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Death of Chicago's First Architect.

Architect John M. Van Osdel, the pioneer architect in Chicago, at the age of eighty, died in Chicago, December 21, 1891. Mr. Van Osdel was born in Baltimore, July 31, 1811. His father was a carpenter, and he followed his father's trade, which then, as for almost fifty years afterward in the United States, meant architect as well as builder. At the age of twenty-two he compiled and published a work on house carpentry, and in 1836 he was employed by a New York gentleman, Mr. William B. Ogden, to design and build a residence for himself in the frontier town of Chicago, and he removed to that city to erect it, shipping much of the millwork for it from New York. Upon the completion of the Ogden residence, Mr. Van Osdel practiced as architect and builder for several years, and two of the first large steamers built in Chicago were constructed by him, the only case in the history of Chicago where an architect has turned his attention to marine architecture. He built immense pumps upon a very ingenious plan for lifting water from the Illinois and Michigan canal and constructed a horizontal windmill to supply the necessary power, and was engaged upon other works of a similar nature. The health of his wife necessitated his return to New York in 1840, where for a year he edited the building department of the *American Mechanic*, now the *Scientific American*, but returned to Chicago the following year, and abandoning building, became the first architect *per se* to practice in that city or in the West. He designed grain elevators, among them the first erected in Chicago; he spent two years in the iron foundry business, and it was in 1845 that his office on Clark street showed the sign "John M. Van Osdel, architect," and he laid the foundation of an architectural practice that has always kept pace with the city building. We will not enumerate his works; for coming as he did to a new city stupendous and rapid in its growth, it can readily be seen how an active mind, a resolute will and a fund of general constructive knowledge, such as he possessed in a remarkable degree, should be taken hold of by those who made Chicago what it is. No problem was too difficult for him to solve, for during his whole life his action always said "I will either find a way or make it." Therefore, to say that he was closely identified with the city's growth, but faintly expresses the intimate relations existing between his master-mind and each point of its material progress. In a series of papers written by Mr. Van Osdel for THE INLAND ARCHITECT ten years ago, the last serious work from his pen, he gives many quaint pictures of those early days in the city's upbuilding. He was always progressive, but with that conservative progressiveness that made him in his latter days look with disapproval upon a twenty-story office building, but which did not prevent him at a more active period of his life, placing the Tremont house, a brick structure one hundred feet square, upon screws, and raising it a story—a feat which at the time was considered much more marvelous than the erection of high buildings is considered today. These are his works as he leaves them to history. His personality, resting in the memories of those who knew him, cannot be recorded. He was a gentleman, and of what is termed the "old school." Courtly always, dignified always, and he knew no more of moral than he did of

physical fear. The truth to him was always the truth beyond any suggestion of compromise. He accepted nothing without investigation, and once convinced, he was a loyal supporter of his convictions. Ever anxious that others should have the advantage of his knowledge, he gave the affairs of others the same careful thought that his own received, but was never arbitrary regarding the use of the advice given. A year ago we mourned the loss of one of another age and epoch — a meteor that suddenly went out when its path was brightest in our sky. We do not thus mourn the departure of this light that shone before our fathers were born, and in the steady luster of which men have built for two generations. He belonged to an epoch that passed with him, and with his death the scene changes in the history of the nation's architecture. He lived to see the old order change, giving place to new, and the work of a lifetime well completed. The city of his youth and manhood had become strange to him while he lived in the midst of it. The methods of building which he had always pursued and found good were changing with the new conditions and demands of a new era. He goes to rest as few kings have gone, leaving a lifework perfectly accomplished, and a memory that has in it nothing of regret, but all of praise, a name that, no matter how brilliant those the future may inscribe upon the superstructure of this country's architectural fame, will be found graven upon the foundation stones by future generations of architects.

**Establishment
of Government
Testing
Stations.**

On January 27, 1892, the National Board of Trade will meet in Washington, D. C. One of the leading topics announced for discussion will be the establishment by the United States Government of stations for testing the strength of building materials. At last year's meeting of the National Board of Trade, held in New Orleans, Louisiana, the following rather sweeping resolution was offered and laid over for the approaching convention in Washington:

"Resolved, That it is the sense of the National Board of Trade that the United States Government should place in each city of 100,000 or more inhabitants in the United States, a testing machine of the capacity of 1,000 tons, upon which any citizen, having prepared his materials, may have them tested free of charge, and that said machine should be installed in a building arranged for that purpose and under charge either of military or civil officers of the government engineering service, etc., etc."

The various mechanics' exchanges of the country, and probably the National Association of Builders, will have representatives at this meeting, and its recommendations will therefore carry considerable weight. We do not object to the resolution as a whole, but that the work outlined seems too elaborate. Why would not a station at New York serve for Boston, Brooklyn and Philadelphia, or at Chicago for Milwaukee or Cincinnati for Louisville. The cost of establishment and maintenance in the thirty odd cities of over 100,000 inhabitants would be enormous, and upon computation might defeat the measure. There now exist testing stations at some points. At Washington University, St. Louis, there is a private testing apparatus of fifty tons, capable of testing full size wood, iron or steel beams twenty-four feet long. At the United States Arsenal at Watertown, Massachusetts, is a testing apparatus of 400 tons, and the Union Bridge Company at Athens, Pennsylvania, has a testing machine of 400 tons, while the Phoenix Bridge Company, at Phoenixville, Pennsylvania, has the largest testing machine in the world, its capacity being 1,200 tons. In addition to these a large number of iron and steel concerns have testing machines of from 25 to 100

tons, and there is similar apparatus connected with many of the engineering schools. No country is so well equipped as ours; and accessible as is every manufacturing center the need for thirty or more testing stations under government control is not apparent, though if the work could be done under the control of army engineers and thoroughly divorced from political influence, much good could be accomplished by the establishment of testing stations of the first class in a few of the larger centers of manufacture.

**Relation of
State
Chapters
to the A. I. A.**

The relations of the American Institute of Architects to its affiliated Chapters, state and local, has been and still is a most perplexing subject. The Constitution and By-Laws of the Institute do not recognize any difference between state and local Chapters; they are all equal in their relations to the Institute at large. It is a problem which presents itself chiefly in the states containing several cities of sufficient size to have local Chapters of the Institute, and others in which there are architects in good standing but not enough in number in any one city to form a local chapter. In these states there is a positive necessity for a federal organization. How to bring this about has puzzled the Fellows and directors of the Institute ever since its reorganization, and the solution seems as far off as ever. As the same, however, cannot be definitely determined by the officers of the Institute alone, but will have to take the form of amendment of Constitution and By-Laws to be proposed within the current year and acted upon at the next convention by the entire Institute, it gives subject for thought to every Fellow of the Institute, and we shall open our columns to suggestions from everyone who has given the matter enough attention and thought to have anything to offer upon this head for the consideration of his fellow practitioners. The matter received extended consideration at the recent meeting of the board of directors of the American Institute of Architects, a detailed report of which is published in this issue.

**How to
Write a
Hardware
Specification.**

How to write a specification for "shelf hardware" which shall answer every practical requirement, in view of the infinite variety of hardware now on the market, the necessary limits to the length of an architect's specification, and the traces of total depravity still lingering in the nature of some bidders on buildings, is a disputed point. Some architects specify the hardware "by allowances" for each door, window, etc. This practice, which is known as the "Boston Method," was recently criticised by a hardware journal as implying simplicity or credulity on the part of the owner, and a firm of architects replied with a protest that the comment was unwarranted and reflected unjustly "on our common sense and brains," i.e., as architects. On matters of construction and of esthetics as applied to a building, architects may properly enough claim to speak *ex cathedra*. But in other directions they would often do well to hearken to the views of practical business men. It is as feasible for the architect to make a close estimate of the aggregate cost of the shelf hardware for a building and then specify the lump sum which the contractor is to allow for such hardware, the hardware to be selected afterward in detail by the owner. If the owner's selection exceeds the cost specified he pays the excess; if it falls below he is credited by the builder with the difference. That is all there is to it.

Architecture and the Allied Arts.

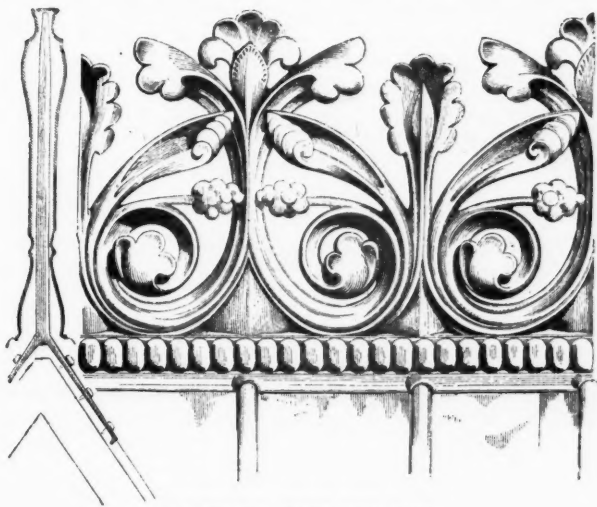
BY BARR FERREE.

PART IV.—Continued.

NEXT to altars and shrines the tombs form the most noteworthy part of the furnishing of a church. The most architectural of these monuments are in England, where a series of sepulchral monuments of great beauty is distributed in all parts of the country. They show that if the English were sparing of the use of sculpture on the exterior of their buildings, where the inclemency of the climate would not unlikely have speedily have disintegrated it, they still know how to combine it with architectural details. The earliest of these monuments are also the simplest, and consist of a raised slab or sarcophagus on which was placed an effigy of the deceased. Then a canopy was introduced, at first of wood but afterward of stone and having an architectural character. The Tomb of Edward II in Gloucester Cathedral, Edward III in Westminster Abbey, and of Bishop Redman in Ely Cathedral, are all superb examples of the canopied tomb, and show that the English artists were thoroughly capable of taking advantage of all the possibilities of Gothic architecture. The tomb is more highly developed in England than on the continent, though splendid specimens are not wanting in France, Italy and Germany. In these countries, however, it is more often in the form of sculpture than of architecture, and is frequently only a slab let into the wall or floor.

It is quite impossible in this narrative to present a summary of the varied forms employed in other examples of church furniture. The altar, the shrine and the tomb exhibit the fullest development of art, but the other pieces of sculpture and carving, the pulpits, the fonts, the galleries, the screens, the canopies, the stalls, the doors must be passed over with simple mention. They all partook of Gothic character and most of them had architectural form. So thoroughly, in fact, did architecture predominate in the art of the middle ages that many of the smaller pieces, such as the vessels of the altar, almost lost their distinctive form and became so many examples of architecture on a small scale. They were all essential to a consistent Gothic edifice, and exhibit to a remarkable degree the influence of architecture upon cognate arts.

Of the furniture of the cathedral, if, indeed, such a term is an appropriate designation for a feature that is frequently an integral part of the structure of the edifice, the most important is the choir screen. Even the altar itself is frequently not as imposing or as elaborately decorated as the screen which incloses the space in which it stands. Some of the most superb illustrations of mediæval sculpture are to be found on the choir screens of French cathedrals.



A CREST RAIL, NOTRE DAME, PARIS.

Sometimes they are open in front or separated from the body of the church by iron railings, but the sides and rear are decorated with series of scenes from the life of the patron saint of the structure, or from Scripture. Thus the choir screen of the cathedral of Amiens has representations of events in the lives of S. Firmin and S. John the Baptist. More important and beautiful is the wonderful screen of the cathedral of Chartres. (Choir Screen, Chartres Cathedral. See insert illustration pages.) Here a long series of Scriptural scenes is contained within delicate frames of pinnacles and arches, the whole forming a combination that has frequently been compared to point lace in stone for its delicacy of treatment and minuteness of execution. The cathedral of Albi has also a noteworthy screen, but

the ornamentation is more strictly architectural than in the examples just noted. In England also the screen is treated more architecturally than in France. There are no sculptures save those belonging to monuments, which are built into the walls of the screen and in fact form part of it. Sometimes the tombs and chapels which form part of the choir screens in England are of great beauty. Several fine illustrations are to be found in the cathedral of Worcester. The rood screen, a series of arches supporting a large crucifix or rood, has survived longer in England than in France. The choirs were also more inclosed toward the nave in English churches than in French, but the effect of thus cutting off the eastern portion of the church was not always happy. The organ was often placed on the choir screen in England, thus bringing all the parts employed in the service directly in the center of the church.

Mention should be made of the *Sacraments Hauslein*, the receptacle for the sacred elements, which are a piece of church furniture peculiar to Germany, though occasionally found in Belgium, and, very rarely, in France. They were frequently of considerable size, and are among the most elaborately ornamented interior decorations. Some are of great beauty, notably those in the church of S. Lawrence at Nuremberg and in the cathedral of Ulm.

Before dismissing the subject of the ornamental use of stone in mediæval art, some notice should be taken of monuments and memorial structures that are independent of any connection with buildings. Any detailed notice of these objects is out of place in the present discussion, for, while many of them possess architectural form, they are not buildings nor have they any of the functions of a building. Among the best known of these are the English "Crosses," built by Edward I, of which only three remain though originally fifteen in number. The surviving specimens, near Northampton, at Geddington and at Waltham, are much dilapidated, but sufficient survives to show how admirably their designers understood the capability of Gothic forms. Very different from these are the Celtic crosses of Ireland, which are simple crosses ornamented with sculpture without architectural form. In Germany the *Schöne Brunnen*, the beautiful fountain, of Nuremberg, closely resembles the English cross, and, indeed, dates from the same period. Another class of monuments somewhat similar to these in general form is represented by the *Lanterne des Morts* or *Tedenleuchter* of France and Germany. These were placed in cemeteries or near tombs, and were frequently of considerable height. A glazed chamber near the summit afforded a place for a light.

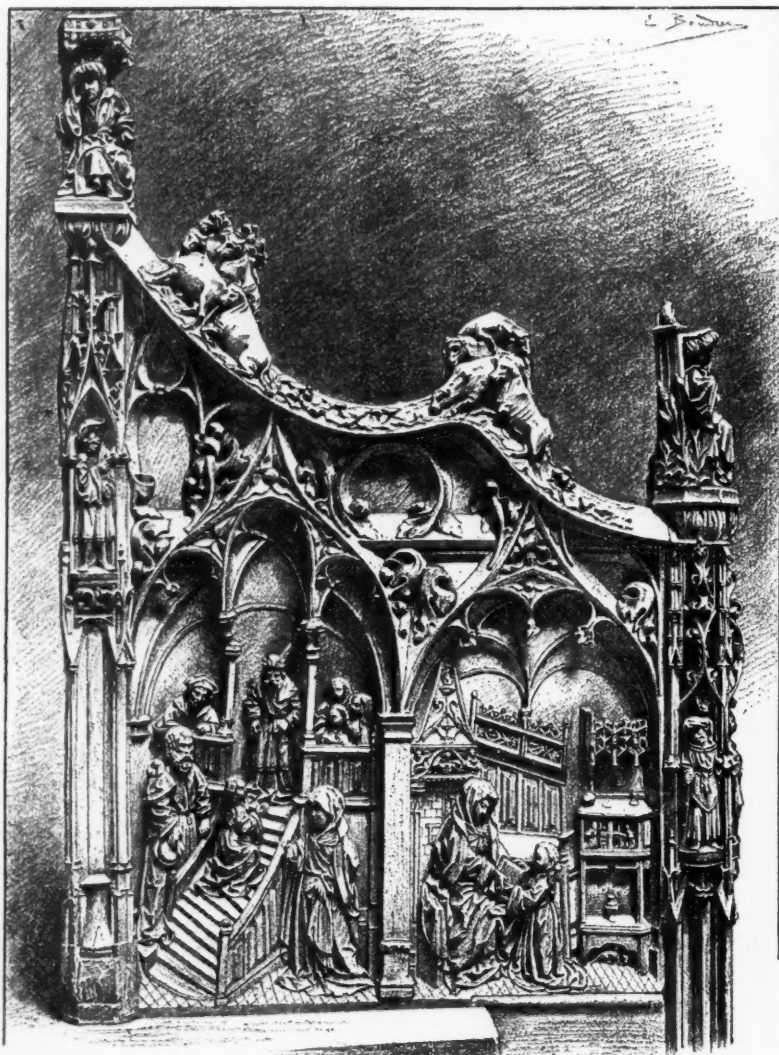
The baser metals, iron, copper, bronze and lead were employed architecturally and much fine work done in them. Railings, grilles, doors, hinges, standards and other articles which may be properly termed furniture were made of them. (Iron work, door of S. Anne, Notre Dame, Paris. See insert illustration pages.) The chief fact to remember in all this work is the care and attention given to the smallest detail. The railings which shut off the different parts of the church were as carefully designed and as much in harmony with the general lines of the structure as the most prominent architectural member. As much pains was taken with the casting of a single column or base as in carving the capitals of the entrance portals. Nothing was too insignificant to be overlooked, and in this way the builders obtained completed results that were far in advance of anything that would have been reached had small things been left to themselves or passed over as insignificant. Bronze was used for statues and doors, though the finest work of this kind, the gates to the baptistry of Florence, belong to the earliest period of the Renaissance. Iron and lead were largely used on the exterior of churches as grilles for the windows and copings and caps for the roof. Even when placed at a great height, where their beauty could scarcely be appreciated by the passer-by, the same care was taken as with work on the lower part of the edifice. There never was unnecessary elaboration, and details were not thrown away that were of no value, but everything was proportioned to the place it was to fill. The copings and weather vanes of many Gothic buildings are as worthy of as much study and attention as much of the finer work on the lower part of the structure.

Wood carving was also employed, though in an architecture of stone such as the Gothic emphatically was, it could not hold a prominent place. Wood altars and pulpits were of frequent occurrence, especially in Germany, as has already been noted. The stalls of the cathedral choirs and the episcopal thrones were also splendid specimens of this work, and are finely illustrated in those of the cathedral of Amiens. In England there are many wooden roofs, all elaborately carved, and many of great beauty. They become an important element in the architecture, and are carefully designed for that purpose.

The wooden roof was never vaulted, but openly followed the lines of construction on a system of its own. In domestic buildings wood was more frequently employed than in the churches. The eaves are often carved, and an elaborate gable is frequently prefixed to the building. Houses entirely of wood were also built, having a form different from

were unequally developed; the architecture was indeed highly refined, but the painting and sculpture were lacking in many of those technical qualities which are essential to perfect work, though endowed with much spiritual feeling and truth. These were developed in the new life termed the Renaissance, when the spirit of progress, that had been struggling so long in the fetters of barbarism and darkness, freed itself from all restraint and broke forth in one of the most remarkable intellectual movements the world has experienced.

Though Gothic art employed a great variety of minor arts, and though much of its individual character was derived from them, it was essentially constructive. No element of the Gothic system is more marked than the ornamental form given to constructive features. Gothic decoration did not consist alone in the application of ornament to architecture, but in making architecture ornamental by the intelligent treatment of constructive parts. Thus the buttress, the flying buttress, the finial and pinnacle were all parts of the construction of a Gothic church, but they received a decorative form which, while not interfering in the least with their constructive value, made them an essential and important portion of the ornamental aspect of the building. Nothing more fully illustrates the artistic spirit with which the builders of the middle ages were imbued than this turning of constructive elements into decorative parts without in the least affecting their static condition. In the interior the same thing is to be noted. The long rows of columns which are necessary to support the vault, the engaged columns which carry the ribs of the vaults and the supporting arches, all have an artistic value which is part of their constructive usefulness. One of the most important developments of constructive decoration is the ribs of the vaults. This is especially the case in English vaulting, where it was carried much further than in France, and which is, in truth, one of the most interesting features of English Gothic architecture. Like all other ornamental features of Gothic art this reached its most complex type in the later period. An interesting comparison can be made between the vaulting of the Chapter House of Salisbury Cathedral and the Chapter House of Wells. In the former the ribs are confined to the actual structural requirements, and have only a secondary decorative value. In the latter they are more numerous, and though they still follow the general lines of construction are partly ornamental. In later work the fan tracery for vaults was invented in which an elaborate system is used that is quite



CHOIR STALL, AMIENS.

the houses of stone. In this respect Gothic architecture shows a marked difference from the principles of Roman building, which sought to obtain uniform effect, be the material plaster, stone, brick, marble or wood. It freely and boldly exhibited its true structure and its true substance, a condition that its freedom of form and its ready adaptability permitted it to assume without losing its essential characteristics.

The Gothic system did not depend on one form of art alone, but made every phase of art a part of itself. Some writers have maintained that the allied arts were not, properly speaking, an essential part of Gothic architecture, but within the last twenty-five years the records of Gothic art have been so thoroughly searched, analyzed and classified that such a position is no longer tenable. The sculptured capitals are as much a part of a Gothic cathedral as the stones of the walls. To painted glass is due the large window space that early became the most characteristic feature of the style, while the sculpture and painting to be found in all parts of the structure are parts of the general plan, and all help to give the building its true character. Remove the sculptured capitals and moldings, knock out the painted glass, whitewash the walls, destroy the furniture, the statues, the carvings of all kinds, and there is nothing left but walls and meaningless openings. The lines may be light and graceful, but they are without expression, and the beauty of a complete and perfect art is wanting. Replace the removed parts, and there springs into life a new structure, throbbing with the intellect of a progressive age. The union of all the arts is intimate and close, though of a different intensity and kind from that noted in other styles. The Gothic artists seized upon all phases of art and made them part of one whole. They

wanting in the structural purity seen in earlier work. The vaulting of King's College Chapel, Cambridge, Henry VII Chapel at Westminster, and many others, are examples of this method, which, notwithstanding its violation of constructional necessities, is one of the richest forms of English Gothic, and is far beyond anything done by the French in vaulting. One of the most elaborately decorated vaults built in the Gothic style is that of Roslyn Chapel, in Scotland. Here the under sides of the ribs are enriched with bosses and carved ornament, which, while very splendid in its result is quite wanting in the simple beauty of earlier vaulting.

The decorative evolution of constructive forms is seen in almost every portion of the Gothic church. The columns and piers in the later examples have a more ornamental effect, while not less constructively important, than in the earlier buildings. A most interesting and valuable study would be a comparative examination of longitudinal sections of a number of Gothic churches of various dates and origin. The treatment of the piers, columns, arches, the proportions between the vertical parts, the nave arches, the triforium and clearstory, the arrangement of the features of the triforium and clearstory, and above all the great increase in the use of ornamental tracery in the windows, would be found to have undergone a progressive evolution from simple and heavy forms to those of extreme lightness and delicacy. The parts become more and more ornamental, and more and more essential elements of the decoration.

Nor was this the case only in the chief parts of the church. Minor portions had the same treatment. Moldings not only had character from the carved forms with which they were decorated, but the sections of the piers, the profiles of the moldings and capitals

and strings were equally marked and individual, and so thoroughly was this carried out throughout the entire mediæval period that the forms and profiles of the moldings, the sections of the ribs and piers are accepted and recognized as safe means of identifying the style and date of a building, and are not infrequently the chief means of determining its identity. Scarcely a part, therefore, of the Gothic structure did not receive in some manner an ornamental treatment, and form, in a measure, a part of the decoration of the structure to which it was itself constructively necessary. It is scarcely an exaggeration to say that in this consists one of the greatest, if not the greatest merit of Gothic architecture.

The decadence of Gothic art, as in all other forms, was marked by an over-use of ornament and the consequent increase of the ornamental parts at the expense of the construction. It is indicative of the inherent progressiveness of decorative elements that this phenomenon should be noted in all the stages of art history, whether there be any organic connection between them or not. The Egyptian,



RETRO-CHOIR, PETERBOROUGH CATHEDRAL.

the Greek, the Roman, the Byzantine, the Moorish, the Gothic, and as we shall shortly see, the Renaissance, all culminated in a form of architecture which was more decorative than structural, and in which the ornamental parts are given an importance quite incommensurable with their constructional functions. Ornament is no longer used as an adjunct to architecture, the allied arts are no longer assistants to architecture, but architecture becomes subordinate to them. Its constructional value is lost, parts are multiplied without reason or necessity, and the greater the amount of decoration the more satisfied seemed the builders. It cannot be denied that there is a fascination in late Gothic façades such as the front of the cathedral of Rouen, the courtyard of the Palais du Justice in the same city, the wonderful buildings of the monastery of Belim in Portugal and many other buildings of the same period. The delicate lace-like work of these structures is not judicious architecture, and their unquestioned richness and beauty fails to satisfy the eye and the reason. It is such works as these in which ornament ran riot that prepared the way for the more stately façades of the early Renaissance.

(To be continued.)

A PARTNERSHIP is about to be formed in St. Louis between Alexander Stewart, of James Stewart & Company, architects, and Messrs. Mulgart and McClure. Mr. Mulgart is recently from the office of Henry Ives Cobb, of Chicago, and has been engaged for the past two years upon the Newberry library. Mr. McClure was formerly with Fuller & Wheeler, of Albany, New York, and has been superintending the erection of two important structures in St. Louis for that firm.

Seventh Exhibition of the New York Architectural League.

It would perhaps be an exaggeration to term the seventh annual exhibition of the Architectural League the most important of the series, but it contains several features that give it an interest and value quite distinct from any of its predecessors and render it more than usually attractive to the public. An exhibition including the principal buildings for the Columbian Exhibition and the new Episcopal cathedral in New York would be remarkable in itself were these drawings supplemented by nothing else. But when in addition to these chief features a collection of drawings is included that is confessedly representative of the best architectural work designed during the past year, the entire collection exhibited becomes one of paramount importance.

Though the general plans and elevations of the Columbian Exhibition buildings have become by this time generally familiar to a large class of the public, there is an especial advantage in grouping them in one collection both for purposes of comparison and the scarcely less useful purpose of familiarizing the public with the real merits of these buildings, which are entitled to stand as the best product of American architectural skill in their particular line. This is especially the case in the East, and in New York perhaps more than elsewhere, for notwithstanding the extensive and justified advertising the Columbian Exhibition has received, it is still looked upon as mythical, an impression the present League exhibition will materially help to diminish. Unfortunately the collection of drawings is not complete, even of the buildings now in process of erection, there being no picture of the Woman's building, for example, but doubtless the vacancies arose from circumstances over which the League had no control and for which it is not responsible. But surely the buildings represented might have been illustrated more fully and with greater detail than in the small drawings, good and effective as they are, in which several of them are shown. General views only are given of Mr. W. L. B. Jenny's Horticultural hall, of Mr. S. S. Beman's Mines and Fisheries building, of Messrs. Peabody and Stearns' Machinery hall (three views), of Messrs. Adler & Sullivan's Transportation building and of Mr. Henry Ives Cobb's Fisheries building. Even Mr. George B. Post's immense building for Manufactures and Liberal Arts would be included in this category were it not for a large drawing of the main entrance, giving full details, and noteworthy as being, with the exception of a large and impressive outline drawing of Messrs. McKim Mead & White's Agricultural building, the only drawing in the collection large enough to permit an intelligent study of the actual merits of the Exhibition buildings.

Much more satisfactory, in the manner of illustration, is Mr. Richard M. Hunt's Administration building, of which there are no less than eight drawings, including a masterly general sketch by F. Hopkinson Smith, unfortunately drawn at so early a stage of the Exhibition enterprise as to include in the background a view of an Eiffel tower which the directors have since happily discarded. Mr. Hunt's drawings include plans and several working drawings, forming a valuable object lesson in the work of the architect, with the practical details of which the public are much too unfamiliar. The collection is rendered still more complete by photographs of the present state of the building, showing the progress and method of work, and by several casts of decorative features. Mr. C. B. Atwood's thoughtful Galleries of Fine Arts is likewise fairly well illustrated, the drawings showing the original design, its final form, a section and two working drawings.

It is evident enough from the irregularity with which these buildings are illustrated that it is impossible to form a just estimate of their merits. One receives the general idea of the buildings rather than their individuality, from the small scale drawings shown. And the architects lose quite as much as the public, for the similarity of style in which all are designed — a well controlled Renaissance thoroughly adapted, on the whole, to the problem in hand — makes them appear in the small drawings much more similar and uniform than they really are. In buildings such as these, designed for a few months for similar though not uniform purposes, it is impossible to expect the individuality and variety which may be possible in smaller structures.

One oblong exhibition building must be much like another; the architect can only vary his outline and plan to a limited extent, and he must depend on the decorative features for his chief effects. As a whole the architects of the Columbian Exposition are to be congratulated on their work. They have met the conditions frankly and produced structures thoroughly well adapted to their purposes and

yet of sufficient architectural interest to make them satisfactory examples of architecture.

The Columbian Exhibition buildings are but temporary structures and therefore should not be judged by the standards requisite for permanent buildings. Yet both the material and the style gives them a more solid appearance than such structures heretofore have had, and almost place them in the category of permanent, in which their merits are not less visible nor less real than when they are looked upon as temporary only. Very different in purpose and intention is the new Protestant cathedral for New York, of which a finely rendered water-color drawing occupies the place of honor. It is hardly possible to exaggerate the importance of this building, because it is intended to stand for all time as the best product of American ideas in architecture at this day. If Chicago is to be congratulated on her Exhibition buildings New York is certainly not to be felicitated on her cathedral. The final accepted design shows several changes in the original conception of Messrs. Heins and La Farge, but they can scarcely be called improvements. The central tower and spire have been made larger and more massive without any corresponding grace or beauty of outline. The alternative idea of two towers with spires on the front has been dropped, and two square-topped towers substituted. A high arcade has been carried around the top of the nave. More unfortunate is the suppression of the lateral doorways on the front, which now contains but a single entrance, a central one which, notwithstanding the recess in which it is placed, is totally without the dignity and impressiveness of the French portals. The New York cathedral is not modeled on French Gothic, but in adopting the Gothic as the style for the new cathedral it is a pity not to have selected its most developed and richest form. This is the more to be regretted as the projectors of the cathedral have sought to place their structure in direct comparison with the great European cathedrals, a comparison, it is scarcely necessary to add, that results very much to its disadvantage.

The cathedral and the Exhibition buildings stand alone as exceptional structures, but the collection of drawings is full of interest. A great variety is shown, the country house being, as usual, the most numerous represented and the most successful from an architectural standpoint. Indeed, so numerous are the country houses this year that, judging by the exhibition, one might almost conclude that it was no longer customary to build city dwellings, so few are the examples. While it is quite true that the country dwelling offers greater freedom and more advantageous opportunities to the architect, the city dwelling more closely represents modern life, and its absence from this representative collection of current architecture deprives it of what should be one of its most characteristic features. The Colonial style is more than ever a favorite for country dwellings, and some very effective designs are shown. Messrs. Berg & Clark show a house at New Rochelle; Messrs. Stratton & Ellingwood, a house at Tuxedo; Mr. Julius A. Schweinfurth, a home and outbuilding at Roxville; Mr. E. T. Hapgood, a residence at Bangor; Warren R. Briggs, a country house; Messrs. Little & Browne, another house; while a residence at Morristown, by Mr. C. A. Gifford, is an example of too great a leaning to this style in which all the unpleasant features are exaggerated. Messrs. Rossiter & Wright show alterations to an old country church, at Liberty, New York, in the Colonial style; Messrs. Rotch & Tilden exhibit a Colonial design for the proposed Newton Club house, while another club house in the same style, the Knollwood Country Club, at Elmsford, is shown by Messrs. Berg & Clark.

The Colonial is the favorite, though not the universal, style for country dwellings. No uniformity need be looked for, nor is it desirable, but the tendency toward the Colonial is a decided advance in country architecture, not only for the real beauty of the style, but for the quiet and subdued buildings that result from its use. Mr. Bruce Price shows an effective design for a cottage at Tuxedo, a rather severe idea well worked out and with liberal wall space judiciously left undecorated. Mr. Albert Randolph Ross shows a small, but good, country house at Cold Springs. Mr. Wilson Eyre, Jr., has an interesting group of house and stable at South Bethlehem, and other picturesque dwellings are shown by Messrs. Cook, Hapgood & Co. and Messrs. Little & O'Connor. Very different from these small houses is the immense country mansion exhibited by Mr. R. H. Robertson. This is an enormous castellated structure, in which the architect has apparently undertaken to condense all his mediæval ideas in one structure, with a heavy and labored result seldom seen in the work of this architect. Somewhat similarly ambitious is a design exhibited by Mr. Julius A. Schweinfurth, for a residence. Another

large country house is that by Mr. J. H. Taft, for C. B. Alexander, at Tuxedo Park, designed on Elizabethan models.

Of churches there are quite a number, though, as with the houses, it is the country church which is more successful than the city. One of the most successful of the latter is the design of Messrs. McKim, Mead & White for a church at Stockbridge. A low tower on the front is connected with the church by a passageway, and the simple forms and pleasing outlines of the group form one of the most successful designs in the collection. Very good also, though not quite so effective in detail as in mass, is the sketch for Central Congregational Church at Lynn by Messrs. Little, Brown & Moore, closely modeled on the typical English parish church, with low square tower. Another picturesque church is the chapel for the Howard University by Mr. J. E. Baker. Messrs. Rossiter & Wright show their design for the Hillside Presbyterian Church at Orange, which has the merit of being evidently a country church, not a city structure put up before the city has been built. Much less successful than any of these, because much less expressive of its intentions, is the library and church by Mr. E. T. Hapgood, a semi-colonial structure which might serve almost any purpose at all without seeming to be any one thing more than another.

In city churches Mr. Charles C. Haight exhibits a thoughtful design of a rather small building with a well marked central tower in English Gothic. Mr. Henry F. Kilburn shows two churches, the West End Presbyterian Church of New York, and a competitive design for church, chapel and school for Collegiate Church, of which the latter is a much more effective design than the former. Each has a tower on the corner, but the ground has been so closely utilized as to render effective grouping of the various edifices out of the question. Much the same might be said of Stephenson & Greene's design for the Congregational Church of the Covenant in Brooklyn, a very wide front, broken into several parts by chapel and tower, the latter being octagonal and rather unfortunately placed on a low square base. More effective in its grouping is Mr. R. H. Robertson's design for St. Luke's Church in New York, of which the rear, much the better part, is shown. This building is placed on a site that falls rapidly behind, affording excellent opportunities for an effective grouping of minor parts that the architect has thoroughly availed himself of. The design more nearly approximates the genuine Romanesque than many structures which now pass under that name. The walls are plain and ample, and broken only by pilasters instead of by buttresses.

City buildings are better represented by business buildings and hotels than by dwellings and churches. Messrs. Adler & Sullivan exhibit their interesting design for the Dooley Block and Hotel Ontario at Salt Lake City, and Mr. H. J. Hardenbergh has an effective drawing of his immense Waldorf Hotel now in process of erection at Fifth avenue and Thirty-third street. In country hotels, of which several are shown, there is a Southern Hotel by Mr. George E. Wood; Mr. James Brown Lord exhibits another ambitious design, while almost overpowering in its immensity is the hotel "Laurel in the Pines" at Lakewood, designed by Messrs. Carrere & Hastings. None of these buildings have anything but their size to recommend them, the making of good façades of the extent required in these structures being apparently a problem for which no successful solution has yet been found. All of them, however, have merits that make them superior to the fantastic design for a hotel sent by Mr. George F. Newton, evidently borrowed from the Chateau of Blois, an impossible structure not entitled to a place in a sober collection of architectural realities.

Although quite a number of business buildings are shown, it cannot be said that any remarkable contributions have been made to the working out of the most complicated problem now before American architects. Architects in the East have not yet been able to break away from old traditions that western architects have passed beyond, and most of the new buildings exhibited are characterized by attempts to make "façades" of the immense modern fronts. Chicago architects have found a way out of this difficulty by not undertaking to mass or arrange their façades, but the most important office building shown by a Chicago firm, Messrs. Adler & Sullivan's office building and hotel at Salt Lake City, is too low to be treated in the typical Chicago manner. Mr. George E. Harney shows an office building quite in the current New York manner. First of all comes a base of stone, on which is erected a brick superstructure in two sections, the first, consisting of three stories, being included under arches, the second, likewise of three stories, inclosed in a sort of square frame, while above is an attic with a gabled roof. The architect has done his best to break up his front, and succeeded only too well. Very

different is the building designed by Messrs. Carrere & Hastings for the *Mail and Express*, the long, narrow and much drawn-out Broadway front of which contains more diverse elements than have probably ever before been put into such narrow compass. It will, perhaps, be doubtless better to omit any criticism of this edifice until it is completed, the more so as that end cannot now be much delayed. The Pierce building, by the same architects, contains some of the features employed in the Fulton street front of the *Mail and Express* building, and being a broader and lower structure, is not so freely open to criticism.

Mr. George B. Post has a finely executed drawing of his building for the Prudential Insurance Company, at Newark, in which he has used the same elements he so successfully brought into use in his *Times* building and the building for the Union Trust Company, without, however, improving as much upon the Trust Company's structure as it was an improvement upon the *Times'*. Messrs. Shipley, Rutan & Coolidge send a drawing of their Ames building at Boston. Messrs. N. Le Brun & Sons exhibit their design for the Metropolitan Insurance Company's building in Madison Square, and Messrs. Andrews, Jacques & Rantoul the Equitable building, at Denver. This last structure is in three divisions above the basement, an arrangement which, while doubtless admirable for lighting purposes, somewhat detracts from the dignity of the front. The same firm also exhibits a design for the Equitable building at Des Moines. The building of the Edison Electric Illuminating Company, by Messrs. Buchman & Deisler, is another large structure in which the front is so divided as to appear almost like two distinct buildings placed one on top of the other.

Of miscellaneous buildings there are a number worthy of special mention. Mr. W. A. Potter sends several drawings of his thoughtful Commencement Hall for Princeton College. Mr. Bruce Price has his new Dormitory for Yale University, a sober design and thoroughly suited for its purpose. The same architect also exhibits a design for the Hotchkiss Preparatory School, at New Haven, in the Colonial style. Mr. James Brown Lord sends his long series of buildings for the Bloomingdale Asylum, and Messrs. Lamb & Rich a very satisfactory design for the Staten Island Academy.

Several buildings almost completed, or just completed, are shown. Mr. Robert W. Gibson exhibits his design for the new Greenwich Savings Bank, remarkable as being one of the few new buildings in New York built for business purposes, and only a single story high. As a matter of fact this structure consists of a single story and an attic, but as it will be one of the very few buildings devoted entirely to the needs of a single bank in the city it becomes more conspicuous than its proportions make it. Messrs. H. J. Hardenbergh, Walter C. Hunting and John C. Jacobson show the final design for the American Fine Arts Society building, one of the most important enterprises now under way. Mr. W. B. Tuthill sends a drawing of the entrance to the Carnegie Music Hall, and a design for a portico for the public tombs at Woodlawn cemetery, a classic design with Corinthian order. Messrs. McKim, Mead & White have a view of the Madison Square tower and roof garden, and Mr. Stanford White sends a view of his design for the Washington Memorial Arch.

There are several interesting examples of interior work. Mr. Bruce Price shows an interior for a library; Messrs. Francis H. Bacon and A. H. Davenport, a Tap Room for the Philadelphia Country Club; Messrs. Brunner & Tryon, a sketch of interior work in Montreal in the Renaissance style, and the Shrine of the Temple Beth-el; Messrs. Parfit Brothers send an elaborate color scheme for the Temple Israel. An interesting though very irregular group of drawings are those sent in for the fifth annual competition of the League, representing a town hall for a town of about 20,000 inhabitants. Thirty-two drawings were submitted from all parts of the country, in varying styles and of various degrees of merit. Several thesis and competition drawings from Columbia College testify to the good and thorough work done in that institution.

Apart from the drawings of the Columbian Exhibition and the New York cathedral the most remarkable feature of this exhibition is the introduction of working plans and detail. In an exhibition of this kind intended for the instruction and profit of the general public it is only fitting that some of the practical methods of architects should be shown. The public should know that architecture is not simply the production of pleasing fronts, but that behind this lie important questions and difficult problems which determine very often the form of the exterior. The preparation of the beautiful and effective drawings which decorate the walls of the League's exhibition implies much more than the use of pencil and brush, and while it may be true that working drawings convey little idea to any but architects, that is no reason at all why they should not be included in

an exhibition of current architecture, and the more so since it is in these that the modern architect finds his most difficult work and achieves his greatest triumphs. Several such plans and drawings are included in this collection, and it is to be hoped their number will increase from year to year.

It is a pity also that the League exhibitions cannot be given a more national character. The most important architectural exhibition in the country, it should omit no effort to make the collections as full and as complete and as thoroughly comprehensive as possible. Many out-of-town architects are represented in the present exhibition, but the volume of outside work, and especially of western work, is lamentably small. Whatever the reason, it is a subject that calls for energetic remedying in future years.

As usual the architectural exhibition is supplemented by a decorative exhibit of a very general character, but very interesting on the whole and an admirable supplement to the architecture with which it is associated. This part of the exhibition is unusually full, crowding the small room in which it is put to serious disadvantage of the objects. Mr. Georges A. Glaenger sends an interesting collection of First Empire stuffs, fabrics and ornaments. Mr. Stanford White loans some carved and gilded columns from Spanish churches. Mr. John La Farge sends some interesting studies at Samoa and the Fiji Islands. Mr. Alexander W. Drake contributes a large and valuable collection of brass and copper vessels collected from various sources and illustrating various times and countries. There is a large cartoon for the Murphy window in St. Paul's, Newark, designed by Walter Crane, and many other decorative features and designs which must be passed over for want of space.

The Rights of The Lowest Bidder.*

WHAT CONTRACTORS WISH TO KNOW.

THE inquiries comprised in this article were suggested by a brief paragraph in the Architectural Department of the *Engineering Magazine* for October. The paragraph referred to a decision of importance to architects and builders, and stated compactly that a Boston contractor, having been the lowest bidder for a contract covering the erection of a building for the Boston Chamber of Commerce, and having had his bid rejected, had sued for, and recovered damages amounting to \$14,500 in the court of first resort; and that the case having gone up on appeal to the court of highest resort, the Supreme Court of Massachusetts, the judgment of the lower court was therein confirmed. * * *

The system of awarding contracts to competing bidders, who base their estimates and proposals upon specifications prepared by supervising architects or engineers, is so extensively practiced, and concerns so many lines of business, that a statement of some abuses that have gradually crept into it, together with their legal remedies, and an epitome of the legal status of both parties to a contract based upon the acceptance of either a written or verbal estimate and proposal seem desirable. * * *

It appears, from the decision cited, that the lowest invited bidder has legal rights growing out of his invitation to bid. How is the lowest invited bidder to be legally identified? What, in the eye of the law, constitutes a "lowest invited bidder"?

Messrs. A, B, C and D are asked for estimates and proposals, each being furnished (as they are duly informed, and as they reasonably suppose) with a copy of the same specifications and drawings. In accordance with their invitation, each, after a more or less exhaustive consideration of the specification, sends in a proposal. In so far as cost of material affects their estimates, we will suppose that all of the bidders—each being of good commercial standing—are practically on one level, any one of them being able to purchase the materials required at a price as low as the others can. As to cost of labor, they may not be able to arrive at the same conclusion; and, on this account, their bids may legitimately vary, but not very widely. Their estimates may also vary legitimately from the fact that one or more of them will be content with a somewhat less profit than the others; the profit desired being influenced by various commercial reasons, as the amount of work on hand, the desire, in a dull season, to avoid the discharge of workmen, etc. In these days of active competition, the margin of profits has been so narrowed for all contract work that it cannot with safety be much reduced; for this reason no very wide deviation in the bids of responsible houses can be expected.

The bids are opened and the contract is awarded to Mr. D. The rejected bidders, asking for the amount bid by Mr. D, are politely informed that this can be of no particular consequence to them, and the information is refused. Now, how are they legally able to ascertain whether Mr. D was really the lowest bidder; or whether, through a preference growing out of something else than the sum named by him as his price for the work, the contract has been awarded to him, regardless of the rights of the "lowest invited bidder"?

Another case: Let us suppose the same bidders have competed as before, and that the contract has been awarded to Mr. D. In some way the rejected bidders obtain all the prices named, and find,

* By Leicester Allen, A.B., M.E., and Charles E. Hellier, A.B., LL.B., in the *Engineering Magazine* for January, 1892.

while the bids of Messrs. A, B and C vary only in so far as may be reasonably accounted for from ordinary commercial reasons, that of D is so far below any of the others, that if he perform the work according to the specifications and drawings upon which the other bidders base their estimates, he must do so at a notable and inevitable loss. Let us suppose the rejected bidders to be suspicious that there is "a cat in the meal," and to quietly watch the progress of the work as executed by Mr. D, discovering, as the result of their scrutiny, that the work is either allowed to depart so far from the specifications as to greatly cheapen its execution, or that another and totally different specification is followed by the favored contractor. In this case who is the lowest bidder, and what are his legal rights? * * *

Let us suppose another case—that in which two contractors each put in the same estimate, their bids each being lower than any of the others. To whom, in this case, must the contract be awarded?

There is another phase of letting contracts to competitive bidders. Certain specifications are presented; several invited bids are made; one of them is substantially lower than the others. The contractor who puts in this bid is, it seems, legally entitled to the award of the contract, but he is now confronted with a formidable document—carefully prepared, ironclad articles of agreement containing requirements and limitations not mentioned in either the specifications or the notice to bidders accompanying their invitations. Is the lowest bidder, in this case, obliged to sign such articles of agreement? Should not the articles of agreement simply coincide in all particulars with the specification, or be filled out and appended to the specification as the form in which all bids must be presented? Does the lowest bidder, in this case, make void his legal claim to the award of the contract by a refusal to sign articles of agreement which, as his legal counsel advises him, contain provisions not made plain in either the specification, the notice to bidders, or the letter inviting him to bid? The form of contract adopted by the joint committee of the American Institute of Architects, the Western Association of Architects, and the National Association of Builders, contains the following clauses:

"4. The Contractor shall, within twenty-four hours after receiving written notice from the Architect to that effect, proceed to remove from the grounds or building all materials condemned by , whether worked or unworked, or take down all portions of the work which the Architect shall condemn as unsound or improper, or as in any way failing to conform to the drawings and specifications, and to the conditions of this contract. The Contractor shall cover, protect and exercise due diligence to secure the work from injury, and all damage happening to the same by neglect shall be made good by ."

"5. The Contractor shall permit the Architect , and all persons appointed by the Architect , to visit and inspect the said work or any part thereof, at all times and places during the progress of the same, and shall provide sufficient, safe and proper facilities for such inspection."

Suppose now that the accepted bidder has signed this contract, and that the person appointed to inspect the materials and the work during its progress turns out to be one who seeks to obstruct the work by undue, useless, unfriendly and annoying inspection, or by arbitrary and unjust condemnation of materials, or of work which has been done strictly and honestly in accordance with the drawings and specifications. What is the contractor's remedy?

Under the conditions imposed by the clauses quoted, has an inspector unrestricted and absolute power to reject or approve materials or work, so that he may wait until all the work has been done before he rejects materials; or is there some equitable principle of law which screens an honest contractor in performing exactly what he expected to do—what he had just reason to expect when he made his proposal?

In cases wherein several parties are requested to estimate upon work furnishing each his own specification, and wherein each estimates upon a different class of materials and different construction, who is to be considered legally as the lowest bidder, and what are his rights as such?

In a case wherein several contractors have been invited to estimate upon identical specifications and drawings, and wherein some uninvited "dark horse" comes forward with specifications and drawings independently prepared, underbids all of the invited bidders, and has his offer accepted—is he legally the lowest bidder? If not, what are the rights of the "lowest invited bidder"?

Has an invited bidder, uninformed otherwise before making his bid, the presumed legal right to assume that the lowest bidder will have the contract awarded to him, unless the right to reject any and all bids is specifically reserved in the notice to bidders?

These are points of interest, not only to contractors, but to all supervising architects and engineers, and to building committees. The writer's experience with architects and engineers ranking high in their professions leads to the unavoidable inference that the large majority of them are fair, just men, incapable of taking advantage of contractors who honestly carry out the provisions of their specifications; unfortunately there are exceptions, but exceptions to integrity are much more numerous among contractors and engineers, and architects are not to be blamed because they take every means to fortify themselves against "scamping." But it seems that the character, reputation and commercial standing of competing bidders ought to be ascertained before invitations to bid are sent out; and that fairness and commercial, if not legal equity demands that, once the invitations are made, each bidder should stand on exactly the same level, except in a case wherein intervening commercial embarrassment or bankruptcy renders any one of the bidders incompetent.

There ought also to be some way of circumventing the "ways that are dark and the tricks that are vain" of the race of straw bidders. * * *

Mutual protection is, I take it, the basis of all equitable contracts. On the one hand, the supervising architect or engineer feels the necessity of fortifying himself against the possibility that a contractor may slight his job. It is for this that specifications are prepared, and that an honest, reasonable and just inspection, at proper times, is indispensable. I submit, on the other hand, that the proper time for

inspection of materials is when they are delivered. It is manifestly unjust that a contractor who has, in good faith, supplied a quantity of costly materials, supposing them to fully accord with the specifications, but which, unknown to him, may, perhaps vary therefrom in some minute particular, should be allowed to erect these materials, at additional cost, only to lose on both materials and work, through the final condemnation of the materials, after the work is completed.

THE ANSWER OF THE LAW.

The rights of the lowest bidder are to be determined in each particular case by the contract, either expressed or implied, entered into between the party who invites bids and the bidder who accepts the invitation. The lowest bidder can have no rights other than those agreed upon with the party to be bound. A public advertisement, by newspaper or otherwise, or a private invitation to a selected number, has never been held by any court of last resort in this country or in England to imply a promise that the lowest bid should be the bid selected; but such advertisements or invitations for bids are considered as requests for offers, and no contract is created and consequently no rights exist until an offer is accepted.

In some localities, where a certain person or firm has been found to excel all competitors in a particular line of work, injustice is sometimes done by a competition being asked for with the sole purpose of acquiring a basis of figures upon which to make a contract with the excelling person or firm. If the bidders had no knowledge that the competition was not *bona fide* and could show that their bids were obtained solely for the purpose of making the lowest possible contract with a previously chosen party, they might recover damages for the time spent in preparing the bids; but as in most cases of this kind the existence of such a state of affairs is an open secret, would-be bidders have the choice of remaining out of a competition which exists in name only, or of putting in a bid in the hope that it may prove so low that the more fortunate rival will not care to come down to it; a hope which generally proves futile, as usually he is better equipped to do the work than the other bidders, and is able and willing to make as low terms as any one rather than give up the job.

In the recent Massachusetts case of McNeil vs. The Boston Chamber of Commerce the facts were as follows: The Boston Chamber of Commerce having voted to build, a building committee was appointed who soon after their appointment selected as their architect one of the leading firms of architects in Boston. After a consultation between the building committee and their architects, the committee invited five of the leading builders in that part of the country to submit bids for the new Chamber of Commerce building, upon plans and specifications made by their architects. Four of these five builders, after inspecting the plans and specifications and the notice to bidders attached to the specifications, declined to submit bids. The building committee then called a meeting of the builders at the rooms of the committee at which all five builders were present, as were also the committee and one of the partners of the firm of architects; the four builders said they would not bid unless the committee would agree that the lowest bidder should have the contract, if the building were built substantially in accordance with the plans and specifications then made by the architects; at the trial before the jury the four builders testified that the committee agreed to the proposition. Some other matters were discussed at the meeting, and the builders went away satisfied. In a few days they again called at the office of the architects and got copies of the specifications and made bids; attached to the specifications, being the first page thereof, was a "notice to bidders." This was the same notice which was attached to the specifications seen by the builders before their refusal to submit bids, with some of the modifications agreed upon at the meeting noted upon it. Among other things the notice to bidders stated "the building to be let to the lowest bidder"; and farther down the page "the building committee of the Boston Chamber of Commerce reserves the right to reject any and all bids." By agreement the bids were opened in the presence of the five bidders; McNeil's was the lowest. The committee announced that they reserved their decision. Several days afterward they requested McNeil to make certain reductions in his bid, some of which he did make, but others which he was asked to make without any corresponding change in the specifications he did not feel as if he could make, and so informed the committee. The next day the five bidders received notice from the building committee that all the bids were rejected, and they were asked to submit bids in a new competition on plans and specifications substantially like those already bid upon. McNeil immediately wrote to the building committee, claiming the contract by virtue of the oral agreement entered into at the conference of the builders with the building committee, to wit: that the lowest bidder should build the building if it were built substantially in accordance with the plans and specifications then furnished by the architects; the three other builders who had at first refused to bid, now refused to submit new bids, and insisted that McNeil alone had the right to the contract to build the building. The building committee ignored McNeil's claim and proceeded to make a contract with the party to whom the other builders were suspicious the architects intended the contract should eventually be awarded after the form of a competition had been gone through with. (In justice to the architects it should be said that they testified that they had no such intention.) The specifications, made a part of the contract, were substantially the same as those figured upon by McNeil, the principal changes being a reduction in the number of piles under the foundation, the architects having discovered that more than were necessary had been required in the specifications as first prepared, and a change in the material of the façade of the building.

At the trial of the case in September, 1890, in the Supreme Court, before Mr. Justice Holmes and a jury of more than average

intelligence, all of the builders, except the one to whom the contract was given, testified that at the conference between the committee and the builders, the committee agreed that the contract for the building, if built, should be given to the lowest bidder. The representative of the builder to whom the contract was given who was present at the conference was called by the defendant and sworn, but was not put on the witness stand. The building committee denied that they had agreed to give the building to the lowest bidder, and insisted that they had never given up the right to reject all bids reserved to them in the notice to bidders attached to the original specifications, which clause appeared also in the modified notice to bidders attached to the specifications figured on by McNeil. The defendant further denied the authority of the building committee to make a contract for the building without the approval of the board of directors, and said that the board of directors had not given such authority and had not approved any contract, if any were made. It was denied also that the contract as finally awarded was for a building substantially the same as that figured on by McNeil. By consent of parties, five questions of fact were submitted to the jury; they were as follows:

1. Did the committee on building purport to make a contract on behalf of the defendants by which they agreed to accept the lowest bid in case the building was built substantially in accordance with the plans and specifications submitted, without reserving the right to reject bids in that case?
2. If such contract was made, was it approved by the directors?
3. If such contract was made, was it within the ostensible authority of the committee?
4. Was the building, as finally contracted for, a building substantially in accordance with the said plans and specifications?
5. If the plaintiff is entitled to recover, what are his damages?

The jury answered "yes" to the first four questions and placed the damages at \$14,500. McNeil's original bid was \$400,000, which was reduced to \$370,280 to correspond with certain changes in the specifications. The court ruled that as a matter of law the plaintiff could not recover and reported all the evidence in the case to the full bench, who decided that the jury were justified in their findings, and that the fact that McNeil figured on specifications to which was attached a notice to bidders containing a clause reserving to the committee the right to reject all bids, did not vary the terms of the oral agreement made at the conference, that the lowest bidder should have the contract; accordingly they ordered judgment for the plaintiff for the amount of the verdict of the jury.

But the case comes very close to the line, as will be seen by the following case decided by the same court some years ago. A town passed a vote at town meeting directing the selectmen to build a sewer of certain dimensions, the job to be advertised in the newspapers and let to the lowest bidder. The board of selectmen accordingly advertised for proposals for building a sewer; the advertisement directed persons desiring to bid to call at a place designated for specifications of the work to be done. A, in answer to the advertisement, called and received the specifications and put in a bid on them. The specifications contained a clause reserving to the selectmen the right to reject all bids. A's bid was the lowest of several bidders, but all the bids were rejected by the selectmen as being too high. A brought suit against the town and obtained a judgment, but upon appeal the Supreme Court of Massachusetts set the verdict aside, and held that the plaintiff had no cause of action. The decision was made upon the ground that the dimensions of the sewer called for by the specifications did not correspond with the dimensions of the sewer which it was voted at town meeting to build; but the court went on to say that even if this had not been so, the fact that A had made his bid upon specifications containing a clause reserving to the selectmen the right to reject all bids was conclusive against A's right to recover, as the specifications were essential to and constituted a part of the contract, and A having figured on them he must be held to have assented to the terms contained therein.

Having been requested to discuss, from a legal standpoint, certain questions raised by Mr. Leicester Allen in the first part of this article, they will be taken up, so far as feasible, in the order raised by Mr. Allen and reviewed briefly in the light of a recent and quite exhaustive search of the authorities on the subject of the rights of bidders and contractors. The question is asked, "What, in the eye of the law, constitutes a *lowest invited bidder*?" As a bid can be high or low only as measured by some fixed standard, it necessarily follows that all bids in an invited competition must be upon the same specifications and conditions, and the lowest legal bid in an invited competition is the one which names the lowest price for all the requirements of the specifications.

The next query is, If A, B, C and D upon an invitation put in bids on the same specifications and the contract is awarded to D, how are the others to legally ascertain whether D was the lowest bidder? As has been pointed out earlier in this article, A, B and C have no legal rights by virtue of their having put in bids, unless the person asking for the bids has agreed that the lowest bidder shall have the contract; if that has been done, an agreement that the bids should be opened and read in the presence of all the bidders would, in all probability, obviate the arising of any question of this nature; but in case such a question should arise, the remedy of A, B or C would be an action at law against the person who invited the bids, alleging the agreement that the contract should be given to the lowest bidder, and claiming that the plaintiff's bid was the lowest and asking for the damages suffered by reason of the contract not being given him; or an application might be made to a court of equity, praying for an injunction restraining the party who invited the bids from executing the contract with D, and asking that the court order the contract to be executed with the lowest bidder, as agreed. If there is an agreement that the lowest bidder shall have the contract, and the contract is awarded to D, whose bid did not conform to the specifications, that one of the other three, A, B or C, whose bid was the lowest

and in conformity with the specifications, would be entitled to the contract, and would have a good cause of action at law to recover damages for the non-execution of the contract with him. In case two bids in such a competition prove to be for the same amount, and lower than all of the others, the contract could not be awarded, as the agreement was that the lowest bidder should have the contract, which, being impossible in this case, becomes void, for impossibility of enforcement. A lowest bidder who is, by agreement to that effect, entitled to the contract, cannot be compelled to sign any articles other than those agreed upon, nor will he waive or render void his legal rights by a refusal so to do; one party to the contract cannot add to its terms without the consent of the other.

The contractor's remedy for unreasonable inspection and a consequent withholding of the whole or a part of the contract price is an action of contract to recover the price agreed upon. The issue of fair inspection is then directly raised, and if the work or material can be shown to reasonably comply with the requirements of the specifications, the contractor will be entitled to receive the amount withheld. Inspection must be reasonable and made at a proper time or else the contractor should receive the contract price. In matters purely of taste, such as for example the fit of a suit of clothes, or the style of a carriage, if the agreement is that the work shall be done "to the satisfaction of" the purchaser, it is a complete defense to an action to recover the price if the defendant says, "I am not satisfied," and he may be as whimsical and captious as he chooses; but where work is done or materials furnished according to specifications, and inspection is stipulated for, the inspection must be reasonable, and the contract price may be recovered if it can be shown that the work or materials reasonably fulfill the requirements of the specifications; if there were no specifications it is sufficient to show that the work or material was reasonably fit and proper for the purposes intended. For example, A agreed to furnish and B agreed to buy a million of brick for sewer work, the brick to pass C's inspection, the work being done for C, by B under contract; an inspector employed by C condemned the brick as unfit for the work. A brought suit against B, showed by expert evidence that the brick were suitable for the work, and also that at about the time that the inspector condemned the brick there was a fall in the price of brick, so that B was able to purchase of other parties for less than he had agreed to pay A. It was held in this case that A could recover damages of B for failure to take the brick, although they had been condemned by the inspector.

Where the specifications bid upon are different in each case, there can be no competition, and consequently no lowest bidder, within meaning of the term as used in this article. The lowest bidder, as was stated at the beginning of this article, has no rights simply by virtue of his bid being the lowest; his rights, if any exist, must rest upon a previously made agreement. There is no doubt that in many cases competitions are unfair and contractors spend fruitlessly much valuable time in preparing bids for them; but there is no protection for them in the law, except for loss of time, where fraud can be proved, unless they first protect themselves by some such agreement as the builders in the McNeil case forced the building committee of the Boston Chamber of Commerce to make. Such an agreement protects both parties.

The Rights of the Lowest Bidder from the Point of View of the Architect.

BY DANKMAR ADLER, ARCHITECT.

THE architect is the representative and agent of a client who is about to erect a building under the professional care and guidance of the architect, and which it is the desire of the client to build in the best manner possible and with judicious economy of time and money.

When the architect receives proposals from contractors, he receives them, not for the sake of giving a certain number of contractors an opportunity to drill themselves in the reading and interpreting of plans and specifications and in the taking out of quantities and in estimating the probable cost of work, but because he wishes to obtain for his client such information as will enable him to determine whom to employ as contractor, and what should be the lowest reasonable compensation for the services to be rendered by such contractor.

It is the duty of the architect, in receiving proposals, to endeavor to confine the selection of bidders to those who are, to the best of his knowledge, well qualified to the kind of work required by his client in each particular case. If he has been successful in the selection of bidders and all are equally well qualified to do the piece of work in hand, then it is the duty of the architect to his client and to the contractors who have expended time and skill upon the making of the proposal, to award the work to the lowest bidder. This is also a duty which the architect owes to himself and to the general mass of his clients—a duty from the consistent and continuous faithful discharge of which every client of the architect reaps benefit—that it be known to contractors that the awards of contracts habitually made by the architect are fair and just, and that, where other things are equal, contracts are invariably awarded to the lowest bidder.

Architects are, however, frequently placed in an embarrassing position by the peculiar attitudes of "enterprising contractors." For many contractors are profuse in their offers to make estimates and submit proposals upon all work which comes up in the architect's office, regardless of whether the architect believes them to be qualified for doing that particular kind of work or not; and others, fortunately less in number, are persistent in demanding, as an inalienable right, that they be called upon to make estimates upon everything that is to be done in the architect's office. It requires, in many

instances, a display of quite a degree of moral courage on the part of the architect to refuse the many tenders of proposals and the many demands for the right to make them, which if accepted or acceded to, would create in the case of each building a mob of bidders of every shade of capacity and incapacity, of every gradation from extreme responsibility and respectability to utter irresponsibility.

I hold that in cases of this kind, that is, where contractors voluntarily tender their services as bidders, or insistently demand that they be accorded the alleged privilege of becoming bidders upon work in the architect's office, there is no obligation on the part of the architect or his client to award the contract to the lowest bidder. In such cases the contract should be let to the best bidder, by which I mean that it be awarded to the bidder who presents the best record as to capacity to do the work well, and to do it in the time required, and whose proposal appears upon careful canvass of the situation the most favorable to the client. If contractors wish to insist upon being awarded contracts when they are the lowest bidders, they must first learn to refrain from indiscriminately tendering their services as bidders to architects or their clients, and still more must they refrain from the practice of demanding the right to bid on a given piece of work.

An embarrassment which frequently confronts the architect is this: Assume that there has been an ideal competition, that is, one participated in only by those selected for their special qualifications in connection with the particular kind of work to be done, and that all have figured carefully and have handed in their proposals, so that in equity and justice the contract should be awarded to the lowest bidder. But there may be among the bidders one who, though not the lowest bidder, is given a preference by the client because upon previous occasions he has served the client or one of his acquaintances or friends in a particularly satisfactory manner, or to whom such preference is extended because of some peculiar business or social relationship. In such cases the architect can hardly fail to remember that the affairs of this world cannot be carried on according to an ironclad and unalterable rule; that the "personal equation" necessarily plays an important part in the transactions of life; that if a given contractor has been fortunate enough to make firm friends, advocates and allies by unusually satisfactory performance of previous contracts and engagements, or by his personal amiability, or by the possession and exercise of any one or more virtues and amenities of conduct, it seems wrong that any stern decree of justice should deprive him of the business advantages which his personal qualities have won for him. It has been my practice in all cases of this kind not to disregard any apparently well founded preferences of my clients. But I have never endeavored to cloak these preferences, and by false reports of the actual status of the bids to create false impressions, but have frankly told the lowest bidder why my client saw fit to exercise his privilege of preferential selection, and have called attention to the fact that perhaps he, the rejected bidder, also has friends from whom some day he expects the same preferential treatment. I have never found that where a statement of this kind has been frankly made to a contractor, any serious fault has been found.

By way of conclusion and summary, the position of the architect toward the lowest bidder may be stated thus: The architect wishes to extend his business, which he can only do by obtaining new clients. He can get new clients only by serving exceptionally well those he already has. He can do this best—assuming of course that his office work is properly done—by intrusting the execution of the work placed in his charge by his present clients to the most capable and honest contractors and to induce these to do the work at the lowest possible price. The only inducement which the architect can offer contractors of the highest standing is the certainty that they will receive fair dealing at his hands, and the first opportunity for fair or unfair dealing in the relations of client, architect and contractors is in the taking of proposals and awarding of contracts. If contractors generally know that a given architect will treat them fairly when they make proposals upon work in his office, they will do all in their power to serve him and his clients faithfully and well, and will begin this effort by making their proposals lower than would be the case had they no confidence in the architect's sense of fairness and justice.

Therefore, the tendency of the policy of every right-minded architect is toward fairness in handling competitive bidding, and it is safe to assume that where, in cases like those before enumerated, contracts are awarded by clients with the architect's consent to parties who are not the lowest bidders, that such action is taken without any intention of breaking in upon a general policy of fair dealing and rectitude.

A SPECIAL train quite recently carried an invited party of the especially interested to witness the initial experiment with the Columbian movable sidewalk at the World's Fair grounds. A section of sidewalk of considerable dimensions was then started and is now in operation. The sidewalk consists of two strips of moving platform so placed that one may step from the ground or stationary walk upon the more slowly moving platform, and from that upon the more rapidly moving. The question of safety in stepping to and from the moving sidewalk seemed to be favorably settled, for elderly men and women, younger men and women, and children even, used the platforms, stepping to and from them with greatest ease, while no sign of danger made itself apparent. The capability of the moving sidewalk to accommodate great numbers was clearly demonstrated, together with the entire practicability of the scheme, and without doubt the sidewalk will do a great deal in aiding the masses to an economically comfortable and expeditious view of the widely separated features of the exposition, if, as they propose, the Columbian Movable Sidewalk Company do encircle the grounds with a continuous track about three and one-half miles long.

Meeting of Board of Directors A. I. A.

AT a meeting of the Board of Directors of the American Institute of Architects, held at the office of the Institute, No. 18 Broadway, New York, on January 9, 1892, there were present: President Kendall, Messrs. Hunt, McLaughlin, Eames, Carlin, Stone, Jenney, Illsley, Hardenburgh, Ferry, Mason and Adler.

It was decided after thorough discussion that the next convention be held at Chicago, at a time to be hereafter fixed in consultation between the Executive Committee of the Institute and the officers of the Chicago Chapter.

A number of communications relating to the organization and maintenance of state Chapters were received and a very full discussion of the subject had. It was decided that, inasmuch as the Board of Directors could not, without previous amendment of the Constitution and By-Laws, change the relations of the Institute to its Chapters, state or local, the Secretary was instructed to prepare a synopsis of the various communications received upon the subject by the directors and of the discussion had in this meeting, and transmit the same to all of the members of the Institute with a list of questions called up by the discussion, which questions when answered by the Fellows of the Institute, would enable the Board of Directors to formulate a policy and propose the necessary amendments to Constitution and By-Laws for submission to the Institute at its next convention.

The following were named as the Executive Committee for the ensuing year: President Kendall, Treasurer Treat, and Secretary Adler as ex-officio members, and Messrs. Hunt, Carlin, Stone and Ferry appointed by the president.

The following were appointed members of the Committee on Education: Prof. William R. Ware, Prof. N. C. Ricker, F. W. Chandler, C. Francis Osborne, Prof. Lang.

Committee on Uniform Contract was appointed, consisting of Alfred Stone, S. A. Treat and D. Adler.

Committee to formulate a Code for Competitions: Messrs. Hunt, Stone, Illsley, Burnham.

Permission was granted, upon application, for the formation of new Chapters in Brooklyn, New York; Denver, Colorado; Worcester, Massachusetts; Tacoma, Washington, Iowa and Minnesota.

Action upon the proposed Architectural Congress in 1893 was postponed, as the Committee appointed to investigate and report upon the matter asked for more time.

The Secretary was instructed to reissue to all Fellows of the Institute the circular relating to the proposed bill on Reforms in Architectural Practice in connection with government buildings, and transmit copies of the same and of Mr. Windrim's proposed bill.

The following resolution was passed:

"Resolved, That the Board of Directors of the American Institute of Architects hereby endorse the efforts made by the architectural societies in the various states of the union, to place the practice of the profession of architecture on a footing similar to that enjoyed by the professions of medicine, pharmacy and the law, and that the various Chapters of the Institute be requested to do all in their power to further the passage of the legislative enactments to that effect.

The secretary was instructed to prepare a synopsis of the minutes of this meeting, and transmit copies of the same to the various architectural journals.

New Publications.

DESIGN BY A. L. TUCKERMAN, New York. Wm. T. Comstock, 1891. Price 75 cents, postage free, to any part of the world.

The little essay with the above title is intended to put the young student of design on the right path as to methods and order of procedure in the actual practice of his art, to furnish him with a sort of chart or diagram of the various steps to be taken from the inception to the completion of the work and of the relative importance and just correlation of the several steps in the process. The author gives not so much rules as principles, and intends, not to supply the student with the technical learning necessary to make designs in any particular style or for any special purpose, but to give him such a comprehension of the meaning and processes of designing as will enable him to use systematically and effectively whatever knowledge or skill he may have, to set before him a code or creed for work so that he may start right and continue with economy of means to ends. The subject matter is, therefore, fundamental and is clearly and simply treated. The work taken as a whole constitutes, not a complete work, but a chapter suitable to begin or close a more thorough-going treatise.

THE WASHINGTON BRIDGE (known during construction as the "Harlem River Bridge" and "Manhattan Bridge") over the Harlem River, at New York City, a description of its construction; by William R. Hutton, chief engineer. Quarto, 100 pages; 63 plates; bound in cloth. Price, postage paid, \$8.00. Leo Von Rosenberg, New York—35 Broadway.

This elaborate volume will be of the greatest interest to engineers, and of incidental interest to all who deal with masonry and iron constructions. Mr. Hutton has given here the history of the undertaking from the inception of the project to its completion, comprising plans of the bridges first suggested for the site, of several of those submitted later in competition, of the bridge as contracted for and as finally completed. The work is shown by handsome albertype plates at twenty-six stages, and from such view points as to make the several processes plain. There are thirty-seven lithographs showing early plans, and details of executed plans, including construction of caissons, machinery, masonry, ironwork, false works, roadbed approaches, drills, derricks, etc. There is the full text of the specifications and extracts, and further explanation of special conditions met in the work and means adopted to solve new problems, together with tables of prices of materials and reports of extensive tests of the several kinds of materials. The bridge has a total length of 2,375 feet, and

the two central arches are of iron, with each a clear span of 510 feet. The bridge is thus a noteworthy structure. At the time of its completion there were few metal arches of equal span. The longest clear span of metal arch, without lower horizontal chord, is 542 feet, in the Garabil Viaduct over the Truyere, France. The estimates of proposed bridges for this site included several masonry structures, at an estimated cost of something less than twice the actual cost of the completed masonry and metal bridge.

A TEXT BOOK ON ROOFS AND BRIDGES. Part II, Graphic Statics, by Mansfield Merriman and Henry S. Jacoby. New York, John Wiley & Sons.

Part I of this work, published some time since, dealt with the computation of stresses in roof trusses and in all the common styles of simple bridge trusses; to the third and fourth parts are assigned "the design of a bridge, which includes the proportioning of details and the preparation of working drawings," and "the discussion of cantilever, suspension, continuous and arched bridges"; and this second part treats of the analysis of stresses by graphic methods. The authors, who are respectively professor and instructor of civil engineering in Lehigh University, do not profess to have set forth much that is new in an elementary work, but call attention to the arrangement and presentation of the matter, "to the abbreviated processes employed in some of the diagrams for wind stresses, to the determination of stresses due to initial tension, and to portions of the analysis of maximum moments and shears under locomotive wheel loads as possessing points of novelty and practical value." The time has gone by when it is needful to point out the value of the graphic method, whether for original solution of the problem or for a check upon a theoretical solution. It only remains to say that the authors have done their work well; the subject is treated amply from various standpoints, for determination of maximum and minimum stresses, for various kinds of loading; and the book will be found to be a satisfactory working treatise.

Our Illustrations.

Office building for the Chicago Title and Trust Company, Chicago; Henry Ives Cobb, architect.

Design for the Mercantile Club building, St. Louis, Missouri, as finally approved; Isaac S. Taylor, architect.

Illustrations of article, Architecture and Allied Arts, "Door of St. Anne, Notre Dame, Paris," and "Choir screen, Chartres Cathedral."

The summer residence of Col. B. W. Wrenn, Frontenac, N. Y., on the St. Lawrence River; Frank H. Taylor, artist and architect. Two views are given: an exterior and interior.

Accepted design for the Carnegie Library Building, Pittsburgh, Pa.; Longfellow, Alden and Harlow, architects. Reproduction from photograph by W. S. Bell of the architect's drawing, through the courtesy of A. Y. Lee.

PHOTOGRAPHURE PLATES.

(Issued only to subscribers for the Photographure edition.)

Residence at Rochester, N. Y.

Residence of C. H. Angel, Rochester, N. Y.

Residence at Philadelphia; Wilson Eyre, Jr., architect.

Residence of J. D. Allen, Chicago; Holabird & Roche, architects.

First Regiment Armory, Chicago; Burnham & Root, architects.

Description given in Vol. XIII, No. 7, page 90.

Residence of H. R. Wilson, Chicago; H. R. Wilson architect. Two full-page plates are given, as follows: view in parlor; view in dining-room.

The Pope building, Boston, Mass.; Peabody & Stearns, architects. First story is of light Indiana stone; the stories above are of light creamy brick and terra cotta detail of about the same tone of color.

Personal.

A UNION of two architects, John H. Coxhead, of St. Paul, and W. W. Carlin, of Buffalo, with offices at the latter city, is one of the probabilities, if not already a fixed fact.

ARCHITECT D. C. Ernest Laub, of Gordon & Laub, of San Antonio, the designer of the Texas state building of the Columbian Exposition, was in Chicago recently, and placed before the Chief of Construction one of the handsomest of all the state buildings.

THE Boston firm of Shepley, Rutan & Coolidge have decided to abandon all offices in other cities, and have established one in the Gaff building, Chicago, which will be in charge of Mr. Coolidge. The high standing of his firm and Mr. Coolidge's genial personality will make his presence most welcome in Chicago architectural circles.

THE Ohio chapter of the American Institute, at the request of the State Commissioners for the Columbian Exposition, appointed a committee to procure a design for a state building. James W. McLaughlin, of Cincinnati, was chosen, and that architect, together with J. W. Yost, of Columbus, and George W. Rapp and John Boll, of Cincinnati, were recently in Chicago.

MR. BARR FERREE, of New York, recently spent a few days in Chicago collecting notes for an article for an eastern journal upon Chicago architecture. The first installment has appeared, probably as an introduction, as the author says: "This is not architecture, it is Chicago." However well that gentleman can write upon architectural subjects, and his work in this line is always correct, and displays wide knowledge of architecture, his comments upon the city in general are as funny as anything written after a similar hasty visit, by a Dickens, a Max O'Rell or a Kipling. Like a distorted perspective, you recognize the place but wonder how so capable an artist could make so inaccurate a drawing.

Building Outlook.

OFFICE OF THE INLAND ARCHITECT, }
CHICAGO, January 19, 1892.

Because of the negligence and lack of system prevailing in so many cities and towns throughout the country, it is impossible to gather reliable statistics regarding building operations, and, therefore, approximations and general statements must be made in a summing up of the results of the past year. Throughout the entire year enterprise felt that the brakes were partially on, that caution was in mind, that apprehensions of overdoing were prevalent. This feeling was the very natural outcome of the great London failures of the previous autumn, and to the unsettled feeling which was imparted to business throughout the commercial world. Besides, the notion began to have some force that in this country we had reached a convenient place to breathe a little and recover ourselves. Besides, all prices showed a declining tendency and labor was restless. Investors and the banking interests looked askance at the situation, and thought there would be nothing lost by going easy for a while.

Out of all these conditions and opinions came the year's business, larger in volume by far than was generally anticipated at its opening. The immense crops came in time to strengthen confidence, and to turn the tide of gold this way. Out of this will probably come increased activity, and enterprise, heavier investments, and a general hardening of values. Labor may, and probably will take advantage of improving conditions to make demands that will intercept the smooth flow of business enterprise. In cities, conditions are generally favorable to continued activity in building, and in the smaller towns, so far as reliable information can be had, especially in the agricultural sections, there will be even more building than during the past year. The possibility of slightly higher prices for building material is recognized, but the heavier operators will make early provision for their requirements. In fact, this early buying and contracting for supplies seems to be assured in many channels. Lumbermen will not enter the spring trade with unwieldy stocks, and in trade circles strong prices are expected. In the iron and steel branches prices are very low, and much business of the early months of 1892 will be done on the basis of present prices. In general manufacturing, among the greater and lesser industries there is confidence and evidence of coming activity. Throughout the South prosperity is general, but not of a very stimulating character because of the abnormally low price of cotton. Throughout the West there are evidences of a general expansion of demand, which help all manufacturing and building interests. Our financial situation is strong, but needs more strength. The financial needs of the people are far from being met, and those who control our financial policy seem to regard the question more as a political than an economic or financial one. Never were our agricultural and manufacturing interests so evenly and healthfully balanced. Raw material of all kinds and manufactured products of almost every description have been crowded down to a low level. There are probabilities of greater railroad building in 1892 than last year, heavier mining operations, and a greater spread of manufacturing interests. The region west of the Mississippi will attract more capital and enterprise than ever, and already the evidences of this coming activity are felt in monetary, manufacturing and jobbing circles.

Synopsis of Building News.

Architects are invited to furnish for publication in this department monthly or occasional reports of their new work before the letting of contracts. Reports of buildings costing less than \$5,000 are not published.

Baltimore, Md.—The Women's College will erect two new buildings at a cost of \$150,000.

Architect Charles E. Cassell: For William A. Moale, a nine-story apartment house, size 51 by 126 feet, brick and stone; cost \$200,000.

Buffalo, N. Y.—Architect W. H. Archer has prepared plans for the new Java Center Academy and Union School, Java Center, New York. The building is classic in design with handsome cupola on roof, with large portico entrance and pediment. Front, frame, brick and stone, two and one-half stories with basement. It comprises schoolrooms, classrooms, lavatory and wardrobes and four entrances. A spacious staircase leads to an assembly hall, 32 feet by 49 feet, having paneled ceiling. The schoolrooms have blackboards and chalk-rails, are wainscoted, have floors of maple and is complete in every respect, is amply lighted and ventilated and heated by hot air.

Chicago, Ill.—Architects Lamson & Newman: For Goodhart Bros., on Winchester avenue, near Polk street, a three-story store and flat building, 45 by 82 feet in size; cost \$13,000. Pressed brick and stone front, with galvanized iron bay windows, gravel roof, hardwood finish and all improvements.

Architects Small & Bishop: For P. W. George, on Sixty-first street, near Stewart avenue, a three-story flat building; to have pressed brick and stone front, gravel roof and all improvements; cost \$20,000.

Architect W. L. Carroll: For W. T. Burgess, on Paulina street, near Adams, a three-story flat building, of pressed brick and stone, gravel roof, electric bells, speaking tubes, etc.; cost \$10,000.

Architect A. F. Hussander: For A. V. Young, at Fairview, several eight-room frame houses; cost \$1,500 each. Also working on plans for a four-story and basement flat building; cost \$22,000. Stone front, gravel roof, stained, plate and beveled glass, electric bells, speaking tubes, etc.

Whitney & Starrett Company have taken out a permit for a twelve-story office building; to cost \$700,000; to be erected on the northwest corner of Fifth avenue and Washington street, at present occupied by the Times building.

Architect Charles Thisslew: For M. Barge, at 244 W. Division street, a three-story store and flat building, to have a front of Anderson pressed brick and stone, galvanized iron bays, gravel roof and all improvements. For P. M. Peterson, on W. Division street near Robey, a three-story flat building, to be of pressed brick and stone, with gravel roof, sanitary plumbing, etc. For C. Lewander, at 638 Wells street, a three-story flat building, of pressed brick and stone front, gravel roof, stained glass, sanitary plumbing, stone sidewalks, etc. For M. Gran, on W. Ohio street near Wood, a three-story flat building, of Anderson pressed brick and stone front, sanitary plumbing, etc.

Architects Clayton & Frazier: Preparing plans for a block of three-story stores and flats, to have a frontage of 250 feet, and cost about \$50,000; pressed brick and stone front, with galvanized iron bays, electric bells, speaking tubes, electric light, steam heat and all sanitary improvements.

Architects Shepley, Rutan & Coolidge are taking bids on foundations, walls and roof for the Art Institute building, to be erected on the Lake front park. It will be all of stone, with two very handsome fronts—one fronting on the lake and the other on Michigan avenue.

Architects Wilson & Marble: For E. Q. Griffing, three three-story and basement residences, to be erected on West Monroe street, stone fronts, slate mansard and gravel roof, stained, plate and beveled glass, sanitary and modern improvements; cost \$30,000. Also preparing plans for a three-story and basement residence, to be erected on Michigan avenue near Thirty-second street; it will have a brownstone front, slate mansard roof, hot-water heating, marble and tile work, and will cost \$25,000. For M. Stevenson, on Washington boulevard, a three-story flat building, 25 by 70 feet in size, to be of pressed brick and stone front, gravel roof, electric light, all sanitary improvements; cost \$15,000. For Doctor

Brown, at 3135 South Park avenue, a two-story residence, of stone front, gravel roof, slate mansard, hardwood finish, stained, plate and beveled glass. For same owner at same location, a two-story and basement livery stable of common brick; size 40 by 45 feet.

Architect L. G. Hallberg: For Thomas Dougall, on Cedar street near the lake, a three-story semi-detached residence, of stone front, gravel roof, hardwood finish, plate and beveled glass; cost \$15,000. For himself, on the northeast corner of Twentieth and Brown streets, a three-story warehouse, 100 by 110 feet in size; to cost \$25,000.

Architect Robert Rae: For William Smith, on Wabash avenue, south of Thirty-first street, a four-story flat building, 25 by 70 feet in size; to cost \$15,000: cut-stone front, hardwood finish throughout, gravel roof, electric bells, speaking tubes, etc.

Architect C. E. Quiner: For Dr. Goodsmith, on Fullerton near Sheffield avenue, three three-story residences; to have stone fronts, slate mansards and gravel roofs; galvanized iron bays; stained, plate and beveled glass; electric bells; speaking tubes; furnaces.

Architect J. L. Merriam: For M. Mortimer, at 2706 Dearborn street, a three-story and basement flat building; to be of pressed brick and stone front, galvanized iron bay windows, gravel roof, sanitary improvements.

Architect Julius H. Huber: For F. E. Brookman, on Roslyn Place, between Clark street and Lincoln Park, two three-story residences; to have stone fronts, hardwood finish, stained, plate and beveled glass, electric bells, speaking tubes, best of sanitary improvements.

Architect R. G. Pentecost: For Reverend Lewis Curtis, on Hammond avenue, South Evanston, a three-story frame residence; to have stone basement, sanitary plumbing, hardwood finish, electric bells, speaking tubes, steam heat, etc.

Architect J. C. Brompton: For Mr. Clough, on Wolcott street near Sunnyside avenue, Ravenswood, a two-story frame residence; stone basement, etc.

Architect Francis J. Norton: For George Detwiler, on East Ravenswood Park, south of Lawrence avenue, three three-story flat buildings, 62½ feet front by 63 deep; to have pressed brick and stone fronts, sanitary plumbing; cost \$18,000.

Architect Henry Ives Cobb: For syndicate, a six-story hotel, to be erected on Everett avenue, south of Fifty-fifth street. It will contain about six hundred rooms and cost \$400,000.

Architect John Hendricks: For V. Knobloch, corner of Ohio street and Lawndale avenue, a block of six two-story and basement stores and flats, 125 by 50 feet in size; to cost \$20,000; St. Louis pressed brick and stone fronts, gravel roof, sanitary plumbing, electric bells, speaking tubes, stained glass. For H. Beck, on Central Park avenue, near Garfield Park, three blocks of double three-story flats; size 45 by 50 feet each; cost \$24,000; St. Louis pressed brick with Bedford stone trimmings, gravel roof, sanitary improvements, furnaces.

Architect R. C. Berlin: For W. H. Colvin, Jr., on Forty-seventh court near Cottage Grove avenue, nine two-story and basement residences, 162 feet frontage by 54 deep; to cost \$40,000; pressed brick and Portage brownstone fronts, gravel roof, stained, plate and beveled glass, etc.

Architects Morrison & Foster: For James Reddy, on Fifty-fifth street and Cottage Grove avenue, a three-story store and flat building, to be of frame construction and cost about \$15,000.

Architect Perley Hale: For J. D. Horton, on Fifty-fifth street and Stewart avenue, a block of six three-story flat buildings; to cost \$50,000. Ashland brownstone fronts, gravel roof, sanitary improvements, stained and plate glass, gas fixtures, etc. For M. O. Leary, on Marshfield avenue near Polk street, a two-story flat building; to have cut stone front, stained, plate and beveled glass, gravel roof, slate tower, copper cornice, hardwood finish, etc.

Architects Treat & Foltz: For Doctor Chew, a three-story basement and attic residence; 30 by 68 feet in size; to cost \$20,000, to be erected corner of Astor and Scott streets; pressed brick, stone and terra cotta, slate roof, hardwood finish, etc.

Architect J. E. O. Pridmore: A three-story addition to Exchange building corner Van Buren street and Pacific avenue; also a seven-story building in the court. It will be of fireproof construction throughout; have marble wainscoting in all the halls, electric light, new system of sanitary plumbing, entirely new steam plant, new elevators which will be run from pressure tanks in the basement; cost \$100,000. It will be a modern first-class office building, complete in every detail, and will be known as the Traveling Men's Exchange and will be owned by a company of that name.

Architect Wm. Griesser: For Birk Bros., on Webster avenue and Ward street; a five-story stock house of fifty thousand barrels capacity; to cost \$30,000. For Crown Point Brewery, Indiana, remodeling and additions; to cost \$20,000. For Cleveland Brewing Company, Ohio, a stock house of brick, stone and iron; to cost \$10,000. For Jacob Baehr, Cleveland, Ohio, new brew house, stock house, wash house and storage house; to cost \$80,000. For Monarch Brewing Company, of Chicago, new stock house; to cost \$30,000. For C. Geiser & Son, Council Bluffs, Iowa, new brewing plant, main building to be five stories; cost \$150,000. For Malt Company, Peoria, Illinois, malt house (pneumatic) to be of three thousand bushels capacity per day. It will be three stories high, of brick, stone and iron, and cost \$30,000.

Architect J. N. Tilton: For H. Lewis, corner of Fortieth street and Cottage Grove avenue; a three-story store and flat building; 96 feet front by 60 feet deep; of pressed brick and stone; cost \$25,000.

Architect Wm. H. Drake: For Thomas Conlan and W. S. Foley, on Stony Island avenue and Sixty-ninth place; a four-story hotel; of pressed brick and stone; to cost \$40,000.

Architects W. W. Boyington & Co.: For Doctor Colburn and Doctor Taylor; two two-story basement and attic frame residences; to have stone basements, hardwood finish; cost \$15,000.

Architect D. A. Blythe: For L. P. Hammond, on Commercial street north of Lawrence avenue, Ravenswood; three two-story frame residences; to have stone basements, stained, plate and beveled glass, sanitary plumbing, furnaces; cost \$15,000.

Architect W. D. Cowles: For A. E. Kent, on Harrison street near Jefferson street; a six-story factory; 50 by 100 feet; to cost \$35,000. Pressed brick and stone front, steam heat, elevator, etc.

Cincinnati.—Reported by Lawrence Mendenhall: The season just closed, or rather closing, has been one of the most successful for many years for our city's building interests. The guardian angel of peace and harmony has exercised her powers in all directions, and the result should show to the army of malcontents and discord breeders the utter fallaciousness of strikes. But, as it has been said, "the biggest fool is a fool who does not know he is a fool."

The aggregate shown below does not show the true value of the building improvements during the past year of our city, and it is perfectly safe to add fully one-third:

	1891.	1890.
Total as per permits (est.).....	\$5,130,000	\$4,310,701

These figures also show a gratifying increase over last year's work. Our Builders' Exchange has taken a step forward in the direction of compiling building statistics of business done by its members. If it proves successful, it is intended to make the movement general, and thus our Exchange become a disseminator (as it should) of trade statistics. It has also declared itself in favor of an equitable lien law, which important subject will receive careful consideration at the convention of National Association of Builders, to be held in January in Cleveland.

Architects Nash & Plympton report: For Mrs. J. S. Cook, Cincinnati, Ohio (Myrtle avenue), a residence; materials: pressed brick, stucco, slate or tile roof, plate and stained glass, furnace, hardwood, laundry, plumbing, etc.; cost \$12,500. For Robert T. Miller, Esq., 632 Greenup street, Covington, Kentucky, a remodeling of his brick residence; to contain all modern improvements, probably costing \$5,000. For Miss E. G. Cook, Myrtle avenue, Cincinnati, a residence; materials: brick, frame, slate roof, pine finish, blinds, grates, mantels, stained glass, etc.; cost \$5,000.

Architects Des Jardin & Hayward have drawn plans for the Italian consul, Dr. A. Ravogli, Cincinnati; materials: pressed brick, stone foundations and trim, slate roof, hardwood, stained glass, mantels, furnaces, laundry fixtures, etc.; cost \$10,000. Also for Mrs. E. L. Rice (care architect), a residence; materials: brick, stone trim and foundations, slate roof, pine finish, mantels, gas, plumbing, stained glass, etc.; cost \$6,000.

Architects Saml. Hannaford & Sons report for H. Huhlman & Son a spice mill; materials: pressed brick, fireproofing, tin roof, elevator, steam heat,

machinery, plumbing and gas. Also for Mr. Geo. Hummel, stone contractor, Elder and Logan streets, Cincinnati; materials: stone, slate roof, hardwood finish, gas, plumbing, stained glass, laundry, wood mantels, etc.

Architect J. H. Kuckertz has drawn plans for a residence for George Kollmann, Norwood, Ohio; materials: brick, pine finish, tin roof, plumbing, gas, blinds, etc.; cost \$7,000.

Architect W. W. Franklin has prepared plans for Mr. J. C. Noyes, care of J. A. Fay & Co., Cincinnati; materials: frame, stone foundations, slate roof, gas, plumbing, stained glass, grates, mantels, etc.; cost \$10,000 for the two houses. Also for Dr. J. C. Thompson (care architect), a residence; materials: frame, slate roof, blinds, grates, mantels, stained glass, gas, plumbing, etc.; cost \$3,500.

Architects Crapsey & Brown have drawn plans for a church for the Presbyterians at Winchester, Kentucky; materials: stone, brick, slate roof, hardwood, frescoing, pews, stained glass, furnace, plumbing, etc.; cost \$25,000.

Architect J. W. McLaughlin has prepared plans for a church for the Baptist congregation at Cumminsville, Cincinnati; materials: brick, stone foundation, slate roof, gas, plumbing, plate and stained glass, grates, furnace, etc.; cost \$30,000.

Architect W. C. Lawrence reports for J. W. Jaynes, Cincinnati, two residences; materials: pressed brick, stone trim, slate roof, gas, stained glass, etc.; cost \$6,000.

Cleveland, Ohio.—Architect John Eisenmann: For the Bradley estate, a five-story store and power house, size 47 by 195 feet, brick; cost \$22,000; contractors Calleser & Moore.

Architects Coburn & Barnum: For the Western Reserve University, a three-story brick dormitory, size 44 by 45 feet; cost \$20,000; also for John F. Zabel, a three-story brick store and tenement building, size 58 by 68 feet; cost \$9,000.

Architect George O. Garnsey, of Chicago: For Charles H. Bulkeley, alterations and additions to theatre building, brick and stone, size 40 by 25 feet; cost \$25,000.

Architects' names not reported for the following: For L. M. Southern, two two-story frame dwellings, size 26 by 60 feet; cost \$12,000; and also a two-story residence, frame, stone foundations, size 26 by 54 feet; cost \$5,000. For the Brakes Wire & Nail Works, a one-story brick workshop, size 60 by 120 feet; cost \$16,200.

Denver, Colo.—Architects Varian & Sterner: For J. C. Seller, a three-story business block, stone and brick, size 50 by 125 feet; cost \$40,000.

Detroit, Mich.—Architect G. W. Lloyd: For William Wright, a four-story brick manufacturing building, on Fort street near Eighth; size 50 by 97 feet; cost \$15,000.

Architect Edward C. Van Leyen: For George T. Atery, a three-story hotel and Casino building; size 50 by 70 feet; to be erected on corner of East boulevard and river bank; to cost \$8,000.

Architects John Scott & Co.: For Pingree and Smith, a seven-story shoe factory, on Jefferson avenue near Wayne street; size 50 by 200 feet; cost \$85,000.

Architects Nelson & Oldfield: For A. B. Healey, a two-story store and flat building, brick; to cost \$6,000.

Architect T. W. Highland: For Colonel Fred E. Farnsworth, a two-story brick residence, on John and Frederick streets; to cost \$7,000. Also for Charles L. Farnsworth, a two-story residence in Highland Park; pressed brick, slate roof; cost \$7,000. And for Jacob Hammer, a two-story frame residence, on Heilen and Farnsworth avenues; cost \$5,000.

Architect J. G. Maclean: For Fred H. Mann, Windsor, Ontario, a two-story brick and frame residence, on corner of Park and Victoria avenues; to cost \$5,000.

2695 New buildings.....	\$5,015,900
701 Additions.....	641,800
Fuel, sheds, etc.....	9,525
Total of....	\$5,667,225

\$292,745 over 1890.

Milwaukee, Wis.—Of the eleven designs submitted for the new City Hall the committee have thrown out all except those of H. C. Koch & Co., Henry Ives Cobb, W. A. Holbrook, Rau & Kirch and Schnetzky & Liebert. These five will only be considered and it is expected a final decision will be made this week. The building is to be eight stories, and not to cost over \$600,000.

Architects Ferry & Clas have prepared plans for Schultz Bros., for a three-story furniture factory, size 50 by 120 feet, brick, stone and terra cotta trimmings; cost \$40,000.

The building gains during the past year have been something remarkable, being the greatest year we have ever known in the history of our city. Total number of permits issued during the past year 1,947, at a value of \$10,000,000.

Minneapolis, Minn.—The total number of building permits issued last year was 3,026, aggregating \$4,704,575. The plumbing permits amounted to \$241,017, and the electric permits to \$28,500. The suburban building amounted to \$500,000.

Pittsburgh, Pa.—Architects Longfellow, Alden & Harlow are the successful competitors in the Carnegie Library competition, their plans having been selected from over a hundred designs submitted. The building, which is to be in the pure Renaissance style, will be chiefly granite and the work commenced as soon as possible; cost \$700,000.

Architect J. Anglin: For W. F. Aull, a two-story residence; size 45 by 45 feet; brick with slate roof; cost \$9,500.

Architect George S. Orth: For Mrs. C. Vandevort, a three-story residence; size 40 by 45 feet; cost \$9,500.

Architects Scott & Peebles: For the twenty-second ward, a one-story school-house, on Linden avenue; size 70 by 80 feet; brick and stone; cost \$12,900.

The Building Committee of Christ M. E. Church offer rewards for the new church to be erected in the east end. The successful architect is to receive his commission, and the second and third choice will get \$200 each. The church, chapel and parsonage will be quite separate. The cost of the three buildings to be about \$200,000.

St. Louis, Mo.—Architect F. W. Folk: For Mrs. Hoskins, a two-and-one-half-story residence; size 28 by 35 feet; brick and stone; cost \$8,000.

Architects Shepley, Rutan & Coolidge: For H. Hitchcock, a two-story residence; size 46 by 50 feet; brick, stone foundation, and slate roof; cost \$25,000. Also for the Tiffany Real Estate Company, a brick warehouse; size 122 by 130 feet; cost \$75,000.

Architect J. H. Randall: For H. C. Hyman, a two-story residence; size 27 by 52 feet; pressed brick, stone foundation; cost \$6,000.

Architects W. S. Balson & Son have prepared plans for R. S. Martin, for a two-and-one-half-story dwelling; size 40 by 50 feet; cost \$7,000.

Architect A. M. Baker: For P. St. John, a two-story apartment building; size 27 by 50 feet; brick and stone; cost \$5,000.

M. Gordon will build a two-story residence, brick; size 30 by 43 feet; cost \$7,000.

Architect T. J. Quin: For T. W. Peters, a three-story residence, brick; cost \$10,000.

J. A. Scudder will build a three-story residence, brick and stone; cost \$11,000. Contractors, Clark & Witney.

St. Paul, Minn.—Architects Hermann Kritz & Co. have just completed plans for a three-story brick and stone apartment house, to be erected at a cost of \$65,000, on Summit avenue between Minnesota and Cedar streets; it will have a high basement, and will be supplied with steam heat, elevators and all modern appliances. The same architects are also drawing plans for a tannery, three stories in height, which will cost about \$30,000.

Architects Reed & Stem are drawing plans for the new St. Paul auditorium; the building will have a frontage of 300 feet on Seventh street and 150 feet each on St. Peter and Wabasha streets; part of the present market house will be utilized, making the cost not over \$120,000; the hall will have a seating capacity for 12,000, and is designed after that at Beyreuth, and the best features of the Chicago auditorium have been adopted.

The building permits issued in St. Paul during the past year numbered 2,408, and amounted to \$3,184,410. There was also about \$500,000 expended in the suburbs in residences and manufacturing plants.



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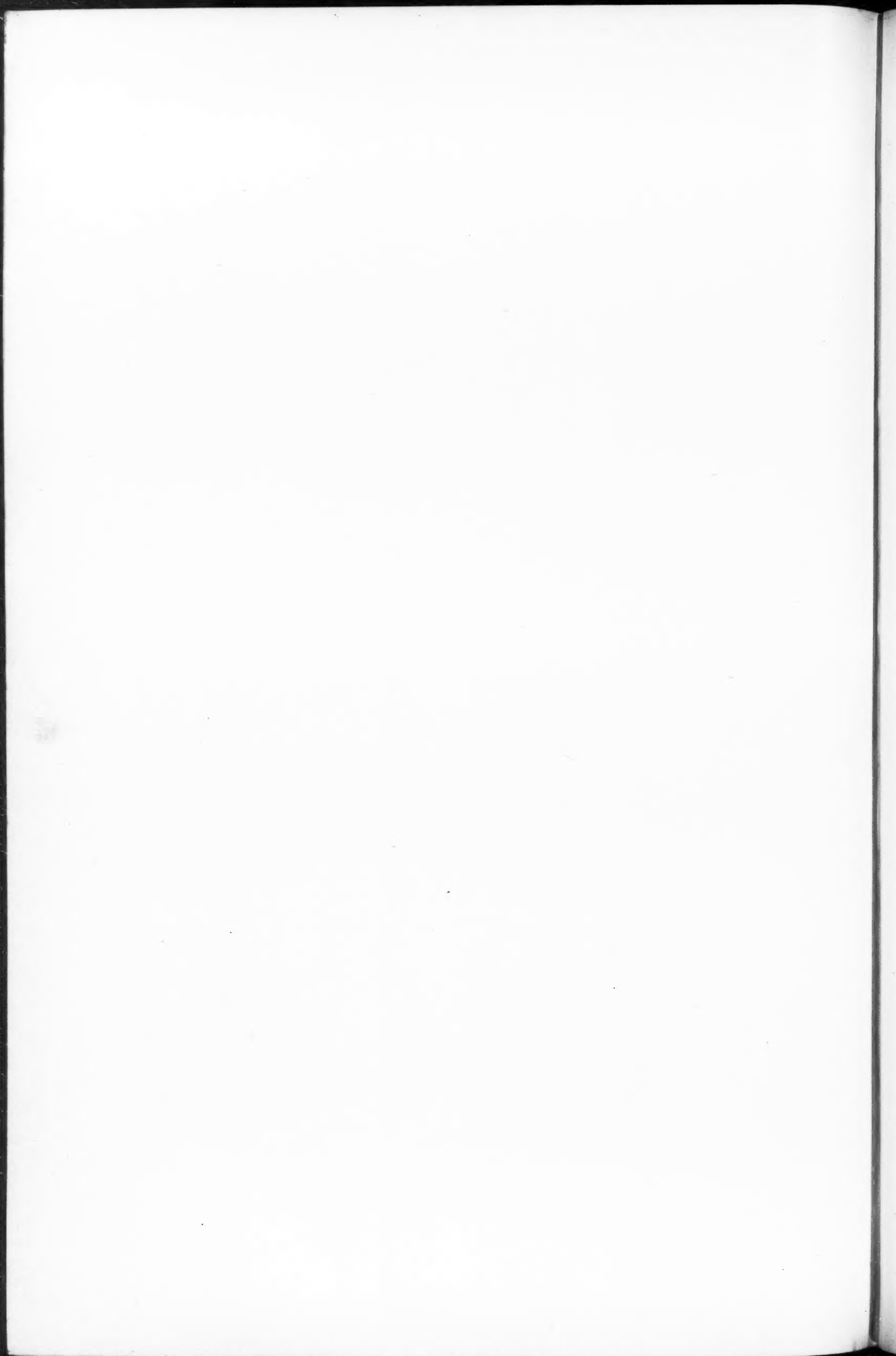
DOOR OF ST. ANNE, NOTRE DAME, PARIS.

IN ILLUSTRATION OF ARTICLE "ARCHITECTURE AND THE ALLIED ARTS" IN THIS NUMBER.



CHOIR SCREEN, CHARTRES CATHEDRAL.

IN ILLUSTRATION OF ARTICLE "ARCHITECTURE AND THE ALLIED ARTS" IN THIS NUMBER.

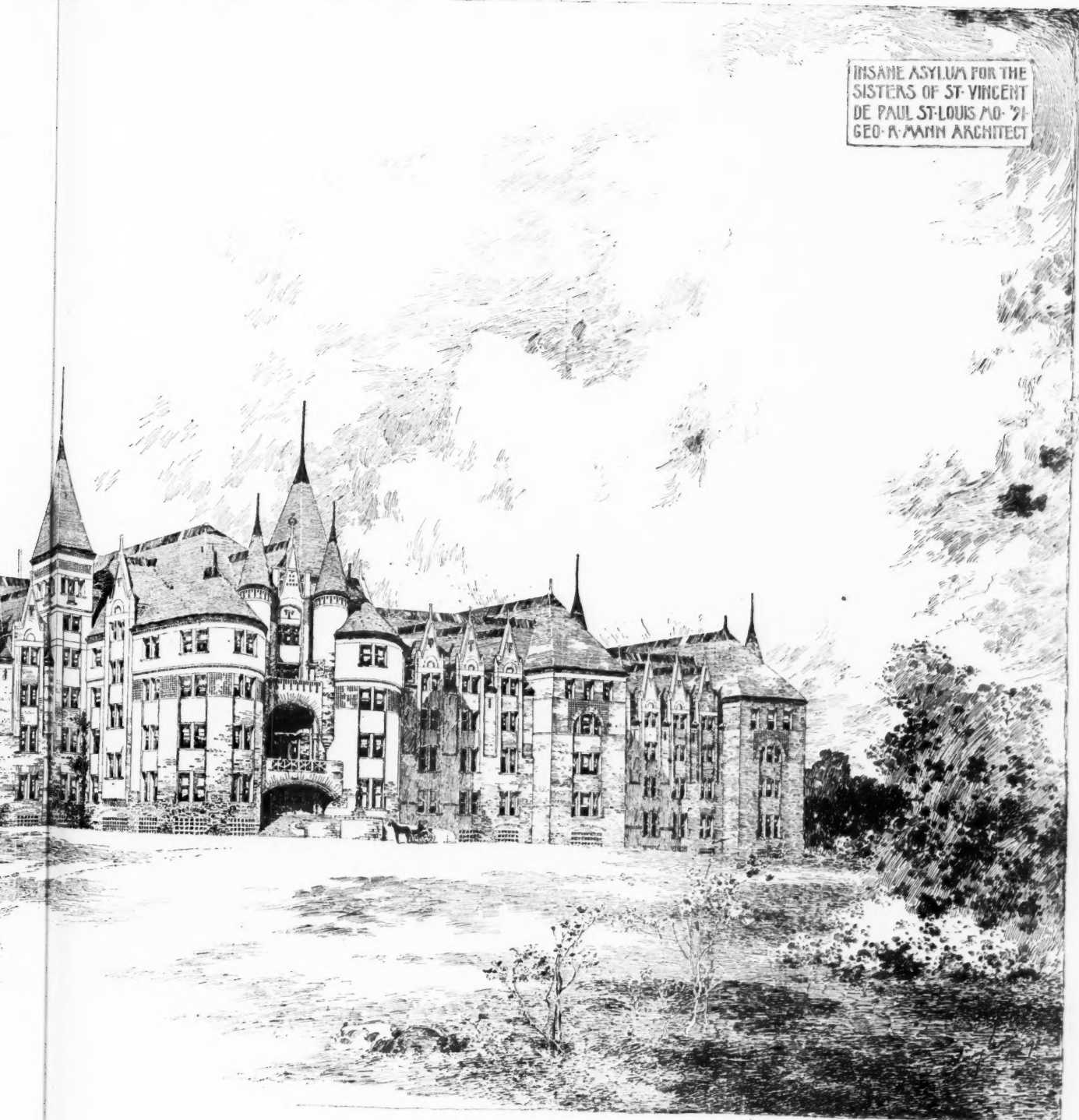




VIEWS OF SUMMER RESIDENCE OF COL. B. W. WRENN, FRONTENAC, NEW YORK,
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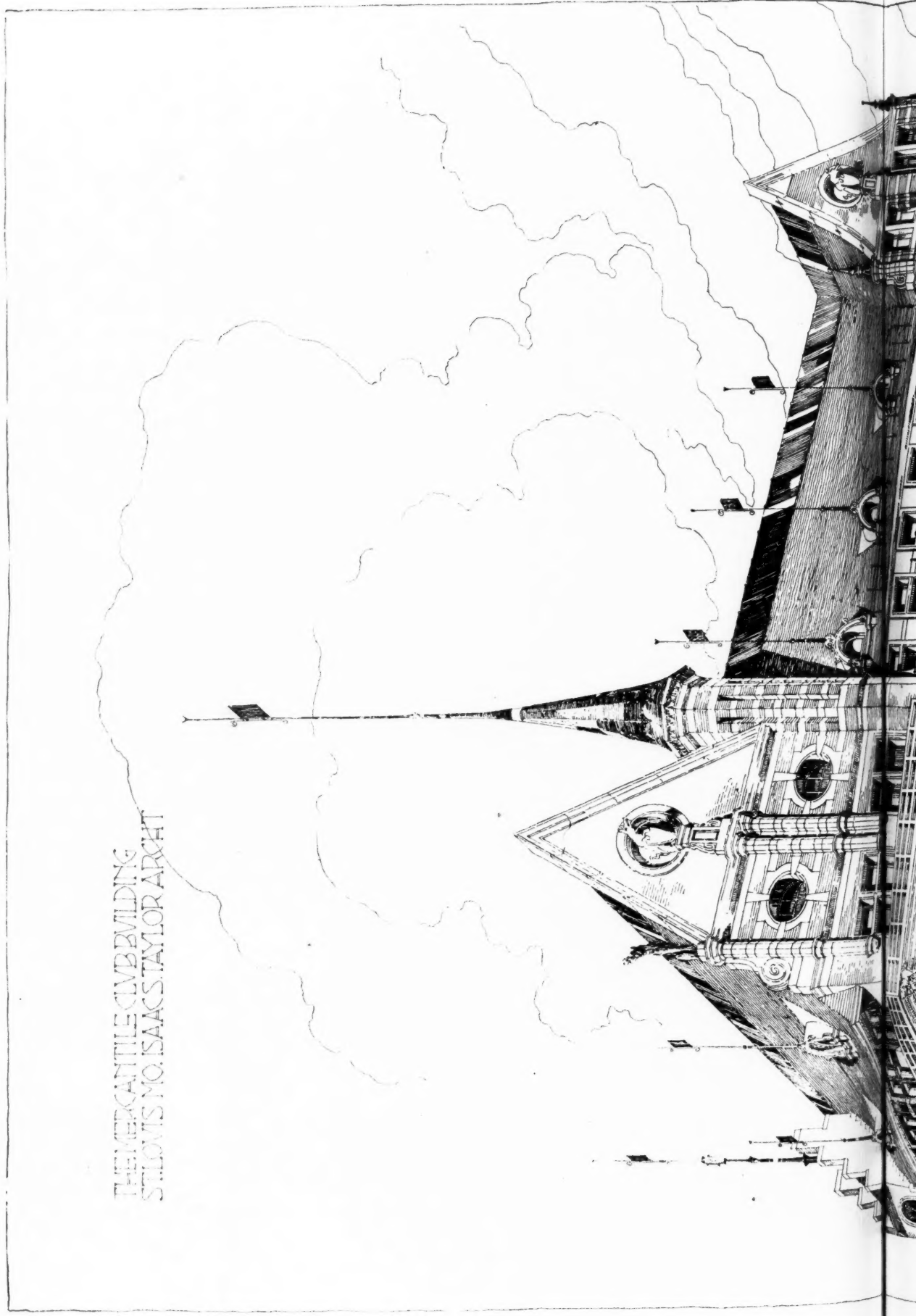
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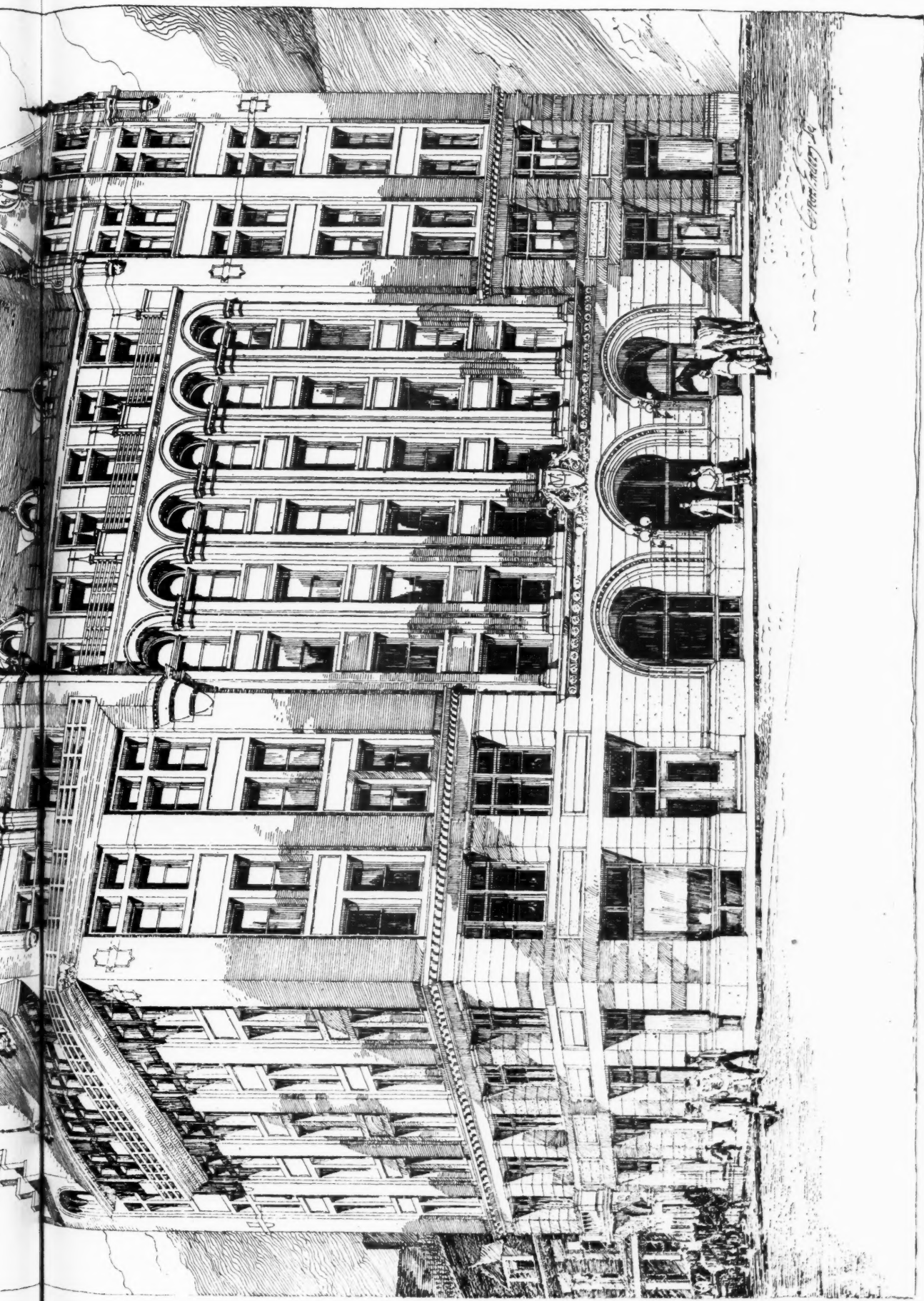




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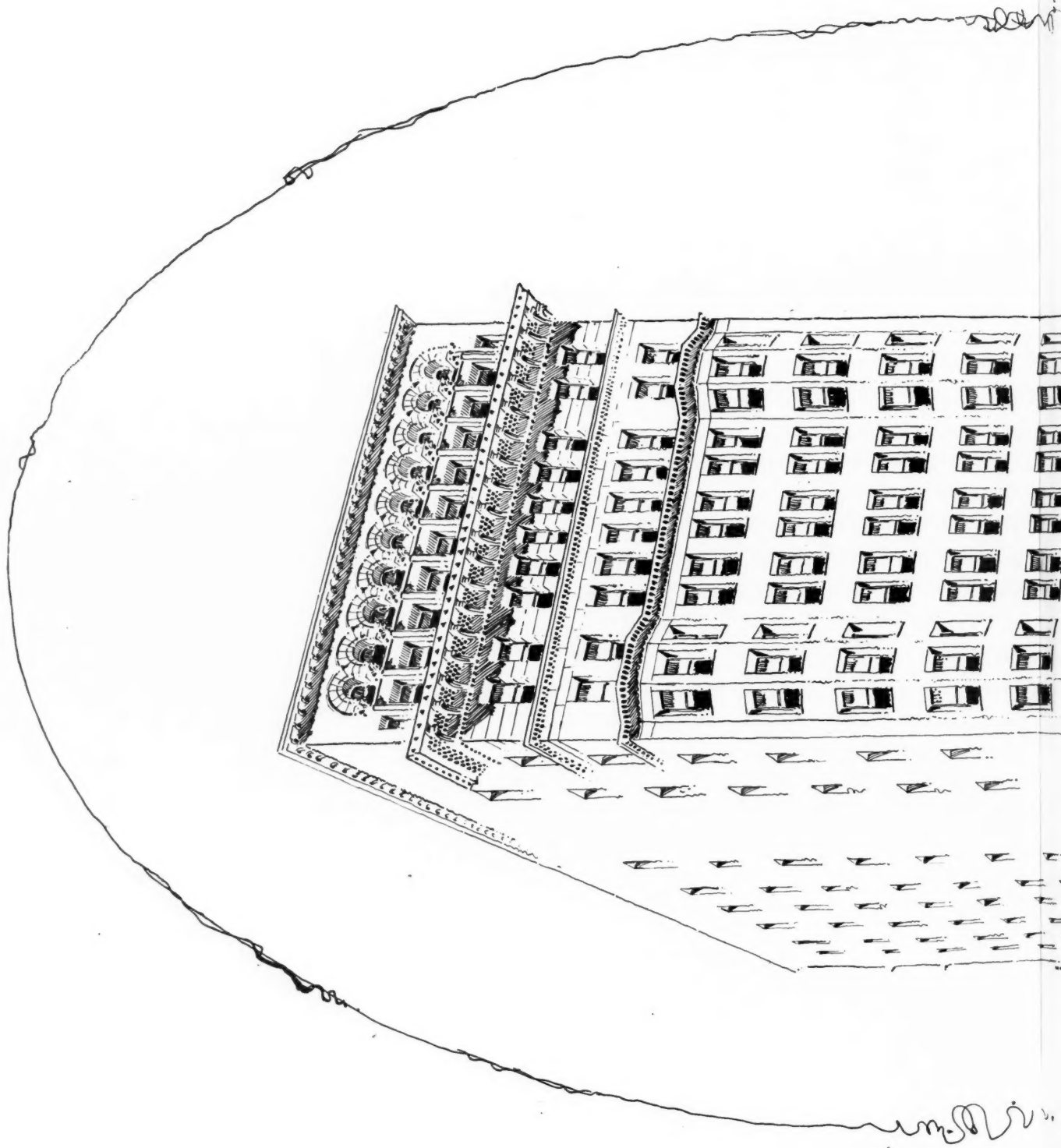
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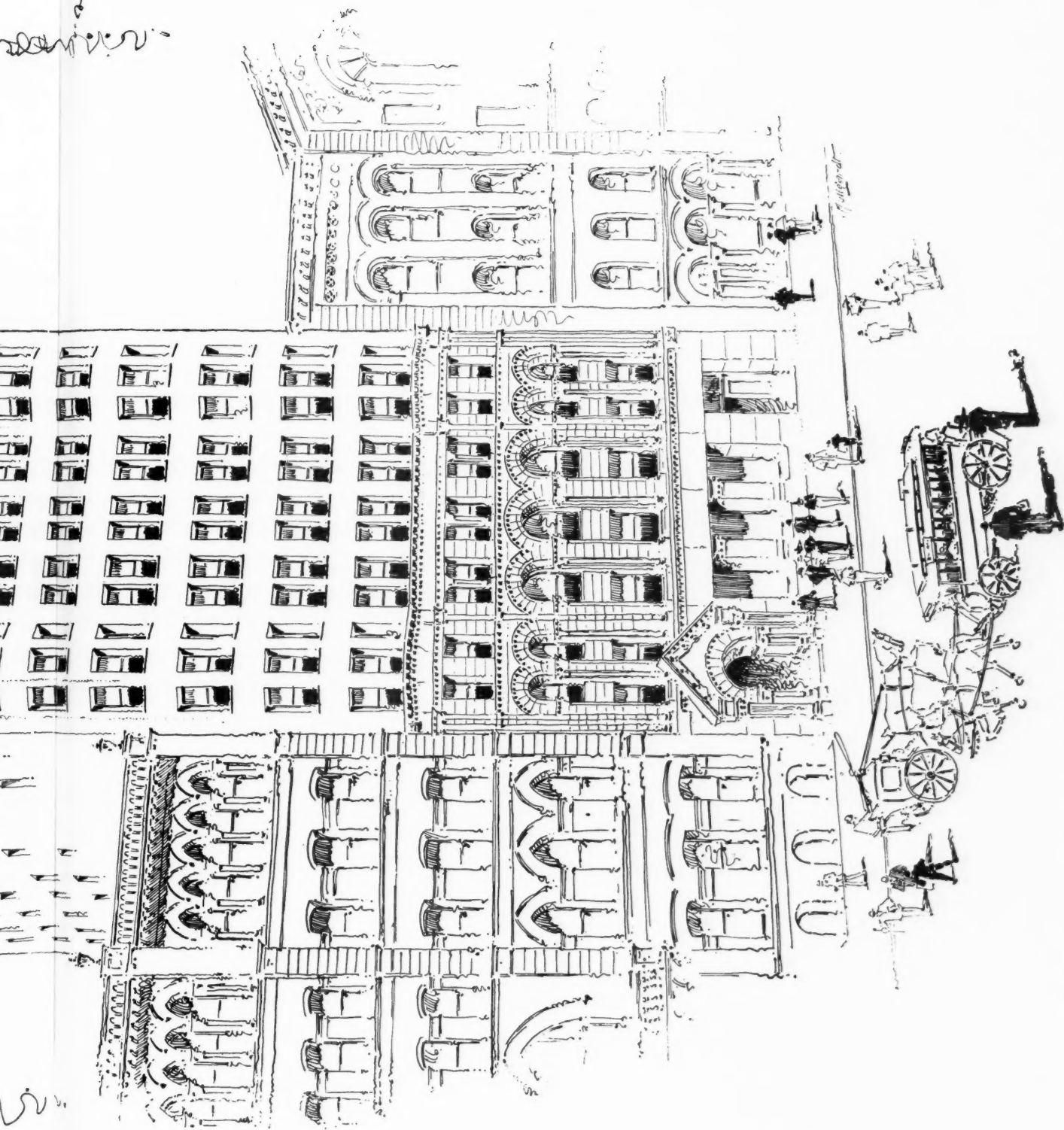




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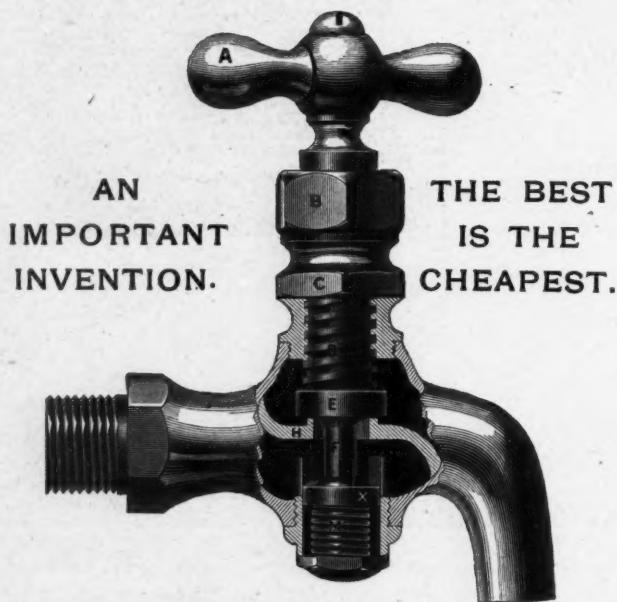
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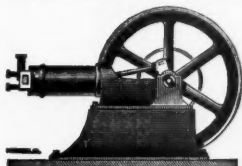
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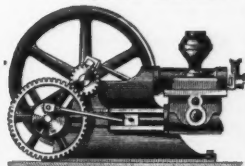
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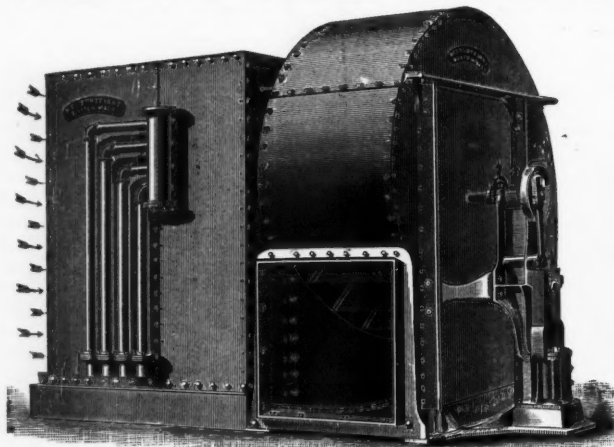
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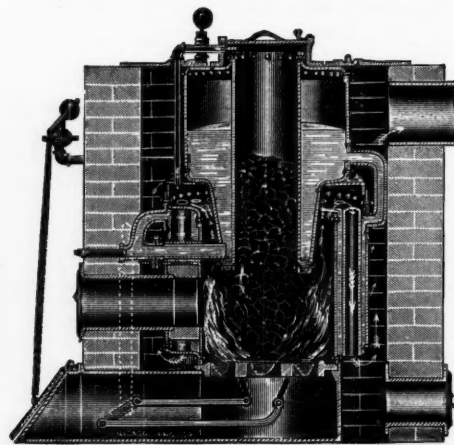
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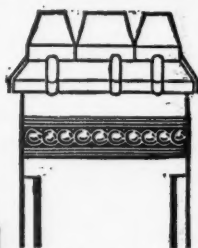
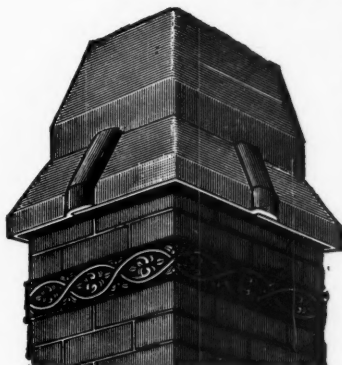
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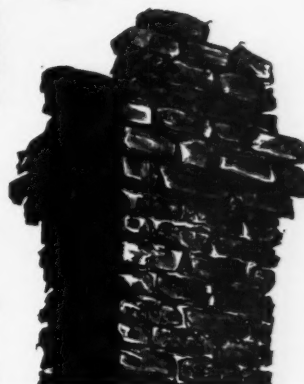
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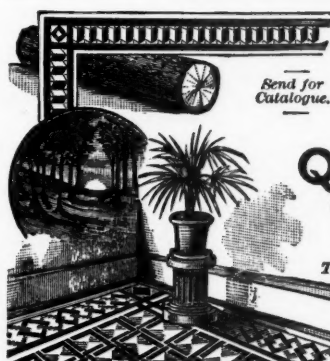
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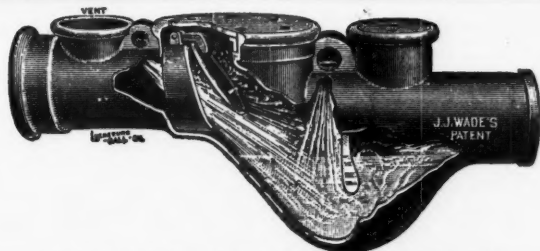
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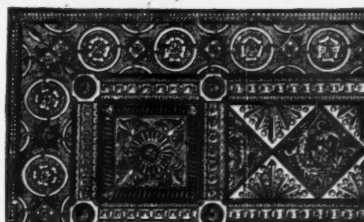
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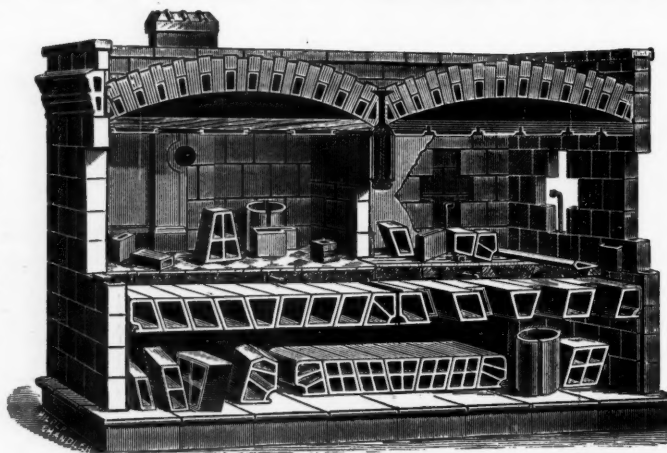
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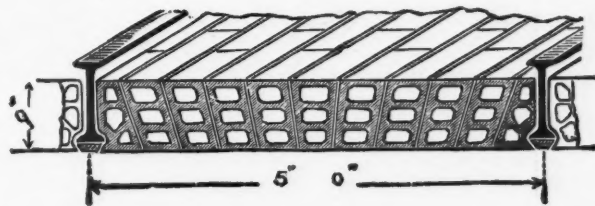
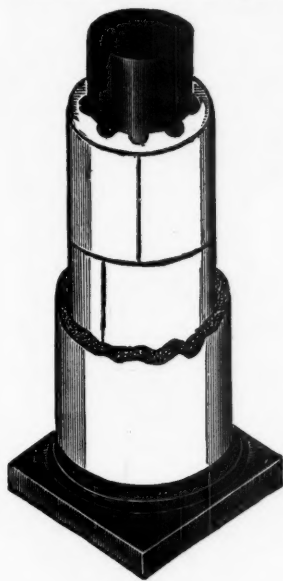
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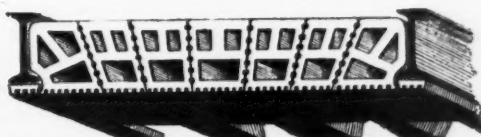
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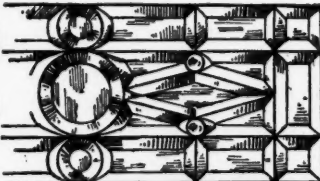
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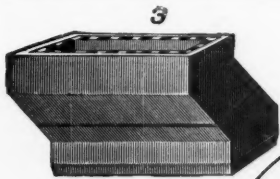
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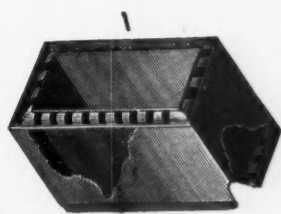
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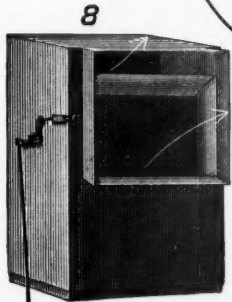


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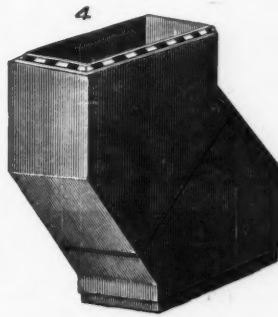
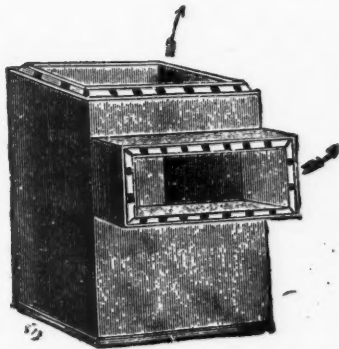
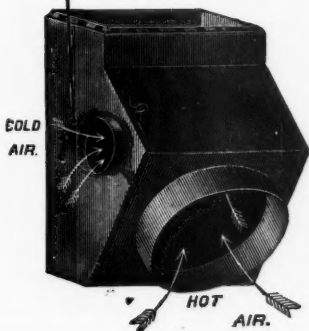


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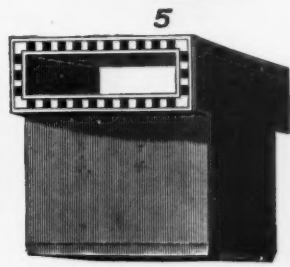
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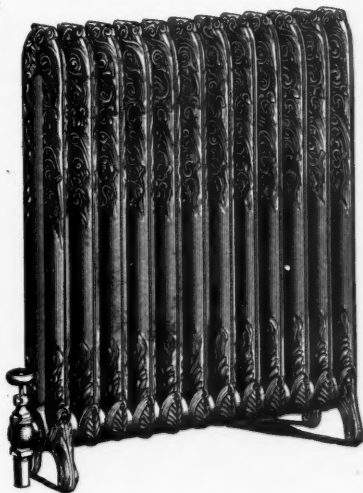
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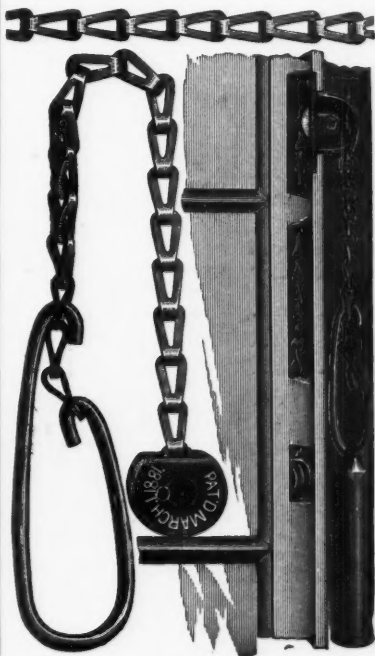


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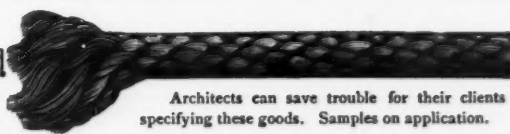
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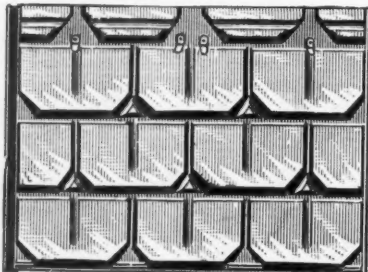
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EACH SECTION AN INDEPENDENT BOILER. REPAIRED WITHOUT DISTURBING THE PIPING. BURNS HARD OR SOFT COAL, WOOD AND COKE.

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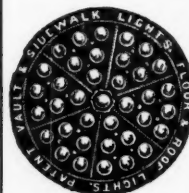
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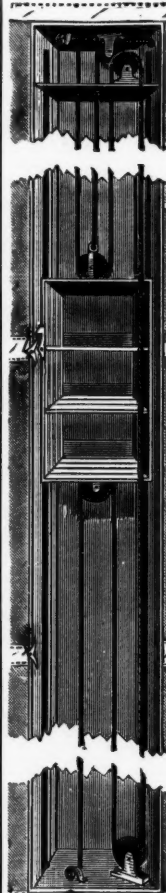
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FLOOR and ROOF LIGHTS.

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All our Paragon Instruments are stamped with our firm name, or K. & E., N. Y.

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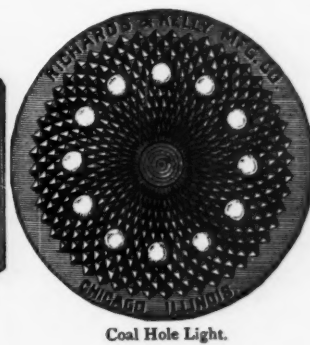
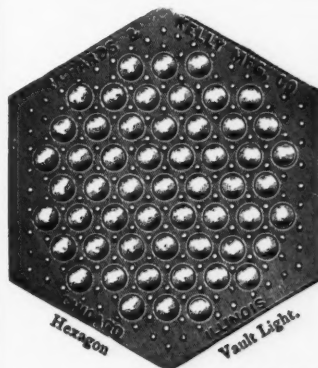
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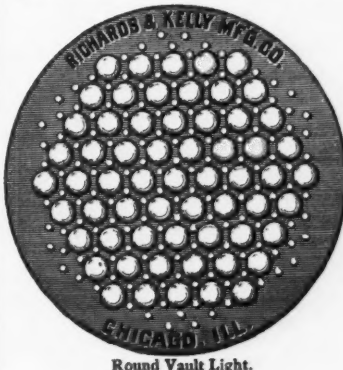
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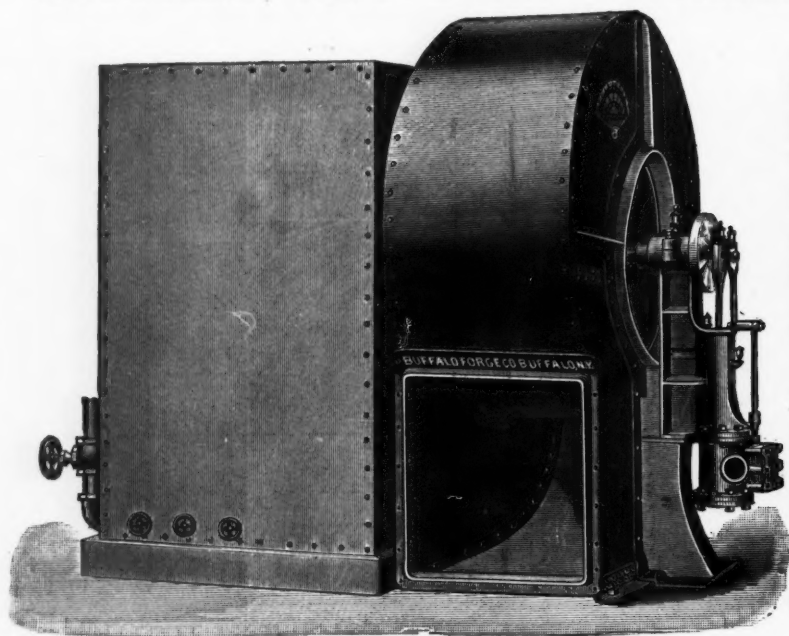
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For Heating, Drying, Ventilating and Cooling.
Steam Fans, Ventilating Fans, Exhaust Fans, Steel Plate Fans,
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JUST THE THING FOR EVERY DOOR

NO OTHER DOOR REQUIRED IN MILD CLIMATE.

Remove center moulding and draw Panel out to form screen door.



W. R. LYLE'S
IMPROVED
SCREEN DOOR

U. S. PATENTS:
PAT. APRIL 6, 1886.
PAT. JULY 12, 1887.
PAT. DEC. 23, 1890.

The device is cheap, simple and effective, easily put up and easily removed. Any screen door is quickly made into a perfect storm door at little expense by inserting the panels and all trouble of taking down the screen door, or damage to same while stored is avoided. Lyle's screen door, ready for storm panels, costs but little more than old style door, and will pay for itself in one winter if you put in panels. Buy no other.

No Territory Sold.

Agents wanted in every town to change over old-style doors and manufacture Lyle's Improved Screen Door. Patented in the United States, Canada, England and France. Address W. R. LYLE, Patentee and Wholesale Dealer, RIPON, WIS.

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FOR FINISHING AND PRESERVING NATURAL WOOD.

Presenting a very hard surface of PERMANENT ELASTICITY, impervious to moisture or Alkali. The ONLY material suitable for varnishing hardwood floors.

No. 1 EXTERIOR. For Outside Doors, Vestibules and Store Fronts, in rubbed or polished finish.

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The Gardner Steel Ribbon Pulleys and Attachments

FOR SASH HANGING.

NOTE.—Aluminum-Bronze Ribbon furnished if desired.

ABSOLUTELY THE BEST AND MOST ECONOMICAL METHOD IN HANGING WINDOW SASH IN THE MARKET.

GARDNER PATENTS.

The Steel Ribbon used is expressly manufactured for Hanging Window Sash, and is especially prepared to prevent rust.

It is attached to the Sash and Weights the same as a Cord or Chain.

It cannot get out of order or wear out, and being a perfect balance, heavy windows can be raised or lowered with the greatest ease.

It presents a neat appearance and can be painted same color as woodwork of the window.

With it any window or door weighing from 5 to 5,000 lbs. can be hung in the most perfect manner.

IN USE IN THE FOLLOWING BUILDINGS IN NEW YORK, CHICAGO, ST. LOUIS AND BOSTON:

New New York Edison Building, J. L. Mott Iron Works, New York Evening Mail and Express, New York Public Schools, New Astor Hotel, Harlem, New York; New Municipal Buildings. First National Bank, Chicago; Adams Express Building, American Express Building, Rialto Building, C. B. & Q. Railroad Office Building, J. V. Farwell's Buildings, New Depot Wisconsin Central, Illinois Steel Co's, Leiter Building, and a large number of others.

THE GARDNER SASH BALANCE CO., 311 First National Bank Building: CHICAGO, ILL., Aug. 19, 1890.

GENTLEMEN.—After a careful study of the qualities of your Sash Pulley and Steel Ribbon, and comparing the same with other methods of hanging sash, preference was given to your pulley and ribbon for the sash of the Leiter Building, State, Van Buren and Congress Streets. This building is over 400 feet long, eight stories high, and being designed for a retail store or stores, the windows are exceedingly large, mostly from 6 to 8 feet wide, and those of the second story some 12 feet high. The sash for such openings require the very best cord and pulleys. Good pulleys can be obtained by paying for them, but I was unable to find as good a pulley as yours at the price you charged us. The question of cord, chain or ribbon is a serious one where windows are as heavy as those in the Leiter Building, and it was only after the most thorough examination, with the assistance of an expert to visit the place where the ribbon was in use, that the question was decided and the contract was awarded to you.

Very respectfully,

W. L. B. JENNEY, Architect, Home Insurance Building, Chicago.

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GARDNER SASH BALANCE COMPANY, . . . 311 First National Bank Building, CHICAGO, ILL.

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THE INLAND ARCHITECT AND NEWS RECORD.

Vol. XVIII.

ADVERTISERS' TRADE DEPARTMENT.

No. 6

DeGolyer's Rock Finish.

The success that has attended "The Watts DeGolyer Company" from its incipency, is the result of a strict adherence to the principle of commercial honor and integrity in each and every transaction with the public, and a determination to excel in every particular relating to the manufacture of varnish, in order that the varnishes bearing the company's name shall be accepted as "superior," without the hesitation of a doubt. It was hardly necessary to mention these facts, so well known to the company's large clientage, but it seemed a proper thing to do in calling attention to the particular article named in the headline of this notice. It is intended for all wood finishing, either interior or exterior, has a peculiar hardness and toughness, drying on the wood like a cement, and is capable of a very high polish. It has also the quality to resist atmospheric influences, being impervious to moisture, and is proof against the action of alkalis. Very many architects, all over the country, have specified its use and confirm all the claims the company put forth in its behalf. In Chicago, New York, Philadelphia and other leading cities, it has been largely adopted, where its merits can be inspected by a visit to almost any of the recently erected important buildings. Architects generally will not go amiss if they specify the use of this most excellent varnish, and should by all means send to the company for a copy of their new album of finished woods and price list.

Announcement.

A contract has been concluded between the Yale & Towne Manufacturing Company and the firm of John Williams, art metal workers, Nos. 544 to 556 West Twenty-seventh street, New York, under which the extensive facilities and experience of the latter will hereafter be available to them for the production of grille work (in iron, brass and bronze), of statuary bronzes, and of other allied products, thus placing them in the most favorable condition to undertake orders for art metal work of almost every kind.

"Some years ago," says the Yale & Towne Company in the *Trefoil*, "the development of our business in fine hardware and metal work reached the point where it involved grille work and ornamental bronzes, in both of which we have already done considerable work, including of late some important and very beautiful productions from the special designs of prominent architects. We had partly equipped our works for the making of these products and were confronted with the necessity of making much more extensive preparations. In lieu of this we have now, as above stated, associated with us the firm of John Williams, under an arrangement whereby we will add their facilities to our own, and will hereafter act as selling agents for their products. The joint facilities of both establishments will hereafter be united and utilized in this work, thus constituting an organization unrivaled in this country and possessing such capital, facilities, skill and experience as will command the confidence and, we venture to hope, the support of architects and their clients generally."

"In the City of New York the firm of John Williams is too well known to need introduction. For the information of our customers elsewhere we beg to state that Mr. John Williams has been long and favorably known to New York architects as probably the most competent and skillful person to whom they could entrust the execution of their designs in wrought metal work of every kind, from the heaviest balustrades and railings to the lightest and most delicate chandeliers and grilles. It is less generally known that Mr. Williams has also had a still longer experience in the execution of fine work in statuary bronze. From a small beginning his establishment has now grown to its present size, giving employment to some 130 men and possessing excellent facilities for its work, to which will now be added the facilities of our works at Stamford.

His business has heretofore been chiefly confined to the execution of work from the special designs of architects. A thoroughly artistic spirit pervades the establishment and marks all the work done in it, a result following naturally from the skill and long experience of Mr. Williams, developed by years of training under the guidance of leading architects of the metropolis. Everything done in the establishment has received the benefit of his critical personal oversight, and this will be continued.

"The record of this company in art metal work, while more recent than that of the firm of John Williams, may fairly claim equality with it in matters of reputation and artistic quality of work. Its products, however, have been chiefly those relating to the interior decoration and equipment of buildings, especially those used in connection with locks and other fastenings, although of late it has done a considerable amount of work of larger character. The facilities of both concerns are now united and will be utilized in the future conduct of a business which will cover the whole field of wrought metal and statuary work as applied to the equipment and decoration of buildings."

The Yale & Towne Manufacturing Company solicit correspondence and the opportunity of tendering for any work of the several kinds herein mentioned, whether from their own or from architects' designs.

A Woodworking Printing Press.

W. W. Grier, of Hulton, Pa., has invented a printing press by which he is able to print in by series of steel type, to the surface of a pine or other softwood board, facsimiles of the grain of any of the hardwoods, now so commonly used in the interior finishing of the better class of houses, and of so perfect a copy of the genuine that an expert, by looking at them, would be unable to tell the counterfeit from the genuine. The inventor terms the process *ingraining*, as the imitated pores of a natural wood are indentations into the surface of the soft wood operated upon to a depth varying from a sixteenth to an eighth of an inch. A completed copy of any wood is made by a properly colored oil filling, flowing into, from a "filling fountain," these artificial pores. Hence it will be perceived the product of one of these machines is an oil-filled facsimile ready for the painters varnish tool, and of such a character that it may be sandpapered to the extent of any required necessity without disturbing its representative quality. The capacity of one of these presses or machines is 60,000 feet of lumber a day. The advantages to be gained by a mechanical operation of this kind are obvious.

Fireproof Construction.

A number of city officials, representatives from the fire and building departments, together with architects, insurance men, and others interested in fireproof building, were entertained at the office of Mr. S. M. Randolph, No. 38 Marine building, Chicago, on January 2. Lunch was served from 10 to 2 o'clock. The visitors were shown new methods of plastering on steel lathing made by the Northwestern Expanded Metal Company. The lathing is in sheets twenty inches wide by eight feet long; is cut and expanded into just the most desirable form to firmly hold the plastering in position, and is rigid enough to support the work on bearings thirty-two inches apart. A partition fifteen feet long, inclosing one side of a room, was shown and was only an inch-and-a-half thick, being of solid mortar on one thickness of metal put up on studs of channel iron three-fourths of an inch thick. Both sides of the partition were nicely finished; it seemed perfect in every way, and actual measurement was necessary to convince the experts of its extreme thinness. The metal has been used on frame buildings to form inclosure of cement work and will be extensively used for that purpose hereafter. All seemed to think it

designed to work a revolution in methods of building, and that its moderate cost would enable all to obtain protection from danger by fire. It was so emphatically stated by the fire marshal that a single partition of steel, lath and plaster, was almost a perfect preventative of the spreading of fire, that it is probable that the insurance companies will raise rates to a prohibitory point on all buildings constructed with the ordinary wood, lath and plaster.

Trade Notes.

THOMAS KELLY & BROS., of Chicago, are the inventors of a new washbasin which they have put on the market. In this basin the overflow is in the bottom above the plug and is therefore trapped, while there is any water in the bowl. To empty the water in the bowl it is not necessary to keep the plug out until all the water discharges. By lifting the plug and letting it drop back to its place, the water rushes out through the overflow, which enters the wastepipe below the plug. Should the plug be held until all the water is discharged a great portion of this water finds its way out of the overflow. The contents of the basin cannot be discharged without flushing the overflow. Should the plug be left in and the cocks left open, instead of overflowing on the floor a periodical flush is secured. The basins are made oval and round and the absence of strainer holes gives the basins a better appearance.

THE Willer Manufacturing Company, Milwaukee, has just issued a special catalogue and price list in the interest of the company's special window screens and screen doors, which have so much to commend them to the favorable attention and adoption by the public. This particular window screen is made both sliding and stationary—the stationary covering the entire window surface; the sliding, so as to cover but one sash and capable of being raised to any position without effort, and can be held there at will by an adjustable balance spring—the same that is used in the now famous "Willer sliding blinds." A peculiar merit of the Willer screen is that it can be so easily set in position, or removed, doing away with the need of any outside help in that direction, as it requires no more skill than to raise an ordinary window sash. As a gentle reminder of the approaching season when insects are troublesome, the company is presenting to possible patrons a piano copy of Professor Bach's "Willer March," composed and dedicated to Mr. Henry L. Willer, by the author. The march is handsomely covered, the frontispiece a home scene, the last page giving pointers how to make homes comfortable.

FRASER & CHALMERS, Chicago, the extensive manufacturers of steam engines, boilers, milling, mining and ore reducing machinery, are sending out a beautifully executed photographic card giving a superb picture of the twenty-one-story Chicago Masonic Temple, which has been provided with two 500 horsepower Corliss engines and eight Scotch marine steel boilers from their great works, said engines and boilers forming, however, but a part of their contribution of material composing the vast structure, as they have supplied the foundation iron, line shafts, piping, flues, tanks, receivers, pipe-covering and other kindred specialties too numerous to mention.

By the way, the firm's new plant, covering the entire block on Twelfth street from Washtenaw avenue to Fairfield avenue, is rapidly approaching completion, and when ready for occupancy, will constitute one of the largest and most completely furnished machinery manufacturing plants in this country, if indeed, its counterpart can be found anywhere on this globe. Treat & Foltz are the architects.

The card above mentioned has a footnote giving interesting statistics relative to the structure, all of which make the card a desirable souvenir, especially as the Masonic Temple is the highest office structure in the world, and if the height of buildings is limited, will long remain so.

ADVERTISERS' TRADE DEPARTMENT—Continued.

Railroad Notes.

AMERICAN travelers who have never tried the Grand Trunk route between Chicago and the East will be surprised to find what an attractive line this has become under its present management. The cars are as elegant and the service as attentive as anywhere in the United States, the track is admirably kept, enduring stone bridges have been constructed across the various streams, the speed is high, there is little or no dust and the fare is several dollars lower than by other lines. The ride through Canada gives interesting glimpses of English life and manners, the lake and river scenery is varied and charming, there is much that is novel and attractive in the cities of Toronto, Montreal

and Quebec, and the road from Montreal to Boston, which winds in and around among the Green mountains, traverses some of the most charming scenery in the world.

TRAVELERS and tourists contemplating a visit to the Pacific coast should bear in mind the Lake Superior, St. Paul & Union Pacific, a new passenger and freight line formed by the Chicago, St. Paul, Minneapolis & Omaha and Union Pacific railways. This line strikes about all the important far western towns and cities, i. e., of Nebraska, Montana, Idaho, Utah, Wyoming, Washington, Oregon and California, and reaches the coast several hours sooner than any other route. The accommodations are first-class in every respect and the fare as low as the lowest. Special

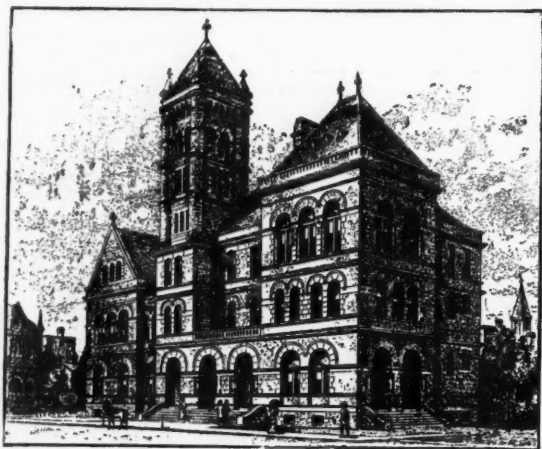
excursion trains are run, leaving St. Paul and Minneapolis every Thursday morning. For fuller particulars address T. W. Teasdale, general passenger agent, St. Paul.

SAVE \$36.50 TO CALIFORNIA.—J. C. Judson & Co's personally conducted California excursions in broad-gauge Pullman tourist sleeping cars, via Denver & Rio Grande Railroad, (the scenic line of the world) leave Chicago via Chicago & Alton Railroad, 12:00 noon Saturday of every week, each excursion in charge of an efficient and gentlemanly excursion manager. Pullman tourist sleeping cars through from Boston and Chicago to San Francisco and Los Angeles. For rates, reservation of berths, etc., call on or address J. C. Judson & Co., 195 Clark street, Chicago.

King's Windsor Asbestos Cement

FOR PLASTERING WALLS AND CEILINGS.

300 PER CENT MORE TENSILE STRENGTH, 200 PER CENT HARDER,
AND REQUIRES ONE-THIRD LESS LABOR THAN
LIME AND HAIR PLASTER.



"U. S. Court House and Postoffice at Williamsport, Pa., plastered with King's Windsor Cement."

Houses can be Occupied in from Four to Six Weeks Earlier than those finished in the old method. Does not Chip, Pit nor Crack. Any mechanic who understands his trade can apply it.

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All dealers in Building Materials are familiar with our goods, ask them for prices.

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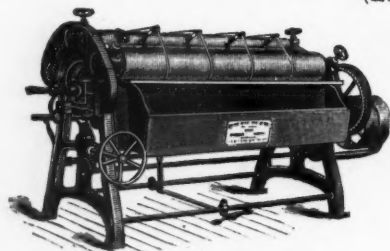
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24 State Street, NEW YORK CITY.

Manufacturers King's Eagle (Patented) and Celebrated "Diamond" Brand Calcined Plaster.

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Our line of Laundry Machinery has all the Latest Improvements, and is the best for Laundering all kinds of goods.

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THE STANDING SEAM allows of an easy and secure fastening, keeping the pipe far enough from the wall to make any overflow from the eave pipe or head, run down the spout, and not the wall; and will open, in case of freezing, so as to prevent bursting, and still remain double-locked and water-tight.



MADE IN

SIX FOOT LENGTHS

of a Single Sheet of

SOFT STEEL.

Either Galvanized, Kalameined or Leaded.

The Only Conductor in the Market Made of Best Bloom Soft Steel Galvanized.

GUARANTEED NOT TO BURST.

Smaller sizes of 26 Gauge. Larger sizes in any Gauge ordered. Prompt shipments. Low prices.

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Can be obtained from any first-class tinner or galvanized iron worker.

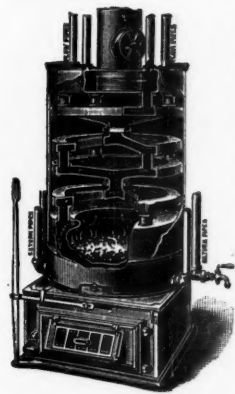
SAVE 50% WATER
BY USING
VARIABLE HYDRAULIC ELEVATORS
FOR CATALOGUES & INFORMATION WRITE
THE JAS. L. HAVEN COMPY.
CINCINNATI, OHIO, U.S.A.

DRAFTSMAN WANTED.

Wanted, a first-class Architectural Draftsman; must be good in designing and construction; references required; an elderly man preferred; state salary wanted.

Address F. J. SCHLOTTER,
EVANSVILLE, IND.

A TRIP TO FLORIDA



Can be saved this winter by warming the house with a Hub Hot-Water Heater, thus securing a uniform summer temperature right at home. Think of the luxury of having every room in the house at the desired temperature and no additional coal burned. Our system embodies simplicity and power, combined with moderation in cost. Write us, and we will put you in the way of getting one of these Heaters, no matter in what part of the country you may live.

The Smith & Anthony Stove Co.,
MANUFACTURERS OF
High Grade Heating and Cooking Apparatus,
—AND THE—
Celebrated Plumbing Specialties,
BOSTON, MASS.

FIRE PROOF
FURRING

of sheet metal, for iron and wood columns and beams, plaster cornices and panels on walls, ceilings, and girders. Conforms to all shapes, making a great saving of plaster. Send for illustrated circular.



E. VAN NOORDEN & CO.,
383 Harrison Ave., BOSTON, Mass.

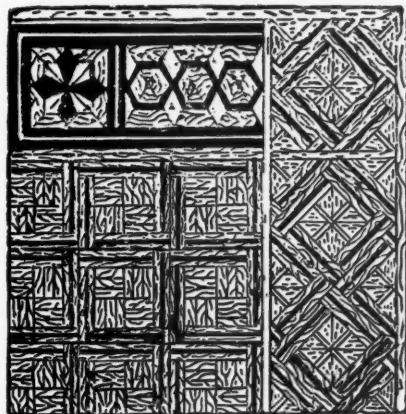
—ESTABLISHED 1873.—

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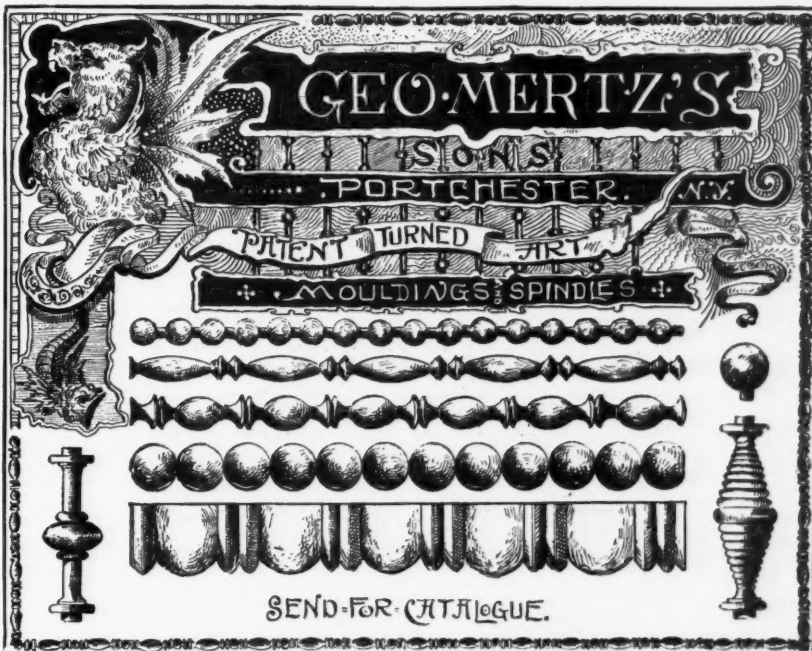
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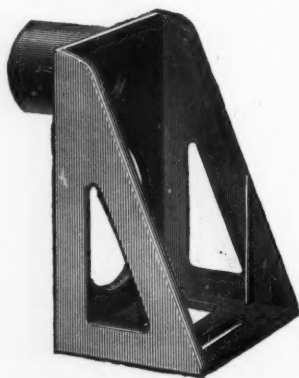
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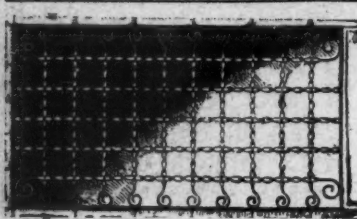
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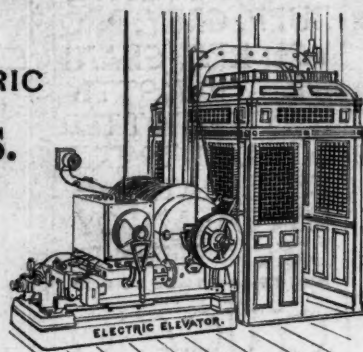
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