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Vol. LXXXV

REGULAR EDITION

No. 1513

ARCHITECTURE

ENGINEERING

DECORATION

CONSTRUCTION

NEW YORK

Times Building, Broadway and 42d Street

BOSTON OFFICE
8 Dix Place

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A WEEKLY JOURNAL OF CONSTRUCTIVE AND DECORATIVE ART.

VOL. LXXXVI.—No. 1513.

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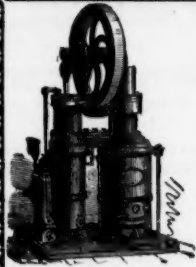
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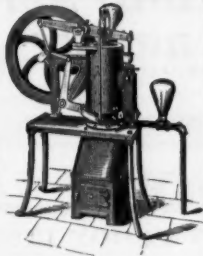
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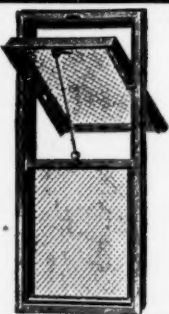
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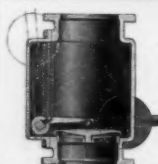
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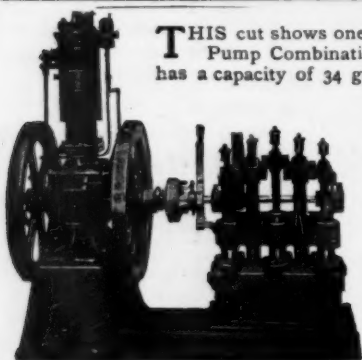
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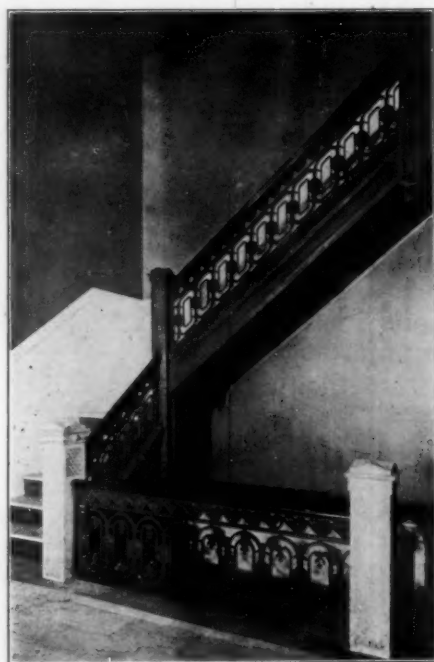


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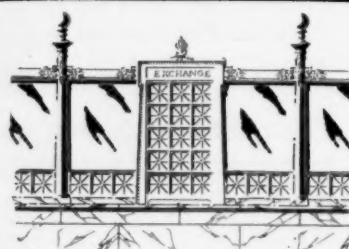
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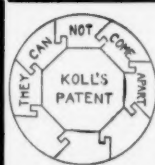
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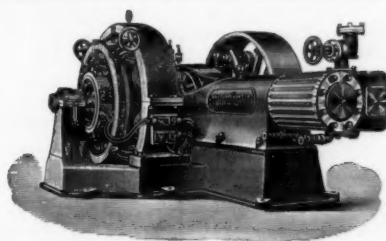
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The Perkins Atelier of Architecture announce that, owing to pressure of business, Mr. Frank E. Perkins has felt it necessary to retire to the position of Ex-officio Patron, and has secured Mr. John V. Van Pelt and Mr. Walter D. Blair, former Professors of Architecture at Cornell University and graduates of the Ecole des Beaux Arts, to continue the criticisms under the name of "Atelier Blair-Van Pelt," on Mondays and Thursdays at 8 P. M., at 122 East 25th Street, New York City. E. DONALD ROBB, Massier. 1514

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BUILDING INTELLIGENCE.

(Reported for the American Architect and Building News.)

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

ADVANCE RUMORS.

AURORA, ILL.—Report states that Colonel Evans, owner of the Hotel Evans, is interested in the erection of a \$100,000 hotel at Aurora.

BROOKLYN, N. Y.—The Arlington Ave. Presbyterian Society broke ground recently for the new house of worship which it is to erect upon the corner of Arlington Ave. and Elton St. The new church will face on Arlington Ave., having a frontage of 58 ft. It will have a depth of 84 ft. on Elton St. To acquire sufficient ground for the new church it was necessary to purchase the house and lot adjoining the plot already owned by the congregation. The church will be erected at a cost of \$25,000.

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BUILDING INTELLIGENCE.

(Advance Rumors Continued.)

BALTIMORE, MD.—The Baltimore and Ohio Railroad has established a mixed competition for the purpose of selecting an architect for the proposed new office building at the northwest corner of Baltimore and Charles Sts. The award will be made by a committee consisting of the president, three vice-presidents and chief engineer, with Professor William R. Ware as its adviser. It is expected that the committee will begin its work about Jan. 12. Six firms of architects have been selected. Each will be paid for drawing designs for the building to be submitted in the competition. About thirty will have an opportunity of competing. The general plan of the building provides for a structure of 155 by 168 feet and thirteen stories high. Each floor will have approximately 13,500 square feet of surface, making a building with a total floor space of nearly four acres.

BALTIMORE, MD.—A number of architects will be invited to submit competitive designs for the new building to be erected at the northwest corner of Baltimore and Hanover Sts., for Isaac Hamburger & Sons. The structure to be built will be thoroughly modern, and will be constructed to meet the requirements of the firm. It will probably cost \$150,000.

BROOKLYN, N. Y.—The Board of Estimate and Apportionment has approved the three sites recommended by Borough President Littleton for interior baths in Brooklyn. The sites and the buildings to be erected will cost \$345,000 and appropriation has been made for the work. Architects will draw plans, and it is hoped to have the baths in operation within a few months. Bath No. 1 is to be built at Fourth Ave. and President St.; No. 2, Nostrand Ave., op-

Building News



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(Advance Rumors, Continued.)

Construction Company, Chicago Stock Exchange building. Cost, \$25,000.

DENVER, COL.—A site has been purchased in the heart of the city for a \$200,000 Y. M. C. A. building.

FORT WOOD, N. Y.—Bids will be received at Governor's Island, N. Y. H., until Jan. 20th, 1905, for construction of two double sets officers' quarters, one double set non-com. staff officers' quarters and one storehouse, all of brick, at Fort Wood, Bedloe's Island. Traber Norman, Q. M.

INDIANAPOLIS, IND.—The Federal Building Company, capital \$150,000, is to build a skyscraper office building corner Meridian and Ohio Sts.

JACKSONVILLE, FLA.—Bids will be received by the Supervising Architect, Washington, D. C., until Jan. 7, for installation of an electric passenger elevator and hydraulic freight lift in the Post-office, Custom-house, etc., at Jacksonville, as advertised in THE AMERICAN ARCHITECT.

KANSAS CITY, MO.—Plans have been prepared by Wilder & Wright, 316 Dwight building, for the \$250,000 building to be erected for the First National Bank.

MACON, GA.—The old Davis stables on Mulberry St. are to be remodeled and used as a postoffice while the new \$305,000 Federal building is being erected. It will be necessary to have such improvements made in the old livery stables as will make the building suitable for at least three or four years' occupancy. The work on this building will begin as soon as bids can be gotten in and approved. It is hoped that both the courts and the postoffice may be moved during the month of January, when the work of demolishing the old Federal building will begin.

MADISON, N. J.—It is announced that J. A. Webb and D. Willis James have contributed \$5,000, each, to the fund for the proposed new building for the Y. M. C. A. It is also stated that James H. McGraw, the president of the local branch, will donate \$10,000, and that he has pledged \$2,400 additional. The committee expects to have the entire amount, \$40,000, raised before the first of the new year. The proposed building will be erected on property owned by the association opposite the James Library. According to present plans it will contain all modern arrangements and conveniences. Ground will be broken early in the spring.

MILWAUKEE, WIS.—The Council has passed an ordinance providing \$50,000 of bonds for an isolation hospital to be built outside the city limits.

NEWARK, N. J.—E. M. Waldron & Co. have been awarded the contract, amounting to \$317,000, for additional work on the \$1,

BUILDING INTELLIGENCE.

(Advance Rumors Continued.)

000,000 Roman Catholic Cathedral of the Sacret Heart. They will carry the side walls up to the window line of the clear-story and the two towers to a height of 98 feet 6 inches each, besides setting all the nave, chancel and transept columns and constructing the arches. Jeremiah O'Rourke is the architect.

NEW HAVEN, CONN.—The new armory of Troop A, Cavalry, on Orange St., between Canner and Cold Spring Sts., which was nearly completed is now a heap of ruins. The building was destroyed by fire on Dec. 14th. Steps are being taken to rebuild at once.

NEW YORK, N. Y.—The general contract for the rebuilding of the 6-story office and storage building at the southwest corner of West Broadway and Franklin St., has been awarded to H. Getty, 274 Ninth Ave. Cost, \$85,000. James S. and William H. Barron, 23 and 25 Jay St., are the owners. Franklin Baylies, 34 Bible House, architect.

Harry T. Howell, Third Ave. and 149th St., has completed plans for five 5-story up-to-date flat buildings, for the Gaines-Roberts Co., of 995 East 163d St., to be erected at the southeast corner of 163d and Union Ave., Bronx, at a total cost of \$180,000.

Plans are under way by Lorenz F. J. Weiher, Jr., 103 E. 125th St., for three 5-story flat buildings, 50 by 114 ft. and 37 by 92 ft. for Haase & Lippman, of 1936 Third Ave. to be situated on the east side of Brook Ave., near 139th St., Bronx. Cost, \$140,000.

NEW YORK, N. Y.—Plans have been filed for a new 12-story fireproof hotel to be erected at No. 71 to 75 W. 45th St., for the Longacre Realty Company. It is to have a frontage of 67½ feet and a depth of 80 feet, with an extension. It will have a facade of brick, with trimmings of limestone and terra-cotta. Estimated cost, \$300,000. The architects are Gordon, Tracy & Swartwout.

NEW YORK, N. Y.—Bids are desired by the Commissioner of Correction, at the Department Office, No. 148 East 20th St., Borough of Manhattan, until Dec. 27th for furnishing and delivering hardware, paints, iron, steam fittings, lumber and miscellaneous articles. Blank forms and further information may be obtained and plans and drawings seen at the office of the department. Francis J. Lantry, Commissioner.

OKLAHOMA CITY, O. T.—The First Baptist Church will erect a new \$75,000 edifice.

PHILADELPHIA, PA.—Lynch Bros. have been awarded the contract for the construction of a 3-story school building on Christian St., west of 3d, at \$63,700, and for a 3-story school at Sheridan and Wharton Sts. at \$60,000.

PHILADELPHIA, PA.—Architect and Engi-

BUILDING INTELLIGENCE.

(Advance Rumors Continued.)

posite Stockton St., and No. 3 on Hamburg Ave., north of Willoughby Ave.

BIRMINGHAM, ALA.—A \$500,000 hotel is to be erected on the corner of 19th St. and Fourth Ave. W. J. Dangaix, the owner, is now in Atlanta consulting with architects, among them W. F. Denny, who designed the Piedmont Hotel.

CHATTANOOGA, TENN.—The first step towards the new \$50,000 edifice which will be erected by the members of Christ Episcopal Church was taken recently, when work on removing the old residence at the corner of McCallie Ave. and Douglas St. was begun. The building committee has been authorized to advertise for bids, and it is expected that work on the new church building will be started by Feb. 1.

CHICAGO, ILL.—Plans have been prepared by Shepley, Rutan & Coolidge, 84 Van Buren St., for the Corn Exchange National Bank. It will be a 16-story bank and office building, costing \$750,000.

It is reported that the Southern Indiana R. R. Co. has selected Jenney & Mundie, 171 LaSalle St., to design a number of depots and power-houses of brick and steel. Cost, about \$500,000.

CARLISLE, PA.—A new edifice, to cost \$40,000, is to be erected by St. Paul's Lutheran congregation. J. A. Dempwolf, York, Pa., architect.

CLINTON, IA.—Plans have been prepared for a new \$35,000 edifice to be erected for St. Patrick's Roman Catholic congregation.

CHICAGO, ILL.—Permit has been issued the Manhattan Brewing Company, 39th St. and Emerald Ave., for the erection of a 3-story malt house, 46 x 70, at 3937-39 Emerald Ave.; architect, Louis Lehle, 109 Randolph St.; general contractor, Falkenau



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BUILDING INTELLIGENCE.

(Advance Rumors Continued.)

near Philip H. Johnson, Fidelity building, has prepared plans for a \$50,000 building for the House of Detention for the juvenile court. It will be a 4-story brick and terracotta structure, 36 x 90.

PITTSBURGH, PA.—It is reported that plans have been drawn by Architects Dean & Stophet, Fitzsimmons building, for a \$150,000 store, office and apartment building, to be erected for Charles Ruben.

PORTSMOUTH, OHIO.—A. B. Alger & Son have completed plans, and bids are now being received, for a new business block to be erected in this city for L. C. Turley. It will be a 3-story brick and stone building, 100 x 92 feet. Cost about \$60,000.

PHILADELPHIA, PA.—The new clubhouse of the Union League will cost \$1,250,000, and will be a structure in keeping with the dignity and standing of the great national club. The old historic building, which is its present home, will not be taken down, but will be made the nucleus of the new structure. The advisory real estate board appointed by the directors has approved plans for the building as drawn by Joseph M. Huston at their request.

PITTSBURGH, PA.—A building permit has been issued to the Iron City Improvement Company for the erection of a 7-story hotel at Penn Ave. and Tenth St., to cost \$350,000.

PITTSBURGH, PA.—A \$400,000 hotel will be built on Penn Ave., to be known as the Fort Pitt hotel.

PITTSBURGH, PA.—Plans have been prepared by Architects Nirdlinger & Simpson for a 3-story apartment house, 45x50, to be erected on the South Side. Cost, \$40,000.

PONTIAC, ILL.—A Mrs. Humiston, seventy-five years old, has offered to give \$20,000 for a building for the Y. M. C. A. at Pontiac, with the provision that \$10,000 be secured for a site. Of this amount \$5,000 has been pledged.

PITTSBURGH, PA.—The Carnegie Institute trustees will spend about \$1,000,000 for interior decorations and furnishings for the new addition to the Carnegie library building. The contract for this work will be let early next year. Several of the best decorators, painters and designers in the United

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BUILDING INTELLIGENCE.

(Advance Rumors Continued.)

States will be asked to bid upon the work. The invitations will be extended by the board, but just how many firms will be invited to enter the competition has not yet been decided. The plans and specifications, by Alden & Harlow, will call for the finest mosaics, while the painting and frescoing will be the best that can be done. The finest tapestries, carpets and the most artistic and substantial furniture that money can buy will be used in the rooms of the new building.

ROCHESTER, N. Y.—Plans have been prepared by Architect W. J. Brockett, 243 Powers building, for a 3-story administration building, 46 x 100, with two wings, 46 x 117, and a chapel, 40 x 77, to be erected on Lake Ave. for the St. Anne's Old Ladies' Home. Cost, \$80,000.

ST. LOUIS, Mo.—J. L. Wees, Commercial building, has designed a new temple for the B'Nai-El congregation. Cost, \$60,000.

ROCKFORD, ILL.—Special efforts are being made to secure pledges to make up the necessary amount so that contracts can be let in January for a new Y. W. C. A. building. Only \$4,000 is needed.

ST. LOUIS, Mo.—William B. Ittner, commissioner of school buildings, has prepared plans for the new Shepard school, to be erected next spring at a cost of \$150,000.

SOUTH McALESTER, I. T.—Arrangements have been completed for the erection of a \$100,000 Masonic Temple for the Scottish Rite Masons.

ST. GEORGE, STATEN ISLAND.—Plans for the new St. George terminal of the Staten Island ferry have been prepared by Carrère & Hastings, and accepted by the Dock Department. The new terminal will extend about 350 feet on the water front. It will have three great arches, each measuring 90 feet across. The concourse for passengers will be 50 feet wide and 300 feet long. The waiting-rooms will contain every convenience, and the whole building will be complete in all its appointments. Everything is in readiness to go ahead with the building as soon as the city acquires the land.

SALT LAKE CITY, UTAH.—New York, Chicago and Colorado Springs capitalists are back of an enterprise to erect a \$500,000 hotel and sanitarium near this city to utilize the waters of several hot sulphur springs, as well as the water from Salt Lake.

SPRING CITY, PA.—Philip H. Johnson, 114 North Broad St., Philadelphia, has drawn plans for Home for Epileptics and Feeble-Minded, to be erected here. Estimated cost,

BUILDING INTELLIGENCE.

(Advance Rumors Continued.)

\$600,000. Legislature will be asked for necessary appropriation.

WINONA, MINN.—A new Y. M. C. A. building is to be erected at Winona in the spring, costing \$50,000. Several wealthy lumbermen of the city are interested. The new structure will occupy the site of present building.

WILKES BARRE, PA.—Plans have been approved for the erection of a large freight station for the Pennsylvania Railroad to replace the present structure at the corner of Northampton and Canal Sts. The plans call for a brick structure, 60 ft. by 210 ft., two stories high in the front part. Cost, \$35,000. Work to begin after the holidays.

WHEELING, W. VA.—Thomas C. Kennedy has been commissioned by Bishop P. J. Donahue, to prepare plans for an industrial school, similar to St. Mary's Industrial School in southwest Baltimore. The new school will be built at a suburb about two miles from Wheeling. The main building, which will have a frontage of 200 ft., will be five stories high, and the two wings will be four stories high.

WASHINGTON, D. C.—The cornerstone of the new \$300,000 building for the Washington Y. M. C. A. was laid recently by Vice-President-elect Fairbanks.

WILLIAMSPORT, PA.—Edgar V. Seeler has nearly completed plans for a \$400,000 library building to be erected in Williamsport. It will be known as the Joseph V. Brown Memorial Library. It will be 2 stories high, of the French Renaissance style, with exterior walls of white marble. The dimensions will be 139 by 75 feet. Estimates will be invited early next year.

YANKTON, S. D.—Bids will be received by the Supervising Architect, Wash., D. C., until Jan. 18th for installation of low-pressure steam-heating apparatus in the Post-office at Yankton, as advertised in the AMERICAN ARCHITECT.

YAZOO CITY, MISS.—W. L. Kendall proposes the erection of a 3-story hotel building here. Cost, \$75,000.

PROPOSALS.

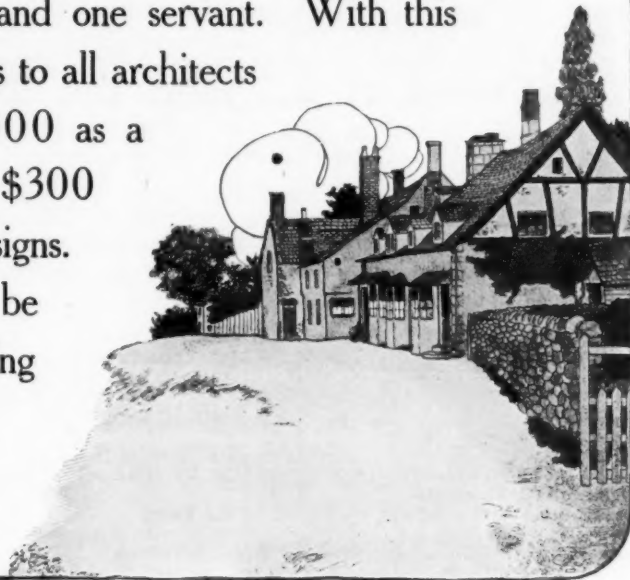
Treasury Department, Office of the Supervising Architect, Washington, D. C., December 19, 1904. Sealed proposals will be received at this office until 3 o'clock P. M. on the 18th day of January, 1905, and then opened, for the low-pressure steam-heating apparatus complete in place, for the U. S. Post Office at Yankton, South Dakota, in accordance with drawings and specification, copies of which may be had at this office or at the office of the

(Continued on page XII.)

\$1000 for a \$3000 House

THE LADIES' HOME JOURNAL wants a good design for building a \$3000 house for the comfortable home of a young couple with one child and one servant. With this idea in mind the magazine offers to all architects in America and England \$1000 as a first prize; \$500 as a second; \$300 for a third, etc., for the best designs. A full circular of details will be sent to any architect by addressing

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PROPOSALS.

(Continued from page X.)

Superintendent at Yankton, South Dakota, at the discretion of the Supervising Architect. JAMES KNOX TAYLOR, Supervising Architect. 1514

Treasury Department, Office of the Supervising Architect, Washington, D. C., December 12, 1904.—Sealed proposals will be received at this office until 3 o'clock P. M., on the 6th day of January, 1905, and then opened, for painting, etc., at the U. S. Court House, Post Office, etc., at Springfield, Illinois. In accordance with specifications, copies of which may be had at this office, or at the office of the Superintendent of Construction at the building, at the discretion of the Supervising Architect. JAMES KNOX TAYLOR, Supervising Architect. 1513

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PROPOSALS.

lation of an electric passenger elevator and hydraulic freight lift in the U. S. Post Office Custom House, etc., at Jacksonville, Fla., in accordance with drawings and specifications, copies of which may be obtained from this office at the discretion of the Supervising Architect. JAMES KNOX TAYLOR, Supervising Architect. 1513

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No. 1513.



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BUSINESS men, everywhere throughout the country, felt an increased sense of insecurity and foreboding when, last season, it was learned that the Pennsylvania Railroad had discharged ten thousand men, followed later by further discharges, and then by the news that all the roads running out of Pittsburgh were following suit, because there was no freight out of that normally busy city to be moved. The period of positive stagnation has been shorter than was feared it might be, and, for some weeks, there has been increasing activity in railroading, and furnace after furnace has again been put in blast, until now ninety per cent. of full capacity is said to be in operation, and orders are now coming in steadily which exceed present capacity. This turn in the tide of affairs is encouraging, and it really is not made less so by the news that prices are to be higher, an advance of three dollars per ton for structural steel and two dollars for sheet metal being anticipated. This advance is not disadvantageous to building interests, owing to the curious working of most men's minds, which leads them to let the stock-market alone when prices are away down and business dull and flat, but causes them to dash madly in and buy, as soon as prices begin to dance merrily upward. The same sort of thing usually happens when the prices of building materials again take an upward turn after a halt. We fancy that, in consequence of the premonitory warning that has been so cannily given, a good many building contracts will be closed at present prices during the next few days. Further than this, however, it remains to be determined whether mechanics will work and for what wages.

BUT just as commercial difficulties that barred progress seem to have been removed, news comes of a check due, not to the wiles of manipulators, but solely to natural causes. The western part of Pennsylvania has for weeks been suffering from one of the most serious droughts in recent years, the record showing a total precipitation for the year less by nearly three and a half inches than the lowest previous record. Naturally, the supply of drinking-water has to be husbanded, even where wells and reservoirs contain any water at all, and because of this many factories and mills have had to turn to streams and rivers for the water needed for steam-making and other purposes. Usually there would be no great hardship in this, but the streams in these localities besides receiving wastes from mills and factories also have emptied into them the water pumped out of the coal mines, much of it heavily impregnated with sulphur compounds in suspension or solution. The streams, therefore, can furnish only water very improper for steam-raising, and many small mills and a few large plants have already had to shut down because of the serious damage done by its use to pipes, valves and boilers. As the ground is already frozen to a considerable depth, the situation is most serious and may bring to a halt the entire progressive movement of reviving business.

WE believe that Missouri zinc mines are among the most valuable in the world, and the output very large, but it could easily be made larger if a commercial outlet for the increased product could be found. Besides its use as an alloy in the minor arts and manufactures, the greatest portion of the product is probably consumed in the form of the zinc coating given to sheet and other forms of manufactured iron, which are finally known to the trades by the bastard term "galvanized iron." Next to this form of consumption, electric batteries probably call for the largest amount of the metal. In building, in this country, practically little use is made of the pure metal aside from that consumed in flashing about chimneys and along valleys, and even here it has been largely displaced by copper in these later years for the better class of buildings. In Europe, on the other hand, zinc is used in considerable amounts as a roofing material in competition with sheet-lead and tin, and there are several well defined systems of applying it, which if introduced in this country would tend to increase the demand for a metal which can be rolled to almost any size or any weight that may be called for. Its disadvantages are that it is of a rather tender and friable fibre, so that it will not stand either careless handling or rough usage; it must be handled with greater care, when it comes to folding seams, in cold weather than in warm, and the angles of the folds should be well rounded and not sharp; and it must not be nailed or generally allowed to come in contact with other metal—in the case of nailing, partly to avoid galvanic action and partly to escape tearing under

expansion. If the surface of a properly laid roof is allowed to become slightly oxidized before painting, or if it has been roughened by scrubbing with sand, the paint will adhere perfectly and the roof remain sound many years. The French and Belgian systems are differentiated largely by the form of the wooden fillet used in forming the vertical standing seams. In each case the section of the fillet is trapezoidal, but in Belgium it is nailed to the roof-boards with the narrow side down, the upright edge of the zinc forming a perpendicular between the top upper edge and the roof-board, the object being that when the zinc sheet between the battens expands it may do so without buckling, since it can stretch into the hollow left between the upturned edge of the zinc, and the lower edge of the trapezoid. In the French system the fillet is nailed with the widest side down, and the angle of the upturned edge of zinc is obtuse, so it is easy for the "crawl" to take place upwards and lose itself behind the folds of the down-turning capping of the fillet.

WHILE walking in a Massachusetts town recently, our eye was caught by a new sign-board fixed to the trunk of an immense oak tree and found that it recited how, in the last century, the then owner of the tree had deeded it to the First Parish of the town that they might prevent its destruction throughout its natural life—not an unwise precaution, since the trunk has already intruded on the sidewalk space. This bit of thoughtfulness for the future is not very common, though we know of a tree in one of the Southern States that was deeded, and recorded, to itself, with enough land about it to provide its natural sustenance, and in the courtyard of one of the public buildings of a Southwestern city is a cottonwood tree that is similarly provided for. The same desire to preserve for the enjoyment of others things which he had taken keen pleasure in himself has prompted a citizen of Boston to make to that city one of the most interesting bequests we ever heard of. The total amount of the bequest was nearly fifty thousand dollars, but it was divided into not a few separate funds the income from each of which is to be devoted to a specific purpose. Thus, the income of five thousand dollars is to be used for the proper care of the "largest and oldest trees on the Common"—a bequest of which Professor Sargent would hugely enjoy being the administrator. The income of ten thousand is to be applied to the care of the four old and now disused cemeteries—true fields of rest that the Bostonian loves and venerates, and three thousand are set aside for the "repairs (not improvements)" of the Old State House. There is an unselfish considerateness about this action that is in delightful contrast with the practice of the modern man of wealth, who likes nothing better than building, as it were, a ring-wall about some natural beauty so that he and his alone can enjoy it, to the exclusion of the public.

IF M. Planat is in the right, we and doubtless others, have been holding very erroneous ideas as to the rights, utility and power of the French Commission des Monuments historiques. We have been under the impression that the law vested in the Commission certain

very autocratic powers, which enabled them to stay absolutely the hand of wanton destruction; but, if M. Planat is right, their real power seems to be confined to a right to protest, not to veto. Recently the city fathers of Orléans decided that two of the listed "Monuments historiques" did not conform themselves satisfactorily to the street lines, and they therefore ordained that they, the buildings known as the Maison de Jeanne d'Arc and the Maison d'Agnès Sorel—the latter known to every one as a beautiful example of French Renaissance work, should be pulled down and their façades, but their façades only, be rebuilt to conform with the street line. Henceforward, if the tale be wholly true, these interesting buildings will be known only by façades set up on the street like the façade of the Chateau d'Anet in the courtyard of the Ecole des Beaux-Arts, tame and lifeless, and the traveler will no longer enjoy the sensation of wandering through the actual rooms where Jeanne prayed or Agnès supped.

IT is curious that artists who have susceptibilities that can be wounded because their exhibits are not granted, at public exhibitions, as high awards as they think their reputations entitle them to, do not protect themselves by the very simple expedient of marking their exhibits "*hors concours*." Mr. F. A. Bridgman, a painter of high repute, is said to be one of the latest of the sensitive brotherhood to let the public learn that he feels chagrin because the jury at the Louisiana Purchase Exhibition awarded him only a silver medal for the three paintings he sent over from Paris, the inference being that he himself feels he should have received, at least, a gold medal. He is also said to have expressed regret that he could not, without committing plagiarism on Whistler, render to the jury his "second-best thanks for their second-best compliment." The English artists who exhibited at St. Louis did protect themselves in just the way we suggest, by announcing that none of the paintings was entered in competition for any form of award. While this unusual act may by some be taken as a confession of extreme touchiness as a characteristic of all British artists, it is fairer to interpret it as an effective protest against the sloppy way in which awards are too often made by exhibition juries. At any rate it will explain why the names of British artists do not appear in the list of prize-winners in this particular affair.

IN speaking the other day of the burning of the Harcourt Studios in Boston, we pointed out the need there was in that city of some satisfactory provision for a very estimable class of citizen. The Copley Society and the St. Botolph Club have taken the matter up and have appointed committees who are to try to interest capital in putting up the right sort of a studio-building in the proper kind of a place for it to be. Amongst other things in the way of data that these committees have gathered is the fact that there are now some forty artists of various kinds who would be glad to install their easels and artistic household gods in new quarters. There being this actual demand, we feel there will be no difficulty in finding ways and means of satisfying it.

SANITARY PLUMBING AND THE PLUMBING LAWS—I.*

IT is now recognized by students of the subject that both legislation and common practice in one of the most important domains of sanitary engineering have for a long time been directly opposed to the actual demonstrations of science, and to the teachings of acknowledged authorities.

It is with the hope of being able to aid our legislators in preparing for us a simpler and better code of plumbing laws that this apparatus has been constructed, and it is for this that the distinguished gentlemen whose names you have seen on the tickets have been invited to aid in the discussion.

I have before me the plumbing ordinances of Boston, which

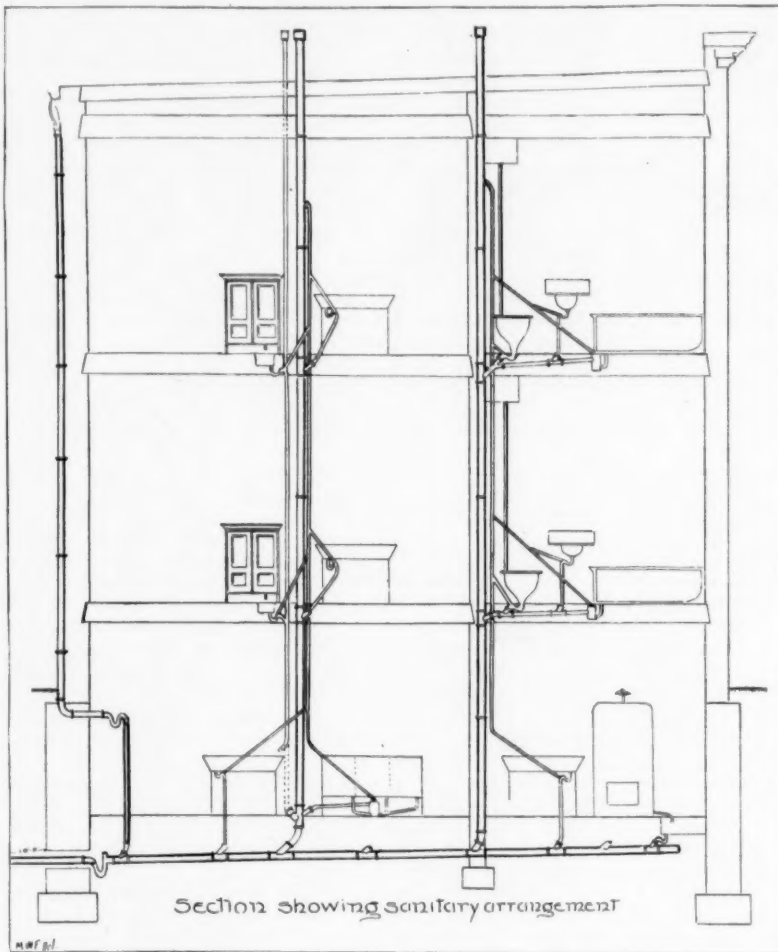


FIG. 1.

The public has preferred to submit to a very burdensome form of taxation rather than, by independent experiment on suitable apparatus, to establish the truth for itself by proper proofs where conflicting opinions as to the facts exist. It has assumed the right to legislate but not always to investigate, and this even in cases where direct investigation is clearly essential to serviceable legislation.

Since, however, no attempt at exhaustive public investigation had been made, so far as I could ascertain, to establish a sound basis for plumbing legislation, and since the public records of private investigations were both incomplete and fundamentally conflicting, I decided, as far back as 1883, to make an attempt myself to obtain sufficient data for independent judgment by careful original experiment, and the work has been carried on up to the present time. These investigations were made originally in behalf of a medical client who, like myself, considered sanitation of primary importance in the construction of his house. They have established certain facts which had previously been in dispute, and suggested certain improvements of a fundamental character, which will be placed before you to-night.

The committee on the revision of the building laws appointed this year by the Boston Society of Architects have invited their fellow architects to aid them by sending suggestions for such revision to be presented to the legislature this winter, and this invitation is responsible for the demonstrations and suggestions we are to consider to-night.

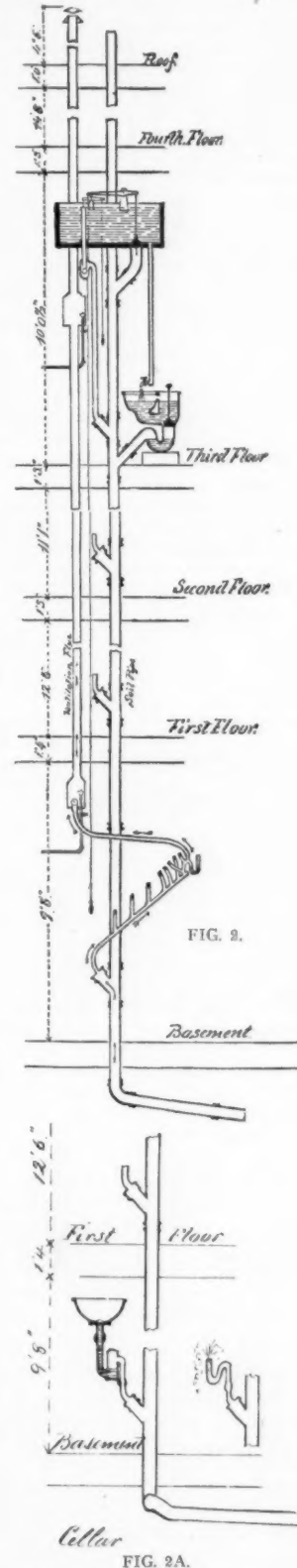
*A paper by Mr. J. Pickering Putnam, F.A.I.A., read before the Society of Arts, Boston, Nov. 10, 1904.

are substantially in accord with those of the majority of large cities throughout the country, and have submitted amendments to a number of the most important provisions in these laws. All of these amendments are in the direction of simplification.

Figure 1 presents the system of plumbing required by the existing ordinances, the drawing being merely an enlargement of the cut printed in the statutes issued by the building department. After this I shall show you a simpler system, embodying most of the amendments now advocated by the best authorities.

Let us first enumerate briefly these amendments in the order of their importance, and afterwards explain the reasons for each in detail, as follows:

(1) More than half of the increased complication is due to



the so-called "back venting" of the traps of all fixtures. We have, for instance, as you see, bath-tubs, wash-basins and other fixtures, whose traps consist in bends in the pipe deep enough to present a barrier to the passage of drain-pipe air into the house. Our building law requires every such trap to be vented by a special air-pipe extending from the sewer side of the trap up to a point above the highest fixture on the stack, as shown on our diagram by the smaller pipe between the fixtures and the 4 in. soil pipe. The original purpose of the law was to protect the trap seals from what is called "siphonage." But soon after it was enacted it was discovered that the air-current induced by the back-vent pipe was itself far more mischievous than the danger it was expected to remove, in that it operated to destroy the seal by evaporation; and so rapidly did it do this in some cases, that in at least one large city the Board of Health felt obliged to issue notices to house owners advising them to have the traps refilled by hand in houses temporarily unoccupied, as often as once a fortnight, in order to restore the seal destroyed by back venting.

It was also very soon found that the system was unreliable on account of deposits of greasy sediment within the vent-pipe and of snow or frost at its top, which rendered it inoperative. Other difficulties and dangers revealed themselves as time went on, as I shall show directly.

On the other hand methods of securing positive protection without back venting were multiplied, until to-day the thinking man is puzzled to understand how the public can continue to allow to exist such a foolish and costly method of ensuring insecurity.

(2) The next important modification of the law recommended consists in the omission of the main house trap, shown in the basement, and of the external sewer vent often resulting from its use.

(3) A third modification consists in requiring every fixture to be constructed with an outlet large enough to fill its waste-pipe "full bore," in order to keep these pipes clean by thorough flushing.

(4) A fourth consists in reducing the number of fixture traps required. The law now calls for a separate trap under each fixture, no matter how near to one another they come. An exception is made in the case of several adjoining wash-trays, which are allowed to have a single trap between them. This good feature should be extended to all adjoining fixtures. I hope to be able to show you that it is much more scientific as well as much safer and more economical to use one trap in such cases than several.

(5) Moreover, it is for important reasons better to place the trap at or below the floor-level than close to the fixture it serves, as is now required by law.

(6) A sixth modification consists in omitting, in most cases, the trap now called for on all rain-water leaders, because a trap here reduces the ventilation and increases the complication and expense. But more than this, this trap prevents the use of the main soil-pipe as a rain-water conductor. There is no possible way of flushing the soil-pipe better than by admitting rain-water, where the combined system of sewerage is used.

(7) A seventh modification consists in striking out the restriction in the law, limiting the jointing of cast-iron pipes to lead calking. Probably no more unscientific method of construction now exists in the whole domain of house building than this, iron and lead having no more constructive affinity for each other in jointing than cats and dogs. Other really scientific methods of jointing cast-iron have recently come into the market which are both reliable and much cheaper.

(8) Finally, the provision requiring water-closets to be supplied from cisterns with flush-pipes not less than an inch in diameter should be modified. Better and simpler means for flushing are now known.

Let us now examine more in detail our first proposed modification relating to the trap-vent law, and in order fully to understand this we must have a very clear idea of the phenomena of "siphonage" and "back-pressure."

Figure 2 gives us a very clear idea of these mischievous forces. The main soil-pipe is shown in the center, and the back-vent pipe at the left. It is taken from the actual plumbing work used in a four-story office building in Boston, upon which I made my first experiments in 1884 for the Board of Health.

When water is discharged from the tank in the third story it descends through the soil-pipe in the form of a plug or piston,

and rarifies the air behind it, because the friction of the walls of the pipe prevents the air from the top of the pipe from following the water as fast as it falls. Consequently the water-seal of a trap placed on either of the branches below the tank will suffer by siphonage, since nature abhors even a partial vacuum, and therefore allows air to rush through all the traps in her effort to break it.

To speak more scientifically, the inertia of the water in the trap affords less resistance to the air than the friction along the sides of the soil-pipe, and if the trap is improperly constructed, its water-seal is forced out in advance of the intruding air-current, and this action is called "siphonage."

"Back-pressure" is the reverse of siphonage. As the plug of water discharged from the tank descends toward the sharp bend shown in the basement, the air in front of the falling plug is compressed because the sharp bend retards its escape, and this compressed air seeks a passage at every outlet. Back-pressure is therefore evidently strongest at branches which are near the bend in the basement, and siphonage is strongest at branches which are farthest from this bend. We have at the end of the basement branch an ordinary so-called S-trap. This trap possesses in itself almost no power of resistance to siphonage.

I have produced by means of a vacuum-pump a partial vacuum in this large pipe (Fig. 7), which represents our soil-pipe. If now we allow air to pass through this small S-trap by opening the stop-cock between it and the soil-pipe, you see that the air has actually forced out enough of the water to entirely destroy the seal, leaving a free passage for soil-pipe air, sometimes called "sewer gas," to enter directly into the house.

Even the seal of the large trap on the left of the apparatus is destroyed in precisely the same manner. The trap is now full of water up to its overflow. If we connect it with the partial vacuum in the soil-pipe by opening this large stop-cock, the atmospheric pressure will break its seal very rapidly and forcibly, as you see. I have produced here a greater degree of vacuum than occurs in practice for the purpose of presenting the phenomenon to you more strikingly. The apparatus being built for comparative as well as positive tests, it is capable of illustrating any degree of partial vacuum desired. Later we will consider the degree encountered in actual plumbing practice.

Now the back-vent pipe shown in our second drawing was invented with the idea of providing an inlet for the air on the soil-pipe side of the trap, so that it could fill the vacuum in the soil-pipe without passing through the fixture and trap-seal, and in some cases the device actually does protect the seal. But, as already stated, it was soon found unreliable on account of friction, clogging, sagging and leaking, and because of its action in evaporating out the water seal.

In our diagram (Fig. 2) you see how this evaporating action takes place. The air of a house being warmer in winter than the outer air, the ventilating current rising through the pipe in the direction shown by the arrows, is conducted over or near the crown of the trap and escapes at the roof. In summer the reverse movement takes place with a similar result. This current evaporates out the trap-seal with a rapidity proportioned to its proximity to the trap, its dryness, temperature, rapidity of movement, and, in short, in proportion to its efficiency in performing its function of ventilating the branch waste-pipe and guarding the seal from siphonage, and in experiments which have been from time to time published it has been found that seals have been destroyed by this cause in actual plumbing work in less than ten days. If the vent is not connected with an S-trap at or near its crown it will not protect it from self-siphonage. Hence the requirement in the Boston laws, which leads to a quick destruction of the seal by evaporation.

The diagrams (Fig. 3) indicate the power of resisting siphonage possessed by various kinds of traps as tested on this apparatus. The vertical line between the two circles shows the depth of the trap-seals. The short horizontal lines the amount of water removed at each discharge from the tank.

Figure 4 illustrates some of the many ways in which the back-vent pipe fails in practice. Clogging with grease, as shown here over the sink-trap, is very common.

At every quick bend under a vertical rim of iron vent-pipe rust is certain to collect. A comparatively small amount of flaking off of rust or sediment in such a place may suffice to destroy the efficiency of the pipe.

Sagging, as shown higher up, is another frequent cause of failure. Water and sediment collect in the sagged portion, and failure is again the result. Finally, hoar frost and snow often

close the upper opening of the pipe above the roof, producing again failure.

Moreover, the chances of leakage by bad jointing are evidently increased in proportion to the increase of piping, and what is more important still, no water-flush passes through the vent-pipes, and there is consequently nothing to announce to the eye

duces the confidence of the house owner in plumbing in general, so that plumbers do not see any advantage to themselves in the law. Pride in their work and a knowledge of the great advances made in the science of plumbing since the law was enacted prompt them now to advocate a change.

The pipe-dealers, on the other hand, appear to be the only

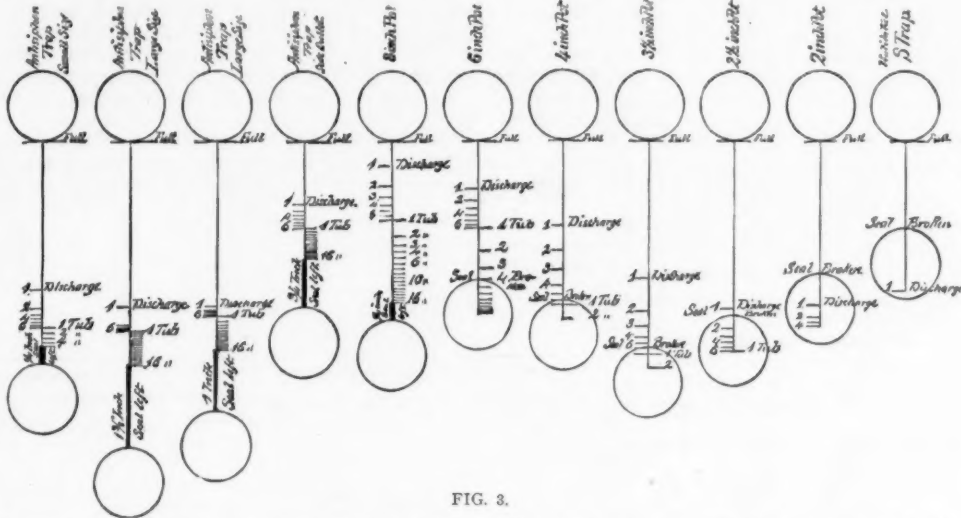


FIG. 3.

the presence of leaks, which may therefore do mischief before the leaks are discovered.

This cut was used to illustrate a paper on trap ventilation I read before the Boston Society of Architects in 1891. The Society then voted unanimously to make an effort to have the back-vent law repealed. A committee was appointed and counsel em-

gainers by the law, and these have, no doubt, constituted a powerful and active influence tending to its perpetuation.

Figure 5 shows the apparatus used to make the tests on siphonage made at the North End Union in 1902 to illustrate a series of lectures I delivered on sanitary engineering. Fig. 5A gives the apparatus used in the Worcester tests before the Master

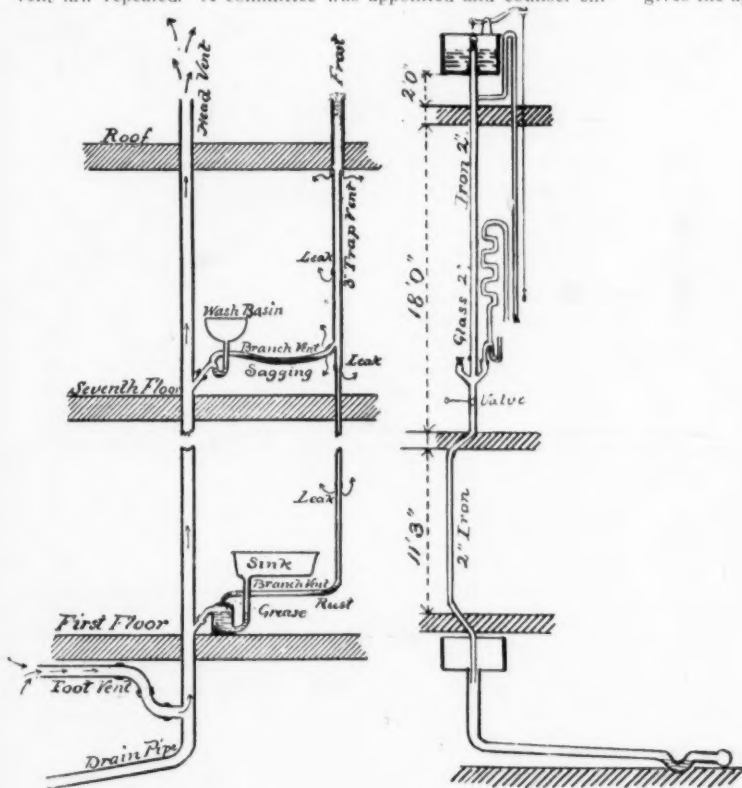


FIG. 4.

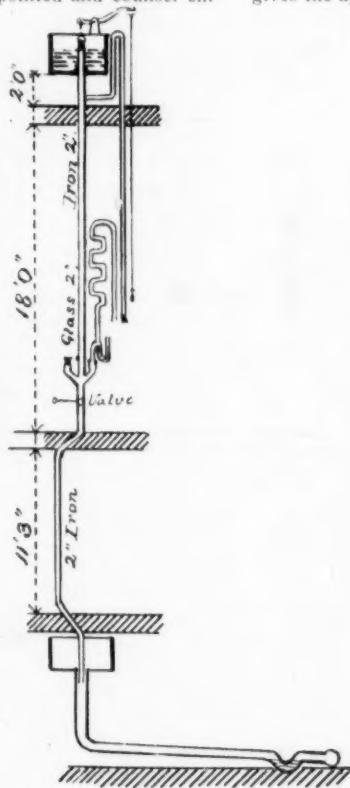


FIG. 5.

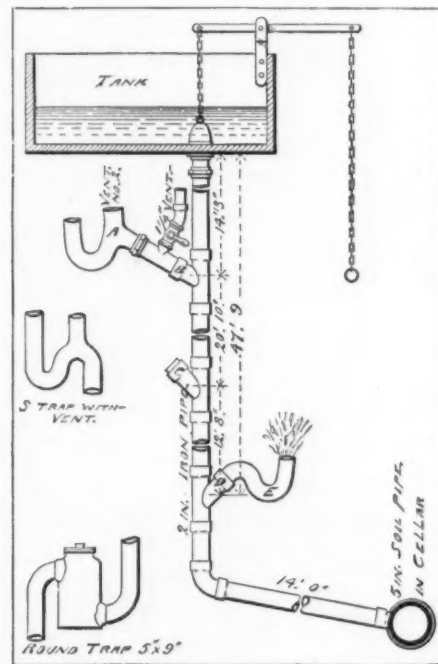


FIG. 5A.

ployed to attend to the matter. The efforts of the Society, however, in this direction have not as yet met with success, and they have not as yet ascertained with entire certainty from what source the opposition came.

Although the amount of rough work in plumbing is increased by venting, yet the expense tends to decrease the number and quality of fixtures which the public can afford to instal, and re-

Plumbers' Association, made soon after the Board of Health experiments were published, and Fig. 6 shows the apparatus I used in a lecture at this Institute of Technology in 1885.

In these and all other demonstrations in siphonage of which I am aware, the tests have been made by hydraulic apparatus, but I have recently found that a pneumatic plant permits of a much greater accuracy of determination, especially in making com-

parative tests. By using a suction-pump we are able to reproduce at will any degree of rarefaction desired in the soil-pipe to correspond with the varying conditions encountered in plumbing practice, and a vacuum-gauge enables us to apply precisely the same degree of vacuum to every trap tested, so that results of great accuracy and scientific value are obtainable. Fig. 7 illustrates this apparatus.

Of course, it will be objected at first thought that the pneumatic test does not reproduce in actual form the precise phenomena encountered in plumbing work, but a little reflection will show that the results are identical so far as they affect our inquiries. The agency which produces siphonage and back-pressure is the partial vacuum in the soil-pipe, and this rarefaction is effected in both cases by the rapid movement of a piston. Whether the piston be in the barrel of a pump or whether it be in the soil-pipe itself is altogether immaterial so far as concerns the effect of the partial vacuum on trap-seals. The pneumatic apparatus possesses the great advantage over the hydraulic of enabling us to vary the force of the strain applied to the traps to any extent desired; while only one degree of rarefaction can be obtained by the falling-water plug in any one plant.

The siphoning action in both cases is exceedingly rapid—almost instantaneous. In the case of the falling-water piston the action takes place in the flash of time required for the piston to pass by the small

waste-pipe, which in this case descends in a vertical line. Having no soil-pipe connection in this hall, I have placed another bath-tub below to take the place of a soil-pipe in receiving the discharges.

Our branch waste here represents the waste-pipe of, say, another bath-tub or of a wash-basin having an ordinary S-trap under it. The trap is sealed with water and is back-vented as you see, although the vent-pipe is not so long as is sometimes found in buildings varying from 30 to 300 feet in height. But to more than offset this disadvantage I have applied a larger number of bends than is usually found in practice.

We cannot alter this degree of vacuum materially on this apparatus, however often we apply the test.

We will now apply this strain to the S-trap vented by 28 feet of $1\frac{1}{2}$ inch new vent-pipe and four return bends. The vent-pipe is new and clean, so that the conditions are in this respect

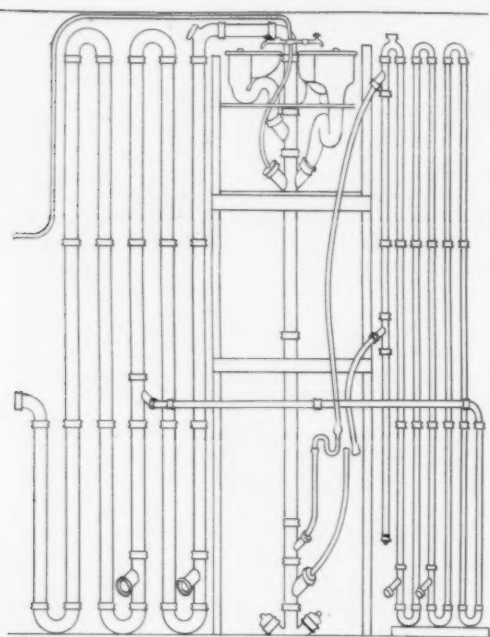


FIG. 6.

mouth of the branch waste-pipe serving the trap. A fraction of a second suffices for this. In the case of the air-pump apparatus the speed of the action is measured by the time it takes to move the valve lever connecting this branch waste-pipe with the soil-pipe. This also requires but a fraction of a second, and the speed may be regulated to correspond accurately with the hydraulic action. Moreover, a vacuum-gauge may be applied to the soil-pipe in both kinds of apparatus, and thus the action be proved to be in both cases identical in speed and power and effect.

In order, however, to satisfy the audience as to the similarity of the effect produced on the gauge and trap-seals, I have had erected for this occasion both kinds of apparatus, and I shall show you that, when the vacuum-gauge registers the same degree of rarefaction in both soil-pipes, the effect on the traps in each is the same.

Above the cornice I have had erected an ordinary bath-tub (Fig. 8), which now stands full of water, and at a height which nearly corresponds to two stories of an ordinary dwelling. Its overflow opening has been corked up, as is sometimes done by careful tenants, who imagine they thereby make doubly sure the exclusion of "deadly sewer gas" from the bath-room. We will discharge part of the water by opening the bath plug into the

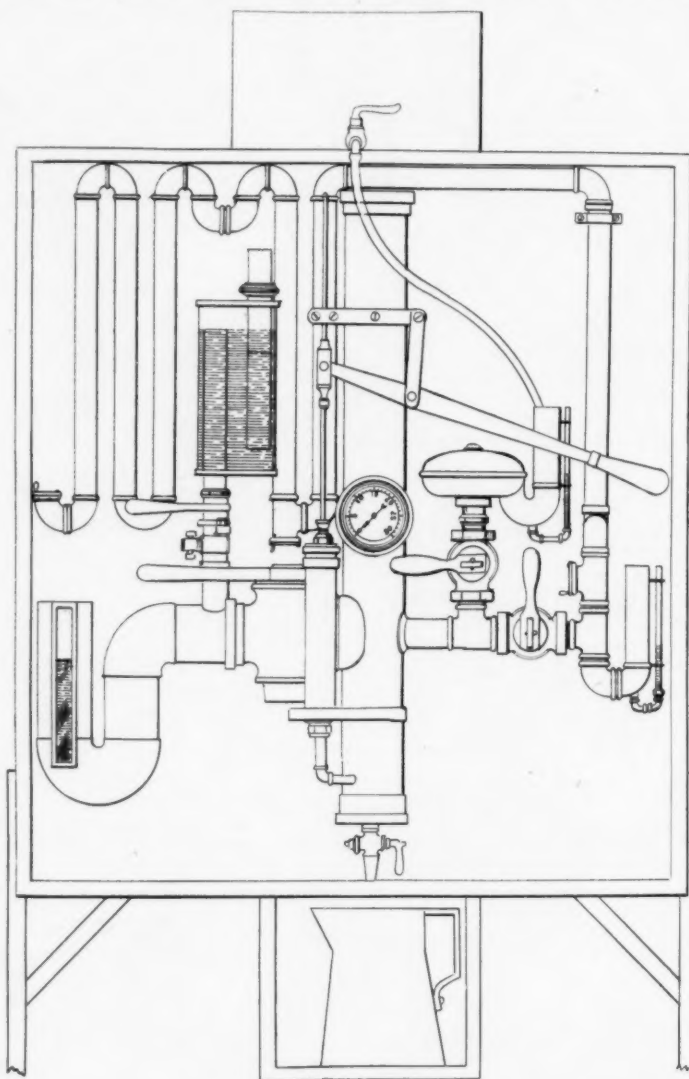


FIG. 7.

favorable for it to protect the trap. Yet you see it has failed. The water-seal in the trap has offered less resistance to the rushing air than the friction along the walls of the vent-pipe, and so the water has been driven out of the trap and the seal has been broken. The vacuum-gauge registered $1\frac{1}{2}$ inches.

We repeat this test several times, until the upper reservoir is empty, and always with the same result. The seal of the vented S is each time broken, as you see, the gauge showing a vacuum of between 1 and $1\frac{1}{2}$ inches.

The published records of all the tests referred to in connection with Figs. 2, 5, 5A and 6, have demonstrated conclusively the same thing, namely, that the S-trap vented in the manner required by the law, is incapable of withstanding under all conditions the strains of siphonage which may be encountered in

actual plumbing work, even when the vent-pipe is new and clean and properly applied. They all corroborate the results you have just witnessed here.

Let us now bring to bear the same amount of strain upon our trap tested on the pneumatic apparatus by rarefying the air in the soil-pipe until the vacuum-gauge registers the same degree of vacuum in each case as has been done on our hydraulic apparatus, and we shall find the effect identical.

Before testing the traps on either plant we have ascertained the degree of vacuum which it is possible to obtain in the soil-pipe by the falling plug of water or by the pump, by corking up the trap openings. In this manner we have obtained a vacuum of 10 inches on our hydraulic apparatus, and as high as 26 inches on our pneumatic, the last being a strain which is undoubtedly much severer than could ever be encountered in plumbing work. But it is very valuable in enabling us to make the most useful comparative tests, giving valuable results otherwise unattainable.

Our vent-pipe is so arranged in our pneumatic apparatus that we can obtain any length of vent and any number of bends we desire by simply opening or closing the little valves on the bends at different points in the length of the pipe. We have limited the length of the pipe to $10\frac{1}{2}$ feet, and the number of return bends to the equivalent of nine, because we find this will create friction enough to break the seal of a vented S-trap under a strain of less than an inch on the vacuum-gauge. On the other hand we find that we can break the seal of this S-trap with a very powerful strain of, say, 20 inches, even when the vent-pipe is not over six inches long and has but a single return bend in it, the bore of the pipe being clean and equal in diameter to that of the trap. We see by these tests that the severity of the strain required to break the S-trap seal is inversely proportional to the length of the vent-pipe and to the number of bends it contains.

Closing now the vent-pipe wholly or in part at the upper end, as by snow or frost, we are able to break the seal still more easily, as you see.

Closing the vent-pipe at the crown of the trap, as by grease or sediment of any kind, we find the seal is instantly destroyed by the feeblest strain. A partial closure here results in a reduction of the seal proportional to the amount of the closure.

(To be continued.)

BARYTA WATER AS A PROTECTION AGAINST DIS-INTEGRATION OF STONE-WORK.

A LETTER has appeared in the *London Times*, from Prof. A. H. Church, F.R.S., in which he says:

"Permit me to offer a few remarks on the preservation of decayed stonework, remarks based on laboratory trials and the practical experience of five-and-forty years.

"Although the imperfect combustion of coal produces tarry matters and soot which cling to and discolor stone, yet it must not be forgotten that it is the sulphur in coal which is the real origin of the mischief against which we have to contend. This element, which ultimately produces sulphuric acid, is present in coal to the extent, roughly speaking, of 1 per cent.; and it must be owned that the most perfect combustion increases rather than lessens the amount of this corrosive acid which is formed. At the same time, it may be conceded that particles of soot charged with acid moisture will injure the surfaces of stone to which they may adhere, even when the sulphuric acid of the air is not directly brought into contact with the stone by the action of rain.

"Amongst the very numerous remedial measures which have been suggested, treatment with certain baryta compounds, notably the hydrate of this earth in the form of baryta-water, are theoretically and practically the most promising. Against the use of all such hydrofuge preparations as paraffin wax and resinous substances, sound arguments may be adduced. But baryta-water repeatedly applied in dry, warm weather with suitable precautions, scarcely changes the color of the surface, forms no skin, penetrates deeply and serves to render solid once more disintegrated stone where the damage has been wrought by the formation of sulphate of lime. It turns this soluble compound into insoluble sulphate of baryta, and at the same time sets free caustic lime, which in course of time becomes carbonated. A recent example of the success of this treatment may be seen in the interior of Westminster chapter-house, where the process has been used in 1901 and 1903. When consulted in 1901 as to the treatment of Bell Harry tower. I recommended the use of baryta-water, for I had analyzed specimens of the decayed stone and had found there enough sulphate of lime to indicate the applicability of this method. It is possible that a final dressing of

some other solution, perhaps one of barium aluminate, of aluminium fluoride or of aluminium fluosilicate, may be advisable in the case under consideration in order to close the pores of the stone. I should deprecate the employment of a free acid such as fluosilicic, which in alternation with baryta-water was suggested by the late Mr. Jesse Rust in 1861, but which subsequent experience has shown to be unsatisfactory.

"Let me, in conclusion, say a few words as to the use of a lime-wash in the treatment of decayed stone. Although from an æsthetic point of view this process has the disadvantage of concealing the time-worn surface and destroying the beauty of its tone and hue, it undoubtedly acts for a time, provided it keeps its place on the decayed and crumbling walls, as a preventive of further attack by sulphuric acid. But it must give rise to more sulphate of lime, the very substance, the formation, presence and migration of which have been the chief causes of the mischief. If such an opaque coating as milk of lime be admissible at all, then, speaking as a chemist, I would suggest a coating into which precipitated carbonate of baryta enters as the chief ingredient. This substance is as effective as lime in barring out the corrosive sulphuric acid, while it can add no injurious soluble salt to the decayed stone."

BOOKS AND PAPERS

THE Gospels in Art" is an interesting collection of pictures from Old Masters and Moderns, representing the Life of Christ—a pictorial Life of Christ, as the editor, Mr. W. Shaw Sparrow, explains in his preface. The choice of Ruben's "Madonna" as frontispiece is unfortunate, as it is simply a very mundane lady nursing an exceedingly pretty child. The color of the picture is glorious, of course, but as a photogravure it conveys no religious feeling to the mind of the spectator. M. Dagnan-Bouveret is represented by his two charming pictures, the one with the rays of light expressing the position of the babe behind its mother's cloak; the other, the little Bambino in its mother's arms surrounded by trees and sunlight. Amongst other modern French painters whose works are reproduced are MM. Bramtot, Cazin, Girardet, Burnand, Bouguereau, Aubert, Bida, Dubufe, Puvis de Chavannes, and Millet. Rosetti, Millais, and Burne-Jones hold their own, but it is a pity such sentimental, maudlin painters as Dobson and Eastlake were included.

In looking through the book one cannot resist the feeling that the moderns (by the way, why are there no Uhdes?) often show more religious feeling than many of the old masters. What dignity and reverence are displayed in Burne-Jones's Wise Men in the "Star of Bethlehem," what solemnity in the attitudes of his angels. And Rosetti! Are not the shrinking of the Blessed Virgin (his sister Christina sat for it) and the awe at the angel's visit marvelously portrayed? Again, the "Nativity" of M. Lerolle. Does any picture by an old master equal it in solemn beauty?

It is curious to compare Rosetti's "Nativity" with Zurbarán's, so similar in feeling, so thoroughly the peasant life, and yet so different in work—the English-Italian being a mystic, the Spaniard a pure matter-of-fact person depicting the peasants who surrounded him.

M. Girardet's "Flight into Egypt" reminds one of Olivier-Merson's. Why is not that included?—the Holy Mother and Child sleeping within the paws of a Sphinx.

In Millet's "Flight" Joseph carries the child; presumably the sketch is in oil, but in what collection is not stated. Indeed, a great fault in this book is the want of information as to the whereabouts of the different pictures.

Millais's "Carpenter's Shop" is here, as well as Mr. Holman Hunt's original conception of the "Shadow of the Cross."

A painter akin to Uhde is Roederstein—a pathetic rendering of "Suffer Little Children." Peter Breughel's "Blind Leading the Blind" is quaint, and seems to have given the idea to M. Tissot. An exquisite profile of Our Blessed Lord is Rosetti's circular picture. Again, where is this? One would like to see the original.

Perhaps the most dramatic representation ever made of the Crucifixion is Gérôme's, in which only the shadows of the crosses appear. On two pages side by side are "Christ holding the Reed," by Ary Scheffer, and "After the Scourging," by J. F. Millet. One would like a plébiscite from all the purchasers of

the book as to the respective merits of the two. Scheffer, as always, is effeminate and sentimental; Millet is masculine, and expresses the agony of the body more pathetically than any painter of the subject we can recall. But probably the verdict of that tiresome "man in the street" would be in favor of the older man. But how delightful in such a collection is the rough ugliness of Velasquez, Burnand, Zurbaran, and Rembrandt! Why should religious art generally run into false sentiment and affectation? Even the great men like Raphael and Van Dyck could not keep clear of sentimentality. Was it from the absence of any real feeling for religion in their own persons? Uprturned eyes are the symbols of religious emotion or agony; and yet, if anyone will observe the expressions of peasants praying in church, he will generally see the face gazing steadily at vacancy, or buried in the hands. It is nearly always the hands which express intense feeling.



GARDEN FRONT: CHATEAU DES PINS, CANTON DE SELLE-SUR-CHER, LOIRE-ET-CHER, FRANCE, AS RESTORED BY MM. ED. DUMONT AND A. LAFARGUE, ARCHITECTS.

THIS château was built partly in the time of Louis XII. and partly by Francis I. to afford a home for a certain dame of his court, the building being about equally distant—22 kilometres—from Francis's own favorite abodes at Chambord and Blois. This addition is the one-story wing at the right of the general view. The chapel (Louis XII.) shows on the extreme left.

POSTERN-ENTRANCE FRONT AND VIEW IN THE COURT OF HONOR: CHATEAU DES PINS.

This, like the preceding view, is copied from *l'Architecture*, and shows the exterior and interior fronts of the entrance-tower, and the manner of its connection with the chapel.

A COMPETITIVE DESIGN FOR THE NEW YORK JUVENILE ASYLUM: GENERAL PLAN AND PLAN OF SCHOOLHOUSE. MESSRS. BUTLER & RODMAN, ARCHITECTS, NEW YORK, N. Y.

This design received very favorable consideration in the competition held a year or two ago for the asylum buildings which were later actually erected at Dobbs Ferry, after the designs of Messrs York & Sawyer, who won the competition.

FRONT ELEVATION OF SCHOOL: A PART OF THE SAME DESIGN.

SIDE ELEVATION OF CHAPEL: A PART OF THE SAME DESIGN.

Additional Illustrations in the International Edition.

HOUSE OF J. F. D. LANIER, ESQ., 123 EAST 35TH STREET, NEW YORK, N. Y. MESSRS. HOPPIN, KOEN & HUNTINGTON, ARCHITECTS, NEW YORK, N. Y.

VESTIBULE AND HALL IN THE SAME HOUSE.

HALL DRINKING-FOUNTAIN IN THE SAME HOUSE.

DINING-ROOM AND BEDROOM FIREPLACES IN THE SAME HOUSE.

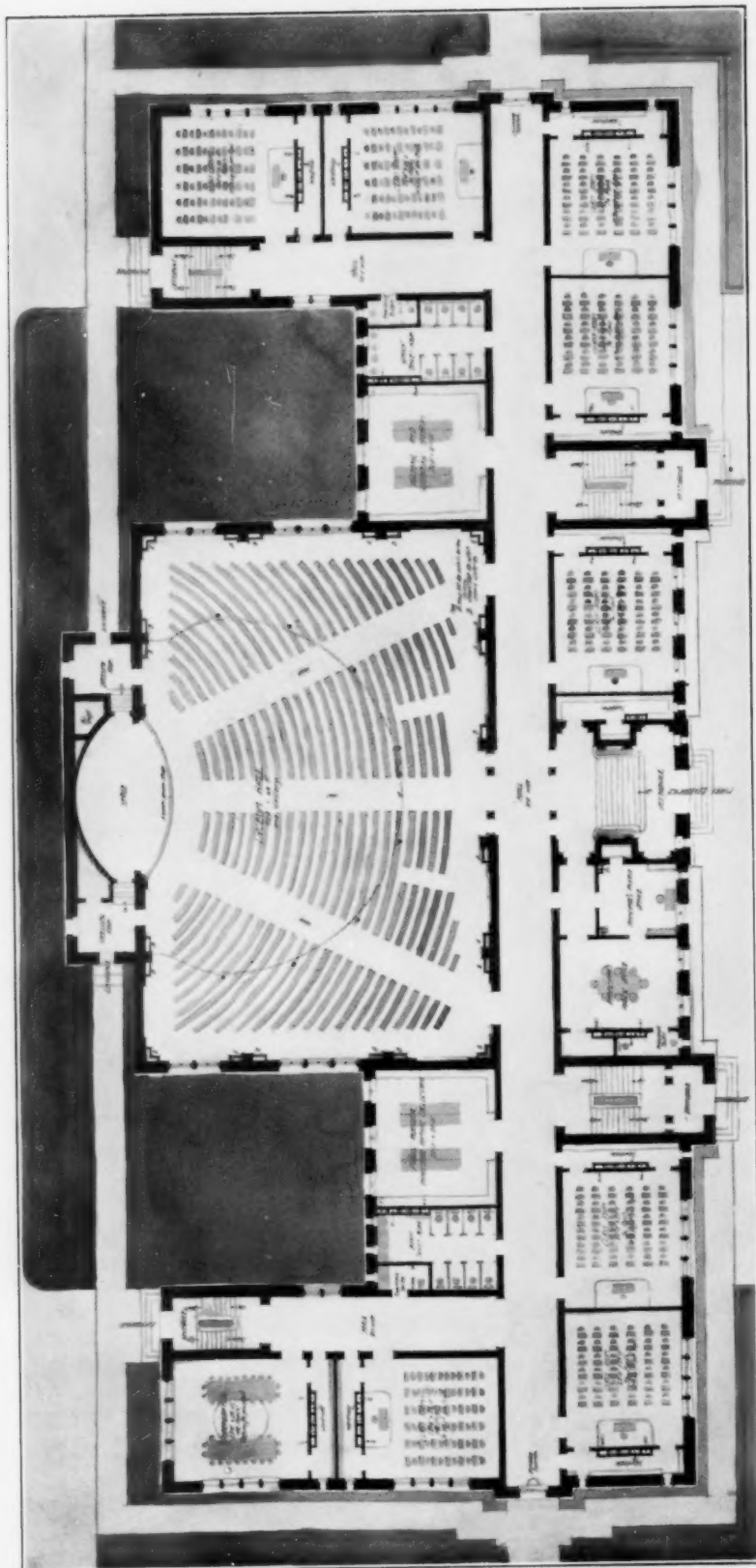


THE GRAY FUND AND THE SPRINGFIELD, MASS., LIBRARY.—According to the will of the late James P. Gray, of Springfield, Mass., a large fund is to be set aside from his estate after the death of his widow, for the purchase of art works for that city's Library Association. It is expected that the amount will be large enough, the income from which is to be expended yearly, to provide in time one of the notable collections in the country.

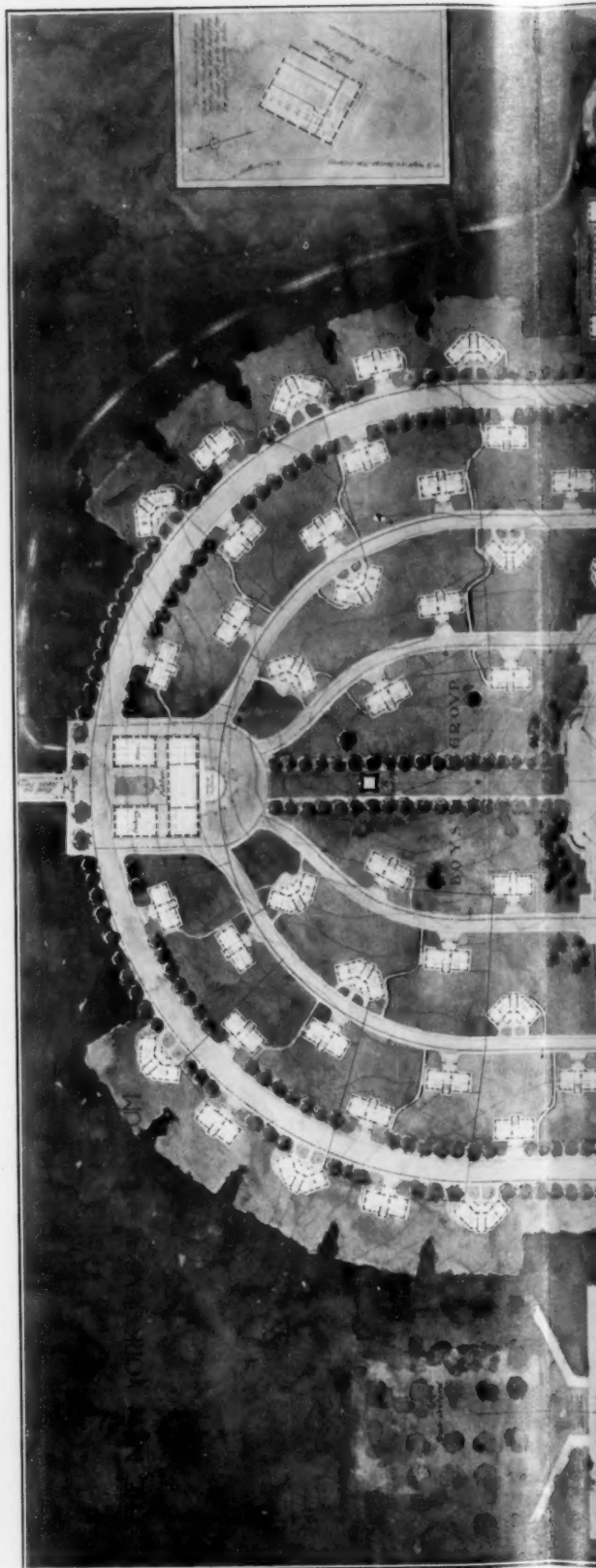
GUSTAV EBE, ARCHITECT.—The Prussian architect, Gustav Ebe, celebrated his seventieth birthday a few weeks ago. The buildings which he began to erect in Berlin in 1874 formed a new epoch in the architecture of the German capital. He was the first to use sandstone there as the favorite material, the first who carried out the architectural style in the inside decorations, the first who infused a really artistic spirit into the building business.—*N. Y. Evening Post.*

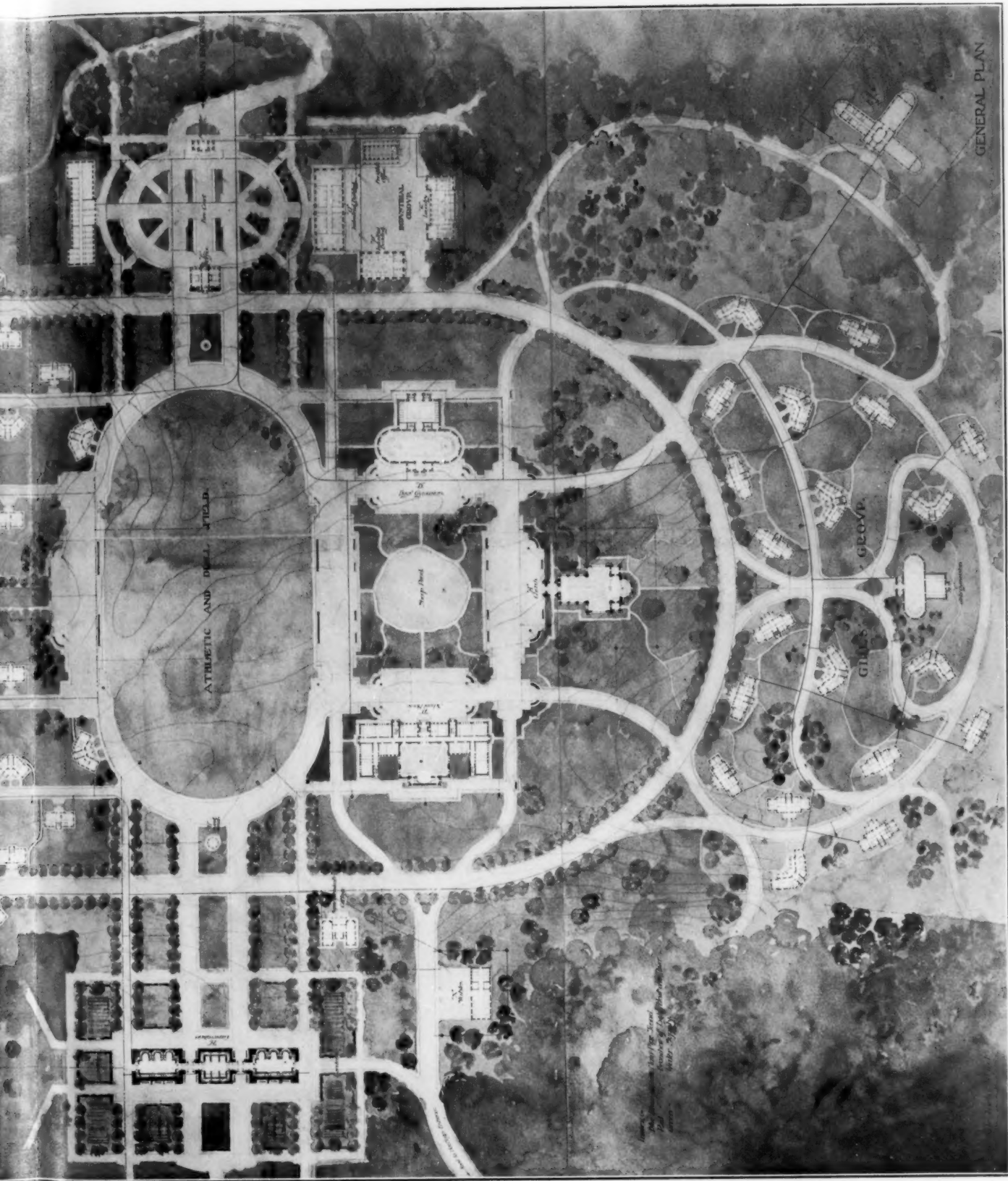
THE CHÆRONEAN LION.—When Dodwell visited Chæronea he was unable to find any trace of a monument of either of the battles which were fought there. One in B. C. 338 made Philip of Macedon master of Greece. Pausanias describes a mound or tomb of the Bœotians, on which the figure of a lion was placed as an emblem. When Colonel Mure was there about 1840 he was able to see a marble lion which was found embedded in the mound. "This noble piece of sculpture," he says, "though now strewn in detached masses about the sides and interior of the excavation, may still be said to exist nearly in its original integrity. It is evident, from the appearance of the fragments, that it was composed from the first of more than one block, although not certainly of so many as its remains now exhibit. Some of the fragments, however, seem to have been removed. The different pieces are so scooped out as to leave the interior of the figure hollow, with the two-fold object, no doubt, of sparing material and saving the expense of transport." Mure was not able to ascertain when the figure was discovered, but it must have been in the period of twenty years which elapsed between his investigation and Dodwell's. The interest which of late years the people of Greece have manifested in their ancient history has been proved by the restoration and re-erection of the lion at a cost of about £1,200. The plain of Chæronea is so desolate, nearly all the fragments were recovered. The head was destroyed at the time of the revolution, in the expectation that gold would be found within it.—*The Architect.*

VENTILATING BY OPEN-FIREPLACE.—"Judging from the various schemes for ventilating buildings which have come under my notice," says Mr. W. Harman, in a paper recently read before the Architectural Association, "I am surprised to find what little attention is given to even the most elementary calculations as to the probable results which will be attained, notwithstanding that certain data have been arrived at which experience proves to be fairly reliable and so simple that there is no excuse for neglecting to employ them. Failure, where it takes place, results generally from under-estimating the supply of air necessary for securing efficient ventilation, and from the employment of restricted areas of inlet or outlet channels, openings or ducts. An ordinary room is provided with one fireplace flue, and, as previously stated, when a fire is lighted, that flue is practically the only outlet of air from the room. Consequently, by ascertaining the velocity of air passing up the flue and the sectional area of the flue, it is easy to find how much air will pass through the room in a given time. Several influences will be at work at varying times which will affect the velocity of air passing up the flue, such as more or less fire in the grate, more or less force of wind outside, etc., etc., but under medium conditions a flow of about 5 cubic feet per second may be taken as the volume passing up an ordinary 14 in. by 10 in. flue. Kindly note that I give the volume at about 5 cubic feet. I do this for the purpose of simplicity, and because it is near enough for practical purposes and can easily be remembered. If 5 feet be multiplied by 60 times 60, the result—viz., 18,000 feet—will be the volume of air passing through the room in an hour, and if change of air be demanded at the rate of six times per hour, the cubical capacity of a room with only one fireplace flue should not exceed 3,000 feet, say 20 feet by 15 feet by 10 feet. A point to which I have given some consideration is the size of a special inlet relative to that of an ordinary fireplace flue. A good rule is to have it of ample dimensions, with easy means for its regulation. It is then the fault of the occupants if care be not taken to adjust it to requirements. The difficulty, however, is that people are generally careless in paying attention to so simple an appliance—on a windy day the opening will be closed to prevent discomfort from draughts, and no one thinks of opening it in calmer weather. I have, therefore, come to the conclusion that when the inlet is placed as I advise—on the same side as the fireplace, and as nearly central thereto as possible, about 2 feet below the ceiling—a clear opening of about one-half the area of the outlet flue will suffice, for the following reasons: 1. If the inlet is simply through an external wall there will be less friction than in the long outlet flue, therefore the velocity can be greater. 2. Because, with a properly-formed and louvred inlet, the additional velocity in the upper and unoccupied portion of the room will distribute the air throughout better than if entering at low velocity. 3. Because variations in the force of wind outside will not be so much noticed within the room when the area of inlet-opening is not excessive."



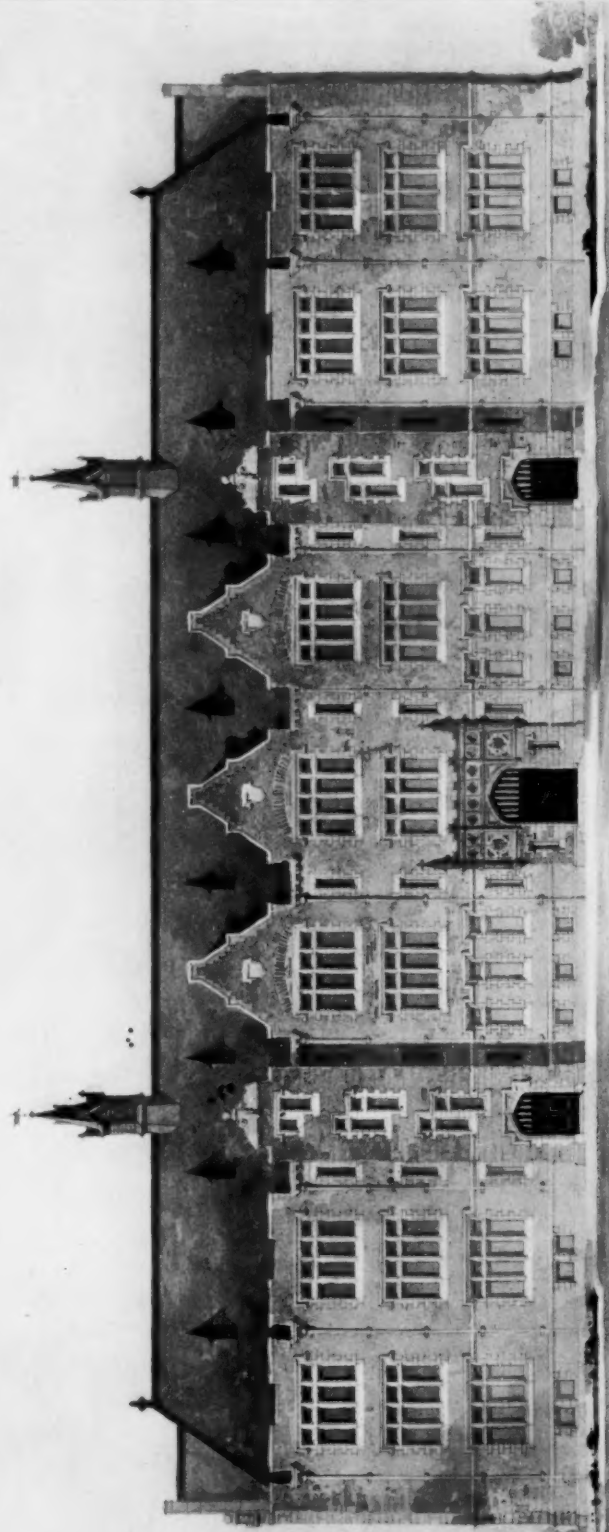
PLAN OF SCHOOL HOUSE.





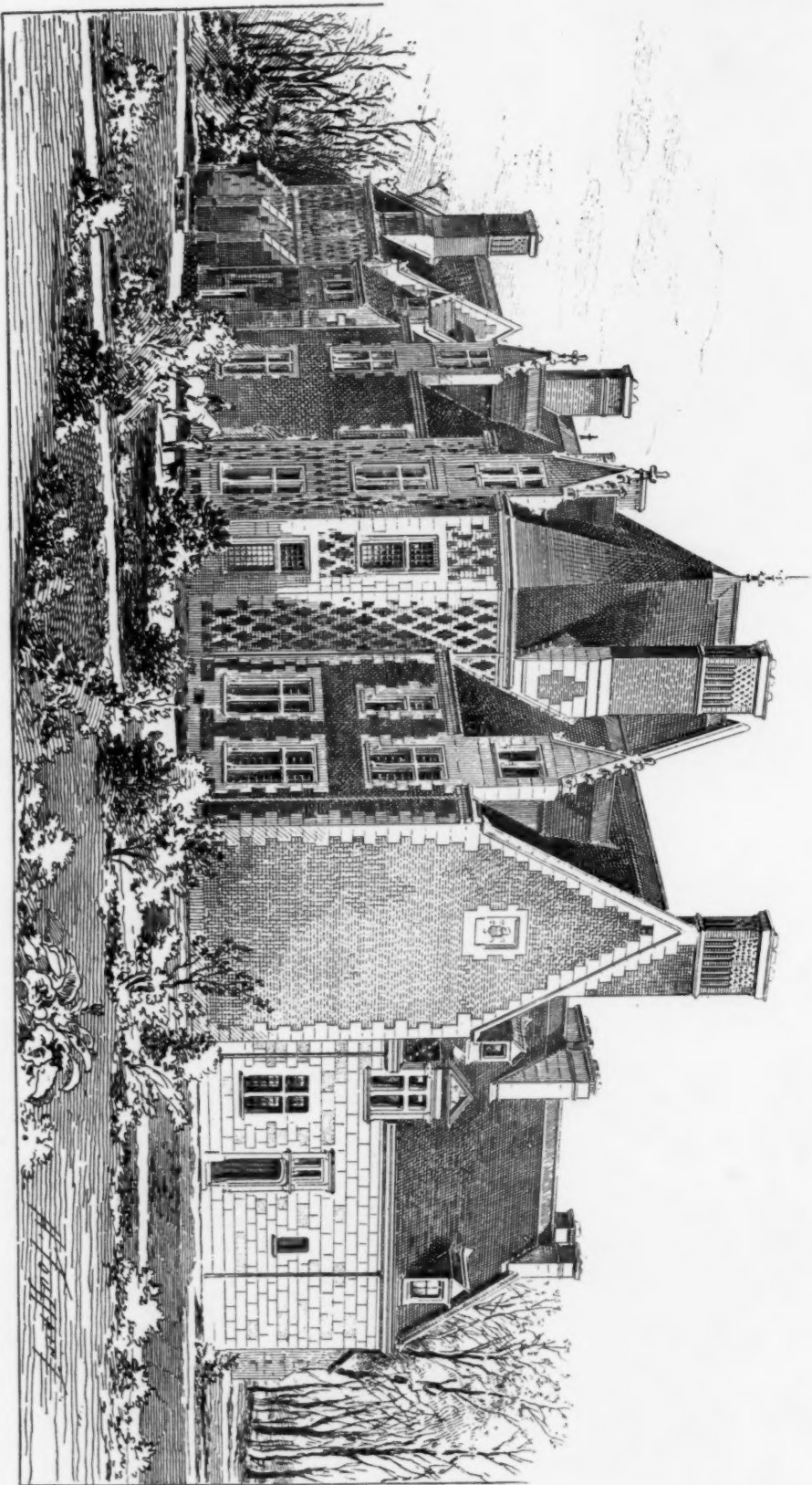
GENERAL PLAN.
 COMPETITIVE DESIGN FOR THE NEW YORK JUVENILE ASYLUM.
Butler & Rodman, Architects.

COMPETITION
FOR
THE NEW YORK JUVENILE ASYLUM



ELEVATION OF SCHOOL

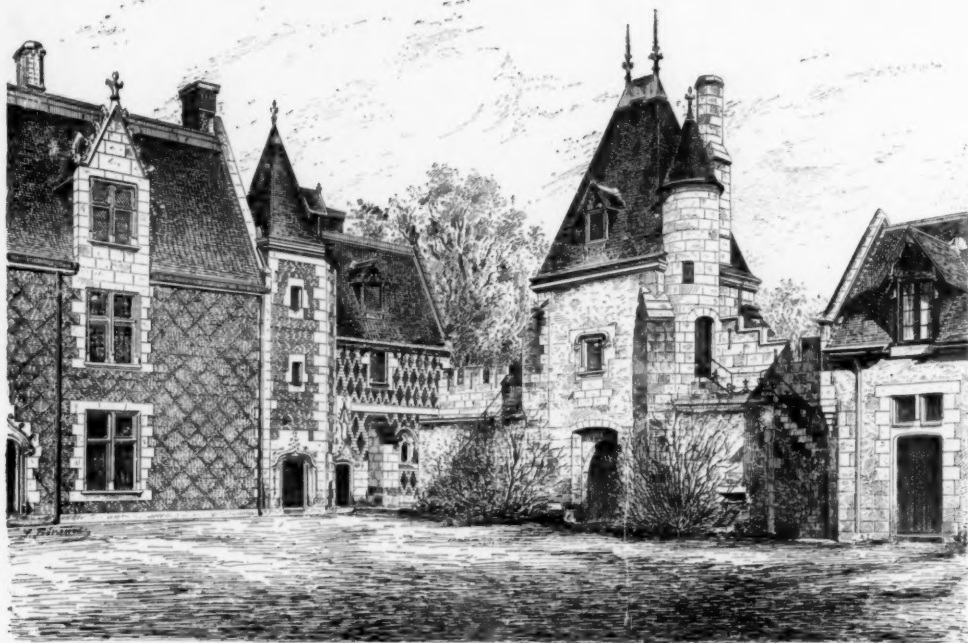
COMPETITIVE DESIGN FOR THE NEW YORK JUVENILE ASYLUM.
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From *L'Architecture*.

GARDEN FRONT: CHATEAU DES PINS, CANTON DE SELVE-SUR-CHER, LOIRE-ET-CHER, FRANCE.

As restored by M.M. Dumont and Leforgue, Architects.



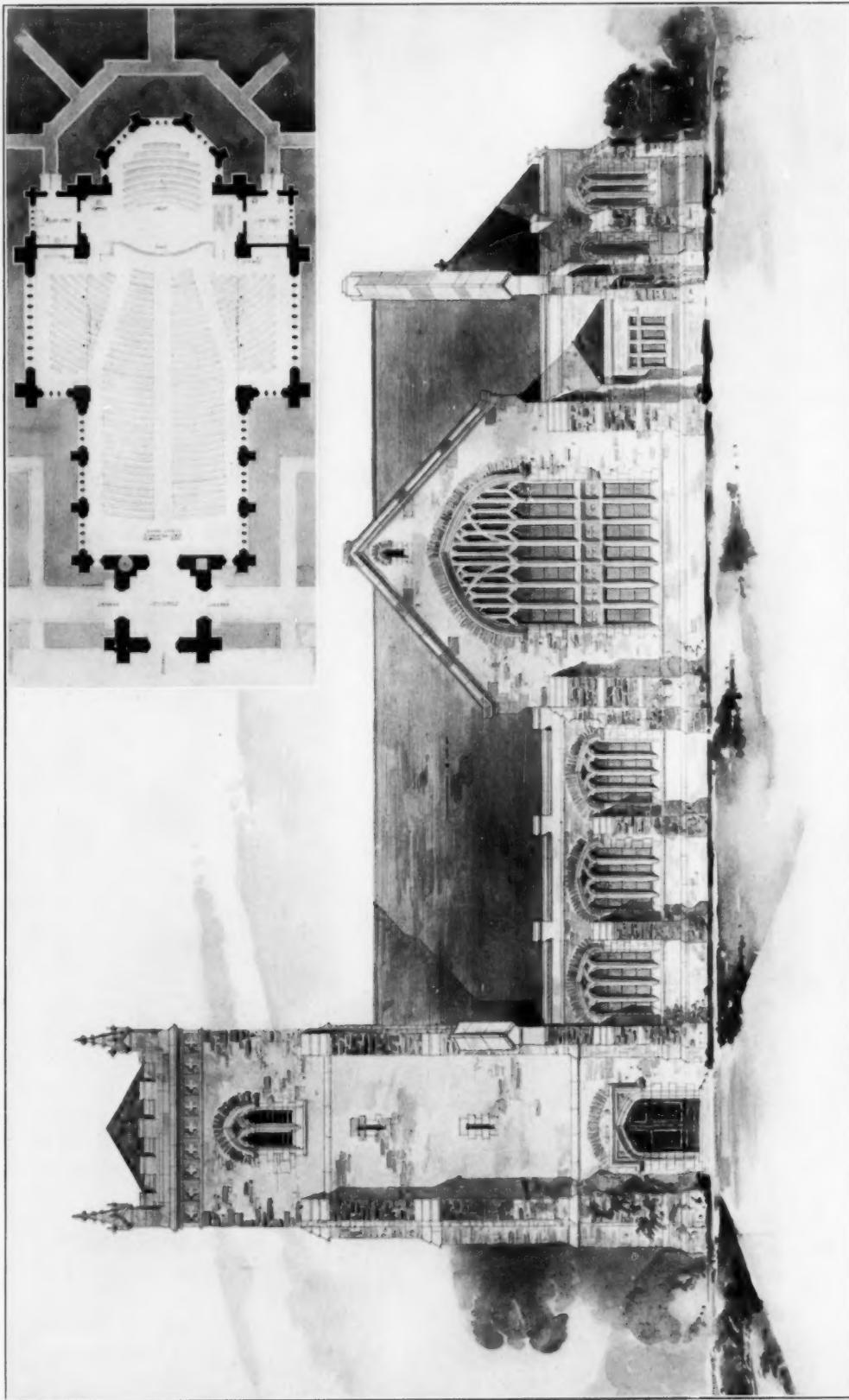
VIEW ON THE COURT OF HONOR.



From *L'Architecture*.

POSTERN-ENTRANCE FRONT.

CHATEAU DES PINS, CANTON DE SELLE-SUR-CHER, FRANCE.



THE CHAPEL.
 COMPETITIVE DESIGN FOR THE NEW YORK JUVENILE ASYLUM.
Butler & Rodman, Architects.

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