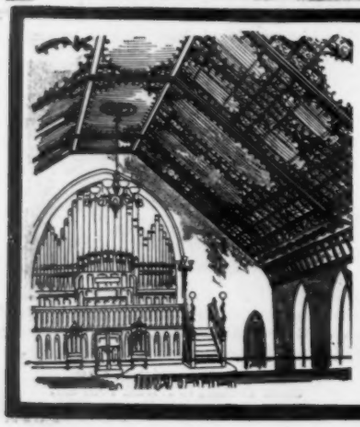

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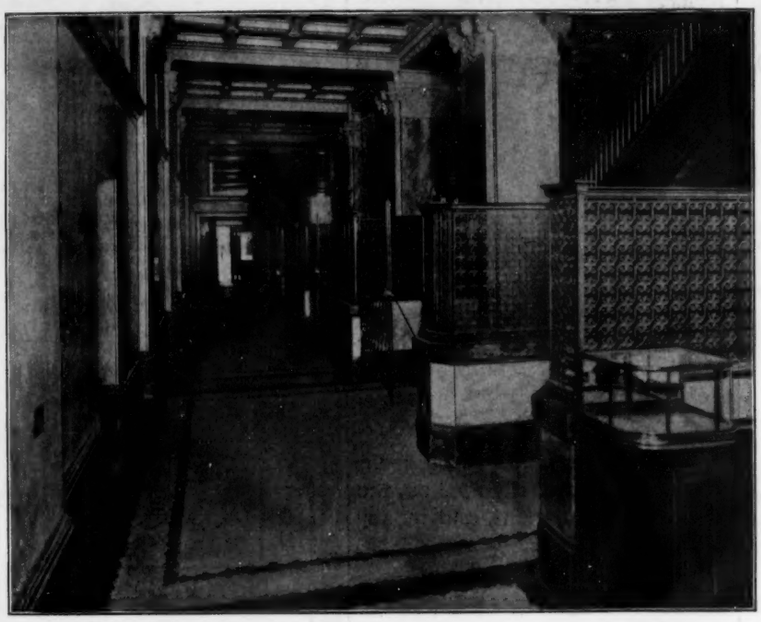

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New Advertisements.

SOUTHERN BUILDING NEWS (Memphis, Tenn.). Periodical. Page x.

See last or next issue for the following advertisements: —

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ARCHITECTS' REMOVALS, Etc.

THE firm of Parker & Austin, 230 W. Washington St., South Bend, Ind., has been dissolved, the practice being continued by Mr. Wilson B. Parker at the above address. Mr. Austin is now Superintendent of Jefferson Barracks, East St. Louis.

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TO ARCHITECTS.—An architect of nine years' experience wishing to close his present office would like a position with an architect as assistant draughtsman or superintendent. Salary or form associate partnership. Correspondence solicited. P. O. Box 264, Pottsville, Pa. 1298

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[*Printed specifications of any patents here mentioned together with full detail illustrations, may be obtained of the Commissioner of Patents, at Washington, for five cents.*]

660,209. Apparatus for Regulating Temperature in Steam-Heated Buildings.—Albert M. Butz, Chicago, Ill.

660,213. Heater.—John E. Frost, Watkins, N. Y.

660,223. Fireproof Door.—John W. Rapp, New York, N. Y.

660,235. Window.—George Worth, New York, N. Y.

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BUILDING INTELLIGENCE.

(Reported for The American Architect and Building News.)

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

ADVANCE RUMORS.

Cleveland, O.—J. A. Blodt of the Guarantee Building & Loan Co. and F. S. Miller of the Superior St. Savings & Banking Co. are interested in a project to erect a four-story apartment-house, 170′ x 350′, at the corner of E. Madison and Wade Park Aves., at a cost of $200,000. Plans by Architects Tenbusch & Hill.

Davenport, Ia.—Architects Clausen & Burrows are preparing plans for a two-story brick residence, 40′ x 60′, to be built for Miss S. Schucker; cost, $10,000.

Mrs. W. F. Peck is having plans prepared by Architects Clausen & Burrows for a three-story and basement apartment-house, 51′ x 61′; cost, $15,000.

Des Moines, Ia.—Architects Proudfoot & Bird are preparing plans for a four-story warehouse to be built at W. 7th St. and the Des Moines Union tracks. It will be of steel construction, 66′ x 132′; cost, $30,000.

Hallett & Rawson are preparing plans for a brick residence to be erected at E. Grand Ave., for Geo. Horter; cost $7,500.

Detroit, Mich.—Wonderland Co. will add an addition of 50′ x 100′, to their present opera-house and make other improvements. Col. J. M. Woods is the architect and Wiggins & Moore the proprietors; estimated cost, $75,000.

The Elks will have new quarters in the seventh, eighth and ninth stories of the new Wonderland Building fitted up at a cost of $20,000.

The U. S. Government architect has prepared plans for a new brick laundry building for the Detroit Marine Hospital. Address the Custodian in this city.

Evanston, Ill.—J. W. Evans has had plans prepared by Architect Warren H. Milner, Stock Exchange Building, Chicago, for a four-story and basement pressed-brick store and office building, 24′ x 132′, to be erected at Main and Jefferson Aves., cost, $20,000.

Germantown, Pa.—The structural steel work of the Germantown Junction Station of the Pennsylvania Railroad will be furnished by the American Bridge Co.

Grand Rapids, Mich.—Mosley Bros. will erect a three-story brick warehouse, 50′ x 140′, costing $15,000. Plans by Architect Fred H. Erly.

Hanover, N. H.—The Dartmouth College Chapter of Phi Delta Theta fraternity will erect a chapter-house on Webster Ave., after plans by Charles A. Rich, 35 Nassau St., N. Y. City. The structure will be built in the Colonial style prevailing in the college buildings, the lines in general being similar to those of the Gov. Hancock House, Boston.

Indianapolis, Ind.—T. J. Carridon will erect a brick and frame store and apartment-building after plans by Architect S. A. Hastings; cost, $10,000.

Kewanna, Ind.—Gilliske & Long will build a $6,000 frame grain-elevator, 36′ x 72′, after plans by the C. M. Seckner Engineering Co.

Little Rock, Ark.—Architect C. L. Thompson is preparing plans for a brick and stone church for St. Edward's Catholic Society; cost, $40,000.

Louisville, Ky.—Architect Charles J. Clark has been selected to prepare plans for the proposed Masonic Temple. It will be a four-story building, 75′ x 125′; cost, $100,000.

New York, N. Y.—The Historical Society and the Geographical Society are considering a renewed plan to erect a building upon Morningside Heights.

Osceola, Ark.—Architects B. C. Alsop & Co., Memphis, Tenn., are preparing plans for a $10,000 hotel to be erected for J. L. Driver.

Port Arthur, Tex.—Architect B. S. Elmendorf is preparing plans for a two-story and basement brick and cut-stone school-building, 71′ x 84′; cost, about $15,000.

Richmond, Va.—The congregation of the Grove Ave. Baptist Church will rebuild their structure at a cost of $30,000. T. H. Ellett, 807 W. Franklin St., chairman building committee.

Rochester, Pa.—Architects E. Briemaier & Sons, 602 Second St., Milwaukee, Wis., will prepare plans for a church for the St. Cecilian congregation, to cost about $50,000.

Toledo, O.—August Knapp will erect a stone and brick residence on Oak St., to cost $75,000. Plans by Architect J. W. Matz.

ALTERATIONS AND ADDITIONS.

Chicago, Ill.—*S. Sangamon St., Nos.* 9-15, six-st'y

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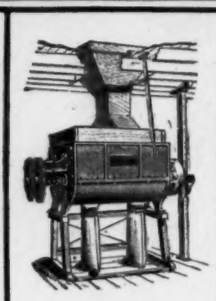

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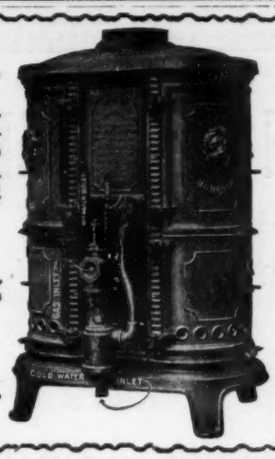

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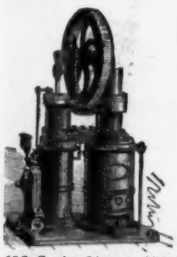

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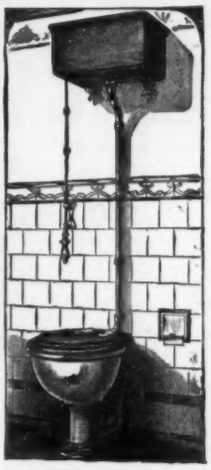

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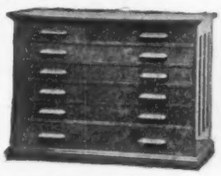

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bk. addition to factory; $21,000; o., George P. Bent; a., Charles J. Furst; b., J. C. Robinson, 480 Quincy Building.

Philadelphia, Pa. — *City Ave.*, nr. Belmont Ave., four-st'y st. addition, 35′ x 39′ 3″; $10,000; o., Presbyterian Home for Aged Couples; b., William Steele & Sons; a., Wilson Bros. & Co.

Somerville, Mass. — *School St., No.* 49, three-st'y addition & alterations, 31′ x 50′, flat roof, stoves; $4,500; o., M. H. Totten; b., Thomas Keating.

APARTMENT-HOUSES.

Chicago, Ill. — *Calumet Ave., Nos.* 5118-30, 3 three-st'y bk. aparts., 43′ x 50′, 43′ x 50′, 42′ x 56′; $45,000; o., W. L. Beck; a., L. M. Mitchell; b., Charles J. Anderson.

Jackson Boulevard, Nos. 2171-73, 3 two-st'y bk. flats, 23′ x 57′; $15,000; o., Mrs. Paula H. Funk; a., W. G. Krieg; b., Anderson & Johnson.

CHURCHES.

Chicago, Ill. — *W. Monroe St., Nos.* 1513-19, one-st'y bk. church, 84′ x 89′; $11,000; o., The Tabernacle Baptist congregation; a., E. S. Hall, 153 La Salle St.; b., N. Storgaard.

FACTORIES.

Chicago, Ill. — *Eighty-sixth St.*, nr. Strand, one-st'y bk. boiler & engine-house, 97′ x 235′; $35,000; o. & b., Illinois Steel Co.

W. Jackson Boulevard, Nos. 87-89, four-st'y bk. store & factory, 51′ x 80′; $7,000; o., Jos. Downey; a., W. C. Zimmerman; b., M. F. Powers, 17, 132 La Salle St.

Sedgwick St., Nos. 545-47, two-st'y bk. factory, 46′ x 53′; $7,000; o., F. Deppe; a., C. F. Hermann; b., Marquardt & Brunke, 633 N. Lincoln St.

HOUSES.

Boston, Mass. — *Chambers St., No.* 201, bk. dwell. & store, 18′ x 19′ x 26′, flat roof, stoves; $6,000; o. & b., A. Lanyone; a., C. Halstrom.

Heath St., No. 323, bk. dwell., 20′ x 52′ x 52′, flat roof, stoves; $6,000; o., Lena L. Aranski; b., L. Aranski; a., G. H. Smith.

Maple St., nr. Garden St., 2½-st'y fr. dwell., 25′ x 48′, pitch roof, furnace; $4,500; o., Nellie Bowers; a. & b., Richard Duffie.

Draper Ct., nr. Bowdoin St., 2 fr. dwells., 26′ x 42′, flat roofs, furnaces; $10,000; o., a. & b., L. E. H. Janes.

Heath St., Nos. 325-329, 3 bk. dwells., 20′ x 23′ x 52′, flat roofs, stoves; $18,000; o., Lena L. Aranski; b., L. Aranski; a., G. H. Smith.

Whittier Pl., Nos. 1-6, 6 bk. dwells., 31′ x 41′, 32′ x 40′, 34′ x 45′, 29′ x 34′ x 34′, 30′ x 40′, 30′ x 35′ x 40′, flat roofs, steam; $55,000; o. & b., Gardner & Osgood; a., G. F. Osgood.

Calder St., nr. Blue Hill Ave., 2½-st'y fr. dwell., 32′ x 33′, pitch roof, hot water; $5,000; o. & b., J. C. Cameron; a., J. R. McPherson.

Columbia Road, Nos. 755-765, 6 fr. dwells., 25′ x 60′, flat roofs, furnaces; $36,000; o. & a., John P. Leahy; b., Daniel McDonald.

Spring Garden St., nr. Crescent Ave., 2 fr. dwells., 26′ x 46′, flat roofs, stoves; $9,000; o. & b., John W. Dause; a., P. A. Tracy.

Harlem St., nr. Greenwood St., 2½-st'y fr. dwell., 32′ x 47′, pitch roof, hot water; $6,500; o., Mary L. Plunkett; b., J. S. McLaren; a., G. W. Killion.

Brooklyn, N. Y. — *E. Seventh St.*, nr. Beverley Road, two-st'y & attic fr. dwell., 25′ x 29′ 10″, shingle roof; $5,500; o., G. J. Chief, 1231 Fortieth St.; a., J. S. Kennedy, 384 E. 16th St.

Bay Twenty-eighth St., nr. Bath Ave., 4 two-st'y & attic fr. dwells., 27′ x 40′, shingle roofs, steam heat; $20,000; o., W. H. Fleming, Bay 11th St. & Cropsey Ave.

BUILDING INTELLIGENCE.

(*Houses Continued.*)

Marlborough Road, nr. Church Ave., two-st'y & attic fr. dwell., 32′ x 42′ 3″, shingle roof, steam heat; $7,000; o., H. A. Butterfield, 270 Prospect Pl.; a., Johnson & Helmle, 220 S. 8th St.

Thirteenth St., nr. 8th Ave., 3 three-st'y bk. dwells., 19′ x 47′ 6″; $15,000; o., W. M. Calder, 478 Thirteenth St.; a., G. Bennett, 198 Fifty-third St.

St. John Pl, cor. St. Charles Pl., 10 three-st'y bk. dwells., 17′ 6″ x 43′, gravel roofs; $160,000; o., C. H. Smith, 353 Pacific St.; a., F. S. Lowe, 186 Remsen St.

Nautilus Ave., nr. Sea Gate Ave., two-st'y & attic fr. dwell., 28′ x 50′, shingle roof; $9,500; o., J. Vendig, McPherson's Hotel, Coney Island; a., J. H. Hamilton, 32 Broadway, N. Y.

Grand St., nr. Olive St., three-st'y bk. shop & dwell., 25′ x 57′; $9,000; o., H. Lohrs, 840 Grand St.; a., Th. Engelhardt, 905 Broadway.

Neptune Ave. and Richard St., two-st'y & attic fr. dwell., 40′ x 45′, shingle roof; $7,500; o., J. O. F. Hill, Neptune Ave. & Cortland St.; a., H. H. Squires, Bath Ave. & Bay 20th St.

Chicago, Ill. — *Malden St., No.* 3169, two-st'y bk. dwell., 34′ x 48′; $9,000; o., T. N. Koehler; a., Robert C. Berlin; b., O. Mueller, 485 Belden Ave.

East End Ave., No. 5222, three-st'y bk. dwell., 46′ x 66′; $25,000; o., J. S. Coonly; a., Pond & Pond; b., C. W. Dameier & Son.

Lunt Ave., No. 1017, two-st'y bk. dwell., 26′ x 41′; $6,500; o., S. L. Hammersmark; b., H. S. Gilbert, 232 Lunt Ave.

Vincennes Ave., Nos. 4951-57, 4 three-st'y bk. dwells., 25′ x 75′; $32,000; o., Andrew Durbach; a., H. L. Newhouse; b., J. N. Durbach.

Touhy Ave., No. 1033, two-st'y fr. dwell., 26′ x 50′; $8,000; o., Homer H. Jewell; a., H. E. Stevens; b., C. Thompson.

New York, N. Y. — *Second St.*, nr. Avenue B, Unionport, two-st'y fr. dwell., 18′ x 32′; $25,000; o., Casimir Lofink, Unionport; a., Gustav Schwarz, 554 E. 158th St.

Sedgwick Ave., nr. Fordham Landing Road, 2½-st'y fr. dwell., 31′ 2″ x 31′ 2″, shingle roof; $7,000; o., G. C. Bixby, Kingsbridge; a., Ahneman & Younkheere, Kingsbridge.

Beekman Ave., cor. Beech Terrace, 5 three-st'y bk. dwells., 20′ x 38′; $21,000; o., Martin Lipps Estate, 854 E. 138th St.; a., Hewlett Baker, 494 E. 138th St.

Philadelphia, Pa. — *Oak Lane*, nr. Willow Grove Ave., 2½-st'y st. dwell., 33′ x 50′; $6,000; o., Mary McMunn; b., William E. Buckley.

Fifty-seventh and Master Sts., and Forty-seventh St. and Fairmont Ave., Ward 34, 58 two-st'y bk. dwells. & 3 stores, 18′ x 40′, 15′ x 40′; $88,000; o., Wesley F. Pike; b., Richard Humphries, Jr.

Somerville, Mass. — *Grand View Ave.*, nr. Vinal St., two-st'y fr. dwell., 36′ x 36′, shingle roof, furnace; $4,600; o., Capt. Doane; b., Ellsworth Ernst.

Near Cedar St., three-st'y dwell., 32′ x 50′, flat roof, hot water; $5,000; o., a. & b., Malcom McLeod.

OFFICE BUILDINGS.

Philadelphia, Pa. — *S. Penn Sq., Nos.* 1416-18, twelve-st'y bk., st. & terra-cotta trimmed fireproof office-building, 36′ 1″ x 92′ 2½″; $155,000; o., Diana F. Levy; b., Doyle & Doak; a., Carl P. Berger.

Saybrook Ave., cor. Island Road, two-st'y bk. yellow-pine & iron office-building, 39′ 4″ x 55′ 8″; o., Fels & Co.; b., Sherman Orem & Co.; a., Keen & Mead.

PUBLIC BUILDINGS.

New York, N. Y. — *Sixty-sixth St.*, nr. Columbus Ave., three & four-st'y bk. & st. armory, 264′ x 175′, gravel roof; $200,000; o., City of New York; a., Horgan & Slattery, 1 Madison Ave.

BUILDING INTELLIGENCE.

STORES.

Boston, Mass. — *Blue Hill Ave.*, nr. Clifford St., 8 one-st'y bk. stores, 19′ x 35′, 18′ x 48′, 18′ x 50′, 15′ x 46′, 15′ x 44′, 15′ x 43′, 15′ x 42′, 15′ x 41′, flat roofs, stoves; $20,000; o. & a., S. C. McIntire; b., Vanerin Bros.

Chicago, Ill. — *Ravenswood Park, Nos.* 1305-07, two-st'y bk. store & office, 47′ x 98′; $25,000; o., Ravenswood Exchange Bank; a., Russell B. Powell; b., S. E. Ockerlund, 2771 N. Seeley Ave.

TENEMENT-HOUSES.

Brooklyn, N. Y. — *Bleecker St.*, nr. Wyckoff Ave., 2 three-st'y fr. tenements, 19′ 9″ x 50′; $10,000; o., E. E. White, 166 Chauncey St.; a., W. B. Wills, 17 Troutman St.

Avenue C, nr. Nostrand Ave., three-st'y bk. tenement, 25′ x 50′; $6,000; o., Louisa Henninger; a. & b., G. E. Hauser.

Avenue L, cor. E. 91st St., three-st'y fr. tenement, 20′ x 52′; $6,000; o., C. Spreen, Berry & S. 6th Sts.; a., C. Gastmeyer, 1172 Johnson Ave.

Christopher Ave., nr. Belmont Ave., four-st'y bk. tenement, 25′ x 86′; $12,000; o., D. Kirslick; a., L. Danancher, Watkins St., nr. Glenmore Ave.

Cambridge, Mass. — *Putnam Ave., No.* 460, *rear*, three-st'y fr. tenement building, 37′ x 40′, hot water; $6,000; o., Miss E. H. Houghton; b., Cornier & Burgess; a., Harry D. Joll.

New York, N. Y. — *Avenue A, No.* 236, seven-st'y bk. & st. tenement, 25′ 9″ x 83′ 6″; $24,000; o., August Ruff, 29 E. 3d St.; a., Kurtzer & Rohl, 190 Bowery.

WAREHOUSES.

Chicago, Ill. — *Thirty-ninth St., Nos.* 701-709, one-st'y bk. warehouse, 111′ x 170′; $10,000; o. & b., W. A. Summer; a., J. F. & J. P. Doerr.

New York, N. Y. — *Liberty St.*, nr. Trinity Pl., eleven-st'y bk. & st. lofts & stores, 70′ 6″ x 112′ 9″, asphalt, felt & gravel roof; $350,000; o., J. T. Williams, 27 William St.; a., J. T. Williams, Jr., 27 William St.

Bowery, Nos. 376-386, seven-st'y bk. & st. lofts, 126′ x 171′ 1″; $275,000; o., Browning, King & Co., 408 Broome St.; a., Jno. E. Nitchie, Park Row Building; b., R. Deeves & Son, 305 Bowery.

MISCELLANEOUS.

Brooklyn, N. Y. — *Atlantic Ave.*, nr. Nostrand Ave., bk. storage battery, 20′ x 97′ 8″, gravel roof; $8,000; o., Edison Electric Illuminating Co., 360 Pearl St.; b., A. N. Brady, 54 Willet St., Manhattan.

Newark, N. J. — *Freeman St.*, four-st'y bk. brewery, 73′ x 94′; $45,000; o., C. Feigenspan; a., Hooper & Co.

Wayne Junction, Pa. — One-st'y granite, Indiana limest. & terra-cotta passenger-station, 21′ x 70′; $44,000; o., Philadelphia & Reading R. R.; b., W. A. Hurlock & Son; a., Wilson Bros. & Co.

COMPETITIONS.

CHURCH. [At Hastings, Neb.]

Plans are invited for a brick and stone church for the Baptist congregation. REV. L. L. CLOYD, pastor. 1298

LIBRARY. [At Baldwin, Kan.]

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PROPOSALS.

COLLEGE BUILDING. [At Baton Rouge, La.]
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Sealed bids are wanted **November 15** for erecting a theatre and office building for the Jackson Opera-house Co. ROB'T B. MIMS, chmn. bldg. com. 1298

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PROPOSALS.

Treasury Department, Office Supervising Architect, Washington, D. C., October 31, 1900. Sealed proposals will be received at this office until 2 o'clock P. M. on the 6th day of December, 1900, and then opened, for the construction (except heating, electric wiring and conduits) of the U. S. Post-office Building at Kansas City, Kan., in accordance with the drawings and specification, copies of which may be had at this office at the discretion of the Supervising Architect. JAMES KNOX TAYLOR, Supervising Architect. 1299

COURT-HOUSE. [At Linton, N. D.]
The board of county commissioners will receive bids **until January 10th** for the erection of a court-house for Emmons County. EDWARD BRADDOCK, county auditor. 1298

STATE-HOUSE. [At Jackson, Miss.]
Sealed proposals will be received by the Capitol commission **until December 8th** for the construction of the proposed $1,000,000 state-house for the State of Mississippi. GOV. A. H. LARGINO, chairman. 1298

Treasury Department, Office Supervising Architect, Washington, D. C., October 27, 1900. Sealed proposals will be received at this office until 2 o'clock P. M., on the 17th day of November, 1900, and then opened, for the installation of a wiring system for the old U. S. Court-house and Temporary Court building adjacent thereto at Baltimore, Md., in accordance with the drawing and specification, copies of which may be obtained at this office or at the office of the Custodian at Baltimore, Md., at the discretion of the Supervising Architect. JAMES KNOX TAYLOR, Supervising Architect. 1298

Office of the Engineer, Third Light-house District, Tompkinsville, N. Y. Sealed proposals will be received at this office until 12 o'clock, noon, Friday, November 30, 1900, and then opened, for furnishing the material and labor necessary for building an extension to the office-building at the Light-house Depot, Tompkinsville, N. Y. Specifications, forms of proposals, and other information may be had on application to D. P. HEAP, Lieut.-Colonel, Corps of Engineers, U. S. A., Engineer Third Light-house District. 1299

PROPOSALS.

COURT-HOUSE. [At Waco, Tex.]
Sealed proposals will be received at the office of county clerk **until December 3** for the erection of a court-house for McLennan County. CHAS. E. MOORE, county clerk. 1299

COURT-HOUSE. [At Pipestone, Minn.]
Sealed proposals will be received **until November 27th** for the erection of a court-house for Pipestone county. WILLIAM DAUS, chmn. co. com. 1299

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Bids will be received **December 1** for constructing a cold-storage and handling plant of about 10,000 tons capacity, and a quay wall, at the navy yard. MORDECAI T. ENDICOTT, ch. bureau yards and docks, Navy Department, Washington, D. C. 1298

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The board of high school commissioners will receive bids **until November 15** for erecting a high school at Warren, Adams and Linden Sts. DONALD DEY, president of board. 1298

SCHOOL-HOUSE. [At Cincinnati, O.]
Sealed bids will be received **November 19** for erecting a 12-room school at Edwards and Observatory Roads. JACOB E. CORMANY, chmn. com. on bldgs., bd. educ. 1298

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The matter already illustrated may in small part be classified thus:

PUBLIC BUILDINGS

City Hall, New York, N. Y.	Date 1803-12
Old State House, Boston, Mass.	" 1748
Pennsylvania Hospital, Philadelphia, Pa.	" 1755
Carpenters' Hall, Philadelphia, Pa.	" 1770
Independence Hall, Philadelphia, Pa.	" 1729
Faneuil Hall, Boston, Mass.	" 1741

and others.

CHURCHES

King's Chapel, Boston, Mass.	Date 1749
Seventh-day Baptist Church, Newport, R. I.	" 1729
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
First Congregational Church, Canandaigua, N. Y.	" 1812
St. Peter's P. E. Church, Philadelphia, Pa.	" 1758
Gloria Dei Church, Philadelphia, Pa.	" 1700

and others.

IMPORTANT HOUSES

Fairbanks House, Dedham, Mass.	Date 1636
Royall Mansion, Dedham, Mass.	" 1737
Philipse Manor House, Yonkers, N. Y.	" 1745
Tudor Place, Georgetown, D. C.	" 179-
Mappa House, Trenton, N. Y.	" 1809
Woodlawn, Va.	" 1799
Mount Vernon, Va.	" 1743

and others.

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Porches and Doorways	36	Subjects
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SECTION 1. No Member should enter into partnership, in any form or degree, with any builder, contractor, or manufacturer.

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

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

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

SECTION 5. It is unprofessional to offer 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.

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

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

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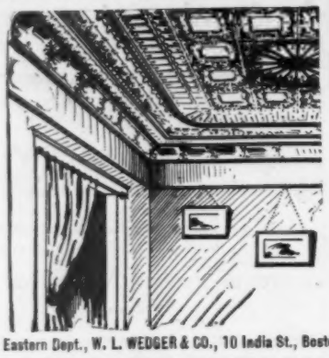
SECTION 16. A Member should so conduct his practice as to forward the cause of professional education and render all possible help to juniors, draughtsmen and students.



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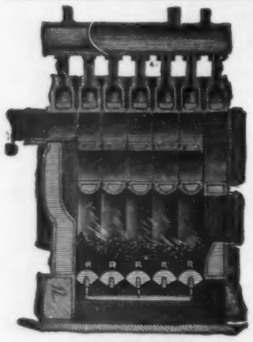

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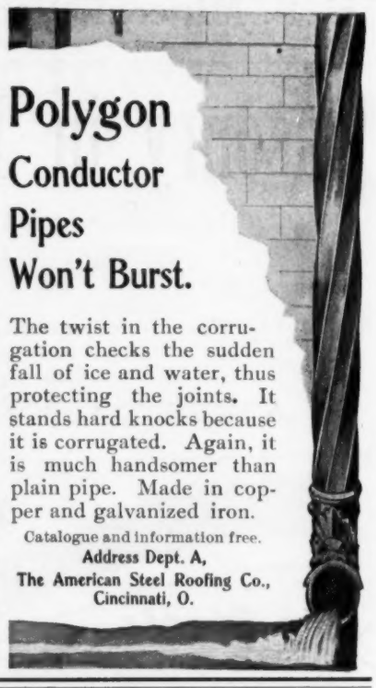

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