

OCTOBER 22, 1904

THE AMERICAN ARCHITECT

AND BUILDING NEWS

VOL. LXXXVI

* REGULAR EDITION *

NO. 1504



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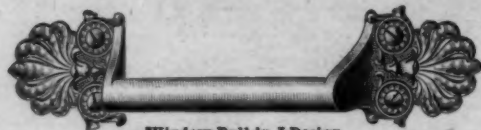
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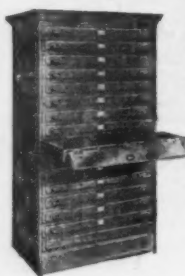
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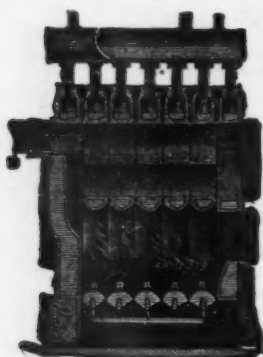
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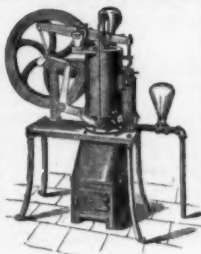
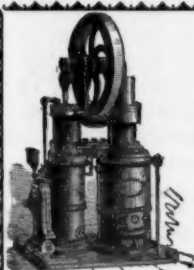
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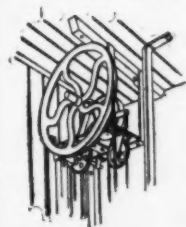
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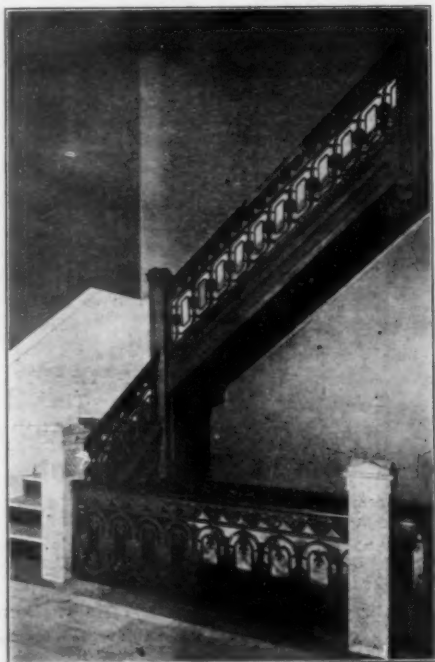
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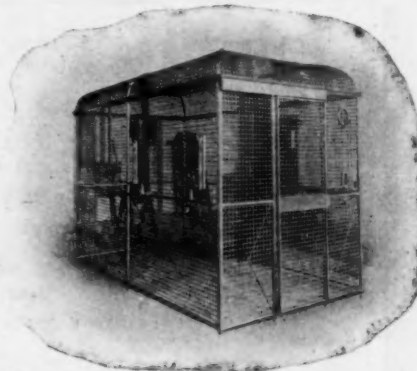
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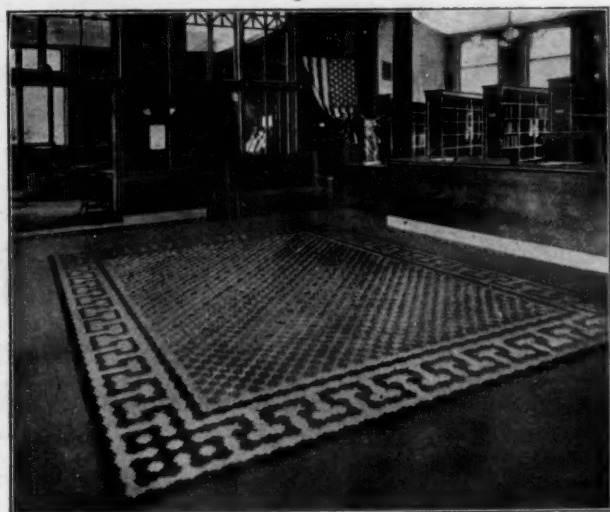


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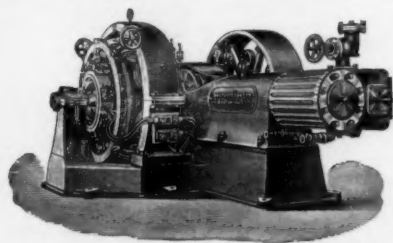
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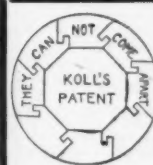
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BUILDING INTELLIGENCE.

(Advance Rumors Continued.)

Church has purchased a lot for \$9,000, upon which it will erect a \$30,000 church building.

MANCHESTER-BY-THE-SEA.—Andrew Carnegie, a nephew of the ironmaster, has purchased the Robert S. Minot estate of 30 acres here. It is the intention of Mr. Carnegie to build a summer residence.

MINNEAPOLIS, MINN.—A seven-story building to replace the present Nicollet Hotel is contemplated. It is thought the work of erection will not be deferred more than a year or two.

NEW YORK, N. Y.—A parish school is to be built at Nos. 313 to 322 East 29th St. It will be conducted by the monks of the Carmelite Priory, at 334 East 29th St. The building will have a frontage of 75 feet and depth of 100, with façade of brick and trimmings of terra-cotta. It will be five stories high. The cost is estimated at \$65,000. T. H. Poole, architect.

John Hauser, 1,961 7th Ave., is drawing plans for two five-story and basement apartment-houses, to be built on the southeast corner of Prospect Ave. and 164th St., for James Picken, at a total cost of \$100,000.

John Hauser, 1,961 7th Ave., is making plans for five three-story and basement dwellings, each 18x63 feet, to be built for William H. Picken, at a total cost of \$100,000, on the south side of 139th St., 85 feet east of Edgecomb Ave.

John Hauser, 1,961 7th Ave., has prepared plans for two high-class apartment houses, to be built on Amsterdam Ave. Each will be of brick, stone and terra-cotta, will be six stories high, and will contain a passenger elevator. One will be on the southwest corner of 122d St., will cost about \$130,000, and will be erected for J. S. Sandler. The other, on the southeast corner of 121st St., will cost \$145,000, and will be built for Samuel Ruth.

Two stories will be added to the six-story office building of J. S. and W. H. Barron, at the corner of Broadway and Franklin St. Cost of improvement, \$85,000; architect, Franklin Baylies, 33 Bible House. Contracts not yet let and estimates now receivable.

BUILDING INTELLIGENCE.

(Advance Rumors Continued.)

Derrick Company, of St. Paul has purchased the property, corner of Twentieth St., running back 97 feet to the railroad tracks, and will erect a \$100,000 warehouse.

CINCINNATI, O.—A permit has been issued to the trustees of the Public Library for the building of the Carnegie Branch Library at the corner of Kemper Lane and Locust St. The building is to be of brick, concrete and steel, and will cost about \$35,000.

DETROIT, MICH.—J. W. Case has prepared plans for a new clubhouse for the Detroit Golf Club, Woodward Ave. and city limits.

E. C. Van Leyen has prepared plans for a six-family apartment, to be built for Ernest Venn, on Cass Ave., near Willis Ave.

The City Council have instructed Donaldson & Meier to do some cutting to their plans for the improvements to the City-hall, as the lowest bid exceeded the appropriation of \$150,000. New bids will be asked for.

BUILDING INTELLIGENCE.

(Advance Rumors Continued.)

ENDICOTT, N. Y.—The Brindy Manufacturing Company will erect a large factory at Endicott, just outside of Binghamton.

GREEN BAY, WIS.—A parochial school to cost \$20,000 is proposed by St. Patrick's Catholic Church. The Rev. M. J. O'Brien, the pastor, has promised to give \$10,000 if the congregation will raise \$10,000.

HARTFORD, CONN.—By the will of Miss Mary Terry, who died at Venice a month ago, the Hartford Hospital will receive approximately \$500,000. Miss Terry was a daughter of the late Oliver G. Terry, president of the Etna National Bank.

INDIANAPOLIS, IND.—A new building will be erected immediately for the Grand Lodge of Knights of Pythias, at Massachusetts Ave. and Pennsylvania St. The structure will be one of the finest office buildings in the State. It will be ten stories, of stone or terra-cotta, and cost not less than \$100,000.

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BUILDING INTELLIGENCE.

(Advance Rumors Continued.)

John Hauser, 1,961 7th Ave., has made plans for a six-story tenement, 25x86 feet, to be built on the north side of 143d St., near 8th Ave., at a cost of \$25,000, for Newmark & Jacobs.

Plans have been drawn by Sass & Smallheiser, 23 Park Row, for two six-story flats, 50x87 feet, for Rosenberg & Aronson, of 11 Allen St., to be erected on the north side of 116th St., 110 feet east of 5th Ave.; total cost, \$100,000.

Plans have been prepared by Geo. Fred Pelham, 503 5th Ave., for a six-story flat building, for Joseph Walkenberg, of 96 Avenue C, to be erected at 310-312 East 34th St. Cost, \$45,000.

John Hauser, 1,961 7th Ave., is drawing plans for three six-story flats, to be built on the south side of 140th St., near Lenox Ave., for the McKinley Realty & Construction Company. Cost, \$120,000.

Plans have been drawn by John Hauser, 1,961 7th Ave., for a six-story apartment-house, 50x86 feet, to be built on the north side of 140th St., near Lenox Ave., for the McKinley Realty & Construction Company. Cost, \$50,000.

Plans have been drawn by Lawlor & Haase, 69 Wall St., for a six-story apartment-house, for the Trood Realty Company, 605 West 112th St., to be erected on the south side of 112th St., 75 feet west of Broadway, at an estimated cost of \$150,000.

John Hauser has prepared plans for two six-story apartment-houses, each 50x86.11 feet, to be built on 139th St., 145 feet west of Fifth Ave., for the McKinley Realty & Construction Company. Total cost, \$100,000.

A six-story house, 50x86.11 feet, is to be built on the south side of 140th St., near Fifth Ave., for the McKinley Realty & Construction Company, at a cost of \$50,000. Architect, John Hauser, 1,961 7th Ave.

NORTH MILWAUKEE, WIS.—The citizens have voted in favor of erecting a \$30,000 combination grade and high school.

PHILADELPHIA, PA.—Frederick A. Poth

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BUILDING INTELLIGENCE.

(Advance Rumors Continued.)

will erect a four-story brick residence on the east side of 36th St., south of Powelton Ave. Cost, \$15,000.

PHILLIPSBURG, PA.—A new high school will be erected, at a cost of \$55,000, at this place.

POUGHKEEPSIE, N. Y.—Percival M. Loyd, 33 Market St., has prepared plans for a Y. M. C. A. building. It is to be four stories high, 56x100 feet, of brick, with limestone trimming, steel frame and concrete floors. Cost, \$40,000. Bids for construction will be received Oct. 31.

PRUDENCE ISLAND, NARRAGANSETT BAY.—James A. Garland, of the American Publishing Company, 1,133 Broadway, has purchased a tract of 744 acres on the northern end of Prudence Island, upon which he will erect a country residence.

READING, PA.—A. F. Smith, 531 Court St., has completed plans for a stone church for the Episcopal congregation, to cost \$18,000.

The I. O. O. F. and Golden Eagles are to erect a three-story hall, to be used for meeting rooms and entertainments, to cost \$14,000. Architect, Wm. A. Fink, of Reading.

ROXBOROUGH, PA.—Four and one-half acres of ground at Roxborough, Philadelphia, have been donated to the American Baptist Board by Sarah Parker, upon which a home for colored people will be erected. A leading Philadelphia architect has been commissioned to prepare plans for this home, and in a short while bids will be invited.

SAN FRANCISCO, CAL.—It is stated that an additional wing is to be erected to the St. Francis Hotel, at a probable cost of \$500,000. Bliss & Faville, architects, Crocker building.

SCARSDALE, N. Y.—The erection of a \$20,000 school is being considered. Supervisor

BUILDING INTELLIGENCE.

(Advance Rumors Continued.)

C. T. Secor, a member of the committee, has the matter in charge.

SEATTLE, WASH.—It is reported that the People's Savings Bank is to be enlarged at an estimated cost of \$60,000.

SHAMOKIN, PA.—It is reported that two new school buildings will be erected, and a proposition to issue bonds to the amount of \$84,000 for such a purpose will be submitted to the voters at the next election.

SHENANDOAH, PA.—At Shenandoah, Schuylkill County, the First Baptist Church congregation will erect a church.

SOUTH BEND, IND.—Report states that S. S. Beman, 135 Adams St., Chicago, Ill., has prepared plans for a brick and stone four-story Y. M. C. A. building, 66x165 feet, which is to be erected here, at a cost of \$150,000.

SPRINGFIELD, MASS.—The City Property Committee has approved plans prepared by E. C. & G. C. Gardner, 33 Lyman St., for the proposed technical high school. The plans provide for a three-story building of brick, with limestone trimmings, 207x146 feet. Estimated cost, \$125,000.

ST. PAUL, MINN.—A building permit has been issued for a three-story brick building for the hospital on Cleveland Ave.; cost, \$20,000; owners, College of St. Thomas; contractors, Newman & Hoy, Chamber of Commerce building.

SUMMIT, N. J.—Dr. Arthur Pell, M. D., 1,148 Dean St., Brooklyn, N. Y., has purchased land here and will erect a residence.

WATERTOWN, N. Y.—It is reported that the Joe Spratt Post, G. A. R., will erect a \$100,000 memorial building for use of various patriotic organizations.

WHEELING, W. VA.—Giesey & Faris have prepared plans for a two-story brick theatre, to be constructed on Eoff St., for Charles A. Feinler. Cost, \$75,000.

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PROPOSALS.

CHURCH.

[At Cleveland, O.]

Bids are wanted October 25 for erecting a \$35,000 church for the First Christian Society. 1504

CONSTRUCTION.

[At Brooklyn, N. Y.]

Bids will be received October 29 by Mordecai T. Endicott, Ch. Bureau Yards and Docks, Navy Department, Washington, D. C., for constructing an addition to Commandant's quarters, Navy Yard here. 1504

Treasury Department, Office of the Supervising Architect, Washington, D. C., October 6, 1904. Sealed proposals will be received at this office until 3 o'clock P. M. on the 14th day of November, 1904, and then opened, for the construction complete of the U. S. Post-office at Adrian, Michigan, in accordance with the drawings and specification, copies of which may be had at this office, or at the office of the Postmaster at Adrian, Michigan, at the discretion of the Supervising Architect. JAMES KNOX TAYLOR, Supervising Architect. 1504

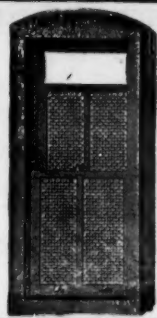
Treasury Department, Office of the Supervising Architect, Washington, D. C., October 7, 1904. Sealed proposals will be received at this office until 3 o'clock P. M. on the 3d day of November, 1904, and then opened, for the installation of a conduit and electric wiring system for the U. S. Post-office and Court-house, Athens, Georgia, in accordance with the drawings and specifications, copies of which may be obtained at this office, or at the office of the Superintendent of Construction at Athens, Georgia, at the discretion of the Supervising Architect. JAMES KNOX TAYLOR, Supervising Architect. 1504

Department of Agriculture, Office of the Building Committee, Washington, D. C., September 19, 1904. Sealed proposals will be received at this office until 2 o'clock P. M. on the 10th day of November, 1904, and then opened, for the general construction (except heating apparatus, elevators, electric wiring and conduit systems) of two laboratory buildings for the U. S. Department of Agriculture, Washington, D. C., in strict accordance with the drawings and specifications by Rankin, Kellogg & Crane, Architects, 1012 Walnut St., Philadelphia, Pa., copies of which may be had upon application to the Supervising Engineer, Capt. John Stephen Sewell, Corps of Engineers, U. S. Army, at the Department of Agriculture, Washington, D. C. One set only of drawings and specifications will be sent to any one bidder, but additional sets may be purchased of the printers designated by the Department, at cost of production of same. All applications must be accompanied by a certified check for \$250.00, made payable to the Disbursing Clerk of the Department of Agriculture, which checks will be retained until the return of all drawings and specifications, including those which may have been purchased from printers. B. T. GALLOWAY, Chairman. 1506

Treasury Department, Office of the Supervising Architect, Washington, D. C., October 15, 1904. Sealed proposals will be received at this office until 3 o'clock P. M., on the 21st day of November, 1904, and then opened, for the construction complete of the U. S. Post-office at Ottawa, Illinois, in accordance with the drawings and specification, copies of which may be had at this office or at the office of the Postmaster at Ottawa, Illinois, at the discretion of the Supervising Architect. JAMES KNOX TAYLOR, Supervising Architect. 1505

Treasury Department, Office of the Supervising Architect, Washington, D. C., October 15, 1904. Sealed proposals will be received at this office until 3 o'clock P. M., on the 22d day of November, 1904, and then be opened, for the construction complete of the U. S. Post-office and Custom-house, Georgetown, South Carolina, in accordance with the drawings and specifications, copies of which may be had at this office or the office of the Postmaster at Georgetown, South Carolina, at the discretion of the Supervising Architect. JAMES KNOX TAYLOR, Supervising Architect. 1505

Treasury Department, Office of the Supervising Architect, Washington, D. C., October 17, 1904. Sealed proposals will be received at this office until 3 o'clock P. M. on the 15th day of November, 1904, and then opened, for the low pressure steam heating apparatus, for the U. S. Post-office Building at Kirksville, Mo., in accordance with drawings and specification, copies of which may be had at this office or at the office of the Superintendent at Kirksville, Mo., at the discretion of the Supervising Architect. JAMES KNOX TAYLOR, Supervising Architect. 1505



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THE AMERICAN ARCHITECT AND BUILDING NEWS

VOL. LXXXVI

SATURDAY, OCTOBER 22, 1904

No. 1504



SUMMARY:—

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THE architects and intelligent people of Pittsburgh, Pa., are most unexpectedly called upon to "save" the Allegheny County Court-house, the building which H. H. Richardson fondly regarded as his most successful piece of design. The attempt to save must, to be successful, proceed along other lines of argument and appeal than those which were successfully followed in saving the "Bulfinch Front" of the Massachusetts State-house a few years ago, and the United States Capitol last winter. In this case, the building has neither historical nor sentimental associations connected with it which cry for preservation; the only profanation is that offered to a work of architecture of whose real value there may be, even amongst architects, honest difference of opinion, and in the case of such conflicting testimony the less instructed public is likely to think that neither opinion is of much real value, and that its own, reached by an intuitive perception of what practical needs require, is a far better guide under the circumstances. The question is likely to be decided on its practical merits, and the architects and others who are preparing for the defence of Richardson's masterpiece will do well, while making an adequate, but brief, presentation of the architectural merits of the question, to place their hope and their reliance on making not only their skirmish line but also their main attack consist of practical arguments, based on dollars and cents. Richardson's strong point did not lie in economy of plan any more than in economy of money, and when we went over the building some years ago we were struck by the seeming waste of unutilized space; hence we are inclined to believe that something might be gained by internal remodelling. It is said that the building is already overcrowded and that there is a possibility of the creation of several new county courts, each of which will require a new court-room and court offices. Here, it seems to us, should be the main point of attack, for the best scheme of defence often is to take the offensive. Unless Allegheny County judges are very different from those elsewhere, we

fancy a little investigation would show that they are very lordly creatures who, having largely the whip-hand of affairs, are willing to do for their salaries only just so much work as pleases them, personages who require frequent "recesses" and, of course, a "long vacation," during which the legal business of the community, being unattended to, naturally accumulates and so causes congestion when the Court is pleased to sit again, which in turn naturally gives rise to the clamor for more courts to handle the business that overcrowds the docket and, of course, more court-rooms. A little patient investigation, a systematic collecting and collating of ascertainable facts would show, we fancy, that the present court-rooms were in actual service an unexpectedly small proportion of the working hours of the year. Create new courts, if the Bar demands it, but make them adjust their schedule so that they shall sit during the periods after the present courts have risen. The adoption of the plan discovered by the ingenious Messrs. Box and Cox might save a large outlay of public money and prevent the mutilation of a good piece of architectural design.

THE scheme of alteration submitted by Mr. F. J. Osterling, at the request of the judges and County Commissioners, is that of interpolating three stories, between the present second and third stories, by jacking up the roof and its supporting upper story. This is to be done uniformly all about the building, save in the case of the tall tower which is to remain unaltered itself although the lifted roofs and walls of the building proper have robbed it of its apparent height. "The architecture will not be affected in the least on account of the additions to the building proper," says the designer, and as there are very many who will believe he knows what he is talking about, because they themselves have not trained imaginations, it will be bootless for those who oppose him to talk learnedly about proportions, and even a reference to the change that is always produced when an inch is added to the length of a man's nose will be ineffective. But if they can find a youth who has grown a foot in a twelvemonth and will produce him at the hearing, clad in his last year's trousers and waistcoat, showing ten inches of white shirt between the waistband of the one and the hem of the other, they will have at hand an *argumentum ad hominem* which the most somnolent of judges and obtuse of county commissioners cannot fail to appreciate. The boys' feet and head, or roof and lower story, if you will, will be recognizable as those belonging to him last year, but no one can fail to notice that his "architectural lines" have changed, although the process of evolution has been natural and not aided by jackscrews.

THE pages of the history of art are thickly sprinkled with tales, more or less pathetic, of the trials, hardships and misfortunes that have befallen artists, and to these annals must now be added the loss that has fallen upon Mr. Augustus St. Gaudens through the

burning of his studio at Cornish, N. H., last week. Doubtless there were some amongst the onlookers who felt it was a pitiful thing to see the clay models for the Mareus Daly and the John Stewart Parnell statues prevented from being thoroughly baked into terra-cotta partly by lack of fuel and partly by the intrusion of hose streams, causes which stood in the way of effecting a species of accidental salvage. Probably the most regrettable, because nearly irreplaceable, loss, aside from the destruction of the death-mask of the late William C. Whitney, ex-Secretary of the Navy, was the destruction of the sculptor's accumulation of drawings, sketches, notes and other memoranda, which were of the utmost value to him as records of the past and as suggestion and inspiration for the future. The ultimate loss to art may not be great, for the sculptor, though at the moment far from well and so likely to be unfavorably affected by the disaster, is not yet ready to begin to feel that he has passed the zenith of his powers or entered upon the last decade of his career, and so has still the capacity to replace the unexecuted models. As the loss is a very grievous one, the artist will take some degree of satisfaction in the knowledge that it has earned for him sympathy in every quarter of the world.

PRESIDENT ELIOT, of Harvard University, has announced that, at last, the joint committee which has been seeking for some possible basis of co-operation, in the matter of technical education, between the University and the Massachusetts Institute of Technology feels that it has at last had placed before it a scheme which has very promising aspects. If the respective governing bodies receive the suggestion with equal favor, the alumni of the two institutions may shortly be put in possession of the particulars of the proposed arrangement, since, considering the importance of the matter and the impulsive way in which the Technology graduates resented the first crude suggestion, it will probably be felt needful to submit the final decision to the alumni of both institutions. Our own opinion of the desirability of the suggested merger is as strongly favorable now as it was at first, and we hope that the cool discussion of a definite plan may result in an effective working coalition. Meanwhile, we hope that the effort to raise funds for the Technology may be maintained actively and effectively, since the sensation of assenting to this compact would be more agreeable to its alumni, if it could be done with the knowledge that it was not a lack of means on its part that had forced an unwilling assent.

IT would seem as if there must be enough steady, sober-minded workingmen, who can see the great virtue and value of the scheme, to bring about the formation of many labor unions on the lines adopted by the Independent Carpenters' Union, of Louisville, Ky. The most significant feature of its laws of association is that none but first-class mechanics can be enrolled. If that could be said of existing unions, there would be vastly less "labor trouble" affecting modern business life, and strikes, even if they did not occur with less frequency, would surely be settled more expeditiously. It is the paying high for slovenly and inefficient service that causes the general public to look with such disfavor on the man with the union "card" in his pocket. Another of the objects of this Louisville

union is to prevent strikes and lockouts, and that is precisely what one would expect first-class mechanics to try to effect. No walking-delegates are to be employed, and why should they be, since there are no strikes to be engineered? Finally, it not only does not object to but actually "believes in the open shop"† It will be interesting to learn the fate of this very praiseworthy experiment, which one would like to call thoroughly indicative of the true American spirit of liberalism, if one dared to think that such spirit still existed anywhere amongst us; for if first-class mechanics, anxious to do only good work, desirous of working every day, and willing to work side by side with union and non-union men alike, cannot succeed in making a living and keeping their organization in existence, then the labor condition in this country is in a hopeless state, indeed.

THERE are discernible advantages in living under an autocratic government for which a good many Americans would be willing to exchange the greater license that is accorded by our own laws and customs to their fellow-citizens—of course, each of us would like to have his own acts and interests unfettered, and only wishes that his neighbors should be restrained. It was only natural that the "iron interests" on the other side of the water should look with envious eyes on the greater possibilities brought within the reach of their fellows in this country by the modern high buildings, structures which are generally ruled out by Continental building-laws. The appeal of the leading association of iron-masters of Prussia for the modification of existing laws so that sky-scrapers might be erected in Berlin—where the present height-limit is fixed at seventy-four feet—and elsewhere has just been denied by the Prussian Ministry of Public Works. Refusal was based partly on the grounds that the possibility of building really fireproof buildings was still an open question and that fire-engines could not reach fires in the upper stories of such buildings, and partly because to change the laws as suggested would surely give occasion for the wildest sort of real-estate speculation. Probably the check is but temporary, and sooner or later the iron-masters will gain their end. But when the change does come, we hope that leave to build sky-scrapers may be granted only to Berlin and a few of the modernized cities, as we can think of nothing more offensive to the sensibilities than for a traveller to revisit, say, Nuremberg and find it all peppered over with twenty-story office buildings of the German type of l'Art Nouveau treatment.

THE last report, that by a National Commission appointed to investigate the matter, has been made on the burning of the "*General Slocum*," in New York harbor this summer, and as a consequence the President has directed the discharge of two local inspectors who have special charge of the Port of New York and the Supervising Inspector in charge of the entire district. But is this all that a President who "does things" proposes to do? Is this dealing proper justice to those who suffered and were wronged? The Nation was distinctly *particeps criminis* in this matter, and it should, in consequence, do what it can, not merely to right the wrong but to alleviate the suffering which it allowed to be inflicted because of its fraudulent assurances of safety.

THE STRUCTURAL DESIGN OF BUILDINGS.¹—II.

LOADS ON FOUNDATIONS.

SEVERAL failures, which have resulted from unequal settlement of foundations, have demonstrated that it is of the utmost importance that foundations should be proportioned properly, more particularly those not on solid rock, or where a settlement is to be expected. The reason for some of these failures was that the foundations were proportioned for the theoretical live loads, which never occurred. During construction, when the dead loads caused a settlement, those foundations which received the smallest amount of live load, therefore, were strained nearly to the limit of the permissible pressure, while those with a large amount of live load received a very much smaller pressure per square foot, thus causing unequal settlement.

For many years it has been the practice to reduce the live loads on foundations to less than the amounts allowed on the footing of columns, a provision which also exists in some building laws. However, as the average live load in a fireproof building is only 20 pounds (or less) per square foot, and the dead load on the interior columns approximately 100 pounds per square foot, and on exterior columns considerably more; and, as the foundations have generally reached their maximum settlement before the building is occupied, it seems that the logically correct way to proportion foundations would be to consider the dead load only, but reduce the pressure per square foot so that the permissible pressure for combined dead and live load will not be exceeded. For example:—

The base of that foundation which gets the greatest live load in proportion to the dead load has:

100,000 pounds live load.
400,000 pounds dead load.
500,000 pounds total load.

The permissible pressure on the base of the foundation is two tons, or 4,000 pounds per square foot, and this foundation, therefore, would require an area of 500,000 divided by 4,000, equalling 125 square feet, which, if the live load be omitted, would give a pressure of 3,200 pounds per square foot for dead load alone. Therefore, all foundations in this building should be proportioned so that the pressure from the dead load alone will not exceed 3,200 pounds per square foot.

WIND LOADS.

All structures are exposed to high wind pressures occasionally, and there have been many disasters caused by structures having been blown down by the wind. All cases of this kind can be traced to inadequate provision in the design to resist these forces. It is not sufficient to compute the wind strains on the exposed surface of the finished building and depend upon the walls and partitions for bracing. The steel frame of a building is generally run up ahead of the walls and partitions. In several instances the framework of buildings has been wrecked during erection, or has been blown out of plumb and has had to be pulled back into place. Sometimes, temporary wooden braces or temporary adjustable rods have been used to hold the framework in line during erection. In one case the framework was so flimsy and shaky that the erectors were afraid to work on it, and, in order to make it safe during erection, tied it together with wire ropes. Certainly, this was not good practice. The steel frame of a building should be treated as an independent structure, the same as the towers of a viaduct, and should be able to resist the wind forces on all surfaces exposed during erection. This should be accomplished by substantial bracing, or by designing the columns and connections so that they may be able to resist the bending strains produced by wind pressure. No temporary makeshifts should be allowed. This method has the advantage of imparting additional stiffness to the framework.

In proportioning the members of the structure for these temporary wind strains, it is permissible to allow a higher unit strain than for permanent work, say 20,000 pounds per square inch, or about two-thirds of the elastic limit.

UNIT STRAINS.

The permissible pressure allowed on foundations on different kinds of soil, on concrete, masonry, brickwork, etc., have been compiled from different sources.

¹ A paper read by C. C. Schneider, M. Am. Soc. C. E., before the American Society of Civil Engineers, October 19, 1904 and published in its *Proceedings*. Continued from No. 1503, page 22.

The permissible unit strains on steel are specified as 16,000 pounds per square inch, which is approximately one-half of the elastic limit; therefore, giving a factor-of-safety of 2. This is in accordance with the best practice now in vogue for bridge work.

MATERIAL AND WORKMANSHIP.

It was not deemed necessary to include in these specifications the quality of the ordinary building material, such as cement, concrete, stone masonry, brickwork, etc., as most of that material is of a local character and is generally well covered by architects' and engineers' specifications.

Cast Iron.—This is practically ruled out in these specifications, as it is the poorest of all metals used for structural purposes to resist bending and tension. It has been the cause of several disasters, and, in bridge work, has been entirely abandoned for many years. The use of cast iron in columns with the usual beam connections is to be particularly condemned, as the beams are supported by lugs or brackets cast on the columns, thus producing eccentric loading and bending strains.

Rolled Steel.—This material, of the grade called "structural steel," adopted by the American Railway Engineering and Maintenance-of-Way Association for bridge material, is specified for all structural parts, as it is considered the most reliable for structural purposes. It is moreover, a commercial article which can be purchased from any reputable manufacturer without extra cost.

The specifications for material and workmanship are practically the same as those adopted by the American Railway Engineering and Maintenance-of-Way Association, as far as they were applicable to structural work for buildings.

These specifications are divided into two parts:

Part I.—This contains the information necessary for computation and designing, such as loads, unit strains and details of construction.

Part II.—This covers the quality of material, the workmanship and the inspection.

This division is made so that each part may be used separately: Part I in the office, by the designer, and Part II in the shop, by the manufacturer and inspector, and, for this reason, the paragraphs in each part are numbered separately.

GENERAL SPECIFICATIONS FOR STRUCTURAL STEEL-WORK OF BUILDINGS.—PART I.—DESIGN.

LOADS.

1.—**Dead Load.**—The "dead" load in all structures shall consist of the weight of walls, floors, partitions, roofs and all other permanent construction and fixtures.

2.—In calculating the "dead" loads, the weights of the different materials shall be assumed as given in Table 16.

3.—**Live Load on Floors.**—Table 2 gives the "live" load on floors, to be assumed for different classes of buildings. These loads consist of:

- a.—A uniform load per square foot of floor area;
- b.—A concentrated load which shall be applied to all points of the floor;
- c.—A uniform load per linear foot for girders.

The maximum result is to be used in calculations.

The specified concentrated loads shall also apply to the floor construction between the beams for a length of 5 feet.

TABLE 2.—LIVE LOADS.

Classes of buildings.	LIVE LOADS, IN POUNDS.		
	Distributed load.	Concentrated load.	Load per linear foot of girder.
Dwellings, hotels and apartment houses.....	40	2,000	500
Office buildings.....	40	5,000	1,000
Assembly-rooms with fixed seats, like theatres, churches, schools, etc.....	40	5,000	1,000
Assembly-rooms without fixed seats, like ball-rooms, gymnasiums, armories, etc.....	80	5,000	1,000
Stables and carriage houses.....	70	5,000	1,000
Ordinary stores and light manufacturing.....	40	8,000	1,000
Sidewalks in front of buildings..	100	10,000	Special.
Warehouses and factories.....	from 120 up	Special.	Special.
Charging floors for foundries...	" 300 "	"	"
Power houses, for uncovered floors.....	" 200 "	"	"

The actual weights of engines, boilers, stacks, etc., shall be used, but in no case less than 200 lbs. per sq. ft.

4.—If heavy concentrations, like safes, armatures, or special machinery, are likely to occur on floors, provision should be made for them.

5.—*Crane Loads and Impact.*—For structures carrying traveling machinery, such as cranes, conveyors, etc., 25 per cent shall be added to the strains resulting from such live load, to provide for the effects of impact and vibrations. (For crane loads, see Table 17.)

6.—*Loads on Flat Roofs.*—Flat roofs of office buildings, hotels, apartment-houses, etc., which are likely to be loaded by crowds of people, shall be treated as floors, and the same live loads shall be used as specified for hotels and dwelling-houses.

7.—*Loads on Ordinary Roofs.*—Ordinary roofs shall be proportioned to carry the following loads per square foot of exposed surface, applied vertically, to provide for dead and live loads combined:—

Gravel or composition roofing.	On boards, flat pitch, 3 to 12 in., or less....	45 lbs.
	On boards, steep pitch, more than 3 to 12 in.	40 lbs.
	On 3-in. flat tile or cinder concrete.....	55 lbs.
Corrugated sheeting.	on boards or purlins.....	50 lbs.
Slate.	On boards or purlins.....	50 lbs.
	On 3-in. flat tile or cinder concrete.....	65 lbs.
Tile on steel purlins.....		55 lbs.

For roofs in climates where no snow is likely to occur, reduce the foregoing total loads by 10 pounds per square foot.

8.—*Large Roofs.*—Large roofs, such as train-sheds, armories, public halls, etc., shall be proportioned to carry, in addition to their own weight:—

A live load, representing snow, per horizontal square foot of roof of:—

- 15 lbs. for all slopes not exceeding 35 degrees.
- 10 lbs. for all slopes between 35 and 45 degrees.

The possibility of a partial snow loading has to be considered. The snow load can be neglected in certain climates, also in roofs having slopes exceeding 45 degrees, if there are no snow-guards or other obstructions.

9.—*Loads on Columns.*—For columns, the specified uniform live loads per square foot shall be used, with a minimum of 20,000 pounds per column.

10.—*Reduction of Live Load on Columns.*—For building more than five stories in height, these live loads may be reduced as follows:—

For roof and top floor, no reduction;

For each succeeding lower floor, a reduction of 5 per cent until 50 per cent is reached, which is to be used for the columns of all remaining floors, viz., the reduced load is to be used for the total floor area carried by the column.

11.—*Loads on Foundations.*—The live loads on foundations shall be assumed to be the same as for the footings of columns. The areas of the bases of the foundations shall be proportioned for the dead load only. That foundation which receives the largest ratio of live to dead load shall be selected and proportioned for the combined dead and live loads. The dead load on this foundation shall be divided by the area thus found, and this reduced pressure per square foot shall be the permissible working pressure to be used for the dead load of all foundations.

12.—*Wind Pressure.*—The wind pressure shall be assumed at 30 pounds per square foot acting in either direction horizontally:—

First.—On the sides and ends of buildings and on the actually exposed surface, or the vertical projection of roofs;

Second.—On the total exposed surfaces of all parts composing the metal framework. The framework shall be considered an independent structure, without walls, partitions or floors.

UNIT STRAINS.—SUBSTRUCTURE.

13.—*Foundations.*—Permissible pressure on foundations, in tons per square foot:—

Soft clay and wet sand.....	1
Ordinary clay and dry sand mixed with clay.....	2
Dry sand and dry clay.....	3
Hard clay and firm, coarse sand.....	4
Firm, coarse sand and gravel.....	6

14.—*Masonry.*—Permissible working pressure in masonry, in tons per square foot:—

Common brick, lime mortar.....	7
Common brick, Rosendale-cement mortar.....	8
Common brick, Portland-cement mortar.....	10
Hand-burned brick, Portland-cement mortar.....	12
Rubble masonry, lime mortar.....	5
Rubble masonry, Rosendale-cement mortar.....	6
Rubble masonry, Portland-cement mortar.....	8
Coursed rubble, Portland-cement mortar.....	10

Concrete for walls:—

Rosendale cement, 1-2-5.....	8
Rosendale cement, 1-2-4.....	9
Portland cement, 1-2-5.....	15
Portland cement, 1-2-4.....	16

15.—*Pressure on Wall-Plates.*—The pressure of beams, girders, wall-plates, column bases, etc., on masonry shall not exceed the following, in pounds per square inch:—

On brickwork with cement mortar.....	150
On rubble masonry with cement mortar.....	150
On Portland-cement concrete.....	250
On first-class masonry, sandstone.....	200 to 300
On first-class masonry, limestone.....	300 to 500
On first-class masonry, granite.....	400 to 800

16.—*Bearing Power of Piles.*—The maximum load carried by any pile shall not exceed 40,000 pounds. Piles driven in loose, wet soil shall not be strained to more than 350 pounds per square inch of their average cross-section.

The safe load on wooden piles shall be determined by the following formula:¹

$$P = \frac{2WH}{s \text{ plus } 1}$$

Where P equals safe load on pile, in tons;

H equals distance of free fall of hammer, in feet;

s equals penetration of the pile for the last blow, in inches.

UNIT STRAINS.—SUPERSTRUCTURE.

Steel.

17.—*Permissible Strains.*—All parts of the structure shall be proportioned so that the sum of the dead and live loads, together with the impact, if any, shall not cause the strains to exceed those given in the following table:—

	Pounds per square inch.
Tension, net section.....	16,000
Direct compression.....	16,000
Shear, on rivets and pins.....	12,000
Shear, on bolts.....	8,000
Shear, on plate-girder web (gross section).....	10,000
Bearing pressure, on pins and rivets.....	24,000
Bearing pressure, on bolts.....	16,000
Fibre strain, on pins.....	24,000

18.—For wind bracing, and the combined strains due to wind and the other loading, the permissible working strains may be increased 25 per cent, or to 20,000 pounds for direct compression or tension.

19.—*Permissible Compression Strains.*—For compression members, these permissible strains of 16,000 and 20,000 pounds per square inch shall be reduced by the following formula:—

$$p = 16,000 - 70 \frac{l}{r}$$

$$p = 20,000 - 90 \frac{l}{r}$$

Where p equals permissible working strain per square inch in compression;

l equals length of piece, in inches, from centre to centre of connections;

r equals least radius of gyration of the section, in inches.

20.—*Provision for Eccentric Loading.*—In proportioning columns, provision must be made for eccentric loading.

21.—*Expansion Rollers.*—The pressure per linear foot on expansion rollers shall not exceed 600 d , where d equals diameter of rollers, in inches.

22.—*Transverse Loading of Tension or Compression Members.*—When a floor, wall or other weight rests directly on the chord of a truss, said chord shall be proportioned so that the sum of

¹ Engineering News formula.

the strains per square inch on the outer fibre, resulting from direct compression or tension, and three-fourths of the maximum bending moment (the chord being considered as a beam of one panel length, supported at the ends) shall not exceed the specified limiting strains in tension or compression, the proper amount of impact, if any, being added to each kind of loading.

23.—The bending moments at panel points shall be assumed equal to that in the centre, but in opposite direction.

24.—*Combined Strains.*—All other members which are subject to direct strain, in addition to bending moment, shall be calculated in a similar manner.

25.—*Alternate Strains.*—Members and connections subject to alternate strains shall be proportioned for the strain giving the largest section.

26.—*Net Sections.*—Net sections must be used in calculating tension members, and, in deducting rivet holes, they must be taken $\frac{1}{8}$ inch larger than the nominal size of the rivets.

27.—*Pin-connected riveted tension members* shall have a net section through the pin holes 25 per cent in excess of the net section of the body of the member. The net section back of the pin hole shall be at least 0.75 of the net section through the pin hole.

28.—*Compression Members Limiting Length.*—No compression members shall have a length exceeding 125 times its least radius of gyration, except those for wind and lateral bracing, which may have a length not exceeding 150 times the least radius of gyration.

29.—*Plate Girders.*—Plate girders shall be proportioned on the assumption that one-eighth of the gross area of the web is available as flange area. The compression flange shall have the same sectional area as the tension flange, but the unsupported length of the flange shall not exceed 30 times its width.

30.—In plate girders used as crane runways, the unsupported length of the compression flange shall not exceed 20 times its width.

31.—*Web Stiffeners.*—The web shall have stiffeners at the ends and inner edges of bearing plates, and at all points of concentrated loads, and also at intermediate points, when the thickness of the web is less than one-sixtieth of the unsupported distance between flange angles, generally not farther apart than the depth of the full web plate, with a minimum limit of 5 feet.

32.—*Rolled Beams.*—I-beams, and channels used as beams or girders, shall be proportioned by their moments of inertia.

33.—*Limiting Depth of Beams and Girders.*—The depth of rolled beams in floors shall be not less than one-twentieth of the span, and if used as roof purlins, not less than one-thirtieth of the span.

In case of floors subject to shocks and vibrations, the depth of beams and girders shall be limited to one-fifteenth of the span.

34.—*Field Connections.*—In field connections, the number of rivets shall be increased 15 per cent.

Cast Iron.

35.—*Compression on Cast Iron.*—The direct compression on cast iron shall not exceed 12,000 pounds per square inch.

Timber.

36.—*Timber.*—The timber parts of the structure shall be proportioned in accordance with the unit strains in Table 3.

TABLE 3.—UNIT STRAINS, IN POUNDS PER SQUARE INCH.

Kind of timber.	Transverse loading.	End bearing.	Columns under 12 diameters.	Bearing across fiber.	Shear along fiber.
White Oak.....	1,300	1,300	1,000	500	300
Long-leaf Pine.....	1,500	1,500	1,000	350	100
White Pine and Spruce.....	1,000	1,400	700	200	100
Hemlock.....	800	800	650	200	100

37.—Columns, the length of which exceeds twelve times their least diameter, shall be proportioned by the following formula:—

$$f = \frac{C}{1 \text{ plus } \frac{h}{1,000 d^2}}$$

Where C equals unit strains, as given in Table 3, for short columns;

h equals length of column, in inches;

d equals least side of column, in inches.

38.—*Planking.*—For thickness of floor and roof planking, see Table 18.

(To be continued.)

NOTE ON THE REMOVAL AND UTILIZATION OF MUNICIPAL REFUSE IN FRENCH CITIES.¹

It is necessary to try and define what is understood by "municipal refuse;" local customs and regulations being liable to create quite important differences, so that misunderstandings might result because of doubt concerning the kind of refuse considered.

It seems that by giving their broadest meaning to these two words "municipal refuse," they may apply to three kinds of refuse which are kept separate at Paris, that is:—

- 1.—Industrial refuse;
- 2.—Street sweepings;
- 3.—House refuse.

The industrial refuse includes in a general way all the waste and refuse produced by the various industries established in cities. The kinds of refuse being as numerous as the industries themselves, it is out of the question to try and enumerate them all.

They include in all cases the refuse and organic waste from kitchens, restaurants, hotels, schools, seminaries and boarding-houses.

In Paris, the proprietors of industries have to dispose of the refuse produced on their premises. They are prohibited from dumping it on the streets.

This refuse is naturally disposed of in many different ways. Some of it is expensive to remove; for instance, ashes and coal cinders from steam engines have most of the time to be carried to the public dumping places.

The kitchen refuse, on the contrary, is sold at a profit on account of the many utilizable matters which it contains. In this way, more than one housekeeper gets profits from the remnants of her kitchen; otherwise, the rag-pickers know how to pick them out from the refuse cans.

It is only some small tradesmen, and chiefly the retail fruit-dealers, who are allowed to drop their refuse on the streets. But these excepted, the city has nothing to do with the removal of industrial refuse. Only the Board of Health has authority to interfere when there is an unhealthy accumulation of refuse.

Since 1873 the sweeping of the streets has been entirely in the hands of the municipal authorities. The property owners are exempted from all work by the payment of an annual tax.

The work begins at 4 A. M. The municipal laborers sweep the sidewalks and horse-drawn sweeping-machines take care of the roadways. When the weather is dry, the roadway is sprinkled lightly before sweeping. Often, chiefly on wood pavings, the street is washed thoroughly.

The refuse, dust or mud, is brought against the curb in the gutter. These gutters are all provided with running water through hydrants conveniently disposed on the highest ground. As soon as the sweeping is finished, the municipal laborers open these hydrants and wash the refuse by means of running water to the nearest sewer opening.

If the roadway is ballasted, the washing in the gutter must be accompanied by a kind of threshing of the refuse, since only the lighter part goes into the sewer, the heavier part remaining at the bottom of the gutter, where sand is found afterward quite often good enough to be used again for the maintenance of the roadway.

In the afternoon all streets with heavy traffic are swept a second time. If the weather is dry, however, sweeping-machines are not used and the sweeping is done by hand. In streets paved or asphalted, the refuse, composed practically of horse manure only, is picked up in wheel-barrows and dumped near a sewer opening from which running water, provided for by hydrants placed under the sidewalks, carries it into the sewers. On the ballasted roadways the horse manure is nearly always mixed with quite an amount of mud; the refuse is then generally piled up in the gutters, or the side of the walk, whence it is carried away every day, by contractors to the public dumping-places.

With this one exception, all sweeping refuse is thrown into the sewers; it mixes with the kitchen water and sewage of the private houses and is carried with them to the purifying fields established around Paris.

In the gutters, furrowing these fields, it is frequently observed that the earth takes a kind of felty appearance; this felting, which does not give any serious trouble, is caused, for the most part, by the horse manure coming from the streets.

It is well to insist on the method of disposal of street refuse

¹ A paper by M. P. Tur, Ingenieur en Chef adjoint du Service Technique de la Voie publique et de l'Eclairage de la Ville de Paris, read at the International Engineering Congress at St. Louis, and to be published in the *Proceedings* of the Am. Soc. Civil Engineers.

described above. Paris, so far as is known, is the only place where this system is used. It may not be very economical, on account of the quantity of water required, but it gives great cleanliness in a very short time.

In most other French cities, the street refuse is carried away in the wagons which every day collect and carry away the house refuse; both kinds of refuse are generally treated alike, and what is subsequently said in this paper applies to both.

In Paris, house refuse is known as garbage (*gadoue*). A municipal regulation, dated March 7th, 1884, gives its exact definition, and at the same time regulates the conditions under which it is allowed to be placed on the public streets.

The house garbage is composed of "all kitchen refuse and any remnants produced by the sweeping of the inside of private properties or public buildings." It must not be mixed with industrial refuse, earth, gravel, rubbish or any other refuse produced by any repair or other works, or the maintenance of yards and gardens. It must be contained in pails having a maximum capacity of 30 gallons, and weighing when empty not more than 31 pounds.

Householders must cause these pails to be deposited at the doors of their houses at least one hour before the regular time of removal by the Municipal Department. This removal takes place in summer between 6:30 and 8:30 A. M., and in winter between 7 and 9 A. M.

The broken crockery, glass, earthenware, etc., from private houses are ordered to be deposited in special receptacles. But this rule has never been observed and has been practically given up after a few attempts to enforce it. The same dump-carts used for the disposal of house refuse also remove the market waste; this waste is composed mainly of the same elements as the house refuse, but is richer in vegetable matter.

In most French cities, the house refuse is of the same character as that of Paris, but is mixed at the time of removal with the street sweepings, as before stated.

In many cases it is still permitted to dump the refuse in a heap on the street, but the tendency is to enforce, as in Paris, the use of garbage pails. In quite a number of cities the officials can compel householders to sort the broken glass, crockery, earthenware, etc., which are then removed separately.

In Paris the refuse is removed in large, two-wheeled dumping-carts called "guimbardes," drawn usually by two horses. Their capacity is from 2 to 6 cubic m. These carts are very high and very awkward to load. The loading is done by city laborers, but the hauling is let out by contract.

The carts are open on top and only within a few years have been covered by a tarpaulin, too often dilapidated. When they are overloaded and the wind blows, this causes trouble. The organization of this part of the garbage service is as yet rudimentary and quite deficient; it will not be possible to improve it as long as the garbage is carried directly to the fields by the carts which remove it.

The city officials have just ordered a competition in order to choose a more satisfactory type of cart, but no final choice has been made as yet.

Most of the cities outside of Paris use ordinary dumping carts provided by contractors for the removal of garbage. In only a few cities is the municipal removal in force.

As soon as collected, all the Paris garbage was carried until the last few years, directly to the fields.

The greatest portion was delivered to the farmers from the same carts in which it had been loaded from the streets; another portion was shipped by railroad, and yet another by boats.

Of a total annual quantity of about 600,000 tons, there were:—

- 380,000 tons, or about 64 per cent, carried by horses.
- 140,000 tons, or about 24 per cent, carried by railroad.
- 80,000 tons, or about 12 per cent, carried on the Seine, or the canals.

But little by little the contractors, who are paid by the city for the removal and disposal of garbage, have raised their bids. The total expenditure for the city, which was about 845,000 francs in 1873, has quadrupled and in 1901 reached 3,435,000 francs. This was due to the fact that the fields, on which it was possible to utilize the garbage, were becoming more and more scarce in the immediate neighborhood of Paris; the suburban towns were refusing to allow garbage to be deposited in their territory and, sometimes, it was not without trouble that the garbage-loaded carts were allowed to pass. Furthermore, the farmers able to buy chemical fertilizers, cheap and easy to apply, were more particular; they were willing to pay only a low price for a fertilizer which required a careful sorting.

Without such sorting their fields were strewn with tin cans, broken crockery and glass, which were dangerous for their horses' hoofs.

It became necessary to think seriously of improving the previous methods.

From 1886 to 1898 incineration systems were carefully studied. After a few trips to England, the municipal engineers built a trial oven and kept it working during the entire year of 1895. These trials have given a number of interesting data. It has been found that the Parisian garbage was self-burning, *i. e.*, that it would burn without any addition of coal. Engineer Lauriol has defined very exactly the conditions essential to obtaining perfect combustion in an oven. But even then the weight of ashes and cinders was nearly 40 per cent of the garbage weight, and as long as a way has not been found to utilize either these ashes or cinders, or the heat produced by the combustion, there is no saving in this method.

On the other hand, the city has received a large number of different proposals which have been studied successively with the result that only one has been carried out, *viz.*, the agricultural utilization of garbage after grinding.

By this system the garbage is carried to a plant located as near as possible to the centres of removal and reached by a railroad spur and also, if possible, by a water route. The garbage is dumped into a pit from which it is raised by an elevator after a short sorting. From the elevator it is emptied into a grinding-machine formed of two rotating steel-toothed plates, from which it falls into the cars for removal.

This ground garbage looks like vegetable earth mixed with bits of straw and many pieces of paper. Its odor is hardly perceptible, can be endured for a long time, and may be removed almost entirely by sprinkling the loaded cars with lime-water. The ground garbage can be used in the fields without giving the same trouble as the original garbage, all *débris*, troublesome or dangerous for the farmers, having been removed.

The inventors of this method, Messrs. Tenin and Pioger, who have turned their business over to the Société des Engrais Complets, began by building in 1896 a small plant to the north of Paris, in the Station of Saint-Ouen-les-Docks, which has prospered continuously.

The comparison between the respective advantages of incineration and the agricultural utilization of garbage has given rise during these last years to spirited controversies.

The farmers, the agricultural syndicates, and the professors of agriculture have denounced vehemently the importation into France of the English incinerating system. They claimed justly that in agricultural matters, England cannot have the same needs as France.

Some attempts have been made to estimate the amount of wealth destroyed by incinerating the Paris garbage and the amounts have varied from 3,500,000 to 5,000,000 francs.

On the other hand, those who advocate incineration point out that the expense of removing the garbage is greater than its selling price on the fields, and that under these conditions its value in Paris is less than nothing. This has been proved by the indifference of the farmers themselves, who will not take the least trouble to procure this fertilizer. Consequently the City of Paris could not be expected to support the farmers. Its officials had only to look out for the immediate interests of the city and to find the cheapest and least troublesome method of removing its garbage. In fact, this question of economy, up to the present has been the principal consideration, and will continue to be so for a long time.

Hygienic considerations do not seem to enter into the question of the adoption of one method rather than the other, provided the agricultural utilization does not bring garbage storehouses near inhabited centres. This condition can be easily realized with the grinding process. Furthermore, ground-garbage storehouses are not much more disagreeable than storehouses for many fertilizers, dried night-soil, waste from sugar-houses, etc.

On the other hand, the same quantity of garbage which it takes a large incinerating plant a full day to burn can be ground and shipped in a few hours by a small grinding-plant, and there is no reason why one should be more objectionable than the other to the neighbors. The financial side of the question only remains to be considered, but there is no doubt that the grinding method has a decided advantage over incinerating, and for the present must be given the preference.

The choice to be made in Paris does not depend on theoretical considerations, but on practical demonstration and figures. There is no absolute proof in the matter; there is only the relative proof

which may vary, not only in place to place, but furthermore, in the same place, from time to time. When Paris has extended so far that the agricultural fields are out of the question for the disposal of garbage, it will have to be burned. It is also likely that even now, in the countries where there is little farming and where the soil is rich enough to produce without fertilizers, the incineration of garbage is the best way to dispose of it. But omitting consideration of the future, the first thing to determine is the best method of solving the problem for the present.

Consequently, the grinding of garbage, in view of its agricultural utilization, has made considerable progress in Paris during the last few years. Of the 20 boroughs in the city, 11 have given a contract for the disposal of garbage to the Société des Engrais Complets.

Besides the plant at Saint-Ouen, which has been in operation since 1896, the company has erected a new plant at Issy and contemplates building a third one at Romainville.

Other companies have begun to compete for the same work, and have put in bids to treat by a similar process the garbage of the other nine boroughs.

However, in order to guard against the contingencies which the continued increase in the population of Paris can not fail to produce sooner or later, the Municipal Government does not lose sight of the question of garbage incineration. An endeavor should be made to install a plant capable of burning the garbage of one borough. This plant should be located inside of Paris, and as near as possible to the centre of the borough which it serves, in order to reduce to a minimum the charge for hauling.

It does not seem that other French cities have as yet been forced to undertake experiments like those just made in Paris. Up to the present time, the farmers have taken care of all garbage produced without difficulty or inconvenience. Marseilles, for instance, fertilizes with its garbage the great barren plains of La Crau.

Havre is the only city which has thought of discarding the agricultural utilization of garbage. An inventor, M. Exbrayat, has made a proposal to combine the garbage with coal dust for the manufacture of a rough and cheap fuel. This proposal has been accepted by the city and the plant will be erected in the near future.

At Monaco, where agricultural cares necessarily give way to the entertainment of tourists, incinerating ovens of the Horsefall system have been installed during the last few years.

This paper would not be complete without a few words concerning the rag-pickers, whose existence in Paris has always complicated the study of all questions pertaining to house refuse.

The rag-pickers of Paris form a population, of which one part is fixed and the other nomadic; with the women and children, they are estimated to number from 20,000 to 25,000 persons, according to a recent report by M. Mazerolle.

The rag-picking is done first in the houses; rag-pickers called "placiers" or "ilotiers," from the place or block where they are known, are authorized by janitors to take the garbage pails from yards of buildings and carry them to the sidewalk, from which place the street-cleaners empty them into the dump-carts; they get from these garbage pails, the first and generally a satisfactory collection. A number of other rag-pickers are authorized by the city to climb on the carts and to pick out, at the time during which the pails are being emptied, anything of use which has been left. Still another sorting by the rag-pickers is allowed, in stations and at the gates, at the time of the trans-shipment of the garbage.

In the grinding-plants the same practice is followed when the refuse is dumped into the pits, and from the pits into the grinding-machine. The installation of the plants makes the work comparatively easy for the rag-pickers.

The rag-pickers are always interested in all improvements made by the city for the disposal of refuse, fearing that their occupation will be injured for the benefit of some contractor. At different times, their protests have been strong enough to stop improvements requisite for the public health.

It is to be hoped that the building of new grinding-plants, where all facilities are offered for sorting garbage, will modify, little by little, the old privileges of the rag-pickers.

There are in France, outside of Paris, few large cities which have rag-pickers, and in these their number is always quite small, and they do not assume the same importance as in Paris.

The objects sought by the rag-pickers in Paris are the same as those sought by rag-pickers all over the world, i. e., rags from wool, linen or cotton; old paper, bones, leather, white glass, tin cans, sheet iron, pieces of bread, orange peel, snail shells, etc. The value of these various objects has been decreasing for a number of years, and in the near future, it is more than likely that

the rag-picking industry will have to submit to important and lasting improvements.

ILLUSTRATIONS

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

KNIGHTS OF COLUMBUS BUILDING, CHAPEL STREET, NEW HAVEN, CONN. MR. JOHN LYMAN FAXON, ARCHITECT, BOSTON, MASS.

THE MASSACHUSETTS BUILDING, STATE STREET, BOSTON, MASS. MESSRS. CABOT, EVERETT & MEAD AND PEABODY & STEARNS, ARCHITECTS, BOSTON, MASS.

HOUSE AT PÖCKING AM STARNBERGERSEE, BAVARIA. HERR E. DOLLINGER, ARCHITECT.

This plate is copied from *Architektonische Rundschau*.

THE CONNECTICUT BUILDING: LOUISIANA PURCHASE EXPOSITION, ST. LOUIS, MO. MR. EDWARD T. HAPGOOD, ARCHITECT, HARTFORD, CONN.

THE OLD BRIDGE AT AVIGNON, FRANCE. FROM A DRAWING BY MR. PERCY WADHAM.

This plate is copied from *The Architect*.

Additional Illustrations in the International Edition.

THE OLIVER DITSON BUILDING, TREMONT STREET, BOSTON, MASS. MESSRS. WINSLOW & BIGELOW, ARCHITECTS, BOSTON, MASS.

THE LINCOLN SCHOOL, EVERETT, MASS. MR. W. HART TAYLOR, ARCHITECT, BOSTON, MASS.

SIDE PORCH OF SAME BUILDING.

VESTIBULE IN HOUSE ON THE AVENUE DES ARTS, BRUSSELS, BELGIUM. M. LEON SNEYERS, ARCHITECT.

This plate is copied from *l'Emulation*.

NOTES AND CLIPPINGS

ARTISTS AND TITLES IN GREAT BRITAIN.—A story which the late Mr. George Richmond, R. A., the portrait painter, used to tell may be quoted here apropos of the bestowal of titles on presidents of the Royal Academy in particular, and artists in general. He was walking with Mr. Gladstone one day, and passing down one of those streets in which doctors chiefly dwell, his eye caught the name on a brass plate, "Sir William Gull, Bart." He pointed it out to Mr. Gladstone, and said: "Is it not rather strange, sir, that men of all kinds of professions have been made baronets, but an artist never?" "Oh," replied Mr. Gladstone, "you are certainly mistaken; Sir Joshua Reynolds was a baronet." Mr. Richmond had some difficulty in convincing him that the mistake was on his side; but the remark appears to have borne fruit, as not very long afterward, Mr. G. F. Watts, R. A., who for private reasons refused the honor, then Millais in 1885, and Leighton in 1886, were made baronets at the suggestion of Mr. Gladstone. Lord Leighton's peerage was on the recommendation of Lord Salisbury. Reynolds was knighted, as we learn from his notebook of that year, at a levee held on April 22, 1769, at St. James's. Benjamin West, on his election as president, was offered a knighthood, but declined it, not, as is popularly supposed, because he was a Quaker, but because he wanted a baronetcy and a pension. These were refused, and the other was not again offered. George IV knighted Lawrence immediately after his election to the presidency, and at the same time presented the Academy with a very massive gold medal and chain, to be worn by its presidents. The medal bears the inscription: "From His Majesty George the Fourth to the President of the Royal Academy." All subsequent presidents have been knighted directly after their election.—*Fred A. Eaton, in Scribner's Magazine.*

THE ROYAL ACADEMY.—The Royal Academy originated in a meeting of a society of artists in St. Peter's Court, St. Martin's Lane, London, about 1739, which Hogarth formed into the Society of Incorporated Artists, who held their first exhibition at the Society of Arts, Adelphi, April 21, 1760. From this sprang the Royal Academy, in consequence of a dispute between the directors and the fellows. On Dec. 10, 1768, the institution of the present Royal Academy was completed under patronage of George III, and Sir Joshua Reynolds, knighted on the occasion, was appointed first president. The first exhibition of academicians (at Pall Mall) was on April 26, 1769, when 136 works appeared. In 1771

the king granted them apartments in old Somerset House, and afterward, in 1780, in new Somerset House, where they remained till 1838, when they removed to the National Gallery. From the honorary members, professors of ancient literature and ancient history are appointed. Among them have been Johnson, Gibbon, Goldsmith, Scott, Macaulay and Hallam. Turner, the painter, gave \$100,000 to the Academy at his death, in 1851. A commission of inquiry into the affairs of the Academy, appointed in 1862, recommended changes in July, 1863, which were carried into effect. The 100th anniversary of its foundation was celebrated Dec. 10, 1868. The Royal Academy held its first exhibition in the new building May 3, 1869. An annual exhibition of pictures by the old masters, with some British, began Jan. 3, 1870. The money received has been used to endow a professorship of chemistry, a laboratory, etc. In 1874 the exhibition included many of Landseer's pictures.—*Jane F. Mason in Boston Globe.*

LIGHTHOUSE ON GREENWICH STREET, NEW YORK.—Attention was called to an old landmark recently by a fire at Vesey and Greenwich Streets, near the old lighthouse at the northwest corner of those thoroughfares. The lighthouse, of course, is the landmark referred to. Although now two blocks back from the water-front and surrounded by tall buildings, this three-story brick structure was once a beacon for the Dutch traders and fishermen coming into port. That was 150 years old, when the water came beyond where Greenwich Street is now, and when St. Paul's Chapel was within a stone's throw of the beach. The lighthouse was on a point of land which at high tide became an island. The lighthouse, according to Charles Hemstreet, author of "Nooks and Corners of Old New York" and "When Old New York Was Young," is the oldest building in the city. "But two of the pre-Revolutionary buildings remain standing," says Mr. Hemstreet—"the lighthouse and St. Paul's Church. The lighthouse was built in the early part of the eighteenth century to protect the west shore of Manhattan Island. It was built out from the old shore about half a city block. It was kept as a shoe store for more than fifty years; in fact, the old boot on top of the building bore the date 1832. The boot was the feature of the famous Croton water parade. About 1852 a beautiful girl named Anna Jordan disappeared. A boatman said he saw her near the lighthouse, and the keeper, John Reamon, was arrested on suspicion of having abducted her. Nothing was proved against him, and he was allowed to go. When on his deathbed, in 1879, he confessed to having lured the girl to the place, where he murdered her. Later some bones were found in a niche in the wall below the water-line, and they were supposed to have been the bones of Anna Jordan." The fire was in a brick building adjoining the lighthouse, and scorched the landmark, but did not damage it.—*New York Evening Post.*

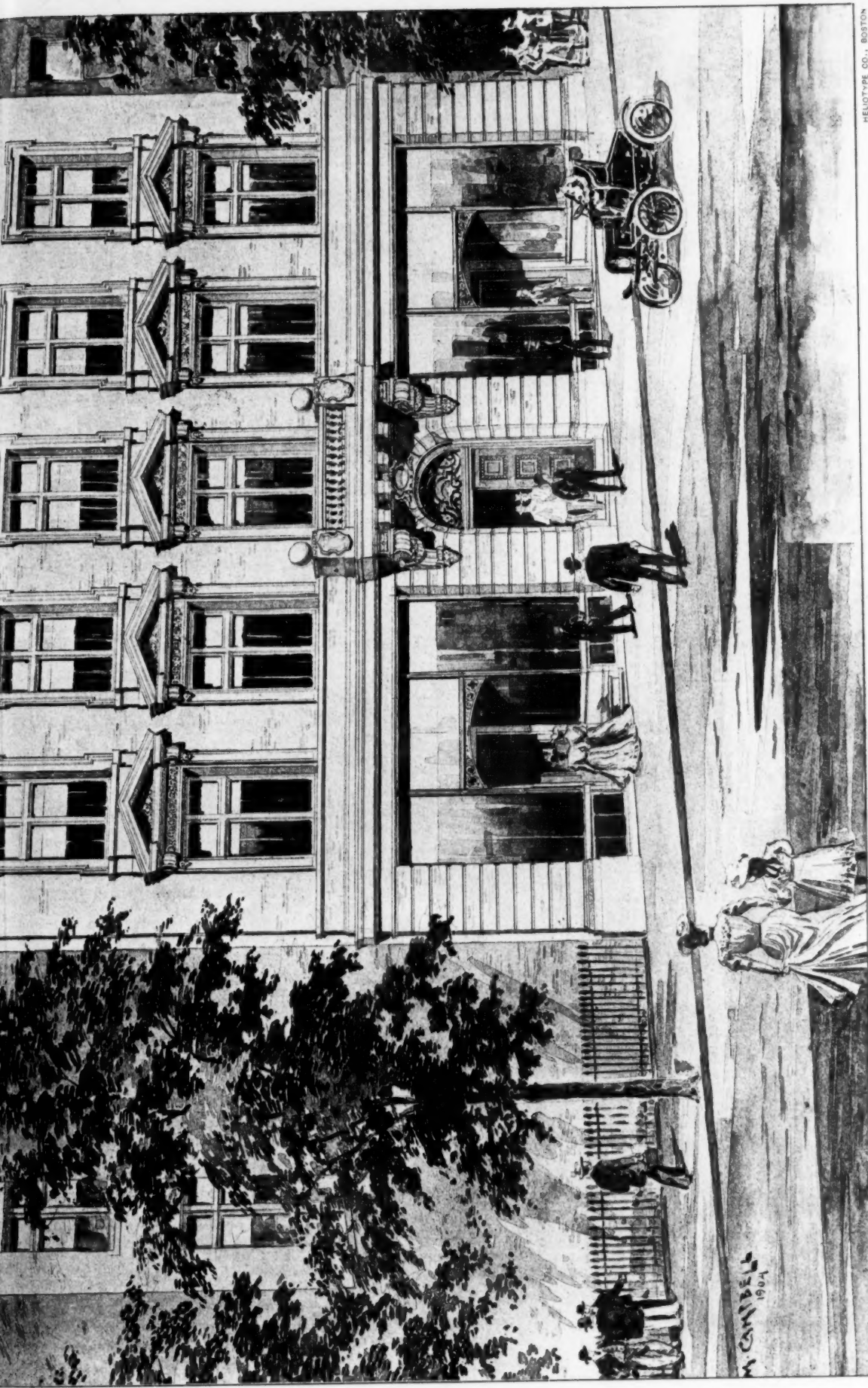
THE ARMS OF THE VENUS OF MILO.—The recent discovery in the garrets of the Louvre, in Paris, of the stuffed charger which the first Napoleon is said to have ridden at the battle of Marengo should have the effect of calling the attention of the public to the fact that there are innumerable treasures of immense artistic and archaeological value which lie hidden away, forgotten and abandoned, in the remote corners of the garrets and the vaults of France's great national museum. Somewhere in these vaults or garrets are the missing arms—or the fragments of the arms—of the statue of the Venus de Milo, which is justly accounted the most famous treasure of the Louvre. There have been so many bitter controversies and so much discussion as to the attitude of these missing arms, and as to the appearance of the statue before the loss of the two arms, that it has always been a source of wonder why no more exhaustive search has been made of the contents of those thousands upon thousands of cases and crates, both great and small, which fill to the ceiling the extensive vaults and the vast garrets of the Louvre. It is true that these cases are being examined by degrees. But the progress of the work is so slow, and the quantity of boxes and crates so enormous, that fifty years or more may elapse at the present rate of progress before the missing arms of the Venus de Milo are found. It seems that when the statue was discovered at Milo the Duc de Rivière, French Ambassador at Constantinople, and his nephew and secretary, the Comte de Saint Maur, were present, and that, according to their sworn statements, the statue, instead of being armless, as it is now, possessed two arms in perfect condition, the right hand holding the apple which Venus had just received from Paris, while with her left hand she slightly raised the skirt of her robe in order to show her ankles to the young shepherd who had been called upon to decide as to the superior beauty of the three goddesses. Curiously enough, it was Henri Rochefort, Marquis de Luca, an editor of the Paris *Intransigeant*, who first called attention to the existence of these two sworn statements, the Duc de Rivière having been his granduncle and the Comte de Saint Maur his uncle. Rochefort's assertions were substantiated by careful investigation of the records at the National Library and of the Department of Foreign Affairs on the Quai d'Orsay. From these it would appear that at the moment when the sailors of the dispatch boat belonging to the French Embassy at Constantinople were landed at Milo for the purpose of embarking the statue they

caught sight of a number of peasants, who, by orders of the parish priest, Orconomus, were endeavoring to cart the statue off, with the object, as it was afterward ascertained, of taking it to the palace of a pacha who resided in the vicinity. In the struggle which ensued, of course the French sailors drove off the peasants. And then it was found that both arms had been broken off the statue by contact with the rocks. The statue was placed on board the dispatch boat "Estafette," together with the parts of the broken arms, which were carefully preserved and crated, and they were received in due course with the statue at Paris. From that time forth until now they have been hidden away somewhere or other in the Louvre, never having been unpacked from the case.—*Marquise de Fontenoy in N. Y. Tribune.*

RESULTS OF THE GREAT STRIKE AT PENRHYN.—Lord Penrhyn will be remembered in connection with his many years' fight with his workmen, thousands in number, a fight in which the government interfered in vain, not in behalf of the peer, but in that of the men. Lord Penrhyn held out, won the victory, and not only that, but likewise the good will of the very men with whom he had been fighting. During the lifetime of his father, the latter had tried the experiment of working the quarries under the management of a committee of the men, which ended in chaos and disaster, from which they were rescued by the present Lord Penrhyn, who took them into his own hands and brought them back into a condition of prosperity. This experiment of his father's determined him to permit no further outside interference with his property, and while he offered no objection to his men forming themselves into associations of the benefit order, he declined to allow them to import professional labor-agitators from the outside, as officers of their unions, or to tolerate relations between the latter and other labor unions throughout the country, resolved not to expose himself to the danger of sympathetic strikes. It was this that brought about the war between his men and himself, and, rather than give way, he shut down his quarries. To-day they are once more working in full blast, his men having yielded to his terms. These are exceedingly liberal in the matter of pay and hours, far more so, indeed, than in any other slate quarries where labor unions are in control. Moreover, he has established a system of pensions, and is extremely generous and indulgent in the matter of rent, all the workmen in his employ being his tenants. Lord Penrhyn shows the same solicitude for the material and moral welfare for the people of his estates as other English territorial magnates, who are keenly alive to the fact that the possession of land carries obligations with it. Indeed, during the years that his men were on strike he refrained from expelling them from their holdings, and relieved their destitution, even while they were waging the bitterest kind of war against him. Lord Penrhyn is the second peer of his name. His father was a Scotch soldier, a Colonel Douglas, who married the daughter and heiress of George Pennant, of Penrhyn Castle, the value of whose estates was commensurate with the pride of his pedigree from Trevor Tudor, the founder of the Tribe of the Marches.—*Marquise de Fontenoy in N. Y. Tribune.*

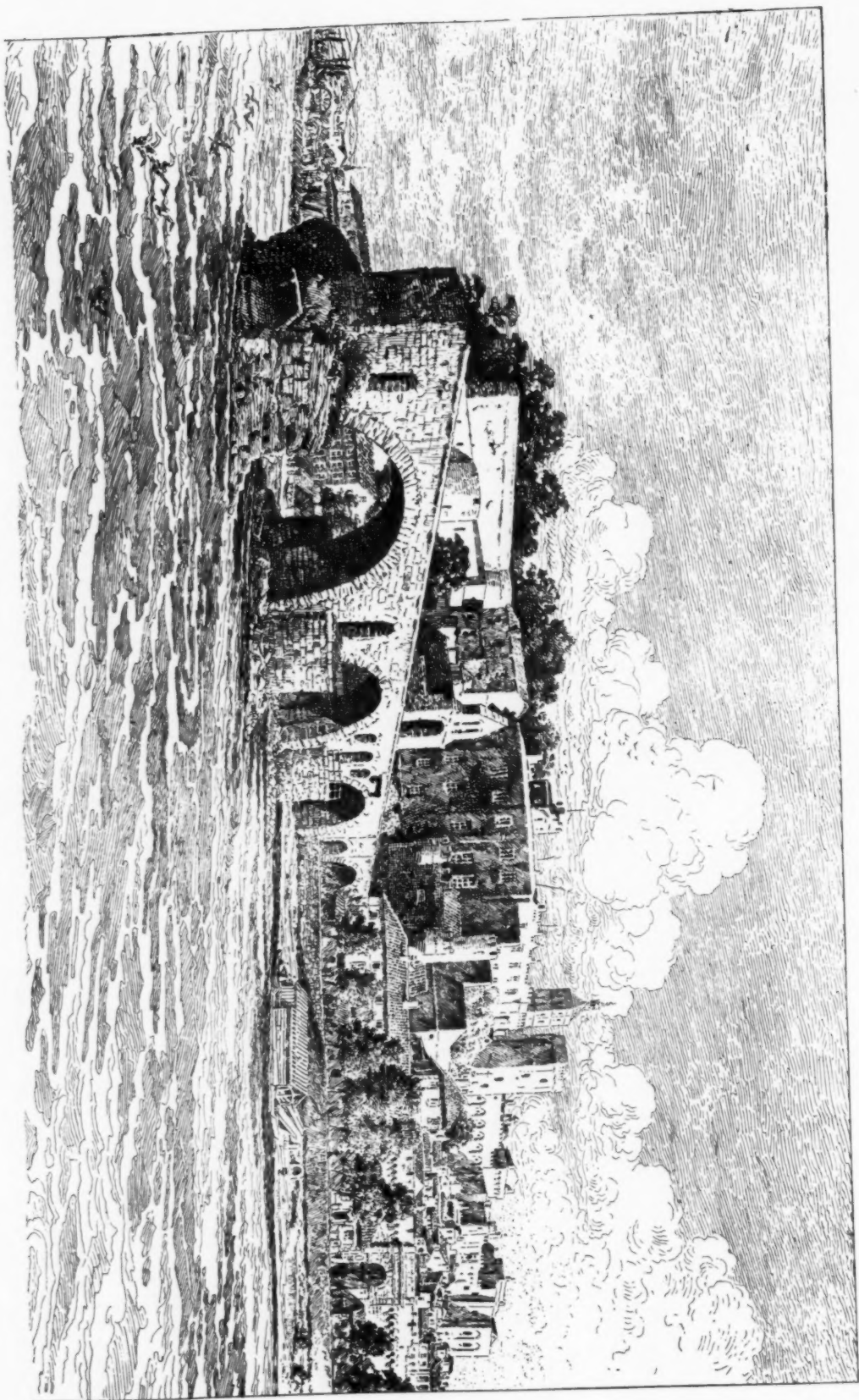
STATUES IN WASHINGTON.—There are twenty-four statues in Washington, and several others are in various degrees of progress toward completion. Statues of General McClellan and General Sheridan are under contract, and designs are in preparation for statues of Count Pulaski, Baron von Steuben, General Kosciusko, Thomas Jefferson and General Grant. Congress has made the required appropriations for these statues. That of Grant is to be a memorial statue, and the cost is fixed at \$240,000. A contract has been entered into for this memorial with Henry Merwin Shrady, sculptor, and Edward Pearce Casey, architect, the work to be completed within five years. The statue of Sheridan is being made by J. Q. A. Ward. Macmonnies's design for the statue of General George B. McClellan has been received at the War Department. Congress appropriated \$50,000 for the statue, and the Society of the Army of the Potomac contributed funds used in securing designs. The statue will be of bronze, fourteen feet high. Last year Congress appropriated \$50,000 for a statue to Count Pulaski, and a Polish-American sculptor has been selected to furnish designs. It will be erected on a public reservation at Pennsylvania Avenue and Fourteenth Street. A like sum was appropriated for a statue to Baron von Steuben, which will be erected on one of the corners of Lafayette Park. The Lafayette and Rochambeau groups occupy two corners of this park, fronting the White House. The organizations throughout the country of Polish-American citizens offered to erect a statue of Kosciusko, to be placed in Lafayette Park, and the offer was accepted by Congress in a joint resolution. With the erection of the statues of Steuben and Kosciusko the four corners of Lafayette Park will be adorned with statues of illustrious foreigners who gave their services to the United States in the War for Independence. It has been proposed, when these statues are erected, to remove the Clark Mills equestrian statue of Andrew Jackson, which stands in the centre of Lafayette Park, and erect in that place a fine equestrian statue of General Washington. It is urged that it would be more fitting that a statue of Washington should occupy the centre of the park.—*N. Y. Times.*





THE KNIGHTS OF COLUMBUS BUILDING, CHAPEL ST., NEW HAVEN, CONN.
JOHN LYMAN FAXON, ARCHITECT.

The American Architect
Oct. 22, 1904.
No. 1504.



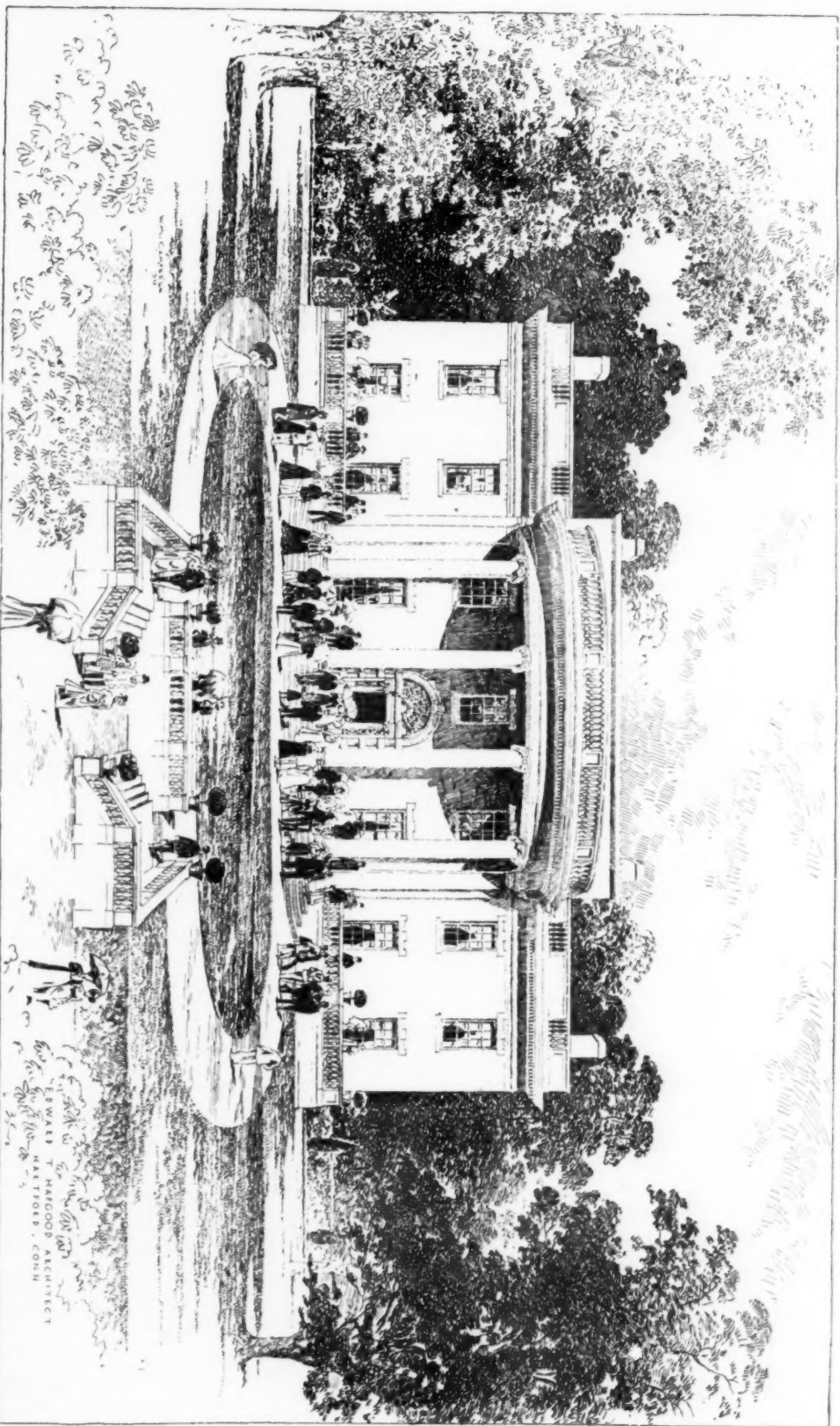
The Old Broken Bridge, Avignon, France.
Drawn by Percy Wadham.

From The Architect.

The American Architect,
October 22, 1904
No. 1504.



*The Massachusetts Building, State Street, Boston, Mass.
Cabot, Everett & Mead, and Peabody & Stearns, Architects.*



The Connecticut Building: Louisiana Purchase Exposition, St. Louis, Mo.
Edward T. Hapgood, Architect.

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House at Pocking am Starnbergersee.