

SEPTEMBER 3, 1904

THE
AMERICAN ARCHITECT
AND BUILDING NEWS

VOL. LXXXV

* REGULAR EDITION *

NO. 1497



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CONTENTS.

TEXT : pp. 73 — 80.

EDITORIAL SUMMARY.
TESTS OF CEMENTS.—II.
LANDSCAPE ARCHITECTURE.
GERMAN LABOR INSURANCE.
NOTES AND CLIPPINGS.

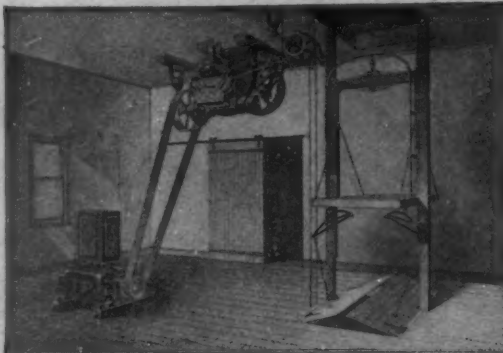
ILLUSTRATIONS.

THE CENTRAL CHURCH, BERKELEY AND NEWBURY STS., BOSTON, MASS.
THE LOUISIANA PURCHASE MONUMENT: LOUISIANA PURCHASE EXPOSITION, ST. LOUIS, MO.
THE AUSTRIAN GOVERNMENT BUILDING: LOUISIANA PURCHASE EXPOSITION, ST. LOUIS, MO.

THE VAN WICKLE GATE: BROWN UNIVERSITY, PROVIDENCE, R. I.
SCULPTURAL DETAIL: LOUISIANA PURCHASE MONUMENT, ST. LOUIS, MO.

[Additional Illustrations in the International Edition.]

THE LOUISIANA PURCHASE MONUMENT AND THE BOAT-LANDING: LOUISIANA PURCHASE EXPOSITION, ST. LOUIS, MO.
SCULPTURAL DETAIL FROM THE LOUISIANA PURCHASE MONUMENT: "SIGNING THE TREATY": "ST. LOUIS AND THE GUIDING SPIRIT."
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[For Classified List see Cover 3.]

Alphabetical List of Advertisers.

A		F		M		S	
Algonquin Red Slate Co.....	v	Fisher & Co., Robert C.....	i	Mass. Institute of Technology.....	i	Samson Cordage Works.....	E
American Mason Safety Tread Co.....	vii	Flynt Building & Construction Co.....	i	Miller & Bro., James A.....	v	Sargent & Co.....	E
American Tin Plate Co.....	E	Fowle, Herbert.....	xi	Morrill & Whitton Construction Co.....	xi	Sears, Roebuck & Co.....	xi
Architect and Contract Reporter, The.....	ii	French & Co., Samuel H.....	v	Morrill, E. P.....	viii	Shultz Belting Co.....	xi
Art Metal Construction Co.....	vi	Frink, I. P.....	(Cov.) 2	Morris-Ireland Safe Co.....	x	Silver Lake Co.....	xi
Associated Expanded Metal Co.....	x			Morse, Williams & Co.....	(Cov.) 2	Simpson Bros. Corporation.....	xi
Atlas Portland Cement Co.....	i			Morse & Whyte.....	xi	Sleep, Elliot & King Co.....	xi
B		G		N		T	
Barrett Mfg. Co.....	2	Gallagher & Munro.....	xi	National Fireproofing Co.....	iii	Taylor Co., N. & G.....	E
Batchelder & Co., C. H.....	xi	Gilbreth, Frank B.....	xi	Neuchatel Asphalt Co.....	vi	Taylor, J. W.....	ii
Benedict & Burnham Mfg Co.....	E	Gilbreth Seam-face Granite Co.....	xi	New England Tank and Tower Co.....	viii	Thorn, J. S., Co.....	x
Berger Mfg. Co.....	ii	Globe Ventilator Co.....	(Cov.) 3	New Jersey Zinc Co.....	xi	Troy Laundry Machine Co.....	(Cov.) 4
Blodgett Clock Co.....	ix	Goodhue, Harry Eldredge.....	3	New York Baking & Packing Co.....	vi	Trues Metal Lath Co.....	v
Broad Gauge Iron Stall & Vane Works.....	xi	Gurney Heater Mfg. Co.....	(Cov.) 4	New York Metal Coiling Co.....	vi		
Building News, The.....	4			Northwestern Terra-Cotta Co.....	xii		
Burditt & Williams Co.....	v	H		O		U	
Butcher Polish Co.....	E	Hartmann Bros. Mfg. Co.....	vii	Ohio State University.....	i	University of Pennsylvania.....	i
C		Hayes, Geo.....	v	Okonite Co. (Ld.).....	E	United States Foundry and Sales Co.....	vii
Cabot, Samuel.....	vi	Hecla Iron Works.....	4	P		U. S. Mineral Wool Co.....	viii
Cairns, Hugh.....	xi	Heliotype Printing Co.....	xii	R		V	
Campbell, Walter M.....	viii	J		Passaic Steel Co.....	x	Valle & Young.....	(Cov.) 4
Chicago & Alton Railway.....	ix	Jackson & Co., Wm. H.....	(Cov.) 4	Pitt, W. R.....	iv	W	
Chicago Clothes Dryer Works.....	xi	Jager Co., Charles J.....	ix	E		Warren Chemical Mfg. Co.....	vi
Cornell University.....	vi	Jenkins Bros.....	vi	Richey, Brown & Donald.....	vi	Washington University School of Engineering and Architecture.....	i
Crawley & Son, George E.....	xi	Johnson & Co., H. A.....	xi	Richter Mfg. Co.....	8	Whitlier Machine Co.....	i
Cudell, F. E.....	viii	Jones, T. W.....	E	Rider-Ericsson Engine Co.....	v	Williams, John.....	viii
Cutler Mfg. Co.....	ii	K		Roby-French Co.....	xi	Winslow Bros. Co., The.....	i
D		Kensley & Mattison Company.....	vii	Rutan, W. L.....	xi	Y	
Dadman, Leon E.....	xi	Kimball Bros. Co.....	v	L		Yale & Towne Mfg. Co.....	xii
Deane, E. Eldon.....	vii	Kinnear Mfg. Co., The.....	(Cov.) 2	Lawrence Scientific School.....	i		
Dixon Crasble Co., Jos.....	v	L		Ledder, G. G.....	xi		
E		Loonis-Manning Filter Co.....	i	Edison Portland Cement Co., The (Cov.) 4			
Edison Portland Cement Co., The (Cov.) 4		Lord & Burnham Co.....	v	Elevator Supply and Repair Co.....	i		
Elevator Supply and Repair Co.....	i			Elston, A. A.....	xi		
Elston, A. A.....	xi			Erickson Electric Equipment Co.....	xi		
Erickson Electric Equipment Co.....	xi						

THE AMERICAN ARCHITECT AND BUILDING NEWS

A WEEKLY JOURNAL OF CONSTRUCTIVE AND DECORATIVE ART

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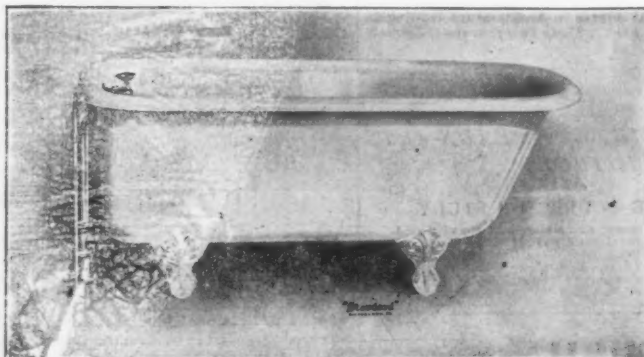


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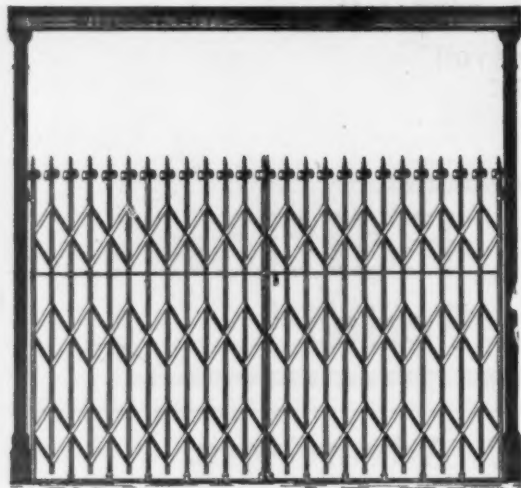
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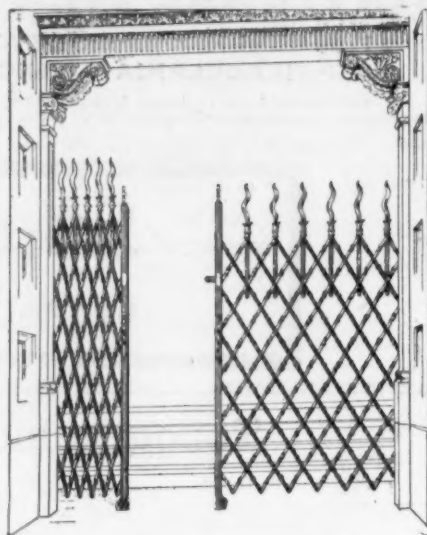
Topographical Index of Advertisers.

[For pagination, see Alphabetical Index on Cover 2.]

CONNECTICUT.		MASSACHUSETTS.		NEW YORK.	
South Norwalk.		Boston.		N. Y. City.	
United States Foundry and Sales Company.....Castings		Moss, Chas. E.....Blue Prints		Frink, I. P.....Reflectors	
Stamford.		New England Tank and Tower Co..Tanks		Gilbreth, Frank B...Waterproof Cellars	
Yale & Towne Mfg. Co.....Locks		Robey-French Co..Photographic Supplies		Gilbreth Seam-face Granite Co.....	
Waterbury.		Rutan, Wm. L.....Building Contractor		Hayes, George.....Metallic Lathing	
Benedict & Burnham Mfg. Co.....		Samson Cordage Works.....Sash-Cord		Hecla Iron Works.....	
Seamless Tubing		Shultz Belting Co.....Leather Belting		Ornamental Iron and Bronze	
ENGLAND.		Silver Lake Co.....Sash Cord		Jackson & Co., Wm. H.....Grates	
London.		Simpson Bros. Corporation..Asbestolith		Jenkins Bros.....Valves	
Architect and Contract Reporter, The..		Sleep, Elliot & King Co.....		Jones, T. W.....Vanes	
Magazine		Modelling and Ornamental Plaster		Mott Iron Works, The.....Iron Work	
Building News, The.....Periodical		Spaulding Print Paper Co...Blue Prints		Neuchatel Asphalt Co.....Asphalt	
ILLINOIS.		Standard Fire-escape & Mfg. Co.....		New Jersey Zinc Co.....Zinc White	
Chicago.		Sturtevant Co., B. F.....Fan System		New York Belting and Packing Co., Ltd.	
Chicago & Alton Railway.....Railroad		Whittier Machine Co.....Elevators		Interlocking Rubber Tiling	
Crane Co.....Valves		Cambridge.		N. Y. Metal Ceiling Co...Metal Ceilings	
Miller & Bro., J. A..Wire Glass Windows		Goodhue, Harry Eldredge.....		Okonite Co., Ltd.....Insulated Wire	
Northwestern Terra-Cotta Co.....		Memorial Windows		Pitt, W. R.....Folding-Gates	
Terra-Cotta		Lawrence Scientific School (Harvard University).....Architectural School		Rider-Ericsson Engine Co.....	
Sears, Roebuck & Co.....Safes		Palmer.		Hot-Air Engines	
Taylor, J. W.....Photographs		Flynt Building & Construction Co.....		Sargent & Co.....Builders' Hardware	
Winslow Bros. Co., The.....		Building Contractors		Smith Co., H. B.....Steam Heat	
Ornamental Iron and Bronze		Worcester.		Smith & Co., Edward.....Varnishes	
IOWA.		Algonquin Red Slate Co.....Paint		Society of Beaux-Arts Architects..School	
Connell Bluffs.		St. Louis.		The Robert C. Fisher Company..Marble	
Kimball Bros. Co.....Elevators		Washington University School of Engineering and Architecture.....School		Truss Metal Lath Co.....Metal Lathing	
MARYLAND.		NEW JERSEY.		U. S. Mineral Wool Co.....Mineral Wool	
Baltimore.		Jersey City.		Warren Chemical & Mfg. Co.....	
Vaile & Young.....Skylights		Dixon Crucible Co., Jos.....Graphite		Asphalt Roofing	
MASSACHUSETTS.		Paterson.		Williams, John.....Wrought Metal	
Boston.		Passaic Steel Co.....Structural Iron		Yale & Towne.....Hardware (Art)	
American Mason Safety Tread Co.....		Tenafly.		Rochester.	
Stair Tread		Richter Mfg. Co.....Tapestrolea		Cutler Mfg. Co.....Mail Chutes	
Batchelder & Co., C. H....Roofing Duck		NEW YORK.		Troy.	
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Cabot, Samuel.....Deafening Quilt		Art Metal Construction Co.....		Berger Mfg. Co., The....Metal Ceilings	
Cairns, H...Stone Carving and Modelling		Metal Furniture		Columbus.	
Campbell, Walter M.....Perspectives		Long Island City.		Kinnear Mfg. Co., The.....	
Crawley & Son, G. E..Tiles and Fireplaces		Richey, Browne & Donald.....		Steel Rolling Doors	
Dadmun, Leon E.....Photography		Ornamental Iron and Bronze		Ohio State University..Architectural School	
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Erickson Electric Equipment Co.....		Hartmann Bros. Mfg. Co..Staved Columns		Cudell, F. E.....Traps	
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Gallagher & Munro Co.....Plasterers		Associated Expanded Metal Co.....		Keasbey & Mattison Co.....	
Gurney Heater Mfg. Co...Hot-water, etc.		Expanded Metal		Magnesia Covering	
Heliotype Printing Co.....Art Printing		Atlas Cement Co.....Cement		Philadelphia.	
Jager Co., Charles J.....Engineers		Barrett Mfg. Co.....Waterproofing		Edison Portland Cement Co.....	
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Morrill & Whiton Construction Co....		Electric Signals		Newman, Geo. A.....Perspectives	
Masons and Builders		Pittsburgh.		Taylor Co., N. & G.....Roofing Tin	
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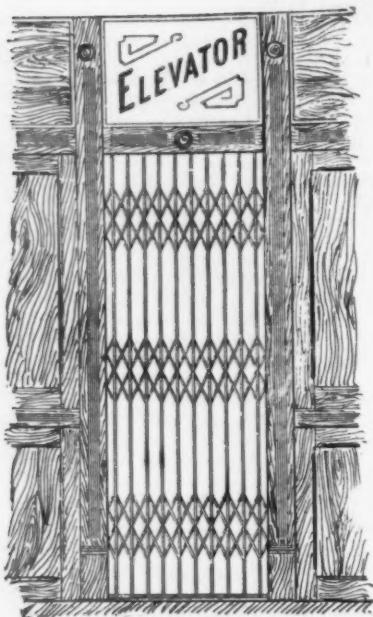


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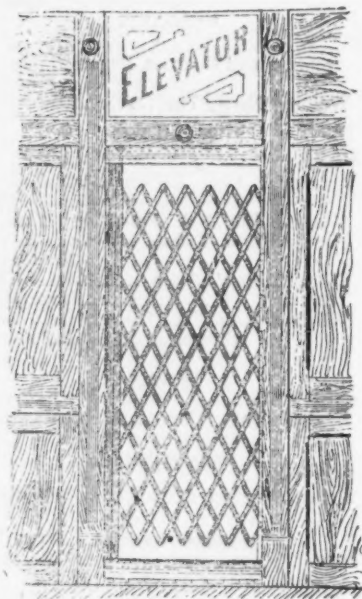
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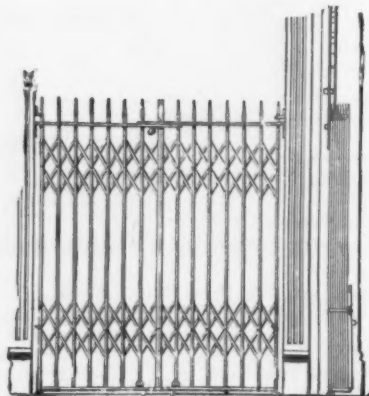
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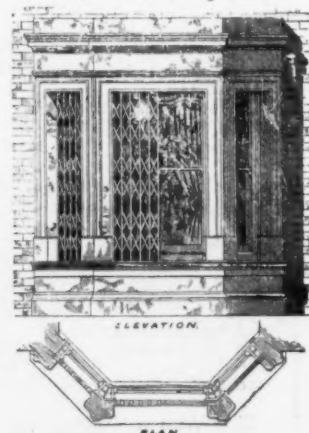
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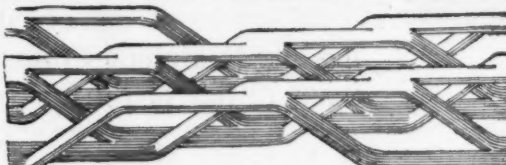
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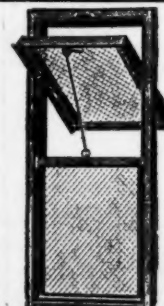
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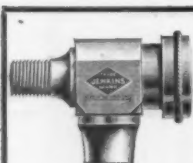
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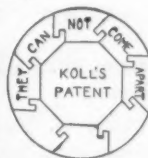
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Barlow, W. F., lately of Bar Harbor, Me.

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Carpenter, R. W. E., lately of Pittsburgh, Pa.

Colbert, H. W., lately of Shawnee, Okla.

Cupperwell, E. W., lately of Union Stock Yards, Chicago, Ill.

Hayes, Jas. T., lately of Syracuse, N. Y.

McCarthy, P. A., lately of Indianapolis, Ind.

Maydwell & McClintock, lately of 22 Sheldon Block, El Paso, Tex.

Rice, Joe, lately of Beaumont, Tex.

Wilcox, F. O., lately of 614 Commercial St., New Orleans, La.

Wolf, James, lately of 125 Broadway, New York, N. Y.

Ropes, George H., lately of Cleveland, O.

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BUILDING INTELLIGENCE.

(Reported for the American Architect and Building News.)

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

ADVANCE RUMORS.

ATHENS, GA.—It is reported that a recitation hall, costing \$50,000, is to be erected at the Normal School.

BALTIMORE, MD.—W. J. Beardsley has prepared plans for a seven-story apartment house, 60x90 feet, which is to be erected at St. Paul and Franklin Sts., at an estimated cost of \$150,000. Harry E. Gilbert is reported to be one of the promoters of the project.

BLOOMINGTON, ILL.—It is reported that the contract to erect the Irving School has been awarded to J. W. Evans' Sons Company, 511 North Centre St., at \$43,598.

BOSTON, MASS.—Plans have been drawn by Peters & Rice for an attractive dwelling to be erected on lot numbered 81, Bay State Road, between Charlesgate West and Sherborn St., for Elizabeth D. Joslin. It will be

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(Advance Rumors Continued.)

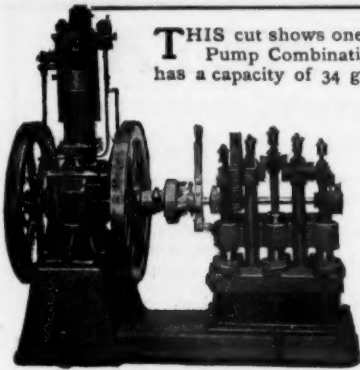
22x75 feet in general dimensions, four stories high, with a swell front and flat composition roof.

CEDAR RAPIDS, IA.—The contract for the building of the Allison Hotel has been awarded to Mr. A. H. Connor. The amount of Mr. Connor's bid is not disclosed by the company, but it is said to be \$106,000. The bid is for the superstructure alone, and does not include heating and lighting. The whole cost of the building, as estimated by the company, when completely furnished, will be somewhere between \$190,000 and \$200,000. The hotel will be a five-story brick structure, with stone trimmings, strictly fireproof and modern in every detail.

CHATTANOOGA, TENN.—It is rumored that Dr. E. F. Lovejoy contemplates erecting a \$35,000 sanatorium at McCallie and East End Aves. Huntington & De Sabla, architects, Loveman Building.

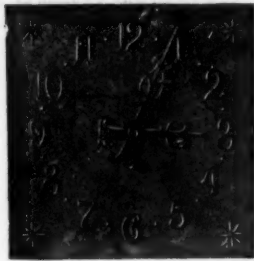
CHICAGO, ILL.—Plans for a public school in the Englewood district have been completed by W. G. Williamson, 153 La Salle St. The building, which will be located at Throop and 60th Sts., will be three stories high, 125x204 feet, of fireproof construction, and cost \$150,000.

Wm. J. Brinkmann, Metropolitan Block, is preparing preliminary plans for a Catholic institution to be erected in Chicago at



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BUILDING INTELLIGENCE.

(Advance Rumors Continued.)

a cost of about \$325,000. For Rev. Father Dorney he is designing a four-story school, 75x115 feet, to be erected at Wallace and 45th Sts., at a cost of \$60,000.

The largest apartment house building project in the history of the North Side is now being undertaken by William H. Barry, the builder. It involves altogether an expenditure of about \$2,000,000, of which amount \$1,500,000 will go into buildings and \$500,000 into land. On this land he proposes to erect 104 apartment houses. The buildings will be principally three stories high, fronting 40 to 50 feet, and about 70 feet deep.

Murphy & Camp are at work upon plans for an apartment house which John Mackin and H. M. Ryan will build in Lake View Ave., 100 feet south of Diversey Boulevard. It will be 100x120 feet in ground dimensions, three stories high, and will cost \$75,000.

W. W. Blair is preparing plans for a building to be erected in West Washington St., near Jefferson, for the occupancy of R. Williamson & Co., manufacturers of gas fixtures. It will be seven stories high and will front 75 feet, with a depth of 136 feet, of mill construction, and will cost \$75,000.

CINCINNATI, O.—Plans for the memorial hall of the Hamilton County Memorial Association are in progress and the architects, Samuel Hannaford & Sons, will have the plans ready for submission to the Board of Managers within the next thirty days. The Board of Public Service will erect nine new engine houses for the accommodation of the proposed new fire companies. Plans for these structures are being drawn and work will commence within a short time.

CLINTON, IA.—Press report states that John Morrell & Son are preparing plans for a Y. M. C. A. building, which is estimated to cost \$45,000.

DAYTONA, FLA.—Reports state that the Florida East Coast Railway Company will soon erect a hotel here, to cost \$650,000. J. R. Parrott, vice-president and general manager, St. Augustine, Fla.

DES MOINES, IA.—The Des Moines National Bank is having plans prepared by Liebke, Nourse & Rasmussen, architects, for a one-story bank building, 26x132, of stone and terra-cotta. The interior finish will be of marble and tile, fireproof construction, steel frame and hollow tile work, safety vaults, etc. Cost, about \$40,000.

Charles Weitz & Sons have been awarded

BUILDING INTELLIGENCE.

(Advance Rumors Continued.)

the contract for the construction of the new Unitarian church. Cost estimated at \$25,000. Liebke, Nourse & Rasmussen, architects.

Plans are being prepared by Smith & Gage, architects, for a theological building, costing \$35,000, for Drake University. It is to be of brick construction, 2½ stories.

Hallett & Rawson, architects to the Capitol Commission, have completed plans for the restoration of the portion of the State-house destroyed by fire and will receive bids from contractors up to noon of Sept. 9. The architect's estimate on the cost of the work is \$109,000.

DEVON, PA.—Milton W. Young, 60th St. and Woodbine Ave., Pittsburgh, has received the contract to erect a residence, stable and gardener's cottage at Devon for C. Hartman Kuhn, at a total cost of about \$50,000.

DUQUESNE, PA.—It is stated that the contract to erect the Holy Trinity Slavonic Church here has been awarded to F. C. Shallenberger, at about \$75,000.

EASTON, PA.—Plans prepared by Wilson, Harris & Richards, Drexel Building, have been accepted in competition for the brick Theta Delta Phi Fraternity House, to be built on the grounds of the Lafayette College, at Easton. It will be three stories and basement high, 111x45 feet; estimated cost, \$25,000.

EDGARTOWN, MARTHA'S VINEYARD, MASS.—Ex-Mayor Charles H. Coulter, of Brockton, and Peter J. Mulligan have purchased the real estate interests of the Ocean Heights Land Company at Ocean Heights, Edgartown, consisting of a tract of about 300 acres, containing about 1,200 shore lots. The new owners will make extensive improvements and erect a number of small cottage houses for investment.

EVELETH, MINN.—W. T. Bray, architect, Duluth, has plans completed for a 14-room school for this place. Cost, \$40,000.

FLUSHING, L. I.—It is reported that plans are completed by G. L. Heins, State architect, at Albany, for the brick armory, 100x192 feet, which is to be erected on Broadway, for the 17th Separate Company, at a cost of about \$70,000.

GADSDEN, ALA.—The citizens have voted to issue \$25,000 bonds to erect a City-hall.

GRAND RAPIDS, MICH.—The Board of Education has presented a schedule representing the proposed expenditure of the



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BUILDING INTELLIGENCE.

(Advance Rumors Continued.)

\$200,000 which will be asked for at the coming school election.

HAMDEN, CONN.—Plans are being prepared by Richard Williams for the proposed new schoolhouse in Hamden. It will be a frame structure, having eight class rooms and seating about 200 pupils. The heating will be by furnace. C. F. Clarke, of Whitneyville, is secretary of the Board of Education.

IOWA CITY, IA.—It is stated that the Odd Fellows are contemplating the erection of a \$30,000 temple.

JOPLIN, MO.—Thos. O'Connor, a mine owner of Joplin, is reported to have donated \$20,000 to erect a \$40,000 church in this city.

KALAMAZOO, MICH.—E. J. Manning, of this place, has received the contract to construct buildings at the Nazareth Academy, east of this city. The contracts for the heating, plumbing, lighting and cement work are still to be awarded. The total cost is estimated to be about \$100,000.

KEOKUK, IA.—H. E. Ratcliffe, of this city, has prepared plans for a four-story brick addition, 100x43 feet, to the St. Joseph Hospital, to cost \$20,000.

KNOXVILLE, TENN.—Press reports state that plans are being prepared for a general hospital to be erected at Cleveland St. and Dameron Ave., by the Tennessee Medical Hospital, at a cost of \$25,000. It is to be a two-story brick structure.

LANCASTER, O.—The building committee of the new Methodist church has accepted plans offered by Architects Richards, McCarty & Bulford, Columbus. The structure will cost \$60,000.

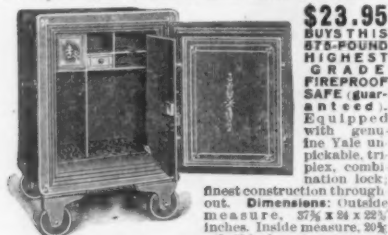
LITTLE ROCK, ARK.—The city School Board has advertised for bids for the erection of the new high school building on the corner of Fourteenth and Scott Sts. The building is to cost in the neighborhood of \$100,000, and when completed will be one of the handsomest structures in the city.

LOS ANGELES, CAL.—A new seven-story fireproof theatre building is to be erected in Los Angeles at a cost of \$300,000. It is to be called the Majestic, and Oliver Morosco is to be the lessee. The incorporation papers of the company have just been filed.

LOUISVILLE, KY.—Capt. Brinton B. Davis, of Louisville, has been engaged by the

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BUILDING INTELLIGENCE.

(Advance Rumors Continued.)

Fiscal Court as the architect for the armory which is to be erected by the county next year on Walnut St., between Centre and 6th Sts.

MILWAUKEE, WIS.—Henry J. Rotier is preparing plans for an apartment house, which will be erected by Patrick Cudahy on the site of his old homestead, Thirteenth St. and Grand Ave. The building, which is to be a four-story structure, will cost between \$80,000 and \$90,000. It will be of stone and brick and will have apartments for thirty-six families. The building will cover the entire lot, which is 90x120 feet.

MINNEAPOLIS, MINN.—Pike & Cook have the contract to build the Soo Line general office building, on Second Ave. South. The building is to be six stories high and strong enough for eight. It will be of terra-cotta and gray speckled brick, strictly fireproof, with wire glass windows and iron frames and sills on the two sides and rear. William M. Kenyon is the architect.

The John Leslie Paper Company has bought a lot at Third Ave. South and 5th St., and will erect a wholesale paper warehouse and office building. It will be 50x165 feet, four-story, of mill construction, with sprinkler protection. Cost, \$45,000. Bertrand & Chamberlin, architects.

A. G. Wass has prepared plans for the Elim Swedish Baptist Church, to be erected on 13th Ave. N. E. and Madison St. It will be 58x62 feet, 36 feet high, of brick and cut stone, to be completed about Jan. 1st next. Alfred Peterson has charge of the work. Cost, \$17,000.

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BUILDING INTELLIGENCE.

(Advance Rumors Continued.)

MT. VERNON, IA.—It is stated that Bartlett & Kling, of Keokuk, have received the contract to erect the \$50,000 Carnegie library in this city.

NEW BEDFORD, MASS.—John B. Sullivan & Son have been awarded the contract to build the 12-room schoolhouse on the Donaghy lot.

The City Council Committee on Property has authorized the architect to receive bids for erecting a 16-room school at the north end of the city.

NEW HAVEN, CONN.—Bishop Tierney will lay the corner-stone of the new church of St. Joseph's parish Sunday, Sept. 11, in the presence of many prominent churchmen and laymen. The church is to be erected at a cost of \$75,000, and will have a seating capacity of 1,100.

Plans are being prepared by Architects Brown & Von Beren for the new brick block to be erected on Hallock St. for Harris Marles. The building will be 40x70 feet, three stories high and with a gravel roof. Six tenements of six rooms each will be provided for, and all the latest improvements will be used.

Estimates on the Swedish Lutheran church, which is to be erected on the corner of State and Franklin Sts., are being made. The contracts will not be let before Sept. 5. The plans for the structure are by Architects Brown & Von Beren, of this city, and provide for a building 42x75 feet, of brick and slate roof. The Sunday school room in the basement will seat 500 persons.

Plans are being made by Architect Richard Williams for a building to be erected by Angelo Porto. It will be three stories high, of brick, with gravel roof and galvanized iron cornice. There will be six tenements of four rooms each, with improvements.

The Knights of Columbus have let the

BUILDING INTELLIGENCE.

(Advance Rumors Continued.)

contract for their new building at \$290,000. The structure will be 64x100 feet, four stories, to contain two stores on the lower floor, offices on second and third floors and the headquarters of the order on the fourth floor. It will require about a year to build the structure, which is to be erected on the Day property on Chapel St., above Temple St.

NEW YORK, N. Y.—Plans for the chapel of Columbia University, to be erected on Amsterdam Ave. north of 116th St., have been filed at the Building Department. The chapel will be a fireproof edifice, shaped like a Greek cross in its ground plan, having a frontage of 58.8 feet and a depth of 141.8 feet. It will have a gallery in addition to the main floor. It will be 114 feet high, with a large dome surmounted by a cupola. The façades will be of granite, limestone and brick, with a decorative frieze of marble with carved inscriptions. The cost of the building is estimated at \$250,000.

PROPOSALS.**HOSPITAL.**

[At Annapolis, Md.]

Bids are wanted September 15 for erecting a hospital at the U. S. Naval Academy; plans and specifications will be furnished by depositing \$15, \$10 of which will be refunded on their return. Ernest Flagg, Architect, 35 Wall St., N. Y. City; CHAS. H. DARLING, Acting Secretary, Navy Department. 1497

CONSTRUCTION.

[At Ft. Caswell, N. C.]

Bids will be received until September 16 by R. H. Williams, Q. M., for constructing, plumbing and wiring commissary storehouse here. 1497

STOREHOUSE.

[At Norfolk, Va.]

Bids will be received September 10 by Mordecai T. Endicott, Ch. Bureau Yards and Docks, Navy Dept., Washington, D. C., for constructing a brick and steel 50' x 150' storehouse for torpedo boat outfits, building No. 81, at Navy Yard here; plans and specifications will be furnished on deposit of \$10. Appropriation available, \$45,000. 1497

PROPOSALS.

REGISTRY OF DEEDS.

[At Plymouth, Mass.]
Office of County Commissioners,
Plymouth, Mass.

Sealed proposals for the erection and completion of a new Registry of Deeds and Probate building at Plymouth, will be received by said commissioners at their office at the Court-house in Plymouth, Mass., until 2 P. M. September 10th, 1904, at which time and place the proposals will be publicly opened.

Proposals must be enclosed in envelopes sealed and marked: "Proposals for the erection and completion of a Registry of Deeds and Probate Building, Plymouth, Mass.," addressed to the County Commissioners, Plymouth, Mass., and must be accompanied with a certified check for one thousand dollars, which will be returned, provided the proposal is not accepted.

Plans and specifications may be seen at the offices of said commissioners at the Court-house in Plymouth, and at the Court-house in Brockton, and at the office of J. Williams Beal, the architect, at 299 Devonshire St., Boston, on and after 12 o'clock noon, August 27th, next.

The right is reserved to reject any or all bids.

WALTER H. FAUNCEY } County
LYMAN P. THOMAS } Commissioners.
E. R. STUDLEY, Associate Commissioner.
1497

SCHOOL.

[At Greenville, Miss.]

Bids will be received September 10 by W. Yenger, Mayor, for erecting a school. Kenneth McDonald & J. P. Shebleeys, Architects, Louisville, Ky.
1497

HIGH SCHOOL.

[At Little Rock, Ark.]

Bids will be received September 15 by the School Board for erecting a high school; bids on ventilating, heating, plumbing and fireproofing to be submitted separately. L. W. CHERRY, Chairman of Committee on New Buildings.
1498

SCHOOL.

[At Lexington, Miss.]

Bids are wanted September 13 for erecting a school; bids will also be received on same date for installing steam-heating plant in school. R. H. Hunt, Architect, Chattanooga, Tenn.; R. C. McBECK, Mayor.
1498

HOTEL.

[At Little Rock, Ark.]

Bids are wanted September 10 for erecting a six-story brick hotel; probable cost about \$250,000. Geo. R. Mann, Architect, Reider Bldg.
1497

HOTEL.

[At Montgomery, Ala.]

Bids are wanted September 15 for erecting a modern fireproof hotel and a 3-story annex for kitchen, servants' quarters etc. W. F. Denny, Architect, Prudential Building, Atlanta, Ga.; C. A. LANIER, Secretary, The Montgomery Hotel Co.
1498

CITY-HALL.

[At Taylor, Tex.]

Plans and specifications are wanted September 13 for a brick and stone city-hall to cost \$20,000; bids for erecting same will also be received. S. F. EVENS, Chairman of Building Committee.
1498

LIBRARY.

[At Cincinnati, O.]

Bids will be received September 20 by the Board of Public Library Trustees for erecting a Carnegie branch library on Kemper Lane and Locust St., including excavation and limestone masonry, brick and dressed stone work, galvanized iron, tin and roofing, gas-fitting, electric wiring, cement work, heating, etc. Jas. W. McLaughlin, Architect, 408-410 Johnston Building; WM. A. HOPKINS, Clerk.
1498

Treasury Department, Office of the Supervising Architect, Washington, D. C., August 18, 1904. Sealed proposals will be received at this office until 3 o'clock P. M. on the 19th day of September, 1904, and then opened, for the installation of a conduit and electric wiring system for the U. S. Post-office and Court-house, Greenville, Tenn., in accordance with drawings and specifications, copies of which may be obtained at this office, or at the office of the Superintendent of Construction at Greenville, Tenn., at the discretion of the Supervising Architect. JAMES KNOX TAYLOR, Supervising Architect.
1497

Treasury Department, Office of the Supervising Architect, Washington, D. C., August 18, 1904. Sealed proposals will be received at this office until 3 o'clock P. M. on the 20th day of September, 1904, and then opened, for the construction, including plumbing, heating, gas piping, conduits and wiring of the West Out-building, Bureau of Engraving at Washington, D. C., in accordance with the drawings and specification, copies of which may be had at this office at the discretion of the Supervising Architect. JAMES KNOX TAYLOR, Supervising Architect.
1497

Treasury Department, Office of the Supervising Architect, Washington, D. C., August 23, 1904. Sealed proposals will be received at this office until 3 o'clock P. M. on the 21st day of September, 1904, and then opened, for the installation of a conduit and electric wiring system for the U. S. Custom-house and Post-office at Nashville, Tenn., 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 the discretion of the Supervising Architect. JAMES KNOX TAYLOR, Supervising Architect.
1498

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[See Alphabetical Index on Cover 2 for Pagination.]

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THE AMERICAN ARCHITECT AND BUILDING NEWS

ADVERTISERS' TRADE SUPPLEMENT

No. 266

SATURDAY, SEPTEMBER 3, 1904

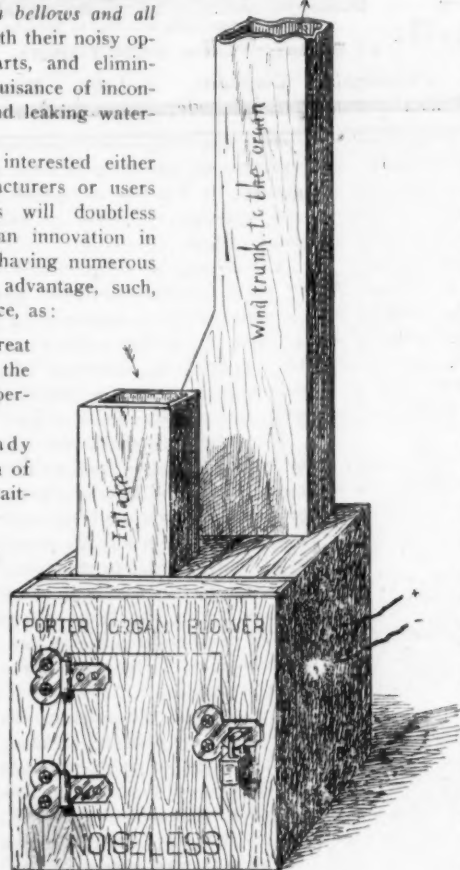
VOLUME LXXXV
No. 1497

ORGAN BLOWERS.

In this age of progress and invention, it appears singular that no marked improvement has been made in the cumbersome, awkward and expensive method of applying air by the use of bellows to organs. This company is the first to install an apparatus that does away entirely with bellows and all feeders with their noisy operating parts, and eliminates the nuisance of inconvenient and leaking water-motors.

Parties interested either as manufacturers or users of organs will doubtless welcome an innovation in this line, having numerous points of advantage, such, for instance, as:

1. A great saving in the cost of operating.
2. Ready application of air,—no waiting.



3. Simplicity and Compactness. An apparatus occupying much less area than needed for bellows.
4. An absolutely steady pressure.
5. No groaning of sliding parts.
6. No leather to interest rats and mice;

and no delicate or complicated machinery, with attendant and frequent repair bills.

7. No water to freeze; no sizzling; no gurgling; no leakage; no pounding.

8. A less initial cost than with the ordinary equipment of bellows, feeders and water motor.

COMPARATIVE OPERATING COST.

A FINAL test of the comparative running cost of a Boston Church Organ by water motor and bellows and by our Electric Rotary Blower—using in each case the same volume of air and a conservative consumption, shows a cost per hour of sixty-five cents (65c.) for the former as against twenty-one cents (21c.) for the latter. For two hundred and sixty (260) hours, which may, or may not, be a fair estimate of annual use, this would result in a cost of One Hundred and Sixty-nine Dollars (\$169) with the bellows and water motor and Fifty-five Dollars (\$55) using our Electric Rotary Blower, or a saving in cost of power alone of One Hundred and Fourteen Dollars (\$114) per annum in favor of our Blower.

Efforts have heretofore been made to use the ordinary centrifugal blower for blowing organs in connection with the bellows.

We do away with the bellows and feeders entirely.

It is obvious that if a centrifugal blower is used to blow an organ direct, without the use of an intermediate bellows or reservoir for storing and steadying the air, some different construction than the ordinary must be adopted.

In the construction of our Blower we have made a radical change, having successfully met and eliminated all the difficulties that have heretofore been found in the attempts to use the ordinary centrifugal blower with or without a steadying bellows or reservoir.

Our machine, furnishes an absolutely steady pressure of air and no rhythmical note foreign to the music is intruded.

Our Rotary Electric Blower is controlled at the organ, and by simply turning a small button, air may be obtained instantly or discontinued at the will of the organist, without leaving his seat, thereby enabling the organist to effect a saving by stopping the motor during intermediate periods, and it goes without saying that electricity is a much cleaner, more convenient and cheaper power than that supplied by water motors.

A medium size Blower is on exhibition, at our office.

On application to this office, parties wishing a demonstration will be afforded an opportunity, at one of the Boston churches, where our apparatus is installed, the water motor and bellows having been abandoned in its favor.

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ONE of the most interesting booklets ever published on the much-discussed roofing problem is called *The Barrett Specification*.

It covers the entire subject most thoroughly, and presents, for the consideration of Architects and Engineers, a Standard Roofing Specification.

The booklet is very attractively illustrated, and the subject is treated from the broad standpoint of actual experience.

No particular brands are exploited, and it is good reading from beginning to end.

We suggest to any of our readers who are interested in the subject that they write to the Barrett Manufacturing Company, at 17 Battery Place, New York City, who are mailing this booklet free on request.

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FELT, Pitch, and Slag or Gravel Roofs, laid according to THE BARRETT SPECIFICATION, have innumerable points of superiority over Tin, or Metal Roofs of any kind.

We mention a few of them:

Slag and Gravel Roofs require no repairs, no tinkering, no painting—an absolute ten years' guarantee is given with every one.

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They are not affected by climatic changes, steam, or acid fumes, and are recognized by fire underwriters as a standard retardent.

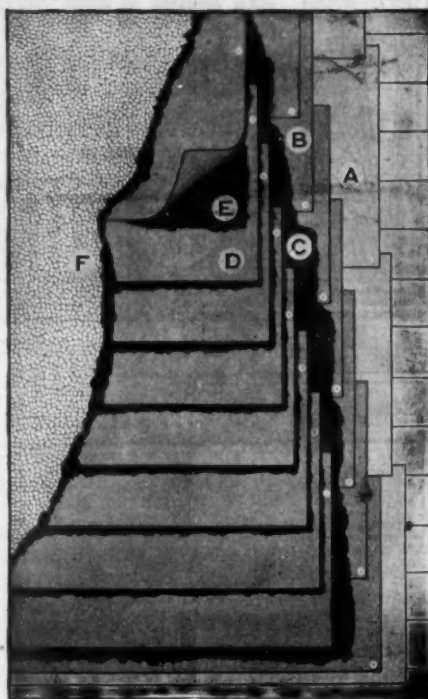
The initial cost is less; and, owing to the absence of expense for repairs or painting, the comparative cost grows less year after year.

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Above diagram fully explained in Specification

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VALVE TROUBLES.

VALVE TROUBLES may be due either to defective design, material and workmanship, or to faulty installation, lack of care, or abuse.

While a valve is by no means a delicate piece of mechanism, many users treat it much the same as an ordinary pipe fitting, when by exercising a little care considerable annoyance could be avoided.

Leaking through the seat when closed is the principal and most annoying of valve troubles, and is due to irregularity or unevenness of the seat or disc, which prevents perfect contact. Poor installation, lack of care, or abuse is usually the cause of this trouble when good valves are used, and as other troubles are of minor importance in comparison, we shall treat of this one only.

To properly install valves, the following practice is recommended:

Piping should be cleaned out before screwing together, and if possible the line should be blown out after valves are in place. Unless this is done, loose scale or metal chips remaining in the pipes may injure the seats or discs and cause leaks, requiring regrinding, reseating or renewal of discs. Red lead or pipe cement should be sparingly used and applied to the pipe only, never to the valve; because if put in the valve it is apt to be pushed inside by the pipe, stick to the seat and cause a leak.

Before screwing on a brass valve do not remove the bonnet unless absolutely necessary; close the valve tightly to make it as

rigid as possible, and use the wrench only on the hexagon next to the pipe end. If used on the other end the strain is liable to spring the valve body and cause leaks, not only in the seat but at the bonnet joint.

If absolutely necessary to remove the bonnet before valve can be screwed on, extra care should be taken not to spring the body or dent the joint. A pipe wrench should never be used for this work, as it not only cuts and disfigures the bonnet, but is apt to crush it.

The best way to loosen a valve bonnet is to hold it firmly by the squares in a good vise, screw a piece of pipe well into the valve end, then give a quick, strong pull on the pipe.

A valve should not be allowed to carry the weight of a line of piping, as this may spring the seat. A hanger properly placed has sometimes remedied the trouble with a leaky valve which could not be kept tight before its use.

For flanged valves the pipe flanges should be made up true and close, as strains that would not affect an ordinary pipe fitting may spring a seat and cause the valve to leak. Unless fitted with a by-pass, it is best to place globe or angle valves so that pressure will be underneath the disc when closed.

It is bad practice to use a wrench or bar inserted between the spokes of hand wheel in closing down a valve. When such means are employed by one not thoroughly familiar with their construction, the seat or disc is liable to be crushed and bonnet or yoke

overstrained, and the practice is really dangerous. It is better to remove the bonnet and examine the valve to ascertain the cause of leak.

Valves must be designed and constructed to stand considerable abuse, and although it is commercially important to have them as light as possible, strength should never be sacrificed to lightness. Light-weight valves are more easily injured than heavy ones, and are more liable to give trouble.

No matter how much care may be given to their installation and maintenance, the use of cheap and inferior valves is sure to prove troublesome and expensive and detract greatly from the efficiency of a steam plant, and in order to insure perfect satisfaction with the minimum of care and attention, valves should be selected of approved merit and reputation, and which are guaranteed to do the work for which they were designed.

A thorough realization of the inherent defects and the difficulty of maintaining the ordinary type of metal-seat valves led to the invention of the "Jenkins Bros." raised-seat and renewable-disc type, which we manufacture, and which experience has proved will give longer service with less repairs than any other valves made, and which have reduced "Valve Troubles" to a minimum wherever they are used.

This valve originated with, and was first introduced by "Jenkins Bros.," and fully recognizing the great value of the invention, they determined to set a high standard for all goods manufactured by them, and

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Jenkins Bros.' Valves are all well designed, have full opening, and are thoroughly interchangeable, so that any worn or broken part can be readily renewed. They are manufactured by the most modern machinery from the highest grades of material, so distributed as to give great strength and wearing qualities, and each valve is thoroughly tested before leaving the factory. In addition to the Jenkins Disc they contain many other valuable improvements, which tend to eliminate valve troubles and give long service. It is not necessary to shut off steam to pack stuffing-boxes, as by opening them wide they can be packed under full head of steam. The Jenkins Disc used is the result of years of experience and is the best that can be made. In service it presents a slightly yielding surface, and is flexible enough so that it readily fits itself to any slight inequalities in the seat, thus insuring perfect contact. Should dirt or chips lodge between the disc and seat, they usually imbed themselves in the disc, which, owing to its elastic properties, may continue to give good service, and in any event can be easily and cheaply renewed. Therefore, we advise all who wish to avoid "Valve Troubles" to use or specify only the genuine "Jenkins Bros." Valves, and see that they bear the Trade Mark as shown in our advertisement on Page vi, which not only guarantees the goods, but insures the purchaser against the losses inherent with cheap and imitation valves.

JENKINS BROS.,
NEW YORK, N. Y.

"THE ARROW."

The publication which we are mailing to architects every month, entitled *The Arrow*,

appears to meet with special favor, and we are receiving from all parts of the country gratifying letters of a very complimentary nature referring to it; many of them are particularly interesting, dwelling as they do upon the general subject of Tin Roofing. The consensus of opinion seems to be that, next to the use of a reliable brand of tin, careful workmanship is most important.

For example, there seems to be some doubt as to the proper paint to be used on a tin roof. The tin should be painted instantly as soon as laid, and only the best quality Metallic Brown or Venetian Red paint, ground in pure Linseed Oil, should be used. The use of patent paints, which often prove injurious to roofing tin, should be avoided. Then the tin should be painted again within one year, and again a few years after. A first-class article deserves good treatment, and a Tin Roof should not be abused or neglected, as it so frequently is. It should receive just as much care and attention as any other part of the house.

If you do not receive *The Arrow* regularly each month, please let us know.

N. & G. TAYLOR CO.,
Sole makers of the "Taylor Old Style" brand Roofing Tin.
PHILADELPHIA, PA.

NOTES.

We wish particularly to call attention to several improvements which are embodied in our "400 Series" steam and hot-water heaters, viz., larger and deeper fire-pot, clinker-door and larger fire-door, and with these boilers we shall also furnish our improved Franklin-grate bar. This grate provides the largest possible air spaces, resulting in the most perfect combustion of fuel, and the utmost ease is assured for cleaning or dumping the fire.

The many valuable features embodied in the balance of our lines of steam and hot-

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WE offer the illustrations of the competitive designs for the great Protestant Episcopal Cathedral, now building on Bloomingdale Heights, New York.

In all, fifty-seven plates [loose], 14 x 20 inches, printed on plate-paper.

Price, \$2.50 per set.

American Architect Company,

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water heaters and radiators are all well and very favorably known to architects and the public.

GURNEY HEATER MFG. CO.,
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N. & G. TAYLOR COMPANY, manufacturers of tin plate, report all departments of their Philadelphia tin plate works in full operation, employing twenty-six tinning stacks, the present activity of the plant comparing favorably with the conditions enjoyed during "boom" times.

This company have long made a specialty of high-grade roofing tin, and they are the largest manufacturers of this material in the United States. They are also the only makers of tin plate controlling all the processes of manufacture, from the raw materials to the finished product. Special attention is given to the quality of their Black Plate, no Bessemer Steel being used in any of their brands of tin plate.

THE advertising agency of "Pettingill," which for the last decade has been located at 22 School St., Boston, has just removed to commodious offices in the Tremont Building.

Since 1849 the house of Pettingill has stood for everything which has been progressive in the advertising world, and while most of their time has been devoted to cultivating the Eastern field, their name is known favorably to every newspaper in the country.

The Pettingill Advertising Agency will now devote its endeavors to every phase of advertising—newspapers, outdoor display, street cars, circulars and booklets, so as to be in a position to take charge of each customer's whole advertising and give him an individual advertising department.

Their experience of over half a century peculiarly fits them to serve their clients judiciously and well.

Mr. H. W. TAYLOR, of the firm of N. & G. Taylor Co., of Philadelphia, manufacturers of tin plates, sailed from New York, August 9th, on the steamship "Kaiser Wilhelm II," for an extended trip abroad.

Atlas PORTLAND CEMENT

The
Standard
American Brand.

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THE AMERICAN ARCHITECT AND BUILDING NEWS

VOL. LXXXV

SATURDAY, SEPTEMBER 3, 1904

No. 1497



SUMMARY:—

Accident to an Acid-laden Elevator.—An Architect sues a City for his Commission.—Effect of Labor Organization on Wages and Hours.—The Locomotive Engineers and the Non-union Man.—“The Stork’s Nest.”—White Pine Forests in Mexico.—No Second-growth Forest in the Michigan Barrens.—A Nun turns Architect.	73
TESTS OF CEMENT.—II.	75
LANDSCAPE ARCHITECTURE.	76
GERMAN LABOR INSURANCE.	78

ILLUSTRATIONS:—

The Central Church, Berkeley and Newbury Sts., Boston, Mass.—The Louisiana Purchase Monument: Louisiana Purchase Exposition, St. Louis, Mo.—The Austrian Government Building: Louisiana Purchase Exposition, St. Louis, Mo.—The Van Wickle Gate: Brown University, Providence, R. I.—Sculptural Detail: Louisiana Purchase Exposition, St. Louis, Mo.	
Additional: The Louisiana Purchase Monument and the Boat-landing: Louisiana Purchase Exposition, St. Louis, Mo.—Sculptural Detail from the Louisiana Purchase Monument: “Signing the Treaty”; “St. Louis and the Guiding Spirit.”—The Arbor: Estate of Dudley L. Pickman, Esq., Hospital Point, Mass.—Porch and Fountain on the same Estate.	79
NOTES AND CLIPPINGS.	80

A PECULIARLY distressing accident last week is likely to induce not only the New York Superintendent of Buildings but all other similar officials to think that it is time to do something effective toward preventing elevator accidents, though, as we have already said, the licensing of the elevator-runner is not likely to be found a panacea. To fall in a car through several stories’ height and bring up with a smashing jar at the bottom, would be bad enough, without being later crushed by the falling of beams, pulley-wheels and counterbalance weights from above. These commonplace factors were all present in the accident which befell four men and a freight elevator, but to them was added a new and terrible feature; the elevator, besides its living freight, was carrying eight carboys of sulphuric acid, so the unfortunate victims had also to endure the gashing from splintered glass and the bitings of the vicious mordant. Two of the men were burned to death by the acid before they could be extricated, and the others were also burned beyond the possibility of recovery. The accident has drawn attention to the fact that freight elevators do not seem to come under the control of the ordinances which govern the installation and use of passenger elevators.

THE fact that the unwary architect who has a municipality for a client may, if the terms of his employment are not explicitly stated under seal, be made to suffer through being used as a pawn in the game of town politics is again exemplified by a case that will soon occupy the attention of the New Jersey courts. Mr. C. F. Long was engaged by the City Hospital Board of Jersey City to prepare the plans for a three hundred thousand dollar hospital, and did so, and, later, when it was found that an appropriation of two hundred thousand dollars only could be secured,

he was required to make a new design, and did so. Unfortunately for him, a quarrel arose between the Hospital Board and the Mayor, in spite of which the Board awarded the contracts and attempted to go on with the work; but the Board of Finance sided with the Mayor and would not ratify the contracts or allow drafts to be made on the appropriation. The Mayor procured from the last Legislature an act creating a new Board of Health and maintains that the new Board must provide the new hospital. The old Board asserts that in some way it was not legislated out of office, and is still competent to act; so the situation, so far as Mr. Long and his services are concerned, is a deadlock, and he has brought suit against the city for his commission on both schemes in the amount of twenty-five thousand dollars.

WHEN one considers the tabulation of statistics of wages and hours in the building trades contained in the July report of the Commissioner of Labor and finds that in some trades, within a period of thirteen years, the wage-scale has been increased sixty-six per cent, while the hours of labor have been reduced thirteen per cent, it would be impossible not to concede that the laboring men have been judicious in organizing, but for the knowledge that there is another side to the balance-sheet where must be set down the vast losses in abandoned wages, the sickness, starvation and death of defenceless wives and children, the bloodshed and loss of life, the damages and waste of property, and the mischief done to the moral nature of workmen who have been taught by their leaders that disregard for the law, violence and breach of faith are the very hall-marks of the “organized” workman. It may be that all this warfare between workmen and their employers is needful, a warfare that bids fair to exceed in distressful consequences the agrarian struggles of earlier epochs, but it is impossible not to believe that all that has actually been gained might have been won by less wasteful methods, especially when the conduct of the ordinary trade unions is contrasted with that of some of the extraordinary ones, the Brotherhood of Locomotive Engineers, for example.

THIS powerful body held a meeting of delegates last week in New York, and amongst other things took the ground that “a non-union man has as good a right to work as a union man.” But engineers are not yet sufficiently of the stature of archangels to stop their utterance at that point, so they had to add the significant proviso “if he gets the same wages.” But it is a great gain to have any union acknowledge that a non-union man has a right to anything under any conditions whatsoever. As an offset to this gleam of right feeling and common sense may be quoted the action of the Boston Building Trades Council, who have recently passed resolutions that none of their members shall be buried in any coffin that does not bear the union label. With union labels on coffins, shoes, coats, hats, collars, loaves of bread, newspapers, tools and all other articles, the union leaders appear to have labelled their followers

thoroughly, and the only weak point in their system is a resolution requiring their wives to label their offspring before they give them birth.

THE uprearing of children in a large city is a matter of grave difficulty, particularly for those parents who realize what the body and mind of a child really require. The public street is no fit playground for any child, and the public playgrounds, which are doing such grand work for children of a certain class, are not the sort of places suited to children from certain other classes, and it is this difficulty of rearing in physical and moral safety the children of middle-class parents who must live all the year round in cities that has as much to do as anything with the matter of so-called race suicide. The unwillingness of landlords of apartment-houses to accept as tenants families where there are young children also has a bearing on a very undesirable condition, for in this country, as in all others, it is the great middle class that makes the strength and character of the people. Mr. Edmund Beale, of Alton, Ill., has perceived the danger and has undertaken to provide such cure as his own means admit by erecting in that town an apartment-house, to which he has given the significant name of "The Stork's Nest," which is to accept as tenants only families where there are young children. The building is designed so as to give young children the best of chances. Each suite has a special playroom, opening on a separate balcony, with favorable exposure, while for winter and rainy-day use there is a large general play-room in the basement; there is also a large unpaved courtyard, where the children may have their sand-heaps or garden-beds. The scheme deserves imitation, but to make it truly successful there should be provided a hospital and there should be included in each lease an undertaking that certain general hygienic laws shall be scrupulously observed for the common benefit of all.

IT must have been rather startling to many a New Englander to read in the newspapers a few days ago that an American syndicate had just bought five hundred thousand acres of "white pine timber land in western Mexico." Jealous of the reputation of the Maine forests, the New Englander has never been altogether willing to believe that even the white pine of Michigan was quite the real thing, and now to have it stated that there is a white pine growth in Mexico, even if only in the higher altitudes, awakens chagrin anew. But there is a good deal in a name, particularly when it is misused, and the writer of the newspaper paragraph and perhaps the members of the purchasing syndicate probably did not realize that there were no less than fourteen different botanical species of pine growing in this northern hemisphere, and known colloquially by ninety-eight different names, and further that the term, "white pine," is applied to five or six of these species which differ materially between themselves in character and value. Probably the growth in Mexico is really the "bull pine" of Colorado and parts of the Rocky Mountain region, a tree of smaller stature than the giants of the Maine forests, and yielding a coarser and somewhat heavier wood. Still it is good to know that there are still large supplies of soft wood

within reasonable reach, and that the Yankee art of whittling is not likely to die out for another generation at least.

SOME years ago, a New England traveller, passing through the lower part of Michigan, as he looked from the car window on mile after mile of pine stumpage, through which the train was flying, had his curiosity excited by the fact that, though the forest had evidently been felled some years ago, the land was still barren, and, turning to a fellow-traveller who had boarded the train at the last station, asked what sort of trees they had in Michigan for a "second growth." "Second growth! We don't have any, and that's not very strange, either. The thing that none of us can explain is how there ever came to be any first growth," was the answer. The soil was practically naught but sand; there was no humus to receive and nourish the seeds of hard-wood trees that in such a mysterious way appear as the second growth where a New England pine forest has been cleared. But what nature has done once she can do again, and these sandy barrens in Michigan are capable of again growing pine forests if any one will but take the trouble to plant them. Man must do this, for Nature will not, since, with the exception of some species of hard pines, the roots of the pine tree die when the tree is cut down and cannot send up new shoots.

WHEN one recalls the importance of the rôle in the development of architecture that was filled by the monastic orders and looks about to find what banded orders of men there are in these modern times that might, in creating buildings proper for their own special needs, possibly have some slight influence on modern architecture, he finds only the hosts of Prophet Dowie's Zion and the Salvation Army, neither organization in its present estate seeming likely to be able to turn its attention to the finer developments of plan and design, though in the "barrack" and the chapel are found the same germs from which those elder monks developed so much. The genius of this country does not look with favoring eye on the segregation of congregations of able-bodied men, so there are very few monastic establishments, while on the other hand sisterhoods and their nunneries are much more numerous, and as the nuns have imbibed some of the spirit of American freedom, it is just possible that they may have a part to play in the history of American architecture. At any rate, a nun of the Order of the Sacred Heart is credited with designing and supervising the construction of a new nunnery and school at Lake Forest, near Chicago, which is to be occupied next month. The building which was erected by this nameless female practitioner is three hundred and sixty-eight feet long and five stories high, affording accommodation for one hundred and twenty-five pupils, besides an unstated number of Sisters, and consequently was a building undertaking of no mean magnitude. Whether the "Madame Supervisor," as the architectural-Sister was called, succeeded in avoiding extras is not stated, but she was at least not annoyed by strikes, as the workmen, probably all good sons of the Church, were proud of working under her direction and zealous in their endeavors to make things go smoothly.

TESTS OF CEMENT.¹—II.

WATER AND CARBON DIOXIDE PRESENT IN HYDRATED MATERIAL.

THE quantity of water commonly used in gauging, even a so-called dry mixture, appears to be in excess of that necessary for hydration, or more than is retained in the combined state by the cement after setting. Specifications for laboratory tests not infrequently prescribe the amount of water to be used, making a distinction between Portlands and Natural cements in allowing the use of more water with the latter class, and while the quantity in each case is greater than that which remains in the indurated material, still larger quantities are used on constructive work where practical considerations demand a plastic mortar.

The experimental inquiry on the total losses in weight and the determinations of the amount of water and carbon dioxide driven off upon heating reground hydrated material were carried on in conjunction with the series of specific gravity determinations.

Cement fresh from the barrel and recently ground loses but little in weight when heated to redness. After exposure to the air a greater loss occurs upon heating, which further increases with prolonged exposure, due to driving off water and CO₂ which has been taken up from the atmosphere. Greater losses are experienced when heating to redness cements which have been gauged, and the influence of conditions attending the treatment of the cement during and following the time of setting are shown in the results in respect to the magnitude of those losses.

There was a preliminary heating of the reground cement at 110 degrees C., for the purpose of driving off hygroscopic moisture, after which the temperature was raised to redness. The loss during the second heating was taken to represent water and carbon dioxide of combination, the CO₂ being determined by the method of absorption by caustic potash, the remainder of the loss being taken as water.

The following results show losses which occurred during the preliminary heating at 110 degrees C., and are taken to represent hygroscopic moisture. Gauged material was reground before heating.

LOSS IN WEIGHT UPON HEATING CEMENT TO 110 DEGREES C.

Brand	Treatment	Loss in weight, per cent.
Star	Fresh from barrel	.14
Whitehall	Exposed to air 28 days	.52
Newark & Rosendale	From barrel, recently ground	.30
	Exposed to air 14 days	.20
REGROUND GAUGED MATERIAL.		
Star	Set in air 28 days	4.92
Newark & Rosendale	" " water 28 days	9.20
	Set in air 7 days	2.53
REGROUND MATERIAL FROM TENSILE BRIQUETTES.		
Alpha	Set in air	3.8
	" " water	5.5
Norton	" " air	2.1
	" " water	3.3

The effect of exposure to the temperature of 110 degrees C. on material not gauged is seen to be confined to losses covered by fractions of one per cent. With gauged material, set in air or water, the losses were greater, generally as shown by the table, although there were instances where they exceeded the maximum figures in the results quoted, reaching in one determination 14 per cent loss. The total losses upon heating from 110 degrees C. to redness were as follows:

LOSS IN WEIGHT UPON HEATING CEMENT FROM 110 DEGREES C. TO REDNESS.

Brand	Treatment	Loss in weight, per cent.
Star	Fresh from barrel	.61
Whitehall	Exposed to air 28 days	2.06
Newark & Rosendale	" " " 14 "	1.85
	From barrel	4.58
	Exposed to air 14 days	6.86
REGROUND REGAUGED MATERIAL.		
Star	Set in air 28 days	8.14
Newark & Rosendale	" " water 28 days	11.92
	Set in air 7 days	10.21

¹ Continued from No. 1486, page 97.

REGROUND MATERIAL FROM TENSILE BRIQUETTES.

Alpha	Set in air	6.90
Norton	" " water	8.20
	" " air	9.60
	" " water	11.80

COARSE AND FINE SIFTED MATERIAL FROM THE BARREL.

Star	Diameter of grain .0050"	1.0
	Finer than .0027"	2.0
Alsen	Diameter of grain .0050"	.7
	Finer than .0027"	2.3

The relative proportions of water and CO₂ driven off were not ascertained in these determinations, the total loss only being looked for. Introducing another table on results with samples in which these separate determinations were made, we have:

WATER AND CARBON DIOXIDE DRIVEN OFF UPON HEATING CEMENT FROM 110 DEGREES C. TO REDNESS.

Brand	Class	Treatment	Water used in gauging per cent.	Loss on heating	
				Water per cent.	Carbon dioxide per cent.
Star	Portland	Set in air at 70 deg. F.	19.	1.68	7.60
Alsen	"	" " " zero F.	19.	3.52	8.60
	"	" " " 70 deg. F.	22.	3.23	6.73
	"	" " " zero F.	21.	3.88	3.30
Hoffman	Natural	" " " 70 deg. F.	26.2	3.04	8.10
Norton	"	" " " zero F.	26.3	5.35	3.77
	"	" " " 70 deg. F.	27.5	2.16	7.84
	"	" " " zero F.	27.5	5.18	3.90
Whitehall	Portland	Fresh from the barrel	None	.55	.10
		Exposed to the air 14 days	"	.90	.74
		Briquettes set in water 7 days		10.00	1.26
		8 hours retarded set	> 22.2	11.90	1.87
		40 " "	> 22.2	14.70	3.00
Atlas	"	Grains finer than .0021" diameter	23.1	4.56	12.21
		Grains finer than .0013" diameter	23.1	5.24	11.20
Storm King		Cube set in air, material taken from .25" below the surface		5.62	2.60
Newark & Rosendale	Natural	Briquette set in air 28 days		4.46	6.80
		" " " water 28 days		9.34	5.76

Harmonious relations exist between the results of the heating and the specific gravity determinations, decided losses in weights in the one class of tests being accompanied by corresponding gains in specific gravity in the other class. Since the disengagement of carbon dioxide was not found to occur under temperatures below 400 degrees C., the effects of exposure to 110 degrees C. are attributed to the presence of water. The losses upon heating to 110 degrees C. having been noted, attention next centres upon the results of exposure to a red heat. At this stage the total losses in weight represent water and carbon dioxide. The conditions of exposure since the time the cement was burnt limit the losses to these elements. The results will therefore be taken to signify that the quantity of water retained by the cement can be no greater than the total losses in weight shown in the last table but one, but will be somewhat less after deducting the CO₂ which was present.

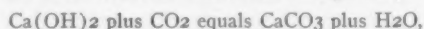
The loose ungauged Portlands showed smaller total losses than the Natural cement examined. In other results, not here tabulated, a considerable part of the loss of the Natural cement was found to be CO₂, but even after subtracting this the remaining loss was greater than for the Portlands. The influence of size of grains is shown, the finer grains losing more than the coarser ones. With gauged material typical results are presented, in which the total losses range from 6.9 per cent to 11.8 per cent. Occasional results fell outside of these limits.

The last table introduced contains separate determinations of the water and carbon dioxide. In order to present comparable figures, the water used in gauging is stated in terms of the sum of the quantity of water and the cement, instead of reporting it in terms of the cement alone. As usually stated, the water used in gauging the first Portland cement entered in the table would be 23.4 per cent, instead of 19 per cent, and the first Natural cement would be 35.5 per cent, instead of 26.2 per cent. Without this explanation the mixtures would appear to have been drier than they were.

The large quantity of CO₂, in many of the cements, will be noted. A limited weight of CO₂ was taken up during the manipulation of the material, during regrinding, sifting and

weighing. The larger part, however, was taken up during the interval of setting, and exceeded the quantity of water retained in many of the samples. More CO₂ was found in the exterior parts of the briquettes and cubes than in the interior portions. It was also found that material which set in air at zero F. contained less CO₂ than samples of the same batch which set in air at ordinary temperatures. A small quantity was driven off the loose material fresh from a barrel of Portland, and an increased quantity from the same brand after exposure to the air for a period of two weeks.

In passing from a hydrate to a carbonate the CO₂ present displaces an amount of water shown in the equation,



to be 18 parts of water for 44 parts of carbon dioxide.

The water retained in the series of cubes which were set in air at temperatures of 70 degrees F. and at zero, respectively, ranging in the samples quoted from 1.68 per cent to 5.35 per cent, is seen to be in limited quantities.

If the carbon dioxide present be taken at its equivalent in water and added to the water shown in the table, the results would still remain small and be included within the limits of 5 per cent and 7 per cent. None of the surface material was included in the samples of Storm King, the determination being made with parts which were taken $\frac{1}{4}$ " or more below the surface of the cube. The amount of water here found was 5.62 per cent.

Cement which set in water retained more water than that which set in air. More or less CO₂ was present in these samples, due in part to that which was absorbed while drying the hydrated material in the open air at 110 degrees C., and in part to that which was in the original cement as shown by the analyses of the loose material from the barrel.

A Portland briquette set in water was found to have retained 10 per cent of water. A Natural-cement briquette, under similar conditions, retained 9.34 per cent, while one which set in air had 4.46 per cent of water. Special treatment was given some of the Portlands. The material of one batch was not all put into the molds immediately after gauging. The Whitehall sample, designated as eight hours retarded set, was not tamped into the molds until eight hours after the water was first added and the next sample in the table until 40 hours thereafter. The original quantity of water used in each was 22.2 per cent, more being added from time to time as required to keep the mixture plastic. It was set in air 35 days. These and other samples of the retarded set series showed relatively large quantities of water retained, reaching a maximum of 14.7 per cent. Another specially treated sample of the same brand showed results above the average of air-set material. A small cube was broken up after setting 24 hours, reground and regauged, and then set a further period of 35 days, at the end of which time the determination showed 10.37 per cent of water present.

Briefly reviewing the results, it appears that from 5 to 7 per cent represents the amount of water or its equivalent which is retained by air-set material. Larger quantities are retained by samples which set in water, by those which were regauged after having set undisturbed for a short period, and by those of the retarded set series, among which the amounts ranged from 10 to 14 per cent. It is thought to be well established that no decided difference exists between the Portlands and the Natural cements in respect to the amount of water retained by them under similar conditions of treatment. There were persistent differences shown by the several brands of each class, in the amount of carbon dioxide present, between samples which set in air at 70 degrees F., and those which had been exposed to zero temperature. The amount of CO₂ was found to be much less in the low temperature specimens, while the amount of water present averaged higher in these. It is not clear why the same brand of cement taken after hydration with the hygroscopic moisture driven off at 110 degrees C. should not retain a constant quantity of water. Incomplete hydration, if such was the case, might account for certain observed differences, notwithstanding in each instance the water of gauging was in excess of that ultimately remaining in the cement. Provided the chemical reactions were only partially completed, and some of the tests favor this very natural assumption, and even go so far as to raise the question whether ordinary material eventually attains a state of complete hydration, the incompleteness must be attributed to some other cause than a deficiency of water as originally gauged.

It is not to be inferred that the limited quantity of water retained by the cement necessarily represents all that is required

in gauging to attain the best results. High strength can undoubtedly be reached with a small quantity of water, comparable with the quantities shown in the last table, but further data are needed to indicate the quantity that should be considered a minimum.

Air set material loses in weight for a considerable period of time after gauging. A number of grouts were observed, covering a period of 28 days, beginning two days after mixing, or as soon as they could be removed from the molds, and during this time the losses in weight proceeded continuously.

A trait in the behavior of cement occasionally mentioned by writers consists of the avidity with which water is suddenly absorbed by freshly ground material at certain intervals after gauging. This trait was conspicuously displayed by a sample of Star Portland cement, from which, by request, the usual small quantity of plaster-of-Paris to act as a restrainer had been omitted in manufacture. A grout was mixed, using 40 per cent of water, pouring the dry cement into the water, which had been cooled to about the freezing point, stirring the water as the cement was added. There was a brief interval, after the cement had been added, during which the mixture assumed the appearance of a very thick grout. A few seconds later the mixture suddenly thickened, the water disappeared from the surface, and when the cement was moved about it separated into a granular, mealy mass. The same result obtained with 50 per cent of water, and with 60 per cent the mixture thickened immediately, but was less dry than with the lower percentages of water. Ordinary grouts resulted from the use of larger quantities of water. The same brand of cement, in which the usual quantity of plaster was present, did not display the granular state when gauged with corresponding quantities of water, the immediate mixtures being ordinary grouts. This cement was two months old from the time of grinding. Later examinations of the cement without plaster showed enfeebled activity of this kind.

There were subsequent observations upon grouts of each variety of cement, gauged with water at ordinary temperatures. The granular, mealy state was not shown, but at subsequent intervals there were times when the water of the mixtures was rapidly absorbed. The more water used the later was the time when the full amount disappeared below the surface of the mixture. Thus it was found that cement, with plaster in its composition, gauged with 40 per cent water took $6\frac{1}{2}$ hours, while with 100 per cent water it required 45 hours to reach this stage. This condition was one of some delicacy to acquire with the larger percentages of water. It was found that moderate stirring assisted, while vigorous agitation retarded this action, and for the time being reduced the consistency of the mixture. Corresponding manifestations occurred in a series of tests on retarded sets, in which the cement was kept from setting hard by reason of frequent movement with a hoe in the mixing bed, maintaining a plastic state for hours and even days. It was necessary to add water at intervals, after the original gauging, to keep the mixtures at the desired consistency. Copious quantities were needed with one brand during the interval between $4\frac{1}{2}$ and $9\frac{1}{2}$ hours after gauging and with another for the period between 4 and 20 hours.

There were examples in which cement gauged with hot water, at the temperature of about 190 degrees F., became a thin mortar and so remained for at least $2\frac{1}{4}$ hours, when it was put into the molds, while that which was gauged with the same quantity of ice water, 50 per cent, immediately became granular and mealy. These phenomena doubtless mark different phases or periods of modified action of the material which promptly occur and precede the usual observations on setting properties and strength.

J. E. HOWARD.

LANDSCAPE ARCHITECTURE.¹

WE frequently hear nowadays the questions, "What is landscape architecture and what does a landscape architect do?"

Believing, as I do, that this subject is one that may interest the engineering profession (and it is certainly one that comes in very close touch with engineering in many ways), it is my purpose this evening to try in a few words to define more clearly the meaning of the term landscape architecture.

At the present time, even among intelligent writers, there is the greatest possible confusion and apparent misunderstanding of the terms landscape architect and landscape gardener. Recent

¹ A lecture by Stephen Child, Member of the American Society of Civil Engineers and Boston Society of Civil Engineers, delivered before the Boston Society of Civil Engineers and published in the *Journal of the Association of Engineering Societies*.

discussion of these terms has even brought out the opinion that this calling a man a landscape architect instead of a landscape gardener is merely a "recent fad," and that the idea is absurd, "filling one's mind with images of quarries, stonecutters, creaking derricks, tapping trowels and the like, instead of with pictures of freehand dealings with sunshine and shadow, trees, flowering shrubs and leaping fountains."

I am going to ask you to look at this a little more carefully with me and see what is true in this discussion. In the first place, the term is not a "recent fad." Frederick Law Olmsted, the elder, called himself a landscape architect away back in 1856, when he first entered upon the work of developing Central Park in New York City, and the fact that he did so, and continued to so designate himself during the whole of his career, has had much to do with the general adoption of the term. But the fact that one man, even an eminent one, adopted this title is perhaps not entirely sufficient, although those of us who are familiar with Mr. Olmsted's work and with his wonderful genius and mastery of the subject in all of its details may well feel assured that he did not adopt the title without most careful thought. Unfortunately he did not in his writings, so far as I am aware, really explain his reason. He was so immersed in the great battle, then going on for public parks for large cities, in showing their value and necessity and in laying down the principles and executing the work of these great undertakings, that he apparently had little time to explain fully why he assumed the title. We may, however, be perfectly assured that he had reasons, and most excellent ones, and a little study of these may be interesting and profitable.

In the process of the development of mankind there has been noticeable a constantly increasing tendency toward differentiation and specialization, each step in the process being a slow one, and, as a rule, taken at first by some man or group of men trained in some other line. In this way have come about many new forms or fields of work, each adapted more or less from others of a previous and perhaps lesser civilization. Each new profession, or branch from an older one, demanded and received a new cognomen. This process of differentiation has developed more or less clearly defined groups of men, as, for example, the professions of the ministry, medicine, law, civil engineering, architecture, and so on.

Fifty years ago, when Mr. Olmsted began this landscape work, there was beginning to be a demand in this country for men to do a certain line of work that was intrinsically quite different from that previously carried on by either the architect, the engineer or the gardener, and yet work that embodied some of the principles heretofore utilized by all of these men. Here was this great tract of land, now known as Central Park, to be developed and made beautiful, for the purpose of providing the crowded millions of the great city of the future with the opportunity "for a form of recreation to be obtained only through the influence of pleasing natural scenery upon the sensibilities of those quietly contemplating it." This was a new problem for this country, and indeed for any country, for none of the great parks in Europe now utilized for this purpose were originally created for anything of this sort. They are chiefly the result of developing land that had originally been set aside as hunting forests by the great nobles or rulers of Europe.

I think it will be generally conceded that New York was most fortunate in its selection of the master mind to work out this problem, and that the work of creating Central Park has been most successfully designed and executed. Mr. Olmsted saw clearly the greatness of the task and the differentiation of this form of design from that of the architect or engineer and certainly from the work of the gardener. He chose to call himself a landscape architect. Let us, therefore, look into the meaning of these words and see whether they are not well selected and worthy of our respect and of more general adoption.

That most delightful and interesting writer, Philip Gilbert Hamerton, says of landscape: "We use the word in two distinct senses—a general and a particular. In the general sense the word 'landscape,' without the article, means the visible material world—all that can be seen on the surface of the earth by a man who is himself upon the surface; and in the special sense 'a landscape' means a piece of the earth's surface that can be seen at once, and it is always understood that this piece will have a certain artistic unity or suggestion of unity in itself"; and further he adds, "although the word refers to the natural land, it does not exclude any human works that are upon the land." The word is derived from two good Anglo-Saxon parts, "land" and the suffix "scape," corresponding to "skip" or "ship," as in the

word "friendship," meaning "the state or condition of being." Landscape then means "the state or condition of being land." When we come to add the word architecture, however, the connotation conveys to many people a wrong impression, but it should not, for in its early and primitive meaning the word architect meant simply and solely "chief workman" or "master artisan." It is well, I believe, for us to recall this earlier meaning of the word at the present time.

It is quite largely the architect himself who is responsible for any wrong impression that may have developed in the use of the term landscape architect; as many have assumed that, because the word architect is used at all, the term landscape architect means simply an architect who meddles a bit with the landscape immediately surrounding his buildings. Many architects have done this, with regrettable results both to the client and to the profession of landscape architecture. I think it is but fair to suggest that, if the architect solves the problems of his buildings successfully, he may well leave to the landscape architect the matter of designing the surroundings for them, realizing that his own architectural problems are many and difficult, and that the trained landscape architect can, by cooperating with him, greatly improve the net result; for, as we all know, the effect of many a successful building has been seriously impaired by lack of a proper setting.

What Mr. Olmsted meant when he termed himself a landscape architect was that he was aiming to be a master artisan in matters pertaining to land, having regard both to the beauty of its appearance and to its use. In a very real sense such work covers agriculture, forestry, gardening, engineering and the elements of architecture.

Landscape architecture has been defined as "a group of activities which include horticulture, architecture, civil engineering and agriculture." Humphrey Repton, a great English authority on matters of this sort, says that in order to carry out this line of work one must possess not only artistic ability and taste, but "a complete knowledge of surveying, mechanics, hydraulics, botany and the general principles of architecture." We may well weigh his words, for Humphrey Repton was a cultivated English gentleman of great refinement and good taste. He was the first Englishman from such a grade of society to undertake the planning or designing of country estates. Kent, one of his predecessors in this line of work, was a coach-painter by trade, who possessed some artistic taste, but little culture. "Capability" Brown, Repton's most famous immediate predecessor, was a gardener, who, by association with men of refinement and by his tact and native ability, worked his way up to an honorable place; but Repton was a well-educated English gentleman, who had travelled and studied much. Repton, however, called himself a landscape gardener, as did all of the others at that time, but Mr. Olmsted chose to avoid that term for several reasons. In the first place, these workers in landscape design in England had confined their efforts almost entirely to the design of country estates. The term landscape gardening was, I believe, first used by the poet Shenstone to mean more particularly an informal or picturesque treatment of the grounds of an estate, as distinguished from the older style of formal treatment that had been in vogue and which had been carried to such excess. In the early part of the eighteenth century formality had been carried to the point of puerility. A reaction set in, due to numerous causes, and the "new style," or so-called "English style," was introduced by Kent and others, who, as Sir Horace Walpole enthusiastically exclaimed, "leaped the wall and saw all nature was a garden," and so in fact it is in those delightful parts of old England in which they labored; those country estates, with their deer-parks and pleasure-grounds. These men made a practice of designing country places in an informal or naturalistic manner, and termed this landscape gardening. They were in favor of abolishing all formality, and they themselves carried their theory to excess.

Later, in the latter part of the eighteenth century and the first of the nineteenth century, men like Repton came forward, realizing that formality had its place and value, and began to use it under certain circumstances, but still called themselves landscape gardeners. This latter use of the term was a serious twisting of the original meaning; for a garden is, properly speaking, a place engirt, enclosed or set apart and highly cultivated. Landscape is, as we have seen, a piece of the earth's surface that can be seen at one time by a man who is himself standing upon the earth, and may, of course, mean a broad stretch of country not at all inclosed.

There is another important point and one that has not been

particularly mentioned in discussions of the term landscape architect, one that I have already alluded to, namely, that these English landscape designers were engaged almost exclusively in the preparation of plans for country estates. These were, of course, not always large, and often were walled in or engirt, and, therefore, perhaps in a sense gardens. Mr. Olmsted, in 1856, had before him not such a problem, but that of designing a great public park for a large city. This work was not gardening in any sense of the word; it was something quite different. It was a work of design, a work that could be undertaken and successfully carried out only by a "master artisan in matters pertaining to land." Here were to be developed, and we know how well it has been done, broad peaceful landscape effects, giving the tired city dweller opportunity for restful contemplation and relief from city sights and sounds. These were to be designed and executed where none had existed before, and in such a way that there should be no obtrusive evidence of man's elaborate control and no marring of the pleasing, restful effect by such garden elements as beds of geraniums or rare and striking shrubs clipped into formal shapes; in other words, no gardening. This was what he termed landscape architecture. The French landscape designers had already adopted this term, their phrase *architecte paysagiste* meaning simply landscape architect.

Many of Mr. Olmsted's great works are familiar to us all. They include Central Park, New York; Prospect Park, Brooklyn; the almost unrivalled Park System of Boston; the great work designed by him at the World's Fair at Chicago; and almost innumerable country estates, notably Biltmore, at Asheville, N. C., the mere enumeration of which serves to show some of the diversity of the work, and even the most casual observer can see in them some of the reasons why this sort of work is not properly to be called landscape gardening. A gardener, as commonly understood, is one who cultivates a garden. He may, and of course should, know a great deal about botany and horticulture, but when you come to associate the word garden with landscape there is implied simply that we have a gardener who cares for a garden having a naturalistic or landscape character; the absolutely essential factor of creative design disappears. Expensive mistakes have often resulted from employing on landscape work a person who was simply a common gardener and ignorant of the principles of this sort of design. Art commissioners would not think of employing a man to design a monumental public library or city-hall simply because he was a good stonemason.

Landscape architecture is, then, as Charles Eliot, one of Mr. Olmsted's gifted disciples, has well said, "the art of arranging land for use and the accompanying landscape for enjoyment." Landscape gardening is, it seems to me, a term conveying in itself confused ideas, but used, if at all properly, simply to cover that part of the landscape architect's work which has to do with the development of formal or natural beauty by the simple process of removing or setting out and caring for plants. This is quite secondary to the matter of designing a general scheme for the development of land for any given purpose.

The problems with which a landscape architect has to deal are many and varied. Among them are, as we have seen, the design for a great country park for a large city, where the object is, or should be, to afford perfect relief and rest to the tired citizen by offering to him and preserving for him the contrast of broad, restful rural scenery unmarred by any of the sights and sounds of city life. This is a great problem, involving many considerations as to choice of the tract of land, its bounds, its present scenic effects, its accessibility, the design of roads and paths through it, so that the public may enjoy, but not destroy, its beauties.

Then there are approaches to the park, "parkways" so called, to be designed, involving much careful thought as to location and details of grades. Perhaps a hitherto neglected sluggish stream, whose banks had been an unsightly dumping ground, can be transformed, by careful design, into a beautiful parkway.

Other problems for the landscape architect are the planning of the more or less formal paths and planting of the City Square; the development, in a pleasing way, of the children's playground; or the surroundings of the schoolhouse, with its school garden, now so necessary an adjunct to American educational methods. Then, too, the stately Public Library or City-hall must have its appropriate landscape setting.

The landscape architect should share with the architect the design of country estates and homes, the two working together to place the house and the buildings properly as regards terraces, approach roads and paths, the landscape architect using his trained taste and experience in working out appropriate changes in the surrounding scenery, perhaps screening, by judiciously placed

planting, an unsightly neighboring building. There may be a formal garden to design, with its paths, ramps, terraces and pergolas.

Then there is the important subject of the design for naturalistic treatment of reservoir basins. This is a most important class of work, and one in which the engineer can effectually co-operate with the landscape architect. I can but allude to this matter very briefly, but the results of this branch of landscape design certainly add greatly to the beauty of such basins, and, by the pleasing naturalistic treatment of shore line and embankment, make them beautiful lakes rather than stiff and ugly artificial reservoirs. An entire lecture might well be devoted to this branch of the subject, and the superiority of such naturalistic treatment over the former mathematical regularity or partial formality of the more common mode of treatment of such basins can be clearly shown, and I trust those of you who have such problems to solve will remember the importance of looking at them in this way and of co-operating with the landscape architect in obtaining such desirable results.

There is also the question of designing, for the street railway companies, amusement parks for their thousands of patrons. In this case provision must be made for the necessary band-stand, open-air theatre and other amusement features, and great care must be exercised in securing ample approaches and the like.

There is much for the landscape architect to do in the laying out of new suburbs for our growing cities, residential parks, neighborhoods of summer-cottages at the mountains or the seashore, and there are the grounds of hospitals, educational and other institutions, of hotels and railroad stations, to be designed.

In the time at my disposal it is impossible to more than briefly touch upon the many and varied fields of work open to the landscape architect or to explain more fully the principles involved in such design. I can only add that all of these problems involve the thoughtful care of trained minds, and in all of them the first and fundamental purpose should be to ascertain, by careful study of the existing natural conditions, what the "genius of the place" really is, what it is that nature herself hints at, and then, by taste and judgment, to so design the improvements that they will harmonize with the natural tendencies of the place, and be both practical and useful, always remembering what Charles Eliot has so wisely said, that "what would be fair must first be fit."

GERMAN LABOR INSURANCE.

R. FRITZ KESTNER of the German Commission to the World's Fair contributes to the *St. Louis Republic* the following article on workmen's insurance in Germany:—

The World's Fair encompasses objects of the most varied description. From the imposing royal structure of the German Castle to the rustic Robert Burns cottage, from the sashes of the Igorrotes to the lace-covered Parisian evening robes, visitors find every kind of art, of industry, of products of the most diversified character represented.

The educational feature of the World's Fair finds its clearest expression in the Palace of Education and Social Economy. In the western part of the building, which is dedicated to social economy, is installed a German division well supplied with books, tables and statistical material. This division will be avoided by the casual visitor to the World's Fair, but the searcher in the province of social economy and the earnest student of public affairs will derive therefrom an abundance of interesting material.

On the initiative of the celebrated American social economist, Carroll D. Wright, from the Department of Labor, Washington, D. C., the German Imperial Government has resolved to explain, with the help of pictures and tables, to the Americans at the Exposition, the grand creation of the German workmen's insurance. This is the most characteristic creation of Germany in the province of social economy, entirely different from similar institutions in other countries. The German institutions are more and more imitated by other European countries, and there arises the great question, which is left to the future to solve, whether the United States could likewise undertake similar organizations.

The aim of the German workmen's insurance is to guarantee to working men and women protection against the consequences of accident, against sickness and the debility of old age, as well as against invalidism brought on in any way. There are 17,500,000 laborers insured against accident, 10,500,000 against sickness and 13,500 against old age and invalidism. Exempt from the insurance against sickness are agricultural laborers, as they are taken care of by another method.

Whoever in the pursuit of his avocation has met with an accident receives medical treatment free of charge, is supplied with medicine, and, moreover, is entitled to a daily allowance for the support of himself and his family. Should it be impossible to restore him to full health he will draw a so-called accident rent for the duration of his impaired working capacity, eventually to the end of his life. The amount of this rent is so regulated that it will equal two-thirds of his usual wages.

Any workman who becomes ill likewise receives medical treatment free of charge and medicine, at his home or at a hospital, and, besides, a daily sick benefit for himself and his family. Should an illness last longer than six months he will be considered an invalid and henceforth enjoy the advantages of invalidism insurance.

Every laborer who has completed his seventieth year of life, or before this time has become an invalid so that he could not any longer attend to his work with full energy, receives a so-called invalidism rent. This rent varies in proportion to the dues heretofore paid by him, and the latter are regulated with regard to the wages he has received. Moreover, the time during which he has belonged to the invalidism insurance is taken into consideration. This rent is never high enough to afford a comfortable livelihood; nevertheless it is fully sufficient to supply the necessities of life.

In 1902 not less than 490,000 invalidism rents were paid, 180,000 old age rents, 120,000 accident rents, and in conformity with the insurance against sickness 4,000,000 cases of sickness were treated. To achieve this, enormous means are required. In 1901 a total of approximately \$100,000,000 was paid to the insured. This vast sum, to be sure, is raised by widely different methods. Accident insurance is paid exclusively by the employers, as it is a firmly grounded conception of German law that whoever gives occasion for endangerment is responsible for the consequences resulting therefrom. For this purpose the employers are organized in so-called "Berufs Genossenschaften," upon whom it devolves to pay the rents and then to assess the required amounts to the individual employers. Of the amounts for the insurance against sickness two-thirds are contributed by the workmen themselves and one-third by the employers.

All laborers of a certain factory, or (and this is a rule) of a certain place, belong to a so-called sick fund, which is administered for them in conjunction with the employers. The dues are paid in weekly installments upon the payment of the wages. For old age and invalidism insurance the dues are likewise paid in weekly. This is done by the passing in of stamps in a little book, these stamps at the same time serving the purpose of controlling such payments. Employers and employes pay the same amounts, in addition whereto the German Imperial Government, from state funds, makes a yearly payment of fifty marks on each rent. For the administration of the amounts paid in the regulation and disbursement of the rents, certain organizations called "Landes-Vericherungs Anstalten" have been created.

All these institutions do not bear in any degree the character of provision for the poor, for in Germany, as well as in the United States, the opinion prevails that it is demoralizing to be permanently dependent upon charity. On the contrary, all these claims resulting from said insurance are rights which can be sued for by procedure at law. To expedite this in an impartial as well as expert manner, a special system of resorts has been created. Everywhere, except for accident insurance, employers and employes coöperate with professionally trained judges. As highest resort there exists the Imperial Insurance Office in Berlin, under President Gaebel, at the same time an administrative body and court of justice. It is this bureau which, under the supervision of Privy Councillor Dr. Zacher, a scientific authority in such matters, in coöperation with the Statistic Office, has installed the exposition of the workmen's insurance.

By means of a literature, deposited upon six shelves, everybody taking interest in these matters may acquire a clear insight into the state of affairs.

While the principal figures are displayed in great tables fastened to the outer walls, similar tables are to be found vis-à-vis of the entrance, to the left and right of a large allegorical centre picture, symbolizing the protection extended to labor, and finally upon and in three desks a great number of tables concerning all the different branches of insurance, is exhibited.

With a view to make these ideas of German workmen's insurance accessible to larger circles and for the purpose of fixing a permanent knowledge of the system in the mind or memory of the visitor at the World's Fair, five monographs in German and English, specially written for this purpose and which in concise

form impart an exact and reliable representation of the system, are distributed free of charge at the Exposition. Every person entering his name in a book laid out for this purpose will receive the German Statistical Year-book, which contains a summary of all of the economical, political and judicial conditions of the German Empire, as far as such information can be expressed through figures.

As it often happens, the German Workmen's Insurance, exceeding its original aim, has brought about a series of beneficial results that were unexpected. These are displayed in the same manner at the Exposition. In the first respect, exact regulations for the prevention of accidents have been enacted and this has led to the development of a special technic in this province. Two pictures on the wall vis-à-vis of the allegorical picture, represent ways and means instituted by the two leading German navigation companies, Norddeutsche Lloyd and Hamburg-American Line. Underneath pictures, tables and photographic albums convey information concerning different technical constructions for the prevention of accidents.

In this manner it is achieved that in Germany, notwithstanding the continuous growth of industry, the number of accidents are on the decrease. Likewise the insurance against sickness has contributed its share to an essential improvement of the national health and a reduction of the mortality rate. This is attained, more than by any other regulation, by extending to the laborer gratuitous medical treatment. Consequently the workingman who heretofore from economical considerations hesitated to call in a physician, now is induced to consult him on the appearance of the first symptoms of sickness.

The greatest German local sick fund—that of Leipsic—with 124,000 members, exhibits several pictures of hospitals and recreation stations, as well as convalescent homes. Likewise the "Knappschafts-Berufsgenossenschaft" (for miners) produces examples of the system of caring for the sick developed in the course of centuries.

The immense accumulation of funds which is the result of every insurance, especially of invalidism insurance, facilitates the erection of numerous institutions conducive to the public welfare, above all convalescent homes, recreation stations for persons suffering from tuberculosis, called homes for the old. In the same manner other improvements which indirectly cohere therewith and which contribute to the comfort of the less wealthy classes; for instance, dwellings for workmen, have in many cases been built out of these funds. All funds that in a private insurance association are disbursed as dividends to stockholders, or are invested in securities, here may be utilized for the pursuit of purposes of general usefulness, since the state affords a sufficient security.

The buildings and institutions of four German "Landes Vericherungs Anstalten," the Thuringian, Hanseatic, Hanoverian and Brandenburg, here are artistically illustrated on the wall to the left of the allegorical pictures. The majority of these objects at the end of the World's Fair will be turned over to American scientific and economical institutions.

Meantime every American may avail himself of the opportunity offered to arrive at a conclusion, whether these institutions may be transplanted to the widely different conditions of the United States.



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

THE CENTRAL CHURCH, BERKELEY AND NEWBURY STREETS, BOSTON, MASS. THE LATE R. M. UPJOHN, ARCHITECT.

It is rather curious that, with the exception of a page of detail sketches published in 1877, we should have left until now unillustrated in this journal so excellent a piece of design as this.

THE LOUISIANA PURCHASE MONUMENT: LOUISIANA PURCHASE EXPOSITION, ST. LOUIS, MO. MR. E. L. MASQUERAY, ARCHITECT, NEW YORK, N. Y.

THE AUSTRIAN GOVERNMENT BUILDING: LOUISIANA PURCHASE EXPOSITION, ST. LOUIS, MO.

THE VAN WICKLE GATE: BROWN UNIVERSITY, PROVIDENCE, R. I.
MESSRS. HOPPIN & KOEN AND HOPPIN & ELY, ASSOCIATED ARCHITECTS.

SCULPTURAL DETAIL: LOUISIANA PURCHASE MONUMENT, ST. LOUIS, MO.

Additional Illustrations in the International Edition.

THE LOUISIANA PURCHASE MONUMENT AND THE BOAT-LANDING:
LOUISIANA PURCHASE EXPOSITION, ST. LOUIS, MO.

SCULPTURAL DETAIL FROM THE LOUISIANA PURCHASE MONUMENT:
"SIGNING THE TREATY," MR. KARL BITTER, SCULPTOR; "ST. LOUIS
AND THE GUIDING SPIRIT," MR. C. H. NIEHAUS, SCULPTOR.

THE ARBOR: ESTATE OF DUDLEY L. PICKMAN, ESQ., HOSPITAL POINT,
MASS.

PORCH AND FOUNTAIN ON THE SAME ESTATE.



THE LONDON "BUS" VS. THE "UNDERGROUND."—Notwithstanding the strong competition of the "Tube," as Londoners call their underground railway, the half-yearly meeting of the London Road Car Company, or omnibus line, developed facts which show that the older form of transit is still popular. The number of passengers carried during the first half of the year showed an increase over the number carried the corresponding period in the preceding year of 144,531. This is accounted for by the fact that many Londoners still prefer being carried in vehicles in the open air, notwithstanding the exhilaration said to be derived from the ozonized air of the "Tube." Perhaps a still better explanation is the Englishman's tenacity in holding on to established ways and usage. At any rate, the omnibuses seem to retain their old-time popularity, and minister to the wants of a constantly growing number of patrons.—*N. Y. Tribune.*

THE ROTHSCHILDS AND SOUTH AMERICAN WORKMEN'S HOMES.—While three members of the Rothschild family have given 10,000,000 francs for the building of workmen's houses, comfortable and cheap, the rent of which will bring no more than the legal interest on money, they propose in the Argentine Republic, to follow that example. A project will be presented to the Buenos Ayres Congress authorizing the issue of bonds to the value of \$20,000,000, to be applied to the construction of workmen's dwellings in the suburbs and other parts of the capital. *The Review of the River Plate* says that "cheap, healthy dwellings of the poorer class, as well as the workers, are what the country has been calling for for many years."

OWNERSHIP OF ARCHITECTS' PLANS.—An important test case, "Gibbon vs. Pease," raising afresh the architect's right to retain plans, which was supposed to have been settled against the profession in "Ebdy vs. McGowan," nearly four-and-thirty years ago, will be tried in the King's Bench Division at the end of October next, the case being among those placed high in the list for hearing after the long vacation. The action is brought by a building owner for whom some property at Paddington was converted into flats, against the architect for the return to him of all plans, specifications, papers, and minutes, including all copies of such general particulars relating to the work. The building owner also demands of the defendant architect the "return of all estimates, tenders, contracts, bills of quantities, and copies of letters to and from the client relating to the plans, specifications, or contracts." The architect, who was employed at the usual 5 per cent commission on the amount of the accepted tender, deems it his duty in the interests of the profession to refuse to deliver up the plans, the whole of the contract having been completed and the fees paid. We understand that many well-known architects and surveyors have been subpoenaed in the action. In the case of "Ebdy vs. McGowan," very fully reported by us in our issue of November 18, 1870, and heard in the Court of Exchequer by the Lord Chief Baron and Barons Martin, Bramwell and Pigott, the plans were prepared for a vicarage, but were never carried out. Mr. John P. Seddon, the secretary to the R. I. B. A., and the late Mr. Fogarty were called to prove the custom of the profession to return the plans whether the works were executed or abandoned; while, on the other hand, Mr. Smirke deposed that when the works were completed it was the practice of architects to retain the plans; but when the building was not constructed, the plans were offered to the client as a matter of right. The Lord Chief Baron withdrew the question of custom from the jury, and the Court unanimously gave judgment against the architect's claim. The late Mr. A. S. Ayrton, when First Commissioner of Works,

refused, it will be remembered, to give up to Mr. Barry, Jr., Sir Charles Barry's plans for the Houses of Parliament, and we are not aware that that claim was brought into a court of law. Just fourteen years later, in the case of "Gooding vs. the Local Board of Ealing," Mr. Justice Mathew decided against an architect's claim to recover plans submitted to a local sanitary authority and not approved of by them. This case, which in some respects follows the same ruling, was reported in our issue of Dec. 5, 1884. The issue of the present action will be awaited with interest by architects and building owners.—*Building News.*

SCHOOL GARDENS IN EUROPE.—A special Consular Report on "School Gardens in Europe" tells us that Leipsic, in Germany, in 1888, at the instigation of the principals of its schools, donated 400 square metres (478.4 square yards) of ground to each new school for botanical purposes, and set aside for gardening purposes a plot of ground, whose area is 12,000 square yards, "which is surrounded by forests, exposed to the sun, and watered by the River Pleisse, and conveniently located." This garden is open daily, with the exception of Sundays and holidays, from morning until evening. The teacher has sufficient opportunity to take his classes to the garden, to acquaint the pupils with the flora and impress upon their minds the natural growth of every useful and poisonous plant. The teachers have a right to take from the garden such material as they may want for demonstration in the class-rooms. It is possible for anyone interested in the study of botany to obtain, free of charge, specimens from the school garden. In order to encourage visits to the garden, the school board distributes a circular about every two weeks, containing a list of such plants as are in bloom, or have some interesting feature to be observed. There is a head gardener and eleven assistants. Most of the assistant gardeners are women. A teacher has charge of the pedagogic side of the work." Even in Russia, not to speak of other countries in Europe, no school can receive State funds unless it has a garden connected with it. There are to-day more than 100,000 school gardens in Europe, according to Hemenway. We Americans are accused of thinking only of the almighty dollar—of being intensely utilitarian. If that be true, then why do we permit our children to grow up in ignorance of plant life, when 65 per cent of our exports are farm products?—*Gustave Straubenmüller, in School Work.*

THE HOUSE OF LORDS ON THE CHANTREY BEQUEST.—The House of Lords has been more practical in measures of art reform than in processes of religious purification. The Chantrey trust inquiry has been impartially conducted, and the remedies suggested are sensible and effective. There was neither captious criticism nor vulgar abuse of the Academy at any stage of the investigation. The select committee acquitted the Academicians of all charges of corrupt or interested motives; but convicted them of showing too exclusive a preference for pictures exhibited at Burlington House, and of creating an incomplete and unrepresentative gallery of modern British art, from which examples of many of the most brilliant artists were excluded. The art critics have complained that the Chantrey collection included many insignificant works and too few which reached the degree of artistic distinction aimed at when the sculptor's will was drawn. The committee emphasizes these points, and explains how the bequest can be converted into a national benefit. A committee of three, consisting of the president and two members of the Academy, is to be substituted for the president and the council; and purchases are to be made from art-dealers, auction-rooms, private owners and general exhibitors. With the responsibility for the collection carefully defined and with the field of choice broadened by flexibility of method, the standard of merit will inevitably be raised. The reforms are virtually those which Mr. Sargent recommended in his testimony before the committee. It is to be hoped that he will be one of the members of the new committee of selection.—*J. N. F. in N. Y. Tribune.*

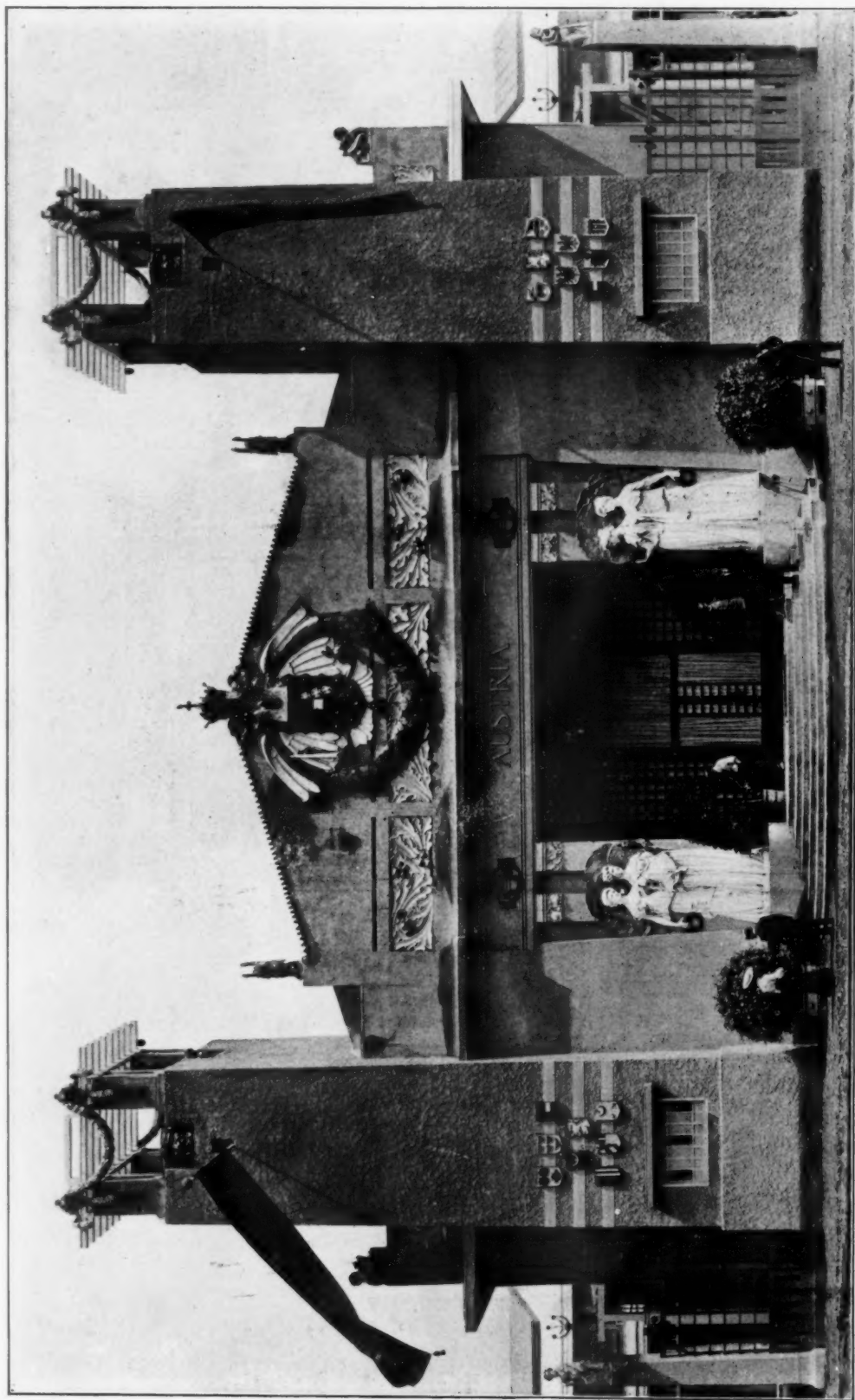
NORDENSKJÖLD'S PERUVIAN EXPEDITION.—Stockholm newspapers print interesting details regarding the expedition of Erland Nordenskjöld to the boundaries of Peru and Bolivia. He has found in the Quareatal a region never before visited by a man of science, which he describes as a paradise for archaeologists. At the border of the primitive forest there are countless graves, some of which contain more than a hundred skeletons. There are also tolerably well-preserved houses and fortifications of the days of the Incas. The expedition intends to proceed into the unexplored forest.—*N. Y. Evening Post.*

LONG-LIVED IRON WATER-PIPES AT VERSAILLES.—There are still in use at Versailles cast-iron water-pipes dating from 1664 to 1688. The total length of these pipes is 15½ miles. A large proportion are 20 inches in diameter, the remainder being 12¾ inches. They have been laid in lengths of 40 inches, and are coupled by means of flanges and bolts. The 20-inch pipes are 1¾ inches thick, and the other seven-eighths of an inch. The only repairs still found necessary consist in replacing from time to time the bolts, which rust through, but even this amount of attention is seldom required.—*Boston Transcript.*



The Louisiana Purchase Monument, St. Louis, Mo.
E. L. Masqueray, Architect.

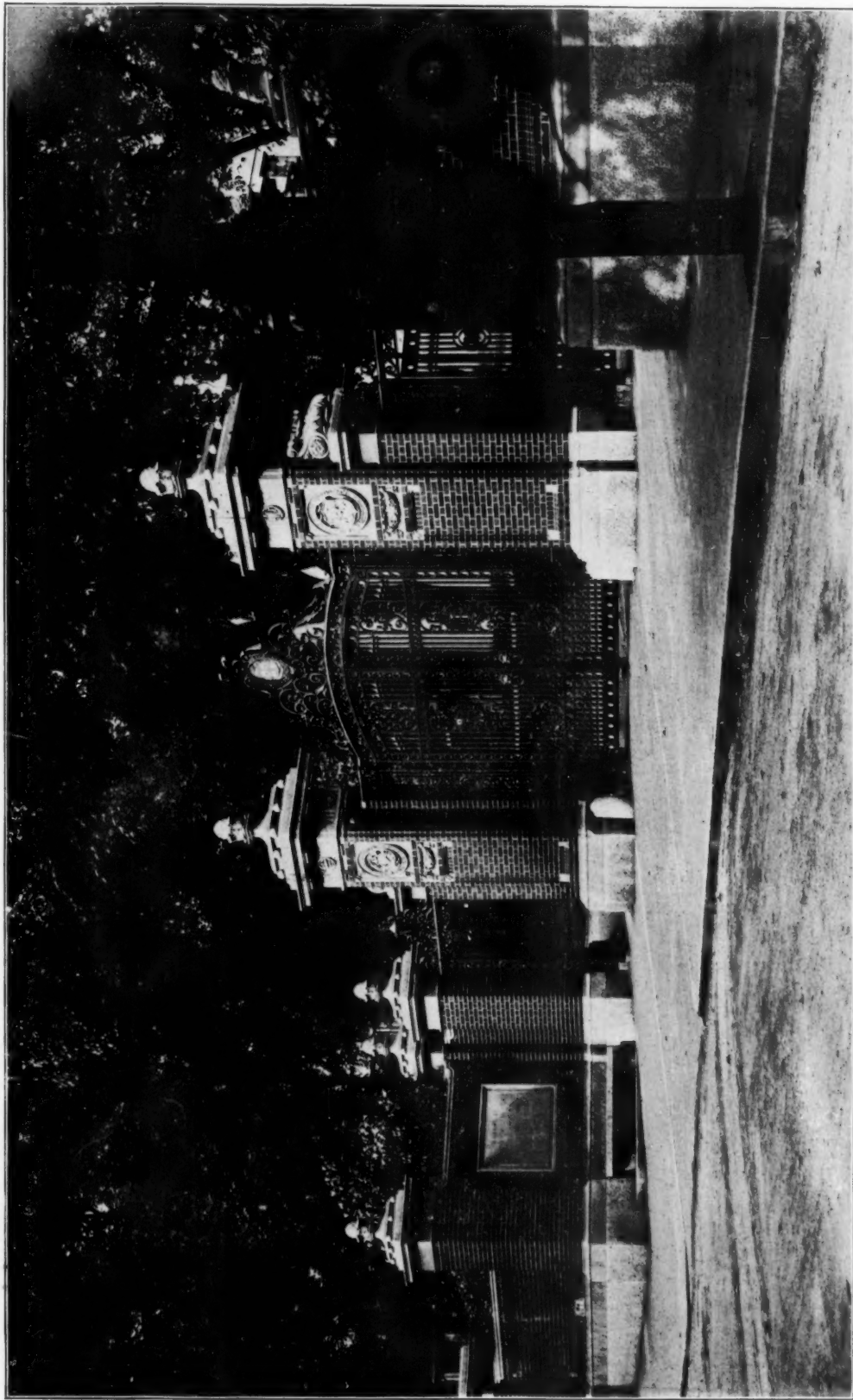
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The Austrian Government Building: Louisiana Purchase Exposition, St. Louis, Mo.

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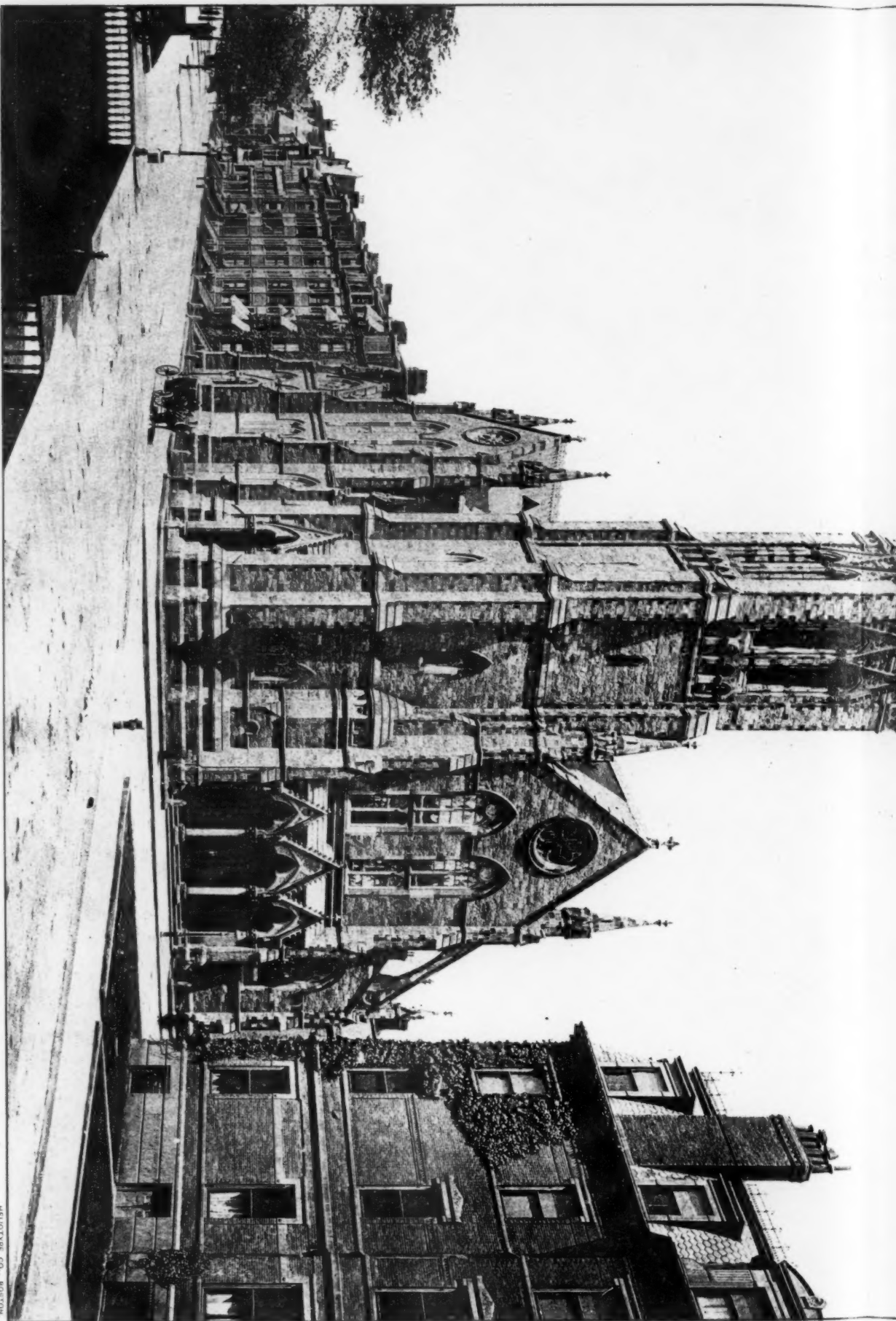
*The Van Wickie Gate: Brown University, Providence, R. I.
Hopplin & Koen and Hopplin & Elb, Associated Architects.*

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*Sculptural Detail: Louisiana Purchase Monument.
St. Louis, Mo.*



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