

BOOKS AND PERIODICALS.

Year Book of the SCHOOL OF ARCHITECTURE, University of California, published by the Architectural Society, 1897. This handsome pamphlet contains a list of the members of the Architectural Society as well as a list of the officers of the same. The work is fully illustrated with drawings of the students from problems given as directions in regard to the design required, many of these are very meritorious and do credit to the students as well as to the University.

A Mountain Moloch by Duffield Osborne is the complete novel in the July LIPPINCOTT'S Magazine. In addition the list of articles are of unusual interest and well worth the price of twenty-five cents.

Sixth Annual Report of the BUREAU OF LABOR, STATISTICS AND MINES to the Governor and Fiftieth General Assembly of the State of Tennessee, 1896. Nashville: Franc. M. Paul, printer to the State, 1897.

This report is fully illustrated by half-tones, and maps; coming as it does at a time when the strike of the coal miners is attracting the attention of the country. The following extract from a letter of M. Wood of the Commission, will be of interest:—

"The growth of Tennessee as a mining and industrial State, as exhibited herein is very encouraging. The figures show that the total value of her mineral products in 1896 was the largest in the history of the State, and it is gratifying to note the material improvement in the physical condition of the Mining properties in the State. The decrease in the number of accidents over the previous year is very appreciable, notwithstanding the large increase of production."

INEXPENSIVE COUNTRY HOMES, a practical book for architects, builders, and those intending to build. A handsome cloth-bound portfolio, consisting of 88 pages, about 11x14, printed on heavy plate paper, and containing 43 designs with floor plans, of practical, tasteful, and comfortable country homes, ranging in cost from \$1,000 to \$5,000 complete. The designs have been carefully selected, as embodying the best efforts of various architects throughout the country. Every one of the houses has already been built, and all of the illustrations are half-tone engravings, made direct from photographs of the completed structures, taken specially by the *Scientific American* artists. In many cases, two perspective views of the same house are shown. Several illustrations of inexpensive stables are also included among the designs.

The location of the dwellings, the cost, owners' and archi-

itects' names and addresses, are given, together with a description of the dwelling, thus enabling, if desired, a personal inspection of the dwelling or direct correspondence with the architect or owner.

Architects, builders, and those intending to build will find many new and valuable suggestions among the up-to-date designs illustrated in this handsome portfolio. Price, \$2.00 by mail, postpaid. Munn & Co., publishers of the *Scientific American*, 361 Broadway, New York.

SEMI-ANNUAL SUMMARY OF BUILDING OPERATIONS.

IN the following table we present the number and value of buildings erected in San Francisco during the first six months, it will be noticed there is a decrease in both the number of buildings and the amount of cost as compared with the first six months of last year.

FOR FIRST SIX MONTHS, 1897.

1897	No. of Buildings	No. of Contracts	Brick Building Value	No. of Buildings	No. of Contracts	Frame Building Value	No. of Buildings	No. of Contracts	Alterations & Additions Value	No. of Buildings	No. of Contracts	Total Value
January	12	16	\$ 128,000	22	26	\$ 53,524	3	3	\$ 7,917	37	45	\$ 190,481
February	6	17	181,128	21	24	71,475	8	8	28,028	35	40	280,631
March	10	18	233,122	41	47	135,019	10	10	17,234	64	73	405,955
April	6	22	154,702	71	75	217,369	25	25	100,780	102	122	472,912
May	13	19	119,836	40	43	147,385	11	11	13,086	64	73	277,427
June	7	9	48,718	35	38	162,750	19	20	49,994	71	77	261,462
Total	54	101	\$ 888,326	243	263	\$ 788,123	76	77	\$ 217,030	373	411	\$ 1,888,488

To this amount has been added the further estimated sum of \$500,000 where costs have not been given, which would make the total for the first six months, \$2,388,488.

FOR FIRST SIX MONTHS, 1896.

1896	No. of Buildings	No. of Contracts	Brick Building Value	No. of Buildings	No. of Contracts	Frame Building Value	No. of Buildings	No. of Contracts	Alterations & Additions Value	No. of Buildings	No. of Contracts	Total Value
January	5	11	\$ 40,743	34	40	\$ 177,389	13	13	\$ 33,153	52	64	\$ 251,265
February	2	7	251,323	59	69	190,778	13	13	25,005	74	80	466,966
March	2	6	38,082	57	63	215,372	6	6	13,500	65	75	266,951
April	32	49	694,417	108	120	365,087	28	28	60,796	168	197	1,129,960
May	2	11	255,042	30	36	146,752	30	30	23,017	71	89	406,441
June	10	19	221,234	33	36	460,234	17	17	70,890	120	130	733,398
Total	53	106	\$ 1,482,611	378	422	\$ 1,496,192	116	116	\$ 157,991	547	644	\$ 3,136,224

The business of the first six months for several years is shown by the following table.

1885—754 contracts	value, \$4,267,375
1886—670	" 2,486,633
1887—516	" 3,269,914
1888—437	" 2,719,820
1889—546	" 3,910,600
1890—556	" 3,793,858
1891—583	" 3,916,973
1892—411	" 2,942,496
1893—475	" 3,024,498
1894—524	" 2,456,428
1895—517	" 2,625,024
1896—644	" 3,636,224
1897—433	" 2,388,488

LEGAL DECISIONS.

From a large number of Legal Decisions of the higher Court, of the different States of the Union, we select and publish in this column, such as appear applicable to this section of the country.

WHEN DEFECTS OF CONSTRUCTION ARE NOT WAIVED.—A defect in work done on a public building is not waived, where the commissioner of public works takes possession of it from necessity, but expressly states that this is done without prejudice to any rights against the contractor, and refuses to give a certificate that the work is satisfactory.

MacKnight Flintic Stone Co. v. N. Y. City, 43 N. Y. Supp. Rep. 139.

WHAT IS NOT A WATER-TIGHT CELLAR.—A contract to make a cellar "water-tight" is not carried out, where after the work is done water leaks into such cellar, although the contractor puts under the floor an automatic instrument, which while at work keeps the cellar dry.

MacKnight Flintic Stone Co. v. N. Y. City, 45 N. Y. Supp. 139.

LIABILITY OF OWNER FOR DELAYS OF ARCHITECT.—If the architect employed by the owner to superintend the erection of a building, who is to direct the work, and is by the contract made the arbiter of its proper performance, delays the contractor unreasonably in his work for the benefit of the owner and other contractors, and by allowing such other contractors to obstruct the work, renders it necessary for the contractor to do his part in an unusual manner, which adds largely to the cost, the owner is liable to such contractor for the loss resulting.

Genovese v. Third Ave. R. Co., 43 N. Y. Supp. Rep. 8.

WHEN INJUNCTION WILL NOT LIE AGAINST OWNER.—That a subcontractor is proceeding with work in a negligent and improper manner, to the injury of adjoining property, affords no ground for a preliminary injunction against the owner, who has no control over the manner in which the work is being done.

Hill v. Schneider, 43 N. Y. Supp. Reporter, 1.

CONTRACT AND PLANS MUST BE FILED IN CALIFORNIA.—A contract to erect a house in conformity with plans prepared by and in possession of a designated architect, filed with the recorder without a copy of the plans, does not comply with the law of California (Sec. 1183) which requires building contracts to be in writing, and to be filed before work is commenced.

Pierce v. Birkhold, Cal., 47 Pacific Reporter, 681.

OWNER LIABLE FOR DELAYS OF ARCHITECT.—A provision in a building contract by which the architect is given authority to adjust and make allowance to the contractor for loss of time due to delays caused by other contractors does not preclude a recovery by the contractor against the owner for delays and obstructions caused by the acts of the architect as superintendent for the owner.

Genovese v. Third Ave. R. Co., 34 N. Y. Supp. Rep. 8.

NOTICE OF MEETINGS.

SAN FRANCISCO CHAPTER, AMERICAN INSTITUTE OF ARCHITECTS, meets second Friday of each month at 408 California street,
SETH BABSON, Pres. W. P. MOORE, Vice-Pres.
OLIVER EVERETT, Sec. JOHN M. CURTIS, Treas.

SOUTHERN CALIFORNIA CHAPTER AMERICAN INSTITUTE OF ARCHITECTS, meets first Wednesday of each month at 114 Spring street, Los Angeles, Cal.

THEO. A. EISEN, Pres. ARTHUR B. BENTON, Vice-Pres.
WILLIAM C. AIKEN, Sec't. AUGUST WACKERBARTH, Treas.

WASHINGTON CHAPTER AMERICAN INSTITUTE OF ARCHITECTS, regular meetings at 8 o'clock P. M., the first Friday of each month, except July and August.

JOS. C. HORNBLLOWER, Pres. JAS. G. HILL, Vice-Pres.
E. W. DUNN, JR., Sec. W. J. MARSH, Treas.

ASSOCIATION OF ARCHITECTS OF ARIZONA, meetings held at Phoenix, Arizona.

D. W. MILLARD, Pres. T. H. MADDOX, Vice-Pres.
W. R. NORTON, Sec. and Treas.

TECHNICAL SOCIETY OF THE PACIFIC COAST, meets first Friday of each month at Academy of Sciences Building.

E. J. MOLERA, Pres. W. F. C. HASSON, Vice-Pres.
OTTO VON GELDERN, Sec. EDWARD T. SCHILD, Treas.

MASTER PLUMBERS' ASSOCIATION, meets every first and third Friday of each month at the Flood Building.

JAS. E. BRITT, Pres. J. L. E. FIRMAN, Sec.

BUILDERS' EXCHANGE, Directors meet first Friday in each month at Mission and New Montgomery.

OSCAR LEWIS, Pres. JAS. A. WILSON, Sec.

MASONS' AND BUILDERS' ASSOCIATION, meet first Friday evening of each month.

ADAM BECK, Pres. M. V. BRADY, Sec.

HOW THE TUNNEL WAS MADE.

IN CONSTRUCTING the Blackwall tunnel the first difficulties the engineers had to face were the dimensions, which, owing to the amount of traffic the tunnel would have to provide for, were of a size unheard of before in the history of subaqueous tunnels. The largest tunnel of the kind ever constructed prior to the Blackwall was the St. Clair River tunnel, in America, having a diameter of about 20 feet, the Blackwall being 27 feet, says *Lloyd's London Weekly*. This diameter was proposed by Mr. Alexander R. Binnie, the chief engineer of the L. C. C., in order to accommodate both

vehicular and passenger traffic, and by the engineering fraternity generally it was looked upon as a size impossible of accomplishment. Mr. Binnie, in his article in *London* on the planning and construction of the tunnel, says:—"It was frankly held to be an impossible proposal by some of the leaders in the engineering profession. One of the older members—a gentleman of great experience—impressed upon me the fact that failure would mean the loss of all professional reputation, and even the late Mr. Greathead, as an old and kind friend, warned me not to be too sanguine of success." But Mr. Binnie was confident of success—a confidence which he has magnificently justified; all opposition was overcome; and his proposal adopted. The contractors, Messrs. S. Pearson and Son, were the next to be warned of the impossibility of the task they were undertaking, and we are told in *London* that "an engineer of the foremost rank, with an experience greater than that of any other engineer in difficult subaqueous tunnelling, deemed it his duty, from the regard he had for Messrs. Pearson, to advise them not to risk their fortune and reputation in undertaking a task that was impossible of fulfillment." They, however, like Mr. Binnie, had confidence in their own judgment, and like him have also been magnificently justified.

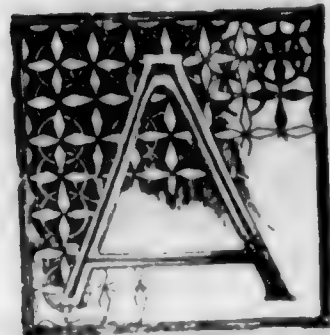
The tunnel is 6,200 feet in length, and of this 1,225 feet is under the bed of the Thames, and the commencement of the work early in 1892 was the making of the approaches on both sides of the river. These approaches had naturally to be of considerable length, so that heavy traffic might not be rendered difficult by steepness of incline, and the gradients nowhere exceed that of the Haymarket. The approaches were commenced on what is technically termed the "cut and cover" system—an excavation, somewhat resembling a railway cutting, being worked out and bricked as it proceeded, but long before the actual river was reached tunnelling was begun, and here the principal instrument in the work came into operation. This was the great cutting-shield, the largest of its kind ever seen. It was suggested by Sir Benjamin Baker, as an improved form of the implement designed by Brunel for cutting the Thames tunnel, but the special and distinguishing features were designed especially for boring the Blackwall tunnel by Mr. E. W. Moir, Messrs. Pearsons' engineer and manager. The total length of this shield is 19 feet 6 inches, and the outside shell consists of four five-eighths of an inch steel plates. Air tight diaphragms divide it into two parts, so that a great air pressure could be kept at the working face of the shield, which has four rooms and contains twelve working compartments. The cutting portion of this gigantic implement consists simply of the outer shell referred to fixed by circular girders to an inner skin, the two joining to form a cutting outside edge. This was driven forward by twenty-eight hydraulic rams, the pressure as a rule being 2½ tons to the square inch. Every time the shield was pushed forward it made room for an iron ring composed of fourteen segments, each weighing a ton, the segments being placed in position by hydraulic elevators attached to the rear of the shield. These rings form the outer lining of the tunnel, being connected with each other by seventy bolts, and no fewer than 17,000 segments have been used in the construction of the great work. Cement concrete faced with white glazed tiles lines the iron skin, and gives the tunnel the bright appearance it now presents.

Another prominent feature in the construction of the tunnel was the use of compressed air in the workings. This driven into the tunnel by engines of 1200 horse power by its pressure against the face of the river bed, as the shield

cut it, prevented any inrush of water. An ingenious arrangement called an "air lock" shut off the finished portion of the tunnel from that in progress of construction, preventing the escape of the compressed air yet allowing for a passage from the ordinary atmosphere to the condensed one, on much the same principle that a canal lock allows boats access to or from divisions of water at varying levels. The lock resembled nothing so much as a large iron boiler embedded in a concrete block that hermetically sealed one end of the tunnel. At either end of the boiler were doors, each opening inwards towards the compressed air side. In this boiler a person passing from the ordinary atmosphere to the working one would sit down, a pipe would be opened, and the compressed air rushed in with a roar until the pressure in the lock was equal with that in the workings, when the further door could be opened, and the part of the tunnel in progress entered. The sensation of the person in the thicker atmosphere was merely that of an increased weight and somewhat heavier breathing. It was in the lock during the equalization of the atmospheres that any unpleasantness, singing in the head, popping in the ears, pain across the forehead, and such-like was felt. At least this was the experience of our representative when he visited the tunnel at the time it was bored about half way across the river. A description was given in *Lloyd's* in two illustrated articles in May, 1895. The scene in the workings was weird and striking in the highest degree. Down the middle of the tunnel ran a tramway, bearing trucks that carried the clay or gravel cut out from the face by the men in the shield. Gangs of men moved silently under the electric light, which was used throughout, some fixing cement, others riveting, others "grouting," as the process is called, by which an outer coating of concrete is given to each ring as it is fixed. So, day and night, the work went steadily on, only a small line of foam on the river marking the position of the shield to persons above ground. Some days only a few inches could be made, and on others several feet, but bit by bit it advanced until the two great "caissons," as the shafts on either side the river are called, were connected by this latest London roadway. Never was so great a work carried out with so few accidents, thanks to the ever-careful supervision of the resident engineers Messrs. Hay and Fitzmaurice. Once the cutting edge of the shield was turned by an encounter with a great piece of lime-stone rock, and the implement was only repaired after considerable delay and at a cost of between 7,000/ and 10,000/. This however, was the only great mishap encountered, and the work so many practical men pronounced impossible has been brought to a triumphant issue. In the making of the tunnel a million tiles have been used and seven million bricks, which figures convey but a faint idea of the vastness of the undertaking; and its need and utility in uniting two great districts are made plain by the following fact:—The contractors had occasion to move a large crane from one side of the river to the other. Across the Thames it was about half a mile, but in order to get around it had to be drawn by way of Tower-bridge, miles above, so that the journey was a matter of some ten miles.—[Since the tunnel has been opened a loud echo has come into being and it is said the uproar is deafening as vehicles proceed through its spaces.—Ed.]

Subscribe for CALIFORNIA ARCHITECT AND BUILDING NEWS—\$3.00 Per Year.

STONE PRINCIPALS AND INTERNAL ARCHES.



VERY rare mode of constructing roofs is that in which stone principals occur instead of timber. The examples in England are few, and one or two are mentioned in the "Architectural Dictionary." The south transept of Minchin Hampton Church, Gloucestershire, has a pair of stone principals, and at Willingham, Cambridgeshire, a smaller instance may be seen. At Carlow a stone principal is constructed in the shape of a trefoiled arch within an acutely pointed arch, the object of which form is apparently to obviate the necessity of counterforts on the outside, though the writer does not give details. The weight of stone concentrated at the "cusps" of the trefoil arch were no doubt intended to act as counterbalancing forces, their centres of gravity falling within the walls. Stone ribs supporting the purlins of roofs are common in many churches, and their object was doubtless to save trouble. Whatever motive induced the old architects to use them, it is quite certain these principals add to the monumental character of a building. The stone arching connects, in a pleasing manner, the two opposite walls, and the roof becomes a more integral part of the structure than it does when timber is employed. But the construction requires considerable care, and the centring should not be "struck" till the work has had good time to settle. If the walls are thick and low, the springing of the ribs may be made to commence low down, and the side walls do not require any buttresses, and it is a common and very effective manner of roofing porches, small chapels, etc. In lofty structures the employment of stone principals is more doubtful, for unless there is ample masonry provided in the form, either in internal piers or extended buttresses, observed in some of the churches in the South of France, great risk is run, as there are not a few examples to witness in spreading naves and fractured arches. In this connection we may point architects to tower and chancel arches, many of which, both in old and modern churches, bear evidence of the "sleepless" activity of the arch, when improperly tampered with or not duly buttressed. Many an old Norman and obtuse-pointed Transitional arch to be seen in the village churches in the south and west of England, show signs of the weakness and instability of the abutments. In probably

more than half the cases to be met with, the fault lies with the tampering spirit of later times in making external vaults for interment, or in injudiciously performed alterations—as for instance, the enlargement of a church by the addition of transepts. During the progress of these alterations, the wall is cut through and weakened, no shores are erected to help the abutments, which have been so recklessly deprived of their bond with the adjacent walling, or the excavations for the foundations of new work are made in dangerous proximity to old buttresses or footings. In new churches we have seen chancel arches cracked, and serious signs of instability in the masonry of the walls; it is not unfrequently the practice in these days of partial building, to afford a temporary support to the chancel arch before the aisles are added by the erection of a rough brick flying buttress on the outside; but, it is needless to say, very much more caution is required than is sometimes taken. In one case we know, where this expedient was adopted, the result has proved so bad that the arch will doubtless require to be rebuilt sooner or later. The chief point, of course, is to make such a buttress the permanent one, so that it will not require to be tampered with when the additions are made; and to secure safety the centring should be very carefully "struck," and not until the work has been quite finished, and the mortar set. Architects might very well take a lesson here from their brother professionals the engineers, although the latter cannot be said to be always infallible in their arch construction. A pleasing proportion of an interior arched opening is one in which the eye naturally takes immediate cognizance of the proportion between it and the solid masonry of the abutments, and discerns nothing to offend it. In very many of our new churches, the mass of masonry above the arch-crown often reserved for mosaic or colour decoration is disproportionately large to the abutments, or the span looks exceedingly wide for the buttresses, and whenever we meet with such an instance, the suggest of a counterfort sufficient and necessary to satisfy visual requirements and set the mind at rest is important. The question is one which concerns good proportion as much as mechanical stability; and, in fact, if the eye were consulted and followed in this and similar matters more loyally than it is, we should have better and more carefully designed buildings—appealing to our sense of just balance of parts and artistic fitness.—*The Building News.*

BUSINESS MOSAICS.

George Goodman, Patentee and Manufacturer of artificial stone, is one of the gentlemen who consumes an immense amount of Portland Cement. The result may be seen in many parts of the city, in the good sidewalks, garden walks, as well as foundations and bulkheads. Mr. Goodman does his work well and therefore gets lots of it to do; he can be found at 307 Montgomery street.

L. E. Clawson & Co., 1340 Market street, San Francisco, furnish everything in the line of Patent Chimneys that comply with the new fire ordinance. An illustrated circular sent on application.

Ives Patent Sash Locks are now finished in cold rolled steel, bronze and brass in all the popular finishes. Hobart B. Ives & Co., New Haven, Conn.

Cabot's Creosote Shingle Stains are manufactured by Samuel Cabot, Boston, Mass., can be obtained of Mr. Charles J. Waterhouse, agent, 35 New Montgomery street, San Francisco. The merits of this stain are well known among architects as a protection to wood; it is unequalled—entirely preventing the blackening of redwood. Samples and prices on application to the above address.

The Norton Door Check and Spring with its simple and durable air cushion check, is exactly what you want to prevent the slamming of your door; as this is not liable to get out of order, and duplicate parts can always be obtained if it does—be wise in time and provide yourself with one, thus stopping the slamming of the door.

To those in favor of home industry we suggest the patronizing of P. & B. building paper, manufactured by the Paraffine Paint Co.; everything supplied by this reliable firm can be depended upon as represented, and home made at that—116 Battery street, San Francisco.

Facts about paint is what we all want who intend painting—therefore go to the fountain head and get W. P. Fuller & Co., to tell you something in this line. They recommend Phoenix Pure Paint because it is made from pure material only and is finely and thoroughly ground and mixed with heavy machinery.

Joseph Budde can be found at his old stand, 575 Mission street, San Francisco. Mr. Budde makes his mark as a manufacturer of sanitary appliances in the plumbing line, and thus you are able to partonize home industry and get what you want in that line at the same time. Mr. Budde has been in the business so many years, is know so favorably to the trade that it is hardly necessary to call attention to his advertisement on page vii of this journal.

Parties desiring to purchase cement should go to W. R. Grace & Co., 203 California street, and get the celebrated Josson brand.

The Pacific American Decorating Company, manufacturers of stained and art glass—offer you the opportunity of having your house decorated with landscapes, marine views or photographs of persons and animals, 26 O'Farrell street, room 3.

CITY BUILDING NEWS.

- near Hoffman. Cottage; owner, John Galloway; cost \$1600.
- Baker** near Greenwich. Two-story frame; owner, J. A. Voegelson; architect, E. Depierre; contractor, A. Dahlberg; signed, June 19; filed, June 21; cost \$2725.
- Belyedere** near Fredrick. Two-story frame; owner, Mrs. M. J. Goodwin; contractor, E. W. Hyde; signed, June 25; filed, June 28; cost \$3100.
- Beulah** near Stanyan. Two-story frame; owner, Henry W. Copp; contractor, John Steidler; signed, April 30; filed, July 7; cost \$4100.
- Boardman Place** near Bryant. Frame building; owner, Giovanni Camica; architect, P. De Martini; contractors, Martini & Pagano; signed, June 15; filed, June 21; cost \$2550.
- Bryant** near 3rd. Three-story frame; owner, Alice Colleton; architect, P. J. Lynch; contractor, P. J. Scott; signed, June 21; filed, June 24; cost \$3834.
- Broadway** near Devisadero. Two-story frame; owner, Thomas Magee, Jr.; architects, Percy & Hamilton; signed, June 23; filed, June 30; cost \$3800.
- Bush** near Montgomery. Alterations to the old Standard Theatre; days work; cost \$5000.
- California** and St. Mary's Place. Alterations and additions; owners, Grasso & Co.; architect, W. H. Lillie; contractor, John Miron; signed, July 6; filed, July 7; cost \$1300.
- Green** near Jones. To build; owner, Fred Marriot; architects, Laver & Mullany; contractor, Jno. Blake; cost \$900.
- Olay** near Larkin. Alterations and additions; owner, A. G. Burgner; architect, G. A. Bordwell; contractor, M. J. Logan; signed, June 23; filed, June 25; cost \$2275.
- Clay Ave.** near Clay. Two-story brick school house; owner, John F. English; architects, Havens & Toepke; contractor, J. G. Adams; signed, June 30; filed, July 7; cost \$2170.
- Clay** near Larkin. Alterations and additions; owner, Harriett L. Van Bibber; architect, W. H. Wharff; contractor, A. L. Whitney; signed, July 13; filed, July 18; cost \$2278.
- Clara** near 4th. Alterations and additions; owner, Wallace A. Wise; architect, R. H. White; contractor, A. J. Anderson; signed, July 23; filed, July 3; cost \$1580.
- Devisadero** near Union. To build; owner, Sarah Anderson; architect, T. D. Newson; contractor, J. H. Simpson; signed, June 14; filed, June 16; cost \$2150.
- Douglas** and 17th. Two-story frame; owner, C. Ruhland; builder, C. Zwieler; cost \$3600.
- Ellis** near Mason. Concrete foundation for six-story brick; owner, L. H. Sly; contractors, Gray Bros; signed, June 18; filed, June 19; cost \$2790.
- Ellis** near Steiner. Two-story frame; owner, Hugo Klein; architect, W. H. Armitage; contractors, Garson & Otter; signed, July 1; filed, July 8; cost \$2835.
- Ellis** street, No. 621-631. Alterations and additions; owner, Dr. P. H. Flood; architect, James E. Wolfe; contractor, F. A. Blanchard; signed, July 7; filed, July 7; cost \$1570.
- Ellis** near Mason. Six-story brick; owner, L. H. Sly; days work; cost \$60,000.
- Ellis** and Anna Lane. Carpenter work etc., for six-story brick; owner, W. J. Somers; architects, Percy & Hamilton; contractor, T. M. McLachlan; signed, June 25; filed, July 12; cost \$13,040.
- Ellis** and Mason. Underpinning Langham hotel; contractor, M. Kelleher; cost \$1000.
- Eighteenth** near Church. Cottage; owner, H. E. Brown; contractor, C. W. Duffie; signed, July 8; filed, July 9; cost \$1835.
- Fell** and Masonic Ave. Three-story frame; owner, Martin A. Aronson; architect, R. H. White; contractor, Donald Currie; signed, June 8; filed, June 16; cost \$5300.
- Fell** near Scott. Three-story frame; owner, R. Nichols; architect, C. W. Duffie; contractor, S. A. Brown; signed, June 21; filed, June 25; cost \$3894.
- Fell** near Cole. Carpenter work; owner, Martin Kealing; architects, Cahill & Condon; contractor, Bernard Dryer; signed, June 28; filed, July 7; cost \$6350.
- Folsom** and Alice. Alterations and additions; owner, F. J. Hund; architect, C. A. Meusdorffer; contractor, Isaac Penny; signed, June 24; filed, June 25; cost \$2575.
- Folsom** near 4th. Two-story brick; owners, Schroth & Westerfield; superintendent, G. T. Watson; contractor, Wm. Little; signed, June 25; filed, June 28; cost \$14,350.

- Polson and Harriett. Three-story frame; owner, Harry Bush; contractor, C. M. Depew; cost \$5000.
- Fourteenth Ave. near M. street. Cottage; owner, Edward Eggers; contractor, M. J. Scott; signed, June 23; filed, June 23; cost \$1240.
- Franklin and Hickory Ave. Three-story frame; owner, Frank A. Meyer; contractor, R. O. Chandler; signed, July 8; filed, July 8; cost \$2200.
- Geary and Powell. Additions and alterations; owner, Mrs. Charlotte F. Clarke; architect, P. Schwerdt; contractor, Val Franz; signed, July 10; filed, July 12; cost \$11,700.
- Geary and Stockton. Cast iron fences; owner, Spring Valley Water Works; architect, Clinton Day; contractor, H. Haustein; signed, June 22; filed, July 3; cost \$6637.
- Geary and Powell. Plumbing work; owner, Mrs. Charlotte F. Clarke; architect, P. Schwerdt; contractor, Val Franz; sub-contractor, H. Williamson; signed, July 12; filed, July 14; cost \$1350. Brick and granite work; contractor, D. J. Bannan; signed, July 12; filed, July 14; cost \$2575.
- Golden Court near Sacramento. Repairs; owners, Ellen and John Golden; superintendent, Lawrence Kelly; contractor, J. M. Harcourt; signed, July 13; filed, July 13; cost not given.
- Gough near Sacramento. To build; owner, Robert C. Foutet; architects, Coxhead & Coxhead; contractor, Chas. M. Depew; signed, July 3; filed, July 7; cost \$3340.
- Haight near Scott. Two-story frame; owner, J. D. Feldmann; architect, Emil John; contractor, C. Kreeker; signed, June 14; filed, June 15; cost \$4000.
- Haight and Shrader. Two-story frame; owner, I. Steinhart; architect, W. H. Lillie; contractor, M. J. Savage; signed, June 30; filed, July 6; cost \$5594.
- Harrison near 4th. Three-story frame; owner, John J. Sweeney; architect, Oliver Everett; contractors, Barrett & Leahy; signed, July 7; filed, July 8; cost \$733.
- Henry near Castro. Two-story frame; owner, Miss Ann Hall; contractor, Charles Koenig; signed, June 17; filed, June 19; cost \$1448.
- Hill near Noe. One-story frame; owner, L. A. Smith; contractor, D. Einstein; signed, June 28; filed, July 10; cost \$1150.
- Jones near Washington. Two-story frame; owner, Henry L. Wagner; architect, Albert L. Fair; contractor, Wm. Knowles; signed, June 14; filed, June 15; cost \$3538.
- Joost Ave. Frame building; owner, Mrs. Hicks; cost \$1200.
- Joost Ave. Frame dwelling; owner, Mr. Stammer; cost \$1200.
- Iowa near Yolo. One-story frame; owners, Thomas and Ellen Commors; architect, M. G. Bugbee; contractors, Brennan & Nichols; signed, June 21; filed, July 8; cost \$1400.
- Larkin near Sacramento. To build; owner, W. J. Harris; builder, C. Zwierlein; cost \$5000.
- Lily Ave. near Buchanan. Alterations and additions; owner, Margaret Corbett; architect, A. Hildebrand; contractors, Klein & Eickholt; signed, July 8; filed, July 9; cost \$1530.
- Lundy's Lane near Esmeralda Ave. Cottage; owner, R. Sample; architect, G. H. Butchelder; contractor, W. W. Elliott; signed, June 22; filed, June 24; cost \$1000.
- Lundy's Lane near Esmeralda. Cottage; owner, R. Sample; contractor, W. W. Elliott; cost \$1000.
- Market near 5th. Alteration to Pythian Castle Building; architects, Pissis & Moore; contractor, W. A. Lange; cost \$1000.
- Market and 3rd. Models and carving in sand stone; owner, Claus Spreckels; architects, Reid Bros; contractor, Rupert Schmid; signed, June 12; filed, July 7; cost \$1350.
- McAllister near Lyon. To build; owner, Eurico G. Bressi; architects, W. Mooser & Son; contractor, A. Stevens; signed, June 19; filed, June 26; cost \$2889.
- Minnesota near 22d. Alterations and additions; owners, Thomas Brown & Alice Brown; contractor, Frank Coyer; signed, June 11; filed, June 16; cost \$1625.
- Mission near 18th. One-story brick; owner, Pacific Telegraph and Telephone Co.; contractor, J. A. Wilson; signed, July 1; filed, July 3; cost \$4100.
- Montgomery and Sutter. Three-story brick; owner, Anna L. Whittell; architect, Townsend & Wyneken; contractors, Veitch & Bros.; signed, June 17; filed, June 12; cost \$21689.
- Oak and Ashbury. Two-story frame; owner, Geo. F. Gorden; architect, G. A. Behrend; contractor, H. Brown; signed, July 6; filed, July 6; cost \$3478.
- O'Farrell near Laguna. Alterations and additions; owner, Moses Samuels; architect, A. F. Oakley; contractor, H. Jacks; signed, June 15; filed, June 17; cost \$1552.
- O'Farrell near Gough. Two-story frame; owner, James Tierney; architect, T. J. Welsh; signed, June 24; filed, June 28; cost \$5545.
- O'Farrell near Gough. Plumbing, etc.; owner, Jas. Tierney; architect, T. J. Welsh; contractor, W. E. Wilson; cost \$883. Painting; contractor, L. J. Dwyer; cost \$399. Tinning, etc.; contractors, Conlin & Roberts; cost \$274.
- Pacific Ave. near Octavia. Plumbing, etc.; owner, E. J. McCutchen; architect, E. A. Mathews; contractors, Ickelheimer & Bros; signed, June 15; filed, June 16; cost \$1444.
- Pacific Ave. and Webster. To build; owner, Mrs. James A. Robinson; architect, F. S. Van Fries; contractors, Anderson & Craig; signed, June 11; filed, June 19; cost \$5172.
- Post and Taylor. Three-story frame; owner, Estate of H. Molleshaner; architect, T. J. Welsh; contractor, J. E. Mooney; signed, June 14; filed, June 22; cost \$7700. Plumbing, etc.; contractor, Jas. McAllister; signed, June 21; filed, June 22; cost \$1255.
- Post near Laguna. To build; owner, Chas. H. Gottschalk; architect, Wm. Curlett; contractor, Wm. Linden; signed, June 29; filed, June 30; cost \$3835.
- Post near Laguna. Three-story frame; owner, Mrs. Wolf; contractors, Phillips & Hood; cost \$6000.
- Powell near Geary. Brick, carpentry work, etc.; owner, Mrs. Margaret A. Skelly; architect, P. Schwerdt; contractor, D. Powers; signed, July 12; filed, July 14; cost \$5537.
- Powell near Bush. Four-story frame; owner, Julia Hyde; architects, Shea & Shea; contractor, L. W. Coburn; signed, June 17; filed, June 26; cost \$1800.
- Pine near Polk. Grading, carpentry, iron, etc.; owner, E. F. Guedet; architect, J. Godart; contractors, Hawking & Lindsay; signed, July 10; filed, July 12; cost \$5177. Painting, etc.; contractor, C. E. Schwartz; signed, July 10; filed, July 12; cost \$400. Plumbing, etc.; contractors, Schanz & Grady; signed, July 10; filed, July 12; cost \$862.
- Sanchez near Alvarado. Cottage; owner, Mrs. Emma Landgrebe; contractors, Carl Schley & C. A. Boss; signed, June 23; filed, June 25; cost \$1180.
- San Bruno Road near Gates street. One-story frame; owner, Mrs. Elizabeth Taylor; builder, C. Zwierlein; cost \$1000.
- Seventh Ave. near M. Cottage; owner, Nathaniel Hallinan; architect, M. J. Welsh; contractor, J. B. Quinn; signed, June 15; filed, June 19; cost \$1300.
- Stanley Place near Bryant. Alterations and additions; owner, Fannie Gluckmay; contractor, R. C. Stiller; signed, June 24; filed, June 24; cost \$1067.
- Steiner near Broadway. To build; owner, C. R. Havens; architects, Hermann & Swain; contractor, G. Peterson; signed, June 23; filed, June 23; cost \$420.
- Stevenson near 3rd. Excavation for brick building; owner, Claus Spreckels; architects, Reid Bros; contractor, J. Tuttle; signed, June 10; filed, June 26; cost \$1280.
- Sixteenth street. One-story frame; owner, J. H. Burns; days work; cost \$1500.
- Stockton and Geary. Elevator; owner, Spring Valley Water Works; architect, Clinton Day; contractors, Cahill & Hall Elevator Co; signed, July 2; cost \$14,870.
- Taylor and Bernard. Additions and alterations; owner, Catherine Fahey; architect, H. D. Mitchell; contractor, Peter Hamilton; signed, June 16; filed, June 18; cost \$1200.
- Tehama near 2d. To build; owner, John Driscoll; architects, Rowell & Collins; contractor, David R. Perry; signed, July 9; filed, July 10; cost \$2300.
- Twelfth near Harrison. Alterations and additions; owner, Mrs. I. M. Schmidt; architect, W. H. Wharf; contractors, Enquest & Wright; signed, June 14; filed, June 15; cost \$1125.
- Twelfth Ave. near A. street. Cottage; owners, Geo. E. Mitchell and Mary Ann Mitchell; contractors, A. P. Ely & J. W. Smith; signed, June 14; filed, June 16; cost \$1102.
- Twelfth Ave. near A. Cottage; owner, Francis Miller; contractor, L. G. Bergren; signed, July 6; filed, July 8; cost \$1180.
- Twenty-third near Hoffman. Cottage; owner, F. W. Westfall; cost \$1600.
- Twenty-third near Hoffman. Cottage; owner, J. Willmson; cost \$1600.
- Twenty-third near Noe. To build; owner, Sarah Nesbitt; contractor, J. O. Dyar; signed, July 6; filed, July 8; cost \$2000.
- Twenty-seventh and Church. To build; owners, Thomas and Catherine Fanning; contractor, V. G. Godin; signed, June 21; filed, June 22; cost \$2450.
- Vallejo near Powell. To build; owner, Isaac Fox; architect, A. W. Marquis; contractor, D. A. McIntosh; signed, June 16; filed, June 18; cost \$1325.
- Vermont near Yolo. To build; owner, Mrs. Kelleher; builder, C. Zwierlein; cost \$1200.
- Washington near Van Ness. Alterations and additions; owner, Mrs. Margaret J. Jones; architects, Coxhead & Coxhead; contractor, M. C. Lynch; signed, June 16; filed, June 21; cost \$4831.50.
- Washington and Spruce. To build; owner, Ed. G. Carrere; architect, T. P. Ross; contractor, Fred Miller; cost \$3880.
- Webster near California. Alterations, etc.; owner, Lilian D. Reynolds; architects, Herman & Swain; contractors, Anderson & Stockholm; signed, July 2; filed, July 7; cost \$1925.

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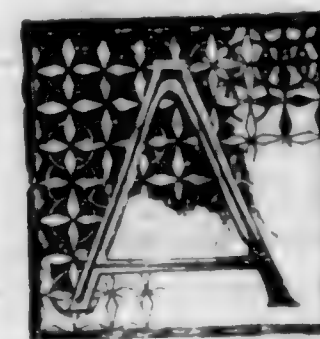
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THE MATTER of a New Charter for San Francisco is again on the tapis the time is opportune for remarks as to the position of architects, engineers and builders in it.

In the most important place, this being the age of specialization it seems that the Architectural Department of the Municipal Government should be kept separate from the Engineering Department.

In all American Charters we believe so far no distinction has been made, and all are grouped in the Board of Public Works; who are generally supposed to be engineers.

A little consideration will show that this is very inadvisable. The distinction is very palpable between the two departments; in fact, there is nothing apparently in common between them.

One busies itself with the laying of sewers, building of roads and walks, water supply, gas and electric light supply, bridge building, street cleaning, railroads, telegraphs and

telephone, subways, and the charge and care of all these things. It also would naturally include all surveying.

San Francisco being a seaport it would also include all marine engineering such as building of wharves, dockage, etc., and the charge of the same.

All this comes appropriately under the term "Works" so that "Works Department" or "Engineering Department" could be either of them used.

On the other hand the Architectural Department, or what could be called for short the "Building Department" includes all constructions for protection from the weather; and those made for the delight of the eye, such as parks, statues, monuments, gardens, museums and other art treasures of the City.

One sees at a glance that a different order of men are required to handle these latter works than those mentioned before—and it is hardly necessary to note that the two geniuses have been very seldom indeed united in one man—and, with the present complexity of public wants, it is im-

possible for one man or set of men to do justice to both. The head of the first department should be an engineer, of the second department an architect.

The Architectural Department should have charge of the construction and repair of all public buildings, the lighting and all other installations in connection with said buildings and the furniture within the same.

One bureau of the department should be empowered to make a proper building ordinance including plumbing regulations and see it enforced by Building Inspectors—who would take the place of the present Fire Wardens and Health Inspectors. In regard to the designs of public buildings and monuments, fountains, parks, etc., which more particularly interest the architect—the example of our National Government in the matter is a good one. All constructions of this character costing complete over \$50,000, should have designs open to competition.

The City parks would naturally come under the Landscape Architectural Bureau of the Department—being artistic creations—that being made the great distinction between each department; any other classification does not seem to be so satisfactory.

A few thoughts in regard to the carrying out of the work of these two departments may be apropos. The public service has always a large attraction for the citizens, due no doubt to a feeling on his part that he is partly working for himself when working for the city, being a constituent of the body politic—while, when working for a private employer he feels that the profit of none of his work comes back to himself.

So as to allow as many as possible to participate in the fruition of this laudable desire, the hours of the City should never exceed seven hours, and be less whenever the people are educated to the idea. Two ends are gained by this more people are employed and by allowing only seven hours pay, it prevents those who may have private work from rushing into government situations.

Again all the labor required in these departments should be done by the City by day's work and contracts should be tabooed. There is an element of speculation (gambling in English) about a lowest bid contract which is demoralizing; if the work is large, only rich contractors can bid, and the number being small the temptation to pool their issues is great, and the City has to pay more than the work is worth; or, if it be small enough to encourage a large number of bidders, the lowest bidders generally loses; as we find in quite a quantity of national work let out on this system. In the latter case the City gets something for nothing which every honest citizen abhors.

PUBLIC UTILITIES IN SAN FRANCISCO.

CITY GOVERNMENT A NATIONAL QUESTION.

THE problem of municipal government has become one of the highest concern to the entire nation. It is, in truth, a question whose solution affects the interest of all the people. At present one-third of the people of the United States dwell in cities. One-tenth of the entire population of the Republic live in the four great cities of New York, Philadelphia, Boston and Chicago. American cities resemble

each other so closely, that the experience of one will generally serve as a lesson for all.

OUR CITY HAS NO PUBLIC DEBT.

In the first place, the early settlers of San Francisco, expecting to return soon to their Eastern homes, were unwilling to discount an uncertain future. They had not in view the requirements of a metropolis of 350,000 people. Therefore, no provision for any public indebtedness was provided; and we have to-day a municipality without bonds. One hundred and sixty miles of paved streets have been constructed, costly public buildings have been erected; a magnificent public park, costing annually a quarter of a million dollars; and yet San Francisco is practically out of debt. No other large city on earth can match this remarkable record.

OUR CITY OWNS NO UTILITIES.

In the second place, San Francisco possesses no public utilities. Other large cities have issued bonds mainly to acquire municipal ownership of the great necessities of the people. San Francisco has done neither. The public property of the city, amounting to \$25,000,000, has been either inherited or paid for by current taxation. Nearly all progressive modern cities own and often operate some public utilities. San Francisco has allowed great tax-levying corporations to perform these municipal functions.

VALUABLE FRANCHISES GIVEN AWAY.

Our city has given away for long periods, without compensation or reservation, valuable franchises for street railways, telegraph, telephone, subways, water supply, and gas and electric lighting. Laws governing the sale of franchises have only been enacted within recent years. To recover her lost advantages, San Francisco must now wait until the existing privileges expire by limitation. The present Constitution of California, however, has broken the monopoly of water and light franchises by allowing any person to use the streets for such purposes under reasonable conditions.

MONOPOLY A LOGICAL RESULT.

The natural result of the existence of these gigantic corporations has been powerful monopolies and the imposition of excessive rates for all kinds of service. Morally worse than this has been the resulting suspicion of the corruption of public bodies. Public servants in the Legislature, in the council, and even in the judiciary are exposed to the debasing machinations of these unscrupulous corporations. They have debauched politics and have established an "imperium in imperio," subversive almost of the State government itself.

PUBLIC OWNERSHIP A NECESSITY.

These indisputable facts emphasize more lucidly than any argument the necessity of the public ownership of utilities. With a reform in the civil service, better results could certainly be attained. Moreover, public bodies would not be exposed to the insidious inroads of corruption, carrying with it the ultimate destruction of representative government.

PRIVATE OWNERSHIP INCLUDES TAXATION.

Every rise in the price of water or light is equivalent to

an additional tax imposed upon the people. Every dividend paid upon watered stock of transportation and other companies using public streets is an unjust and unwarranted imposition upon the people. The public streets belong to the municipality and these corporations cannot exist without their use. The first consideration of lawmakers should be the interest of all the people. Therefore, only reasonable interest should be permitted to be earned upon the actual capital invested. The \$2,500,000 contributed annually by the citizens of San Francisco for the universal necessity of water and artificial light is certainly as much taxation as the very taxes levied for the support of the city government. If the people are charged double the value of these necessities, they are unjustly taxed.

ACTUAL COST THE TRUE MEASURE OF VALUE.

Reasonable interest should be estimated upon actual cost and not upon any inflated values. For example, a system of street railway has issued stock for \$18,750,000 and has outstanding bonds for \$11,000,000. It collects over \$3,250,000 annually in fares and thus pays full interest upon all its stock and bonds. Its earning capacity with five-cent fare should, therefore, not be considered the measure of its value. Reasonable dividends could be paid upon its actual value and yet cheaper service rendered, especially during certain hours of the day. A gas company with a plant worth \$5,000,000 is paying 6 per cent dividends on \$10,000,000; and a water company is paying regular rates of interest on a stock and bond capitalization of \$23,000,000. The citizens of San Francisco are paying \$7,000,000 annually for water, artificial light and street car transportation, a sum \$3,000,000 more than was raised last year by direct taxation for the support of the municipal government.

PUBLIC OWNERSHIP THE BEST SOLUTION.

The ultimate solution of this disturbing problem is municipal ownership and operation of public utilities. Modern American cities, careful to preserve representative institutions in their purity, should be prepared for this public duty. The mere power of regulation has failed to prove an adequate remedy. In practice it is the opportunity of the corrupt and the corruptor. Corporations have their duties as well as their rights.

CAPITALIZATION IS NOT FICTITIOUS.

The apparent inflated capitalization of these gigantic corporations is in reality not fictitious. It actually exists and consists of two distinct parts: first, the indispensable portion contributed by the city, and, second, the part contributed by the corporation. The latter is its actual cost to the corporation and is the basis upon which alone it should be paid.

RISK OF OWNING PUBLIC UTILITIES.

Corporations engaged in handling public utilities incur no unusual risk. They are not, in the first place, obliged to go into that business, nor would the city seriously suffer without their aid. The ownership of all property is attended with risk. Aside from the continual vicissitudes of business,

private property is open to competition and may even be condemned for public use. The very magnitude of these corporations excludes ordinary competition. Furthermore, a reasonable interest upon their investments is guaranteed to them by judicial decree.

PUBLIC NECESSITIES NOT A FIELD FOR GAMBLING.

The necessities of the people are not a legitimate field for financial exploitation by private enterprise. Corporate greed should not be permitted to prey upon public bodies. The Government should see that the people are protected, not only against betrayal by their own servants, but also against invasion by corporations of their own creation.—James D. Phelan in *Merchant's Association Review*.

SUPERVISING ARCHITECT, TREASURY DEPARTMENT.

THE United States Civil Service Commission announces a competitive examination to fill the vacancy in the position of Supervising Architect of the Treasury. The salary of this position, which is one of the most important and responsible under the government, is \$4500 per annum, and it is hoped that architects of high attainments and reputation may be induced by these considerations to enter the competition. It is the desire of the Department to secure a practical architect of high administrative ability to direct and supervise the work of the office force as well as the contract work done on public buildings throughout the country.

Those who enter the competition will be required to submit:

First—On blanks to be furnished by the Commission, statements relative to their training, education, and technical experience.

2—Drawing or sketch plans, specifications, and photographs or other suitable illustrations of buildings designed by them as architects or constructed under their supervision as superintendents of construction; and other information relating to such buildings of which competitors will be advised upon inquiry of the Commission.

3—(a)—A thesis relative to designing and construction, and (b) a thesis relative to office administration.

4—In addition to the foregoing tests, competitors will be required to appear on September 10, 1897, at points convenient to their place of residence where the Commission has suitable accommodations, to undergo a test in formulating a scheme for competition for a public building and in criticising designs submitted to them for their guidance and inspection.

The information called for under each of the first three heads above mentioned must be forwarded to the Commission by each competitor on or before September 10, 1897. The test under the fourth head will be given September 10, 1897. The examination papers will be rated under the direction of the Commission by a board of distinguished architects.

Those who desire to enter the competition should write at once to the United States Civil Service Commission, Washington, D. C., for application blanks and other information relating to the examination.

DOOR KNOBS.

DOOR KNOBS, in the matter of shape, have gone through quite a series of changes and improvements. The original and simplest was the one of a circular outline; next came the oval outline, which fitted the shape of the palm of the hand better; finally for sake of variety we have the egg shaped. These several shapes have been ornamented in all imaginable styles or left perfectly plain. However, notwithstanding the perfection to which shape and ornamentation has been brought, the connection between the knob and spindle, or more strictly the means of holding the knob on to the spindle, has remained the same, namely, by means of a screw tightening up the two. This primitive method has always been a source of trouble or annoyance to all concerned—to the mechanic, when he screws it up, to the householder, when he wishes to take out the knob, for about that time it is very generally the case the screwdriver cannot be found, and to the tenant when he finds the knob rattling in his hands, giving him a sensation of want of stability which is not pleasant—or finds the worn screw drop out and leave the knob loose. Everything has a good side however, and the noise of the rattling serves as a notice when the baby wants to get into the room to its mother, which no doubt is conducive to the happiness of the baby but not to the peace of the mother.

In these latter days of the century, however, here comes an invention which does away with all these troubles and annoyances. The Weatherwax Door Knob is illustrated below:

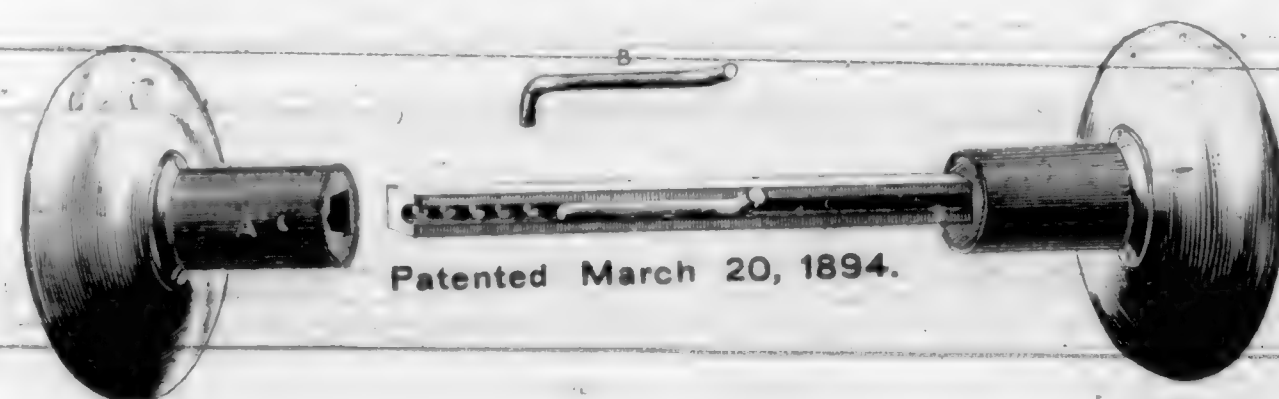


FIGURE 1.

Figure one shows the parts separately—A is the door knob and its shank—B is a small metal rod bent into the shape indicated and C is the spindle.

This is pierced with holes large enough to take the smaller leg of B—the small bent piece of metal aforesaid—these holes are $\frac{1}{8}$ " centres. At A in the shank is a small hole.

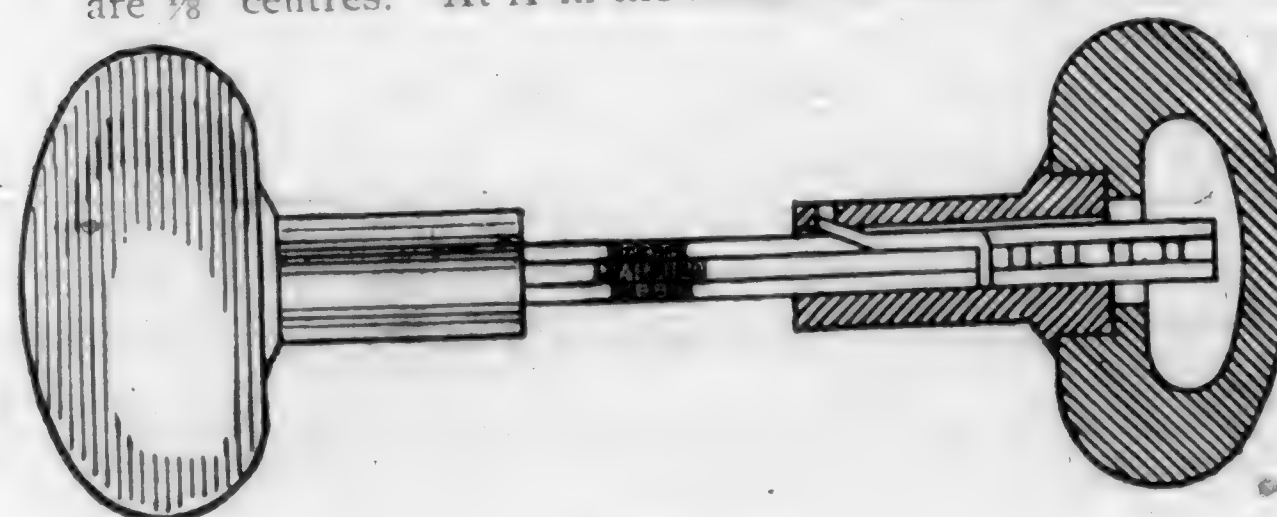


FIGURE 2.

Fig. 2, is a longitudinal section. It shows the knobs in position.

Fig. 3 shows the spindle before it is pushed into place. The method of fitting these knobs as follows:

After lock has been placed in position and escutcheon or roses have been screwed onto door, put the knob spindle through the door, then put the spring "B" in one of the holes in spindle; the free end of spring should just clear the

escutcheon or rose when swung around. If too short move up one hole, if too long cut off with file or nippers, then put knob on spindle and press into place, when it will securely lock itself.

To remove knob insert a small awl into hole "A" and press spring down, at same time pull gently on knob.

This gives a fixture which is perfectly tight and cannot be shaken or rattled.

It can be sold for the same price as the old style which is an important item these times. It must be more durable, as there is no screw to wear out, and in appearance the lack of the screw head leaves a smooth and more sightly shank:

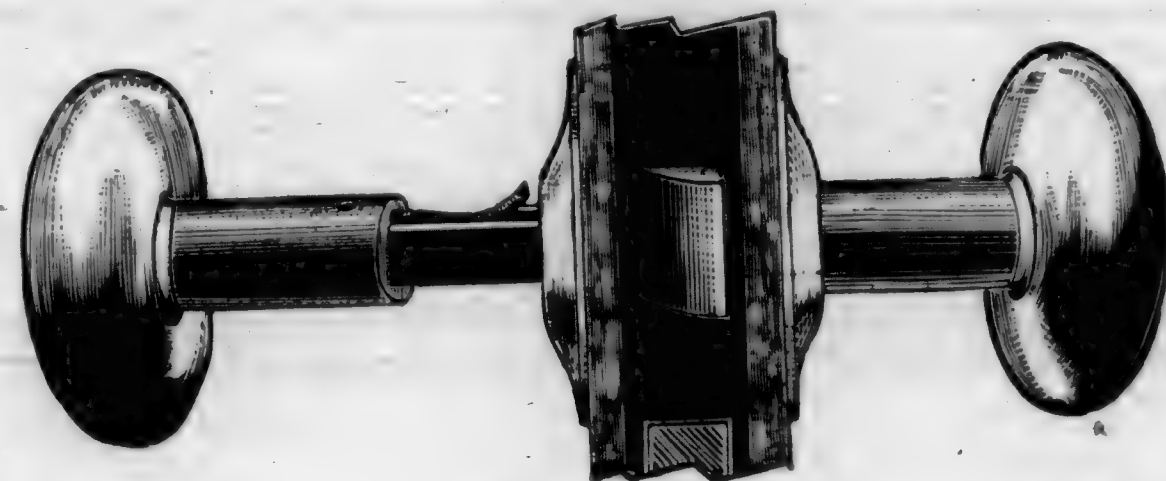


FIGURE 3.

it saves time and patience in applying or removing, and requires no tools except any awl shaped piece of wire which is found almost everywhere where knobs are.

Taking it altogether it does away with all the objections to the present system of door knobbing and is in line with the present trend of everything that is labor and time saving.

The spindle and shank of these knobs are made entirely of steel instead of cast iron, the material of which all the knobs now in use are made.

PLANS FOR THE UNIVERSITY OF CALIFORNIA.

REGENT J. B. Reinstein of the University of California has returned from Europe, where he went three months ago, accompanied by H. E. Maybeck, instructor in architectural drawing, to inspect university buildings and consult with prominent architects as to the plans for the new buildings to be erected at Berkeley. The architects generally regard the opportunity presented as one of the greatest ever offered in the history of architecture, for, in addition to the beauty of the site, the large area of the grounds, and their situation on a gently rising hill overlooking the Golden Gate, Mrs. Hearst has not restricted the amount of money necessary to obtain these plans.

Mr. Reinstein stated that there will be an international concurrence of architects, together with artists, sculptors and landscape gardeners, to bring about the best results. Prof. Gaudet of Paris, who has probably had the most extensive experience of any person living in this direction, is preparing the "programme," as it is technically called. This will give in detail the requirements of the University, together with the necessary data, maps and photographs, and will be finished within a month, when copies will probably be sent to the various architects of the world.

Under the arrangements as contemplated at present the architects will be requested to send in sketches of their plans at a given date, and these will be passed upon by a jury

consisting of one recognized authority each from France, Germany, England and the United States and a representative of the University, the understanding being that each architect submitting plans will receive some recompense. At least ten of the best sketches will be selected by the jury and the authors will be requested to elaborate their plans. The architects so selected will be permitted to name for additional members of the jury, and these nine jurors will select the ultimate plan. It is probable that there will be about thirty magnificent buildings in all, each of which will be built of marble or other stone. The completion of the work is not expected for many years.—*Mining and Scientific Press.*

THE MAGNETIC DIP OF ANCIENT TERRA-COTTAS.

BY THE CAVALIERE GIACOMO BONI [HON. CORR. M.].



THE DIP of a loadstone or magnetized needle was observed by George Hartmann, of Nuremberg, more than three centuries and a half ago, and was commented upon by him in a letter, dated 4th March 1544, to the Duke Albrecht of Prussia. The prototype of the modern dipping needle was constructed in the year 1676 by Robert Normak, and some measurements were taken with it by Gilbert of Colchester (1540-1603), the "Galileo of magnetism."

It is well known that the loadstone can transmit to iron with which it comes in contact a permanent property like its own, and that the earth itself, as a larger loadstone, produces the same effect; so that, by placing a non-magnetic bar of soft iron in the line of the magnetic meridian, with its axis in the direction of the earth's force (i. e. parallel to the line of dip), it will be magnetized inductively, in such a way that its lower end becomes a north pole, and its upper end a south pole. Usually a certain proportion of the magnetism remains after the inducing force is removed.

The phenomenon of magnetization is, however, not confined to iron, but becomes apparent in other materials of which it forms a very small constituent. One of these materials, the ferruginous silicate of alumina, happens to have been—both baked and unbaked—the most extensively used for architectural and domestic purposes, in the shape of bricks and pots.

The ferrous-ferric oxide, which constitutes the magnetic substance of baked clays, possesses a great coercive force, very little inferior to that of steel, that is to say, the power to store up and preserve the magnetic conditions under which it was baked.

Among these magnetic conditions, the most important, from an historic or even prehistoric point of view, is the magnetic inclination or dip: because, as it slowly changes according to what we must assume to be a natural law, we have in terra-cotta a material giving us data to ascertain the age in which some of the objects made with it were baked, and the means to trace or follow the track of this law in prehistoric ages.

Towards the end of the seventeenth century, says the *Journal of the Royal Institute of British Architects*, R. Boyle knew that terra-cottas were permanently loadstones, magnetized according to the direction of the terrestrial magnetism in the place and time they were baked. In the year 1862-63,

Gherardi published in our magazine, *Il nuovo Cimento*, some results of his experiences on the polar magnetism of brick-work in Turin, and of Etruscan and Roman terra-cottas, and announced the principle that baked clays retain magnetism in the same direction in which they first conceived it, even for centuries after they were baked.

The subject has lately been resumed, and some interesting experiments were made by Dr. Folgheraiter, the clever assistant of the Physical Institute of the Roman University, who has extended his researches to many instances of brick-work of ancient buildings, palaces, temples, thermæ, and tombs of Rome and the Campagna, and ascertained that even volcanic rocks employed by Roman architects, such as tufa and lavas, in the primitive walls of Roma quadrata, in the basement stairs of the temple of Vesta in the Roam Forum, in the round temple at the Bocca della Verità, in the walls of Servius Tullius, in the Claudian aqueduct, in the Colosseum, etc., so well retain the primitive magnetic direction that in some cases it points exactly to inverted poles. We may here mention that Melloni, in examining the fragments of leucitophire and of other lavas employed in the amphitheatre of Pompeii, found them magnetized in every possible direction.

In order to familiarize himself with the subject, and to collect data regarding the way in which terrestrial magnetism became fixed in terra-cottas, Dr. Folgheraiter manufactured a series of clay cylinders of different sizes, and vases of different shapes, and had them baked in a vertical position and at different inclinations (see *Rendiconti della R. Accademia dei Lincei*, classe di Scienze, anno 1896). Then he applied the results of these investigations to some vases of the Etruscan epoch, which judging from their shape, had been baked in a vertical position. In four terra-cotta *ciste* (eight century B. C.), preserved in the museum of the Villa Giulia, the south polarity was found prevalent round the base, and the north polarity at the top of the handle. *Oinochoai* of the same epoch gave the same results, which seem to prove that at the same and place where the vases were baked a magnetic needle would have dipped towards the south pole instead of the north one, as at present. The measurements made gave results which vary from $2^{\circ}29'$ to $25^{\circ}37'$, owing to the difficulty of making the corrections necessitated by the imperfections of the vases, and so could assign within very narrow limits the date of those vases, which from their peculiar shape had undoubtedly been baked in a vertical or otherwise determined position.

On the whole, the results of the investigations carried out at present on the history of magnetization point to the necessity of experimenting on materials which do not leave any uncertainty as to the date, place, and position of their baking. A series of such materials ought to be offered by brick walls which have been subjected to fire, such as the Great Council Hall of the Ducal Palace in Venice, burnt A. D. 1577, and of a great many buildings which suffered from the same cause, including some ancient Roman, and possibly even some Assyrian ones. Volcanic eruptions of historical date may also give us the means of ascertaining the magnetic dip, which they have fixed and embodied in cooling down into hard stone, and that which they have caused the structures to assume with which they came into contact, as is the case at Herculaneum.

Although some of these investigations can be carried out in Italy, their nature requires them to be extended over the largest possible field, and to the utmost limits of historic age. For this season I hope that the Royal Institute of

British Architects, recognizing the peculiar interest of the subject, and the possibility that some unhoped-for light may be thrown on the date of some important structures, or of the date at which the enemy destroyed them by fire, will ask its members to contribute a notice of such buildings that exhibit the magnetic dip produced at some period of their existence.

The cipollino columns of the Temple of Serapis at Pozzuoli have preserved for us a record of the geological changes of that territory. Let us hope that scientists may be able to point to some ancient monuments as historical archives of the law of terrestrial magnetism.

Note.—In studying the magnetism of terra-cotta vases, Dr. Folgheraiter has adopted the scheme of dividing into twelve parts the circumference of the base, and that of the mouth or upper rim of each vase (vases, be it understood, of symmetrical shape around a vertical axis at the moment of baking), and measuring the magnetism of each of these divisions of 30 degrees by means of a magnetic needle conveniently suspended and carrying a circular mirror, which serves for the reading of the variation by means of a theodolite.

The force of the positive and negative magnetism, the poles and the magnetic meridian of the vase being known, the magnetic inclination (dip) is reduced by calculating the resultant of the two vertical and horizontal components.

For instance, in subjecting to experiments a Greek amphora of the Museum of Florence, No. 1800 (about 650-500 B. C.), Dr. Folgheraiter read the following deviation:—

Around the base.	Around the upper edge (orlo).
+ 223°0	+ 211°0
178°0	179°0
121°5	130°0
8°0	44°5
— 119°5	— 66°5
215°0	134°5
223°5	147°5
190°5	118°0
147°5	74°0
1°0	+ 69°0
+ 149°5	155°0
+ 191°5	180°0

The maxima and minima of these numbers being considered to belong to the magnetic meridian of the amphora, the following diagram is obtained:—

$$+ 211^{\circ}0 \quad - 147^{\circ}5$$

$$+ 223^{\circ}0 \quad - 223^{\circ}5$$

the vertical component

$$= \frac{(223^{\circ}0 - 211^{\circ}0) - (-223^{\circ}5 + 147^{\circ}5)}{2}$$

$$= \frac{11 + 76}{2} = 43^{\circ}5$$

the horizontal component

$$= \frac{223^{\circ}0 - (-223^{\circ}5) + 211 - (-147^{\circ}5)}{2}$$

$$= 402^{\circ}5$$

the inclination of the magnetic force (dip)

$$= \arctg. \frac{43^{\circ}5}{402^{\circ}5} = 6^{\circ}11'$$



The management of this journal desires to extend a cordial invitation to all architects on this coast and elsewhere to contribute designs for publication.

Drawings should be made with perfectly black lines on a smooth white surface. Good tracings, if made with black ink, answer the purpose.

The designs selected will be published without charge. All drawings, whether accepted or not, will be returned to their authors, who must bear express charges both ways.

RESIDENCE for Ex-Congressman T. J. Clunie, N. W. corner of Fell and Lyon streets, San Francisco, Wm. Curlett, Architect.

STUDY for Small Church, W. J. Cuthbertson, Architect.

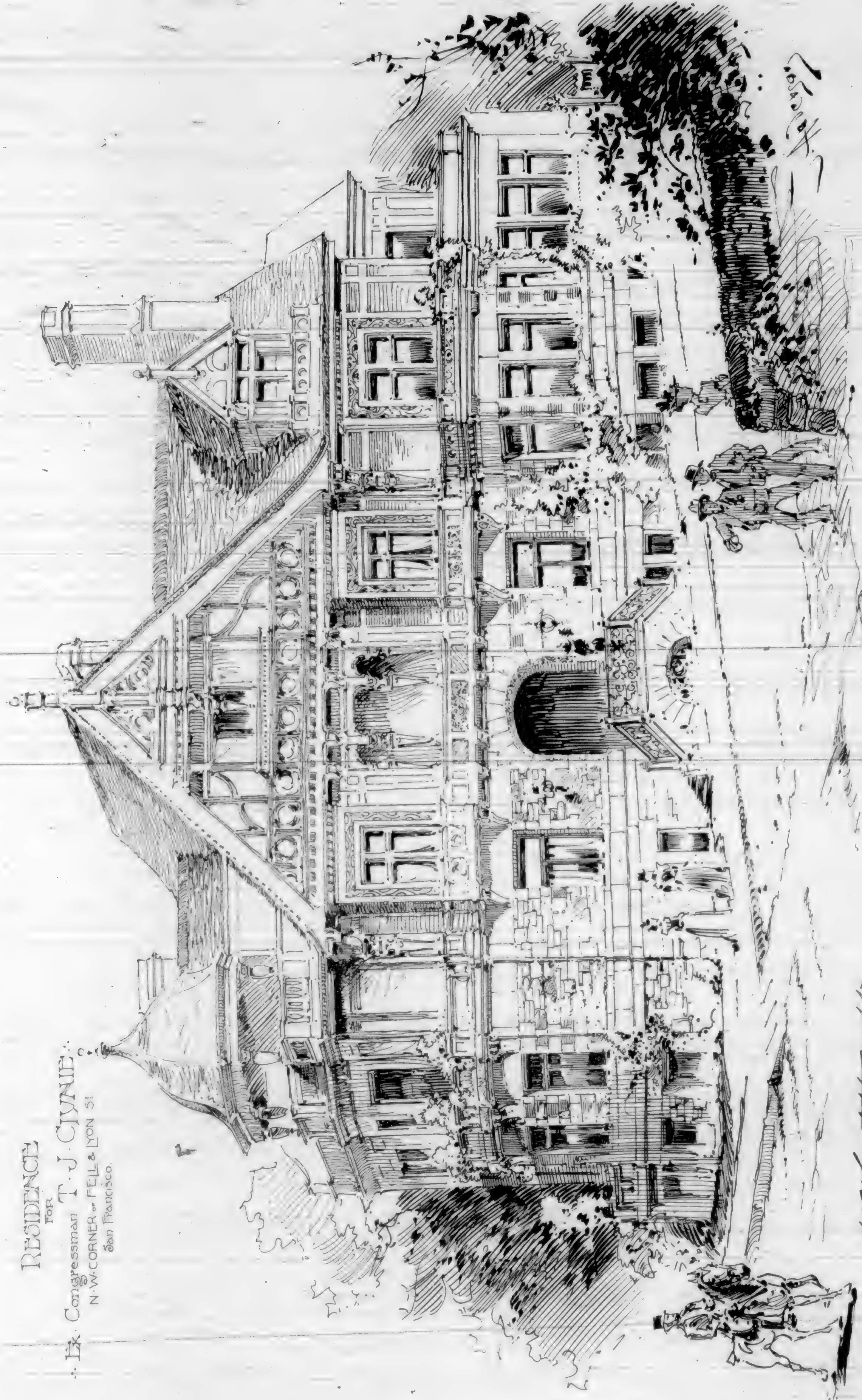
RESIDENCE for Mr. R. Spreckels, Pacific Ave. and Gough streets, Samuel Newsom, Architect.

COTTAGES, Samuel Newsom, Architect.

FIREPROOF BUILDINGS.

BUILDINGS can be erected that are fireproof and absolutely safe against the ravages of fire. The question has been thoroughly considered by architects and the numerous experiments that have been made of late have convinced them that they have good reasons for this belief. The great Pittsburg fire of May 3 affords an interesting field of study for the architects and a writer in the *Engineering News* has improved it. To realize the force of the conclusions drawn it is necessary to understand the character of the buildings burned. The fire broke out in a great grocery warehouse, which was slow-burning, but not at all fireproof, and filled with inflammable materials of great heat-producing qualities, like oil, molasses and hams. Separated from it by narrow streets were three office buildings of different types of fireproof construction. One had hard tile floor arches and covering for the steel framing, one porous terra cotta arches, and one concrete floor arch construction. The first named was a store, with an open front unprotected by iron

RESIDENCE
 FOR
 EX. Congressman T. J. CLEVELAND
 N. W. CORNER FELL & MON ST.
 SAN FRANCISCO.



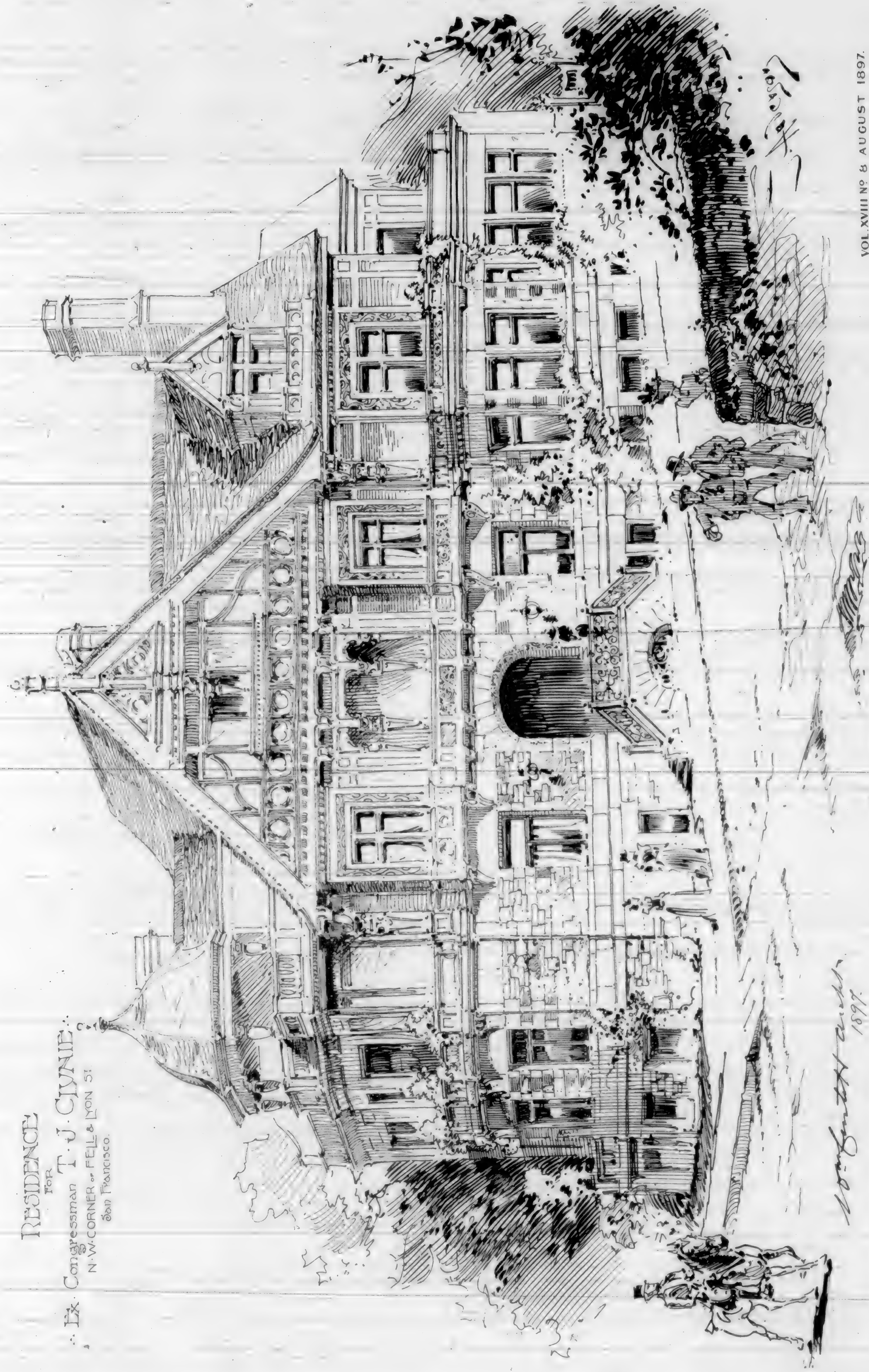
Longfellow
 1897

CALIFORNIA ARCHITECT & BUILDING NEWS
 SAN FRANCISCO.

BRITTON & REY PHOTOGRAPH

VOL. XVIII NO. 8 AUGUST 1897.

RESIDENCE
 FOR
 Ex. Congressman T. J. CLYNE
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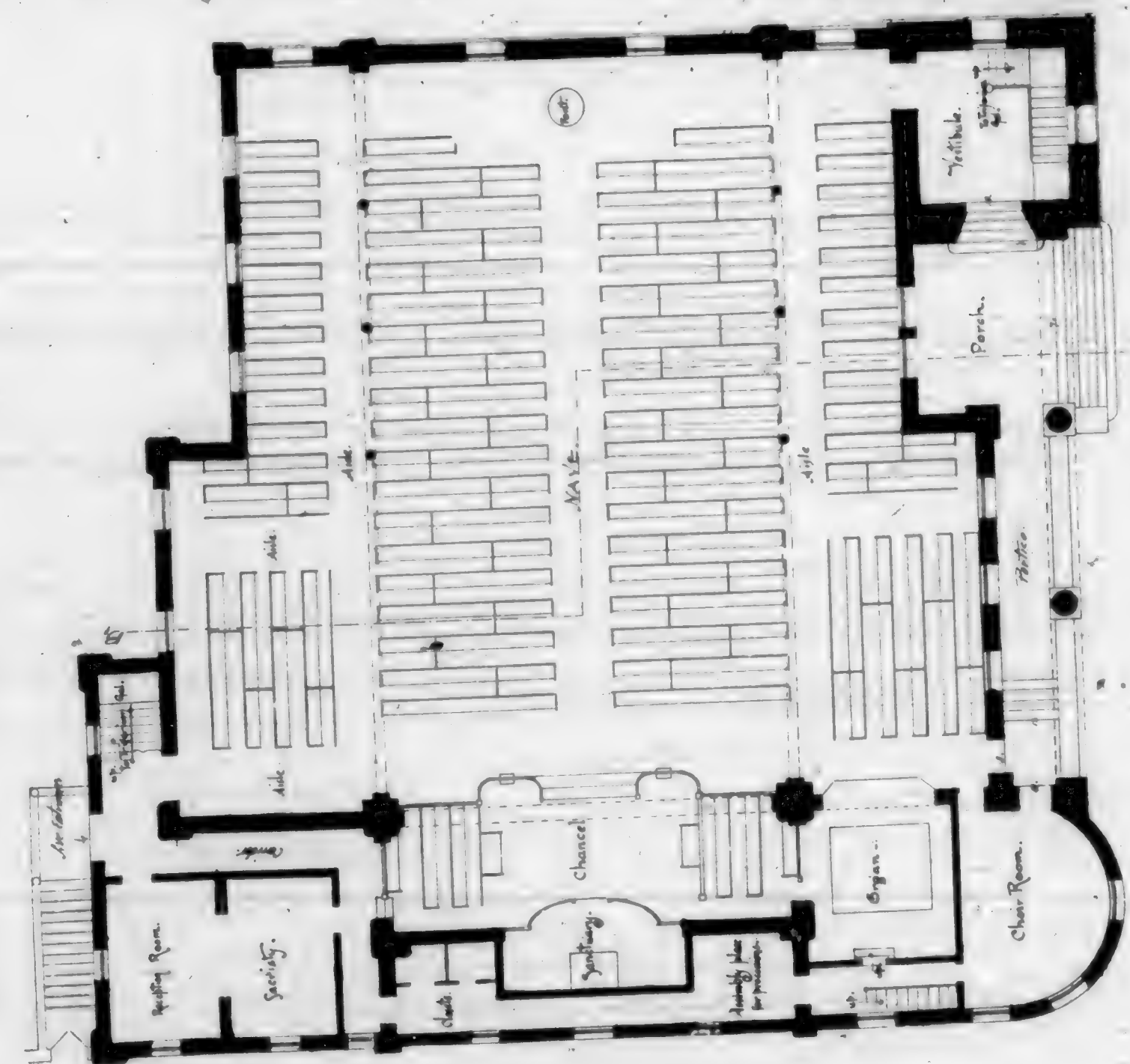
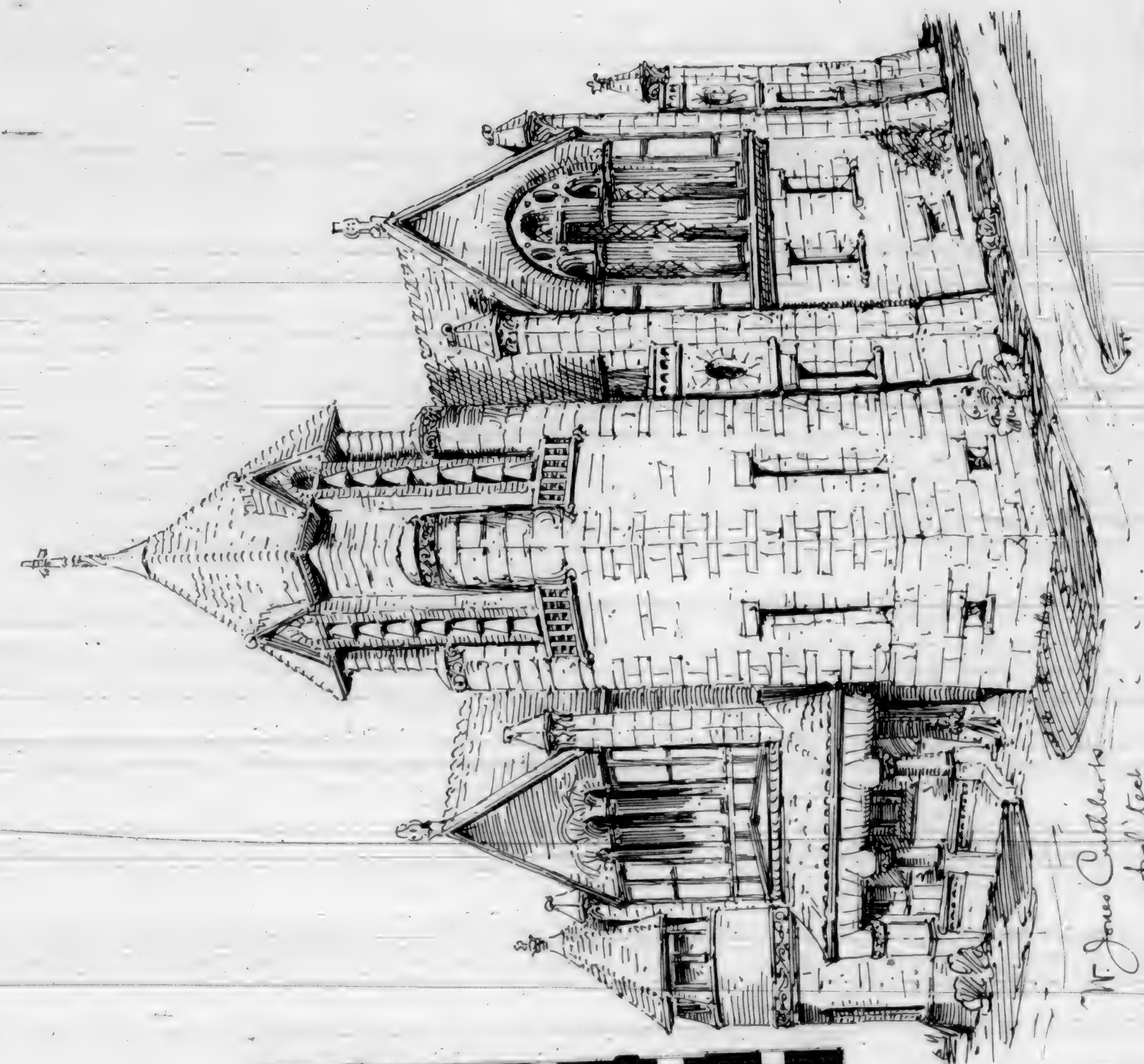
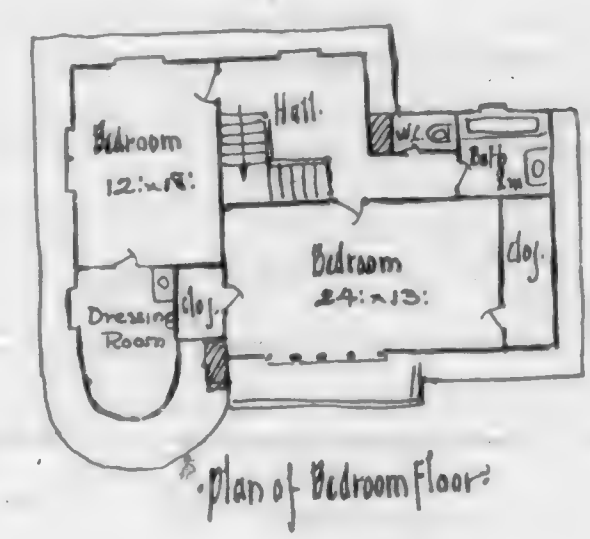
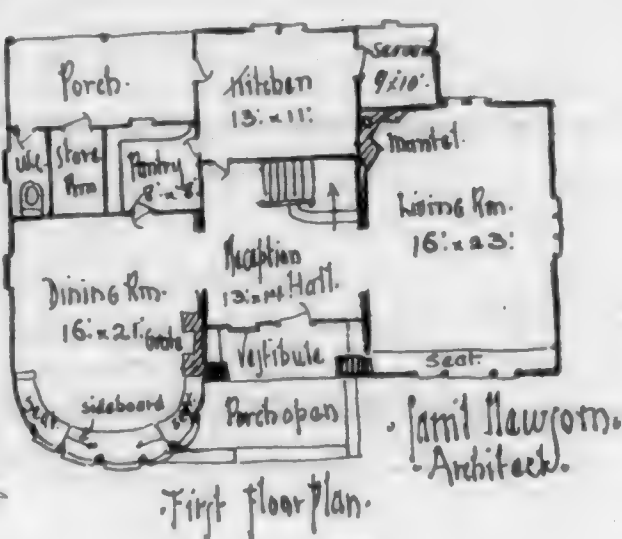
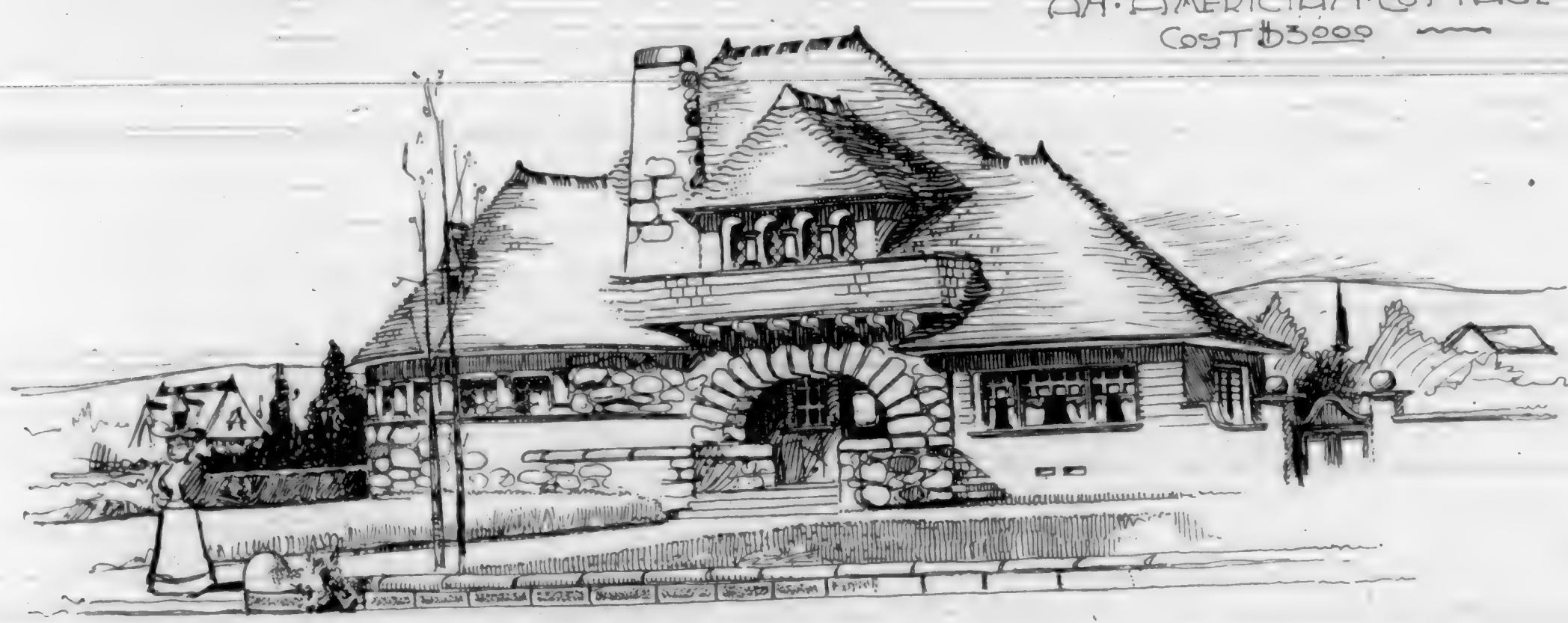
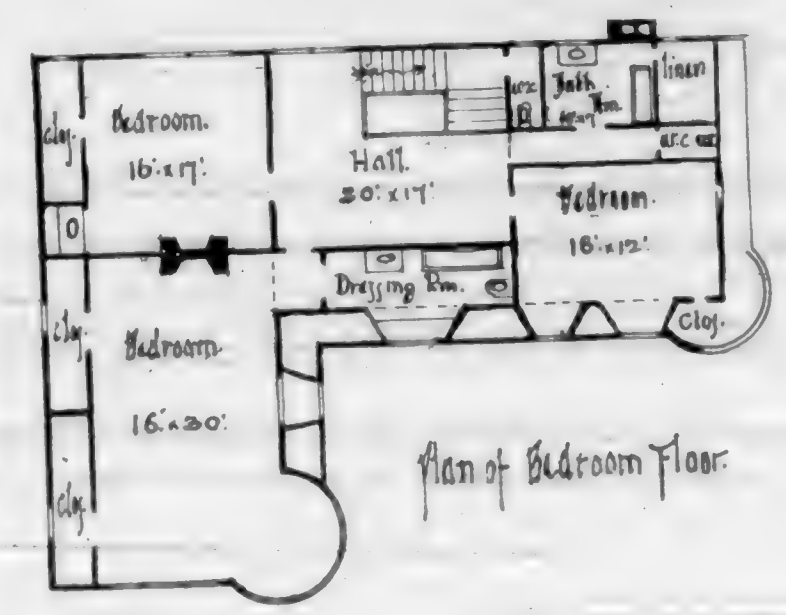
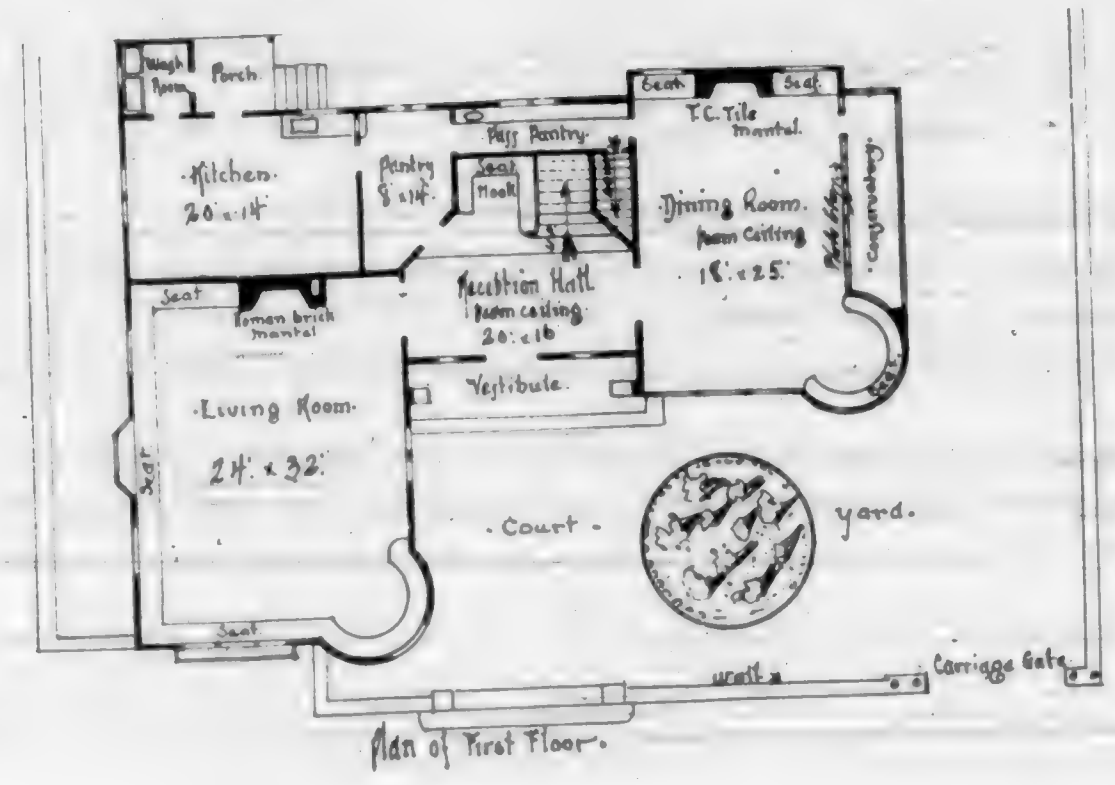


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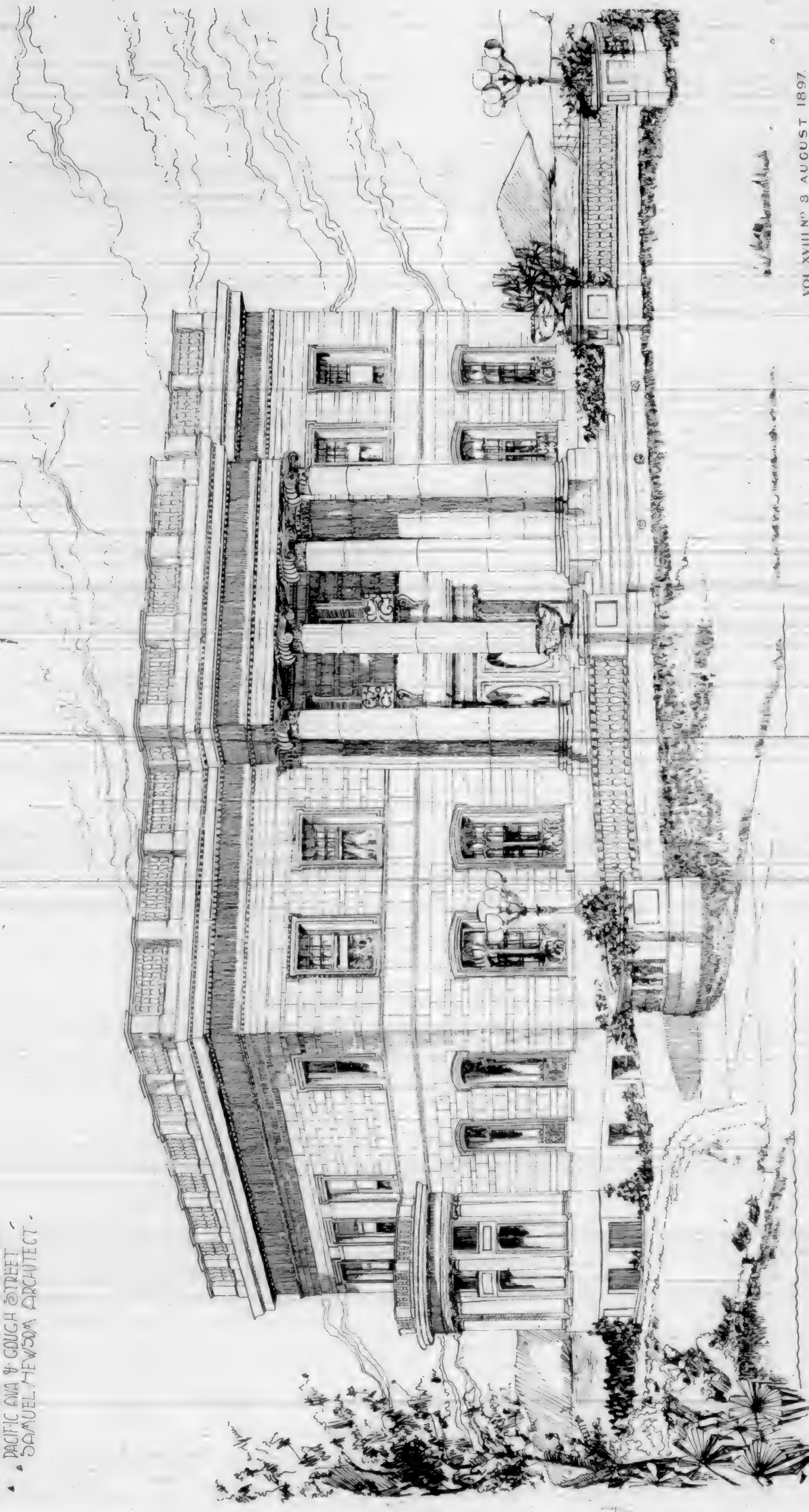
BRITTON & REE, PHOTOGRAPHERS

VOL. XVIII No. 8 AUGUST 1897.



SAINT JOHN'S EPISCOPAL CHURCH - OAKLAND -

RESIDENCE FOR MR. D. SPRICKLES -
 PACIFIC AVENUE & GOUCH STREET -
 SAMUEL HEWSON ARCHITECT.



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shutters and with floors undivided, so as to be practically a shell full of combustible material. The second was equally open and unprotected at the front, but had many four-inch terra cotta partitions, both longitudinal and transverse, above the ground floor. The third building was devided by wooden stud and metal lath partitions. While all three of these buildings suffered severely from the flames, the usefulness of the steel and terra cotta was revealed by a close examination of the buildings. The steel work, covered with terra cotta or concrete, suffered very little damage and the arches remained in position. All the buildings can be readily repaired. There was no twisting of columns. Of course, where fireproof buildings are full of light woodwork, as these seem to have been, the interiors will not be spared by the flames, and the natural conclusion is that it is absurd to call a building fireproof that contains any considerable amount of wood. In the case of these Pittsburg buildings, the flames found easy entrance because the large front windows and doors had no iron shutters. As soon as the glass cracked the interiors were doomed to destruction. It happened that the rear walls had small openings, with fireproof shutters. The iron in these was heated white and warped, but the flames went no further. The inflammable structures beyond were unharmed. Open floors in one building afforded plenty of opportunity for draughts, which spread the flames. Elevator shafts are especially dangerous in time of fire, but cannot well be dispensed with in tall buildings. The second building, by reason of its terra cotta partitions, suffered much less than the others. Terra cotta and concrete were both given a thorough trial at this fire and experts are unable to decide which better served the purpose of the builders. The chief necessity in fireproof buildings is to avoid unprotected openings in the walls through which the flames may enter; to provide fireproof partitions inside, and to enclose the elevator shafts, particularly at the bottom. After the architects have learned how to build an absolutely fireproof structure, they have still a harder task to convince the client who is paying for it that it is good economy for him to build as well as possible.—*Construction News.*

BOOKS AND PERIODICALS

We have received from the CALIFORNIA STATE MINING BUREAU, San Francisco, San Francisco, Bulletin No. 12, containing a list by counties of the mineral productions of California for the year 1896. Compiled by Charles G. Yale from direct returns by producers.

Any resident of California can procure a copy by applying to the State Mining Bureau, San Francisco, inclosing a one-cent stamp for postage.

Annual Report of the Board of Regents of the SMITHSONIAN INSTITUTION showing the operations, expen-

ditures and condition of the Institution to July, 1895. Washington—Government printing office, 1896.

This handsome volume of over 800 pages contains as usual a large amount of valuable information of a scientific and practicable nature appealing to the wants of the present time.

A description of the National Zoological Park with an illustration being a bird's-eye view of National Zoological Park from model; also a map of the locality showing adjacent properties give a very good idea of what has been done in the way of embellishment for this park in the District of Columbia. At present this park contains 520 animals on hand June 30, 1895—many of these animals were presented, some from Yellowstone National Park and some by exchange.

Space will not permit giving an extended review of this valuable work, but will call attention to an article that must attract a good deal of attention at the present time on account of our trouble with Japan—it is entitled "The Japanese Nation—A Typical Product of Environment."

AN OBNOXIOUS ORDINANCE.

THE RECENT ORDINANCE OF THE BOARD OF SUPERVISORS IN RELATION TO ROOFING.

WHAT ASPHALTUM MEN SAY.

THE RECENT action of the Board of Supervisors in passing an Amendment to the Ordinance in relation to roof covering on buildings in this city has occasioned a great deal of unfavorable comment and has been the leading topic of discussion among mechanics and all members of the building trades generally. Subdivision 1 of Sec. 30 of order No. 2927 has been amended to read as follows:

ROOF COVERING.

SUB. 1. The roof of all buildings hereafter erected within the fire limits, and the roofs of all brick or stone buildings hereafter erected within the City and County of San Francisco shall be covered with either metal, slate, tiles, terra cotta, or asphaltum, laid over felt, provided however that said asphaltum and felt shall be laid over a surface of either sheet asbestos, at least one-sixteenth (1-16) of an inch thick, tiling or other fireproof material, and shall in addition be covered with at least three-fourths (¾) of an inch of gravel screened through a screen the meshes of which shall not exceed one-half (½) of an inch square, to protect said roof of building from fire.

In Board of Supervisors, San Francisco, June 8, 1897.

After having been published five successive days, according to law, taken up and passed by the following vote:

Ayes—Supervisors Devany, Haskins, Delany, Sheehan, Lackmann, Morton, Britt, Smith, Rivers.

Excused from Voting—Supervisors Dodge, Rottanzi, Clinton.

This Amendment was vetoed by his honor, Mayor Phelan and returned to the Board on June 16th on the ground that such an ordinance savored too strongly of class legislation and was giving the members of one trade the power to make

the price of the labor of another. Despite the objections of the Mayor the order was taken up at the meeting of the board on June 28th and finally approved and passed by the following vote: Ayes—Supervisors Devany, Haskins, Delany, Sheehan, Lackmann, Rottanzi, Britt, Smith, Rivers. Noes—Supervisors Dodge, Morton, Clinton.

The Amendment, so it is claimed was prepared in the interest of the metal roofers of this city and was passed in direct opposition to numerous protests from property owners and the Asphaltum Roofers' Association; they are the most directly interested; as it is certainly an attempt to make asphaltum roofs less popular amongst owners owing to the additional cost, by the provision calling for asbestos or other fireproof lining beneath the felt. As this paper is committed to the defense of all home industries and home products, and as asphaltum is a very important product of this State, it was deemed proper to investigate the matter. The following interviews with some of the leading men in the Asphaltum Roofers' Association show that the sentiment amongst them is that they have been treated unjustly in the matter.

The Paraffine Paint Company is well and favorably known almost all over the entire civilized world, especially for their wood preserving preparations and fireproof roofing felt, and the universally known P. & B. Paint, which is conceded by all to be the greatest preservative paint ever discovered. The company has also been very successful with their pile covering material.

It is now nearly twelve years since this company prepared some of the piles for the Tiburon wharves and about three years ago they were inspected and found to be almost as perfect as when driven.

They are also interested extensively in the roofing business and also ship large quantities of refined asphaltum from their works, about 150 tons being exported by them to New York and Hamburg every year.

Mr. S. C. Irving, the manager of the company, who is also chairman of the Asphaltum Roofers' Association, when seen at the office of the company, 116 Battery street, expressed himself freely in relation to the ordinance and denounced it most forcibly as class legislation and against the interests of a particular line of trade, as well as a large number of taxpayers.

"All of the best buildings," said he, "were being covered with asphaltum and the metal workers commenced to kick, and backed by the International Metal Workers' Union and by the friendship of certain members of the Board of Supervisors, succeeded in having this ordinance passed. If allowed to stand it will add about \$2.00 per square to the cost of asphaltum roofs, making them as expensive, if not more so, than tin; by this means, the tin roofers think they can retard the growth of our trade, besides giving the California asphalt mining industry a slap, for the benefit of imported tin. Last year we mined in this State \$600,000 worth of asphaltum and that amount could be easily doubled if we had the market for it here. We filed a protest with the Board from property owners, signed by the largest real estate owners in the State, among which may be mentioned the following, as showing the class of taxpayers who favor our roofs: Union Iron Works, Crocker estate, Floyd estate, Sharon estate, Blythe estate, Pacific Imp. Co., Union Oil Co., etc.—but all to no avail."

Upon invitation, Mr. Irving appeared before the Board of Supervisors, who had agreed to grant the asphaltum men a hearing, but he was refused that simple courtesy; he, how-

ever, forwarded to the individual members copies of his argument against the adoption of the ordinance, in which he ably expressed himself as follows:

SAN FRANCISCO, June 8, 1897.

To His Honor, the Mayor, and the Hon. Board of Supervisors of the City and County of San Francisco.

GENTLEMEN:—As representative of the Asphaltum Roofers of this city, as representatives of thousands of dollars of capital invested in the roofing business, as representative of over one hundred workmen employed by the Asphaltum Roofers, I desire to emphasize the protests which have been submitted to you to-day concerning the proposed change in that part of the fire ordinance which relates to the covering of roofs.

Asphaltum roofs have been used in this city for more than thirty years, and a large percentage of the wholesale business portion of San Francisco is roofed with them, and never during that long period has the Fire Department, the Fire Underwriters or the property owners of San Francisco complained of them as being a menace to the safety of the city.

In the large cities of the East the fireproof qualities of an asphaltum roof are so thoroughly recognized that in Boston, Philadelphia, New York and Chicago, it is estimated that over 90 per cent of the business blocks, warehouses, mills and factories are roofed with asphaltum roofs. For more than thirty years the Underwriters of the United States have in their table of rates made no distinction between buildings covered with asphaltum.

In fact, gentlemen, to day among the better class of architects, among the most careful property owners, the asphaltum roof holds a firmer position than it ever did, and it is for this reason that the opposition on the part of the metal workers to this class of roof has been developed.

It cannot be claimed for a minute that the metal workers and the importers of English tin are the only persons interested in the prevention of fires in San Francisco. The three classes of citizens who are most deeply interested in this subject are the property owners, the fire underwriters and the fire department.

The property owners have not asked for any change in the ordinance. We have submitted here a protest signed by property owners representing millions of dollars of taxable property in San Francisco. These property owners express themselves as being satisfied with the present ordinance.

The fire underwriters of San Francisco state that so far as their rules are concerned a building is a first-class building where all its exterior walls are built of brick, stone, adobe or concrete, and has a metal, slate, tile or composition roof.

The fire department has not asked for a change to be made in this ordinance. Chief Sullivan has submitted his report to you, in which he states that during his long experience he has not known of a fire being communicated to buildings through asphaltum and gravel roofs.

To all these citizens referred to above, the present fire ordinance is satisfactory. This fire ordinance was the result of careful investigation carried on by the heads of the fire department for a number of years, and after consulting the fire ordinances of the different cities of the United States, and, if I mistake not, of Europe and Australia.

In the proposed change your fire committee had added as a prerequisite to the lawful laying of an asphaltum roof the use of a sheet of asbestos 1-16 of an inch thick. This requirement is unjust both to the asphaltum roofers and to the property owners of San Francisco. Its addition does not in-

SOCIALISM AND COMMERCIAL ART.

crease the durability of an asphaltum roof, nor does it add to its fire proof qualities, but it does add to the cost of the roof, and is an unjust tax on the property owners who desire to have their buildings covered with an asphaltum roof.

If, however, this asbestos sheet is deemed essential by your Honorable Body under an asphaltum roof, experience shows that it is doubly necessary under a metal roof.

As shown by the disastrous fire which took place not long ago, where the fire is under the metal, the solder of the joints soon melts and the metal sheets part and create draughts, which add to the fury of the flames. Had that building been covered with an asphaltum roof the roof would not have opened up, but would have remained intact until its supports had burned away, and then would have fallen with a crash, smothering the fire, and aiding the fire department in controlling the situation. That this would have been the result is shown by the statement made by Fire Marshal Swence of Chicago, who is the leading fire chief of the United States. He states: "I have seen all kinds of roofs tested and will say the standard Composition and Gravel roof from my experience will resist fire both inside and out more successfully than any other kind of roofing in use, except tile and brick when laid over a foundation of felt and composition. Taking all things into consideration, I think firemen can handle a fire more successfully under a gravel roof than under any other kind of a roof, except as above stated. The superiority of gravel roofs over those of metal placed over boards is best seen however when the fire is from the inside, in which case it not only serves to hold the fire in the building, but even when the support of the roof is completely burned away, the composition roofing in falling serves to smother the fire, while metal becomes loose and unsoldered under very little heat."

You, gentlemen, as property owners of San Francisco, and as citizens of the State of California, are anxious to promote the development of home industries, and yet the passage of this ordinance would mean to a large extent the destruction of vested interests, which employ a great number of men and keep considerable sums of money in circulation in this State, for not only do you discredit these products here, but you also discredit them wherever they may be shipped.

To take the place of these home products, you propose to compel the use of a foreign product, and a product which is hostile to this State's welfare, and for no other reason apparently than because a small class of self-interested individuals has asked for this change, individuals who are not interested in the safety of the City of San Francisco other than as far as it contributes to their private interests.

Now, gentlemen, in view of the statements made above, does it seem fair and just to us asphaltum roofers to pass an ordinance which is injurious to our interests and the interests of our clients, and for the benefit of another and smaller class of citizens? We think not, and we firmly believe that if your Honorable Body will carefully consider the case, it will deem that the best interests of this city and of the citizens of this city will lie in the maintaining of the present fire ordinance in relation to the covering of roofs.

We do not come here seeking your charity, but we do come here as the representative of a legitimate industry seeking justice.

Thanking you for the courtesies shown, we respectfully submit our case.

Respectfully submitted,
S. C. IRVING,
Chairman Asphaltum Roofers Ass'n.

—San Francisco Contractor.

AMONGST certain of our opponents no argument is more popular than that the advent of Socialism will mean the extinction of the artistic, a statement deducted from the fact that the Socialist propaganda generally ignores or contemns what is regarded as art in the present day. Such opponents, by seeming to prove their case so readily, doubtless influence the listening portion of an audience, and have a somewhat demoralizing effect even upon some Socialists. In the interest therefore, of the truth that looks below the surface of things, and to prove the unsoundness of this recurrent argument, it is necessary to enter somewhat fully upon the relationship which Socialism bears to the art of all time, as compared with that of the passing moment.

The stock answer to the statement is well known—that, whereas at present individuality is cramped into a groove and personal aspirations thwarted, Socialism will free both. The idea being that, while everyone must earn his living at the outset, the length of such working hours will be shortened, and facilities for development in any direction increased. It is further agreed that when an individual has shown such aptitude for producing work grateful to the senses as to fairly entitle him to be called an artist (in the specialized sense) he may be freed partly or entirely from the daily labor of "making his living," in order to devote his working hours to the beautifying of the public surroundings. Now, I consider that answer to be, in its way, perfect. Certainly it is merely general, but so is the criticism that called it forth. That which follows is put forward in the hope of affording a practical proof of this conclusion.

My first premise, that the opponent who makes use of the argument quoted has in his mind only what is technically called fine art (music, painting, sculpture and so forth), may readily be granted, the loose phraseology of the time ignoring the claims to that title of most forms of art other than these. That every town and village, every house and street and garden, should illustrate either the collective or individual artistic sentiment of man; that every room in its furniture, and every human being in its dress, remind one of the loveliness of humanity, or rather act unwittingly on the minds of people by sheer fitness, does not ordinarily, I am afraid, enter his thoughts. Yet in this lies the very reason of the existence of art at all. There is no veritable sense of art in a community which conceives it to be a specialization, a thing for the edification of mere individuals, and yet it cannot be denied that at the present day art, the original property and birth-right of everyone born into the world, has become a matter of deep interest to a few, and utterly unknown to the many. This is a complete reversion of the proper condition of things, and just as Socialism has as its chief end the readjustment of the material means of life in order to properly supply the just needs of all, so it must also readjust the distribution of interest in things beautiful. It needs, then, but a hint to show that, as Socialism is aiming at the root of the material capitalist system, it is (probably unconsciously) undermining all the art of the present day based upon that system. The parallel holds still further. Many Socialists speak of the coming communal state as a kind of reversion of what once was. It is pointed out that in savage communities the material necessities of life were held practically in common, and that state—modified by the advance already made—it is desirable to again realize through Socialism. At least one notable Socialist has put

his hand to it that in the realm of art also, that which has been must be again. The artistic Messiah who has so often visited the world, each time to die the death, must yet come again in a sort of glory to be lord over the earth. Both arguments are futile. The savage communal state can have no vital connection with the Social-Democratic community. Medieval art has gone its way, and not a hundred Morrises can make it the art of the age of true freedom. Let us descend to particulars.

In its architectural design. What have we to boast of here? Miles upon miles of the most hideous villadom conceivable, piles of great buildings with no vestige of original idea—being nothing but senseless travesties of classic work, and finally, the most satanic erections of any historic age whatever, the four-square respectable abominations they designate "workmen's dwellings." This is the age that imagines itself imbued with the art of all the ages combined? The thing is a lie, a sham, of a part with the whole great lie upon which the pinchfork edifice of commercialism rests, and as certain to pass away in due course as filth and putrefaction is bound to be dissipated by pure air and bright sunlight in its turn. It will be said, and with perfect truth, that, admitting all this sham art and commercial hideousness, there are still true artists and earnest workmen doing good work in the world, and by their efforts should the time be judged. That is not so. True artists exist in spite of, not because of, commercialism. The fact that the "Banner of the Ideal" which they uphold is yelled at by the world until it is threadbare and outworn shows the nineteenth century artistic conceptions to be as sordid as its money-grubbing aim. By the time your earnest enthusiasts have forced their way to recognition and public acclaim, their fire has abated, their banner a mere wreck of what was, their place in the van taken by new spirits, who are trampled down in their turn. We do not find in the Athens of the Golden Age commercial companies exploiting their slaves by building "workmen's dwellings." They had slaves, and may have treated them ill, but this last great insult they did not—why? Solely because the national artistic instinct was too sincere and deep. Not because their "hearts" bled for the deserving poor (as the lords and ladies who live by the labors of those same poor, would say); not because their heads told them that clean houses meant a lower death-rate all round, but simply because an ugly building hurt the artistic eye—not of a few individuals, but of the nation as a whole.

A. W. POWELL,
London "Justice."

LEGAL DECISIONS.

From a large number of Legal Decisions of the higher Court, of the different States of the Union, we select and publish in this column, such as appear applicable to this section of the country.

TESTIMONY BY ARCHITECT AS TO MATERIALS USED.—In a suit against the owner of a house by one to whom the contractor has assigned his claim subject to the claims of subcontractors and materialmen, the owner set up a defense that he had, since such assignment, paid sums due for certain materials. The court held that after proof that all of one class of such materials were furnished

by a particular subcontractor, the architect might testify as to the quantity of such materials used in the house.
McCormick v. Sadler, Utah, 47 Pacific Reporter, 667.

WHAT WILL NOT REVIVE LIEN.—The right of a laborer to a lien upon a building lost by the lapse of time cannot be revived by subsequent labor upon the building not performed by virtue of the contract with the owner.
Darrington v. Moore, Sup. Jud. Ct. Me., 34 Atlantic Rep. 419.

"OWNER" IN LIEN LAWS.—A party in possession of real estate under a bond for a deed will be deemed "the owner" of same for the purpose of creating a mechanic's lien upon it, as against a subsequent mortgagee of the same party.
Mulvane v. Chicago Lumber Co., Sup. Ct. Kas., 44 Pacific Rep. 613.

NOTICE OF MEETINGS.

SAN FRANCISCO CHAPTER, AMERICAN INSTITUTE OF ARCHITECTS, meets second Friday of each month at 408 California street,
W. P. MOORE, Vice-Pres.
SETH BABSON, Pres. JOHN M. CURTIS, Treas.
OLIVER EVERETT, Sec.

SOUTHERN CALIFORNIA CHAPTER AMERICAN INSTITUTE OF ARCHITECTS, meets first Wednesday of each month at 114 Spring street, Los Angeles, Cal.
THEO. A. EISEN, Pres. ARTHUR B. BENTON, Vice-Pres.
WILLIAM C. AIKEN, Sec't. AUGUST WACKERBARTH, Treas.

WASHINGTON CHAPTER AMERICAN INSTITUTE OF ARCHITECTS, regular meetings at 8 o'clock P. M., the first Friday of each month, except July and August.
JOS. C. HORNBLLOWER, Pres. JAS. G. HILL, Vice-Pres.
E. W. DUNN, JR., Sec. W. J. MARSH, Treas.

ASSOCIATION OF ARCHITECTS OF ARIZONA, meetings held at Phoenix, Arizona.
D. W. MILLARD, Pres. T. H. MADDOX, Vice-Pres.
W. R. NORTON, Sec. and Treas.

TECHNICAL SOCIETY OF THE PACIFIC COAST, meets first Friday of each month at Academy of Sciences Building.
E. J. MOLERA, Pres. W. F. C. HASSON, Vice-Pres.
OTTO VON GELDERN, Sec. EDWARD T. SCHILL, Treas.

MASTER PLUMBERS' ASSOCIATION, meets every first and third Friday of each month at the Flood Building.
JAS. E. BRITT, Pres. J. L. E. FIRMAN, Sec.

BUILDERS' EXCHANGE, Directors meet first Friday in each month at Mission and New Montgomery.
OSCAR LEWIS, Pres. JAS. A. WILSON, Sec.

MASONS' AND BUILDERS' ASSOCIATION, meet first Friday evening of each month.
ADAM BECK, Pres. M. V. BRADY, Sec.

BUSINESS MOSAICS.

Mr. James, the Pacific Coast representative of the J. L. Mott Iron Works can congratulate himself upon the fact that his company being established in 1828 has done more advance and improve the various branches of manufacturing in which they are engaged than any firm in their line of business. In proof of this statement we have only to examine the stock of goods in their show room 27, Flood Building, and compare it with that of others in the same line of business—for both room or kitchen—you will find what you want of the best. The motto of the firm appears to be "We take the front rank let others follow." Call and examine for yourself and you will be convinced of the truth of this statement.

Mike—I want to buy a hat. **CLERK**—Fedora? **MIKE**—No, not for Dora for Dinny.

Dixon's Silica Graphite Paint—In an examination of the Maria Kip Orphanage a few days since we could not but reflect what an improvement would have been made in the appearance of the building had the above paint been used for the roof instead of a bright red paint that has already faded. The lasting quality of the roof would doubtless have been greater to say nothing of the improved appearance.

"Why do you laugh at his jokes? It isn't possible you understand them, is it?" "No. But if I don't laugh, he'd try to explain them."—*Brooklyn Life*.

Bradley Bros.—Cement Laundry Trays, manufactured of the best Portland Cement, guaranteed not to leak, crack or sweat, can be found at their factory, 53-57 Tehama street between First and Second, San Francisco.

She—I don't know what makes her so positive? **HE**—Her sex.—*Puck*.

One can hardly walk in any direction in this city but they will find the use of cement has increased to an enormous extent in the past few years—sidewalks, garden walks, foundations and bulkheads all demand its use. W. R. Grace & Co., 203 California street are the headquarters of this article; if you want Josson, White Star, Scale, Comet, or any of the best brands of Portland cement 203 California street is the place to find it.

Man (in barber shop)—I want a hair cut. **BARBER**—Why not have them all cut?

P. & B. Building Paper manufactured by Paraffine Paint Co., 116 Battery street, San Francisco. By the use of this paper you not only obtain a first-class building paper, the company claim there is none "just as good," but you patronize home industry, a doctrine that is becoming quite universal in our city where there is an increased desire to build up home manufacture and thus keep our money at home stead of sending it east for the benefit of eastern manufacture.

CITY BUILDING NEWS.

A street near 7th Ave. Cottage; owner, Mrs. Mary Comasky; contractor, W. B. Kenny; filed, July 30; cost \$1230.

Alvarado near Hoffman Ave. Cottage; owner, J. Heyman; cost \$1500.

Brannan near 4th. Two-story frame; owner, Eliza Lamey; contractor, H. Munster; signed, July 15; filed, July 16; cost \$3800.

Broadway street No. 1210. Two-story frame; owner, George Goodman; contractor, G. M. Salisbury; signed, July 14; filed, July 16; cost \$2000.

Bush near Buchanan. Three-story frame; owner, Mrs. Bella Harris; architect, J. H. Littlefield; contractor, H. Jacks; signed, July 17; filed, July 21; cost \$3875.

California and Maple. Three-story frame and brick; owner, Hospital for Children; architect, A. C. Schweinfurth; contractor, Daniel Sweeny; signed, Aug. 2; filed, Aug. 10; cost \$7572.

California and Steiner. Three-story frame; owner, Israel Kashow; architect, Geo. A. Bordwell; contractor, B. F. Ellis; signed, July 20; filed, July 22; cost \$4461.

California Ave. near Courtland. Three one-story frame cottages; owner, J. M. Comerford; cost \$3000.

California and Laurel. Two-story frame; owner, Geo. F. Lyon; contractor, W. W. Rednell; signed, July 30; filed, July 30; cost \$4900.

City Hall Ave. near Park Ave. Two-story brick; owner, Wm. B. Craig; architect, Rowell & Collins; contractor, James Geary; signed, July 28; filed, July 29; cost \$3900.

Clay near Laurel. Two-story frame; owner, Walter S. Newhall; architects, Hermann & Swain; contractor, J. H. Simpson; signed, Aug. 2; filed, Aug. 4; cost \$3095.

Congo street No. 118, Sunnyside. Cottage; owner, E. T. Picasso; builder, H. H. Easter; cost \$1200.

Congo street No. 116, Sunnyside. Cottage; owner, F. Z. Angle; builder, H. H. Easter; cost \$1200.

Colma Gulch. Construction of a levee to contain 26,000 cubic yards; owner, Spring Valley Water Works; architect, Engineer of Company; contractor, A. E. Buckman; signed, July 30; filed, Aug. 2; cost 20 cents per cubic yard.

Diamond near 17th. Two-story frame; owner, Ida L. Dillon; contractors, Douglass & Co.; signed, July 30; filed, July 31; cost \$1500.

Dorland near Sanchez. One-story frame; owner, J. Egan; architect, O. Everett; contractor, R. Currie; signed, July 28; filed, July 28; cost \$1650.

Eddy and Franklin. Changing two-story residence into two separate buildings; owner, Callaghan Estate Co.; architect, C. M. Rousseau; contractor, G. C. Nall; signed, Aug. 3; filed, Aug. 5; cost \$4975.

Turk near Mason. Excavation, brick work, etc., for three-story brick; owner, Geo. G. Burnett; architect, James E. Wolfe; contractor, M. V. Brady; signed, Aug. 3; filed, Aug. 4; cost \$5000.

Turk near Mason. Steel beams, etc.; owner, G. G. Burnett; architect, Jas. E. Wolfe; contractor, California Iron Construction Co.; signed, Aug. 6; filed, Aug. 9; cost \$1460.

Union and Vincent. Two-story frame; owner, Jas. B. Wiseman; architect, D. C. Coleman; contractor, D. P. Benson; signed, Aug. 3; filed, Aug. 4; cost \$2310.

Eddy and Mason. Stage in the Olympia Theatre; owner, A. Walterstein; architects, Salfeld & Kohlberg; contractor, H. Behrens; signed, Aug. 4; filed, Aug. 5; cost \$1500.

Eighteenth near Collinwood. Cottage; owner, Mrs. Clara Bennett; contractor, G. L. Bergren; signed, June 19; filed, July 15; cost \$1048.

Eighteenth near Diamond. Frame building; owner, M. J. Barto; contractors, Sarcander & Thompson; signed, July 10; filed, July 17; cost \$1200.

Ellis near Gough. Two-story frame; owner, Matthew Schwann; contractor, C. Zwiernick; signed, July 16; filed, July 16; cost \$5500.

Fell and Lyon. One brick and frame residence; owner, T. J. Clunie; architect, Wm. Grier; contractor, Wm. Linden; signed, July 20; filed, July 20; cost \$1812.

Fell near Cole. Plumbing, gas-fitting, etc.; owner, M. Keating; architects, Cahill & Condon; contractor, G. C. Sweeney; signed, July 20; filed, July 20; cost \$1439.

Filbert and Bay. Addition to wharf; owner, Board of Harbor Commissioners; contractor, J. A. McMahon; cost \$965.

Filbert near Steiner. Two-story frame; owner, Mrs. Margaret McBride; contractor, H. T. Grieb; signed, Aug. 6; filed, Aug. 7; cost \$2000.

Flood Ave. No. 16, Sunnyside. Cottage; owner, J. D. Moreland; builders, McCarthy Co.; cost \$1200.

Folsom near 23d. Alterations and additions; owners, John A. and Wm. McCormick; architects, Hermann & Swain; contractors, Smith & Ely; signed, July 31; filed, Aug. 2; cost \$710.

Fourth Ave. near Clement. Cottage; owner, William Alpen; architect, L. T. Fenn; contractors, Weste & Fenn; signed, June 12; filed, July 17; cost \$1536.

Francisco near Dupont. Cottage; owner, W. H. Milestone; contractors, Morgan & Jackson; signed, July 8; filed, Aug. 3; cost \$1525.

Front and Pacific. Two brick ree lovens; owner, Standard Biscuit Co.; architect, H. B. Magee; contractor, J. A. Wilson; signed, July 17; filed, July 17; cost \$3885.

Geary and Stockton. Interior store finish, etc.; owner, City of Paris; contractors, Home Manf. Co.; cost \$12,000.

Grove near Fillmore. Two-story frame; owner, John L. Koster; architects, Martens & Coffey; contractor, C. Schult; signed, July 15; filed, July 15; cost \$10,300.

Golden Gate Ave. near Lyon. Two-story frame; owner, Louis Klefer; architect, C. M. Rousseau; contractor, R. J. Favert; signed, July 16; filed, July 16; cost \$3290.

Golden Gate Ave. near 1st Ave. One-story frame; owner, Harry Simpson; contractor, A. Dahlberg; signed, July 26; filed, July 26; cost \$1085.

Greenwich near Stockton. Two-story frame; owner, Mrs. L. Thiel; architect, G. A. Berger; contractor, J. B. Penz; signed, Aug. 5; filed, Aug. 6; cost \$2400.

Hardy near 16th. Two one-story frame cottages; owner, J. M. Comerford; cost \$3000.

Hancock near 18th. Inside finish, painting, etc.; owner, T. A. Birmingham; contractor, R. Fahy; signed, Aug. 9; filed, Aug. 10; cost \$510.

Harper near 30th. Cottage; owner, M. S. Moe; contractor, Ed. Stephens; signed, Aug. 6; filed, Aug. 11; cost \$1500.

Hoffman Ave. near 24th. Two-story frame; owner, Christina M. Dettner; contractor, L. F. Williams; signed, Aug. 3; filed, Aug. 4; cost \$1225.

Hyde and O'Farrell. Alterations and additions; owner, Mark Sheldon; contractor, C. W. Duffie; cost \$1000.

Jackson near Buchanan. Mantels and wood finish for two-story frame; owner, L. and E. Emanuel; architect, W. H. Lillie; contractor, L. Stassberger; signed, July 16; filed, July 31; cost \$1838. Plumbing; contractors, Ickelheimer Bros.; signed, July 6; filed, July 31; cost \$1340. Painting; contractor, J. H. Keefe; signed, July 7; filed, July 31; cost \$1215.

Joost Ave. No. 42, Sunnyside. Cottage; owner, Mrs. Laura J. Woods; builder, H. H. Easter; cost \$2000.

Joost Ave. No. 215, Sunnyside. Cottage; owner, W. A. Hicks; builder, H. H. Easter; cost \$1200.

Kearny and Sutter. Plastering, etc.; owners, Adams Co.; architect, H. A. Schulze; contractor, Jesse E. Steere; signed, July 22; filed, Aug. 2; cost \$2558. Electric lighting; contractor, Electric Lighting Co.; cost \$1920. Painting; contractor, R. J. Goltz; cost \$2750.

Laguna near Filbert. Two-story frame; owner, Joseph Reich; architects, Salfeld & Kohlberg; contractor, L. M. Weisman; signed, July 17; filed, July 19; cost \$1540.

Leavenworth near Filbert. Alterations and additions; owner, F. Passe; architects, Salfeld & Kohlberg; contractor, H. Behrens; signed, July 29; filed, July 31; cost \$2000.

Lombard near Gough. Cottage; owner, H. Krause; architect, C. A. Meussdorffer; contractor, F. L. Beach; signed, July 12; filed, July 17; cost \$1400.

Market and Spear. Carpenter work, etc., for five-story brick; owner, W. W. Young; architects, Kuntzer & Barth; contractor, A. C. Hussey; signed, July 21; filed, July 21; cost \$8126. Brick and terra cotta work; contractor, Richardson & Gale; cost \$14,570. Steel and iron work; contractors, Western Iron Works; cost \$26,370. Terra cotta work; contractors, Gladding, McBean Co.; cost \$8250. Concrete work; contractor, G. Goodman; cost \$11,580. Excavations, piling, capping, etc.; contractors, Healy, Tibbitts & Co.; cost \$10,572. Cut stone work; contractors, Raymond Granite Co.; cost \$11,265. Plumbing and gas-fitting; contractor, W. F. Wilson; cost \$1080. Fire proof floors; contractors, San Francisco Fire Proofing Co.; cost \$9947.

Market and Noe. Seven stores and a church tower; owners, Trustees Trinity M. E. Church; contractor, John O. Dyar; signed, July 15; filed, July 16; cost \$3125.

Market near Taylor. Three-story brick; owners, Silverman Bros.; architect, M. J. Lyon; contractor, W. J. Field; signed, July 24; filed, July 27; cost \$1000.

Market near 4th. Alterations to Emporium Building; owner, The Emporium and Golden Rule Bazaar; architects, Pissis & Moore; contractor, F. W. Kern; signed, Aug. 2; filed, Aug. 3; cost \$2515. Fixtures in stock room; contractor, Fred Miller; signed, Aug. 2; filed, Aug. 3; cost \$3125.

Maple street. Two-story frame; owner, M. Mamuth; architects, Kuntzer & Barth; contractor, G. Peterson; signed, Aug. 6; filed, Aug. 11; cost \$2545.

Montgomery and Sutter. Plumbing, etc., for three-story brick; owner, A. L. Whittell; architects, Townsend & Wyneken; contractor, W. E. Wilson; signed, July 15; filed, Aug. 3; cost \$1242. Galvanized iron work; contractor, J. Guilfofy; cost \$1000.

Montgomery street No. 419. Repairs; cost \$1000; days work.

Mission near 23d. Interior copper wainscoting; owner, Mission Masonic Society; architects, Hermann & Swain; contractor, Jas. Guilfofy; cost \$1200.

Pacific Ave. and Buchanan. Plumbing, etc.; owner, Albert Meyer; architect, Salfeld & Kohlberg; contractor, H. Williamson; signed, July 24; filed, Aug. 2; cost \$2014.

Peoples' Homestead Assn. Cottage; owners, Joseph J. Magee and Eliza J. Magee; contractor, T. F. Mitchell; signed, July 30; filed, July 30; cost \$1226.

Powell Ave. near California Ave. Alterations; owners, Lawrence Boyle and wife; contractor, A. O. Brown; signed, July 1; filed, July 15; cost \$1240.

Powell and Geary. Galvanized iron and tin work; owner, Mrs. Charlotte F. Clark; architect, P. Schwerdt; contractor, J. Guilfofy; cost \$1500.

Sacramento near Spruce. Two-story frame; owner, C. P. Fonda; contractor, P. River; signed, July 19; filed, July 20; cost \$2009.

San Bruno Road near Erie. Cottage; owner, John E. Eberle; architect, D. C. Coleman; contractor, J. Kenealy; signed, Aug. 2; filed, Aug. 4; cost \$1145.

Scott near Fulton. One-story frame; owner, R. B. Kittrege; architect, W. O. Banks; contractor, A. G. Johnson; signed, July 27; filed, Aug. 3; cost \$1750.

Second Ave. near Clement. One-story frame; owner, Charlotte S. McLaughlin; contractor, M. C. Power; signed, July 15; filed, July 18; cost \$1600.

Seventh and Mission. Excavation for Post Office; owner, United States of America; architect, United States Architect at Washington; contractor, San Francisco Bridge Co.; cost \$36,830.

Sixteenth and Mission. Alterations and additions; owners, Pattison Co.; architects, Martens & Coffey; contractor, K. Trost; signed, July 15; filed, July 17; cost \$5185.

Spreckels Ave. No. 1, Sunnyside. Cottage; owner, H. H. Easter; cost \$1200.

Stevenson near 13th. Two-story frame; owner, P. Strickert; architects, Salfeld & Kohlberg; contractor, L. Thoenges; signed, July 15; filed, July 15; cost \$2320.

Stevenson near 3d. Concrete work for powerhouse; owner, Claus Spreckels; architects, Reid Bros.; contractor, Gray Bros.; signed, June 28; filed, July 17; cost \$3020; with addition of 15 cts. persquare foot for basement floor.

Stevenson near 3d. Excavations, stone and concrete work for two-story brick; owner, San Francisco Gas and Electric Co.; architect, Engineer of Co; contractor, J. H. Wilson; signed, July 28; filed, July 29; cost \$6917. Carpenter and mill work; contractors, Campbell & Pettus; signed, July 28; filed, July 28; cost \$1188. Roofing, etc.; contractors, Henshaw Grant Co.; signed, July 28; filed, July 28; cost \$375.

Tenth near Harrison. Two-story frame; owner, Mrs. Susan McClasky; contractor, John Flaherty; signed, July 26; filed, July 26; cost \$1700.

Thirteenth Ave. near Lake. One-story frame; owners, Henry and Augusta Pape; architect, H. Hess; contractor, A. G. Anderson; signed, July 17; filed, July 24; cost \$1804.

Thirteenth near Stevenson. Two-story frame; owner, Mrs. Julia E. Spinney; architect, C. M. Rousseau; contractor, P. L. Roberts; signed, July 31; filed, July 31; cost \$3050.

Thirtieth near Merced. Cottage; owner, Chas. T. Jurgens; architect, C. Koenig; contractor, Chas. J. N. Koenig; signed, Aug. 3; filed, Aug. 4; cost \$1220.

Turk near Scott. Additions; owner, H. Miller; contractor, H. Behrens; cost \$1000.

The California Architect and Building News.

SAN FRANCISCO, CAL., U. S. A.

OFFICE, 408 CALIFORNIA STREET,

VOLUME XVIII.

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NUMBER 9.

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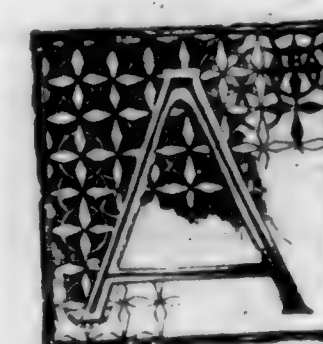
ESTABLISHED 1879. NOW IN THE EIGHTEENTH YEAR.

OLIVER EVERETT, Secretary.

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4 Inch.....	4 00	12 00	22 00	40 00
5 Inch.....	5 00	15 00	27 50	50 00
6 Inch.....	6 00	18 00	33 00	60 00
7 Inch.....	7 00	21 00	38 50	70 00
8 Inch.....	8 00	24 00	44 00	80 00
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10 Inch.....	10 00	30 00	55 00	100 00

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ZOOLOGICAL Garden in the City of San Francisco is no doubt a very good idea and the wish for it should be gratified at as early a date as possible. All cities of the size of San Francisco should be provided with such gardens.

But a greater desideratum yet is the provision of small gardens for recreative purposes scattered amongst the residence part of the city. Fortunately the layers out of the city were farseeing and liberal and provided a number of these in the northern half of the City but for some reason or accident left the Mission district unprovided for. Now this matter wants attending to at once, before the prospective rise in real estate takes place—there is no doubt there are some vacant blocks yet left, that could be had cheap—e. g., there are some steep hilly places which it is very costly to cut down so as to make possible for dwellings; these could be

made very picturesque parks.

However the agitation for any grounds that involve any large amount of money now is out of place—for the wants of our sick and destitute are of paramount importance over any matter of mere pleasure or even scientific interest. The accommodation required foremost at this time is a good public hospital built with all the appliances and arrangements which characterize a modern hospital, and made such a place that citizens should be able to go there without fear and dread as they go to the present one.

Meanwhile, notwithstanding the shocking state of our present hospital, much could be done in regulating it; and those unfortunate enough to need its use should be treated humanely and courteously and not be at the mercy of any tyro of a medico who may have charge of a patient's case, neither should his recovery be jeopardized for the sake of an exhibition for medical students.



THE FOLLOWING editorial, under the title "Peddling Bids" recently appeared in the *California Contractor*.—"Sub-contractors have a very just cause of complaint in a system which appears to have recently grown up among contractors of pressing or sweating their sub-contractors in a novel and unprofessional manner. They call for bids on a certain job and receive a number from sub-contractors. They then take the lowest bid and go to the man who is next lowest and showing it to him, ask if he cannot get down a notch lower than that; this particular sub-contractor consents to give him a lower bid. This bid is then used to operate the same way on the first mentioned contractor, who figures his bid down lower still and so gets the job, not, however, till about all the profit is squeezed out of the job and the figures at which the work is taken come to be dangerously near presenting a margin of loss to the contractor.

"Of course no reputable contractor would do such a thing as this yet the fact is that it is done by some. It is difficult to see how this sort of business can be prevented except by ascertaining the identity of those contractors who do this thing and letting them become known, then securing an agreement among the sub-contractors not to figure on any of their jobs. Perhaps if they were known, the architects might hesitate before they would award a contract, for one who would act quasi dishonestly would not have far to go to act dishonest all the way, should the opportunity be favorable. The understanding, when a bid is handed in, of course, is that each man is to stand upon what he has offered and if the sub-contractors who are solicited to give a lower bid would resolutely refuse to do so, of course that would settle it. But the severe competition in business these time forces men to take work almost for the sake of keeping at doing something and they are loath to let any opportunity go however scant such may be. Peddling bids is one of the products of the times. In good times men would neither attempt it, nor respond to the solicitations."

The evil complained of by our contemporary is an evil inherent in our system of so-called civilization. It is the logical and inevitable result of competition, and as long as competition rules our business life as it does to-day, there will be no hope of a better condition of things.

The work undertaken by the original contractor is frequently obtained only through similar means to those he in turn is forced to use towards his sub-contractors. Business is done on the principal of "Do your neighbor, or he'll do you." A modern novelist has just written a book to prove that a christian life cannot be lived under existing conditions. The fact is too self-evident to need argument. Such being the fact, is it just to blame the individual instead of the system of society that is the true cause of the trouble. Suppose nine-tenths of the contractors and a similar proportion of the sub-contractors should agree to change their methods and stand out for a proper price, what would be the result? Simply that the other one-tenth would secure a practical monopoly of the work. Nor is this true of any one line of business only; it is universal. Read the following statement by John P. Altgeld as another illustration:

"During the strike of 1894 one of the largest operators in Illinois stated that he had some excellent men in his employ, who had families to support, who were sober and industrious, and who had not been able to make over \$8 a month for a year past. The majority of the operators were not to blame; they had to compete in the market in order to sell their coal; they had their money invested in mines and in mining machinery; they found that a few unscrupulous and conscienceless men had taken advantage of the hunger of the miners and got them to go to work at starvation wages, and were thus able to put their coal upon the market at

greatly reduced prices. This forced the honest, humane, honorable men engaged in the mining business to sell their coal at a similar price or go out of the business, and the result was they likewise had to reduce wages. So that it was the unscrupulous and conscienceless men who fixed the wages."

PORTLAND CEMENT.

BY RICHARD TAYLOR—READ BEFORE THE GORDON COLLEGE SCIENCE CLUB.



ALTHOUGH Portland Cement is the subject I intend making a few remarks about, I will, in the first instance, leave the word *Portland* out, and say a few words about cement. Cement is a substance which is capable of assuming a liquid form, and of being applied between the surfaces of bodies so as to unite them firmly when solidifying, such as glue, paste or shellac, but the cement I wish to speak about is one which has for its chief constituent carbonate of lime; in fact carbonate of lime and cement are so closely allied that it is impossible to speak of one without touching upon the other; therefore I will first of all direct your attention to carbonate of lime.

Carbonate of lime occurs as a mineral in all geological ages, and it is very widely and abundantly distributed all over the globe. In its natural state it is largely used for building purposes, and when burnt it becomes quicklime, which is used for hundreds of different purposes in our arts and manufactures.

Limestone is divided into many qualities but for the present purpose I will only make three divisions:—

- 1st. The fat or rich.
 - 2d. The poor.
 - 3rd. The intermediate or hydraulic.
1. Fat or rich lime is that which is most free from foreign matter; when water is poured on a piece it hisses, crackles, and swells, gives off a quantity of hot vapor, and quickly falls to pieces. It increases two or three times in bulk, and if placed in a vessel of water, it falls to the bottom and always remains soft.
 2. Poor lime does not increase in bulk when water is poured over it, in fact water scarcely affects it at all; neither does it harden the water.
 3. Intermediate or hydraulic lime develops no heat when water is poured over it, nor does it increase in bulk; when, however, it is placed in a vessel of water it becomes a hard solidified mass after a few days, and will continue to harden for months.

To summarise these classes, we have

1. The fat or rich, which does not harden in water, and which will contain over 90 per cent of carbonate of lime.
2. The poor, which is in no way affected by water, and contains less than 50 per cent of carbonate of lime.
3. The intermediate or hydraulic, which when burnt and

ground sets in a hard mass when put in water, and contains from 70 per cent to 80 per cent of carbonate of lime.

Smeaton is undoubtedly the engineer to whom we are mostly indebted for our knowledge of hydraulic lime. His great work in rebuilding the Eddystone Lighthouse necessitated him using a lime that would set and become hard in water, and up to that period it was a somewhat doubtful point as to which limes did set in water; one of the commoner ideas was that the harder the limestone, the harder the mortar would ultimately become. Smeaton first tried experiments with a rich lime of undoubted repute for building purposes, but he found that when it was exposed to the action of water it was quite useless. During his searches in the various lime districts he stayed one day with a farmer who told him that the lime in his district was quite unfit for agricultural purposes, and what they used had to be carted a distance of forty miles. On enquiring as to the reason he was told that when the local lime was ground and put on the land it became quite hard after the first shower of rain. This was sufficient to give Smeaton a clue to work on, and he was not long in carrying out a series of experiments, which satisfied him that it was only the intermediate or hydraulic lime which became hard in water. He soon found that limestones containing about 70 parts of carbonate of lime were best suited for hydraulic purposes, and that the remaining 30 parts were an argillaceous clay. Further experiments were then made to see if it were possible to make an artificial hydraulic lime, and for this purpose a fat rich lime was taken and clay added until it became an intermediate lime—in other words, clay was added to a limestone of 90 per cent until it only contained 70 per cent of carbonate of lime. This, on being burnt and ground, set hard under water and gave a proof to Smeaton that the hydraulic properties of lime were due to its containing certain proportions of clay. These were the experiments that formed the foundation of our present knowledge and method of manufacture of cement and Portland cement.

About this time Roman cement came into use, and this is nothing more or less than an intermediate lime containing, perhaps, rather an excess of clay. It is made from a natural stone found on the east coast of England near Harwich, and called Septaria. There are large deposits of this stone all over England, and there is a small quantity of it to be found in Port Phillip Bay, at Mornington. Lias lime or Lias cement is another intermediate lime, which probably more closely resembles Portland cement in its constituent parts. None of these natural hydraulic limes were burnt at a high temperature; they were usually burnt at about the same temperature as ordinary lime. If by any chance any of the material was overburnt, it was thrown on one side as useless, so it was the aim of the burner to get as little overburnt material in his kiln as possible.

About the year 1824, a bricklayer name Aspdin, of Leeds, carried out a number of experiments with artificial hydraulic lime; by chance he ground up some of the overburnt parts—pieces which were burnt to a cinder and which, up to that time, everyone had been careful to exclude. He was surprised to find that these pieces not only set when put in water, but that they set infinitely harder than when only burnt to the same degree as ordinary lime. He was so satisfied that he immediately took out a patent for the manufacture of artificial hydraulic lime, and in his specification, when describing the process, he calls it "Portland cement." This is the first mention we have of Portland cement, and this industry, started in so small a way some sixty years ago

is now one of the great commercial industries of the world. In its early days it had many difficulties to contend with, especially from the makers of Roman cement, who opposed it by every means that lay in their power. Cases occurred where it failed to do its work, and in more than one instance it gave disastrous results, houses and walls that were built with it collapsing, until people were suspicious and afraid to use it. However, difficulties and troubles were one by one overcome, and many engineering feats which have since been executed, could never have been carried through without its aid.

Portland cement as manufactured to-day is in principle the same as that made by Aspdin, the only difference being in the details, but it is these details which constitute the difference between a good and a first-class cement. The name Portland cement is altogether misleading, and a better term would have been hydraulic or water cement. The name comes from its similarity in color and texture to a building stone extensively quarried at Portland, in the south of England.

To briefly summarize the process of manufacture, I will describe the method carried out at Fyansford as being in our immediate neighborhood. A rich lime containing about 90 per cent of carbonate of lime is thoroughly and carefully mixed with clay, and water is added for the purpose of moulding it into bricks. These bricks are dried and burnt in kilns until they become vitrified; the vitrified bricks or "clinker" are ground, and the resulting powder is cement.

Having roughly gone through the mode of manufacture, we now come to the point when it is delivered to the consumer, and also to the time when testing is requisite.

The tests generally specified are:

- 1st. Tensile strain.
- 2d. Soundness.
- 3rd. Fineness.
- 4th. Chemical test.

There are other tests, perhaps as equally important, but these four are the commonest.

The first test is carried out by making briquettes, which have a sectional area of one inch in the smallest part. These briquettes have to stand a breaking strain of 350 lbs. in 7 days, and 550 lbs. in 28 days. Some engineers require only 300 lbs., while others demand 400 lbs. in 7 days, but 350 lbs. and 550 lbs. will represent a fair average of the standard requirements. Care and manipulation are requisite in making briquettes, and I am sorry to say that instances have come under my notice in this colony where so-called experienced testers have not been able to get a breaking strain of one single pound out of a briquette, while, with proper handling, briquettes made from the same bulk, on the same day, in the same room, and with the same appliances gave a strain of over 400 lbs.

Briquettes are made in the following way:—the cement is gauged with a minimum of water, say from 15 per cent to 20 per cent, and it is put in brass moulds with all speed: the more quickly this operation is performed the better will be the results. For the first 24 hours they are covered with a damp cloth or put in a zinc-lined box—in any case they must not be put in the sun, or wind, or before the fire, so that the moisture can be dried out of them. At the end of the 24 hours they are put in water, where they remain until broken. When removed from the water for the purpose of testing, break them at once; if this operation is delayed an hour or two the breaking strain will be reduced. Such items as the temperature of the air, and of the water used, and the

speed with which the briquettes are made, affect the breaking strain.

I expect some gentleman present will say what is the use of all these tests; it is impossible to use cement in actual practice under such conditions, and it is unnecessary to get a cement giving a breaking strain of 550 lbs. to join two bricks together, when the bricks themselves are not half as strong. Now the object to be gained is to find out the very best results that can be obtained from a certain cement under the most favorable conditions. The foregoing are the standard tests, and provided ever sample is used in the same way, and under the same conditions, it is easy to get at the comparative values of the different brands.

It is a mistake to think that because a cement gives a high breaking strain at an early date it is therefore of more value than one which gives a low or moderate strain, for very often it is just the reverse. A cement that gives 650 lbs. in 7 days only gives 600 lbs. in 28 days, 550 lbs. in three months, and in this way gradually lose strength, until at the end of twelve or eighteen months it has all crumbled away, and has no more cohesion in it than sand. It is far safer to have a sample that will show a moderate strain at an early date, and slowly but continually increase in strength; say 350 lbs. in 7 days, 550 lbs. in 28 days, 700 lbs. in three months, and so on. High breaking strains are obtained by the admixture of a heavy percentage of lime; but it is quite possible to overstep the limit, and if your cement contains more lime than can be neutralized by the silicas, etc., you get free lime, which, while showing great strength to start with, ultimately disintegrates and rots the bulk away.

The test for soundness is an important one; it is carried out by making a small round disc, termed a "pat," about three inches in diameter and a quarter of an inch thick. Mix it with a minimum of water, work it up well, and put it on a piece of glass. This like the briquette, must be kept away from the sun, fire, or any hot dry place. At the end of 24 hours it is put in water and examined from day to day. If at the end of 7 days it shows no signs of cracks or blowing, you can pass it as sound; if, however, there are cracks, further examination is necessary to ascertain the cause. The chances are that the cement is too new and fresh, and if it is allowed to mature for a few days by spreading a sample out in a thin layer, these cracks will not appear with the next pats. If the cracks do occur again, be very chary about using the bulk.

Test for fineness. The usual specification is that it shall be ground so fine as to leave no residue on a sieve having 2500 holes to the square inch, and that not more than 10 per cent will remain on passing it through a sieve having 3,600 holes to the square inch. As a rule manufacturers grind to a far greater degree of fineness than this standard. The fineness of grinding largely determines its usefulness as a constructive material, for it is well known that the finer a cement is ground, the better will be the result obtained when mixed with sand. There is a growing demand for finer cement, but it must be remembered that finer grinding means extra wear and tear on the machinery, and consequently an increased cost.

The chemical test is often of corroborative value in estimating the properties of a sample; at the same time it is a test which is of more use to the manufacturer than to the consumer. The chief constituents of a cement are about—

Lime, 60 parts.
Silica, 24 parts.
Alumina and iron, 12 parts.

The remaining four parts are composed of alkalies, magnesia, and carbonic acid. The alkalies will not average more than 0.75 per cent, and although present in so small a quantity they play a very important part, as they form a flux for the lime and the silica.

You often hear the term "set" applied to cement. It is a very ambiguous one. "Set" usually means the ultimate hardness due to its nature attained by a substance originally in a liquid state. Cement, however, does not attain its ultimate strength for years, so the word in this case has a different signification. Cement sets in a few minutes, or hours; after that it hardens. A very common test to apply to cement to see if it is set is to press the pat with the thumb nail. The proper method is to use the Vicat needle, which is a weighted steel rod of about a quarter of an inch in diameter. The rod is suspended over the pat and allowed to fall on it like the monkey of a pile-driving machine, penetrating the sample until such time as it is sufficiently set to withstand any impression. With regard to a quick or a slow setting cement, this must be determined by the nature of the work for which it is intended. The characteristics of each are that a quick cement will probably attain a fair strength in a short time, but will not improve much afterwards, while the slower setting sample will not do so well as the quick one at an early date, but will eventually attain much greater strength. Cement may be rendered slow in setting by exposing it to the air, but such treatment does not give to a quick-setting sample the characteristics and the ultimate strength of a naturally slow one.

The uses Portland cement is put to are numerous, but in any case it is seldom used in its neat state. For the engineer it is in constant demand for foundations, piers and harbor works, in the shape of concrete. Concrete is composed of an aggregate (such as broken stone), sand and cement in varying proportion according to the class of work to be executed. A very small specification is three parts of aggregate to two of sand and one of cement. This, when set, makes an extremely hard and compact mass. The builder more often uses the cement mixed with sand only, for laying bricks or plastering walls in the proportion of two or three parts of sand to one of cement.

It is sometimes contended that there are instances in which the addition of sand in small quantities improves the cement. Such instances are however quite the exception, for sand can but be regarded as a diluent, and the only reason that can be urged for its use is on the score of economy by the admixture of so much cheaper a material.

These are the chief uses, and I should like to enumerate a few of the abuses, for cement is often asked to do work it was never intended for. One of the most frequent causes of failure in making concrete is the use of unsuitable aggregates, such as a soft sandstone, or a half decomposed basalt or stone overgrown with vegetable matters. Another great trouble is the sand. Sand for concrete or mortar should be entirely free from both loam and clay. Do not take sand out of the road or ditch, or a fine drift sand; neither let it be round-grained or soft. To obtain the best results use a coarse, sharp, angular sand such as one gets from quartz rocks. The greatest enemy to cement is loam, clay or dirt, and it is of the utmost importance that the aggregates or sand should be washed perfectly clean before being used. Too much importance cannot be laid upon this point. A very common practice on the mining fields in this colony is to use the so-called sand or sludge from the mullock heaps. At the best of times this sand is quite unsuitable, having

been ground to a very fine state by the stampers, and to use it direct from the heap without washing is throwing good money away, for ordinary lime would answer just as well.

Again in hot weather cement commences to set very quickly, and to get first class work it is necessary to have it in its allotted place as soon as possible after the water has been added. This necessitates mixing a very small quantity at a time, a practice workmen do not care about, and often a larger quantity is gauged than can be used before the setting action commences. The result is that more water is added, to the detriment if not the total destruction of the setting properties of the cement. When cement begins to set crystals are formed, which, when united, becomes one solidified mass, and when the setting action once commences the less the mass is disturbed the better. Another evil is in not having the walls thoroughly wetted when plastering. The water that is added to cement is put there for a purpose—to make it set; now if you put this mortar on to a dry wall the bricks readily absorb a great deal of the water, and deprive the cement of what it requires in order to set and harden.

In the summer months, in a hot climate, plastering and even brickwork in cement, should be well hosed down with water every day or so after the work is done, and on a north wind day no outside plastering should on any account be allowed.—*The Wombat.*

FIRE PREVENTION.

FIRE Prevention, an article on this subject in the *Pacific Coast Wood and Iron*, says it is well to have at hand a simple contrivance for extinguishing a small fire at its start, making the suggestion that the use of bottles filled with the following solution to serve as hand grenades:—Take twenty pounds of common salt and ten pounds of Sal Ammoniac (Nitrate of Ammonia to be had at any druggist) and dissolve in seven gallons of water.

Sal Ammoniac is, as any druggist will tell you, Chloride of Ammonium, an entirely different substance from Nitrate of Ammonia which would rather add to the danger of a conflagration than suppress it.

THE EMERY SUPPLY.

THE bulk of the world's emery is obtained from the island of Maxos, in the Mediterranean. Its hardness prevents it from being dug out or even blasted, so fires are kept burning around the blocks until they crack, when they are pried open with levers, the process being repeated until the blocks are reduced to a cubic foot or less. Three hundred men are engaged in the work, but no bachelor miner can be admitted to the fraternity, which is composed exclusively of benedicts.—*Architecture and Building.*

Preachleigh—What do you expect on the day of judgment? **SPENDTHRIFT**—Supplementary proceedings.—*Truth.*

TESTS OF THE WEARING QUALITIES OF FLOORING MATERIALS.

MR. FRANK Furness, the well known architect of Philadelphia, lately carried out an extremely valuable series of tests to determine the relative durability of various flooring materials. The experiments were made on May 15th, by Messrs William Gray & Sons, large contractors for stone work in Philadelphia, says *Pacific Coast Wood and Iron*. All kinds of material possible for use in flooring were tested and the results proved very interesting as well as instructive. The samples were all placed face downward upon a horizontal iron rubbing wheel 10 feet in diameter, which was run for a space of one hour at a speed of 75 revolutions per minute. A suitable frame held the blocks loosely in place and prevented them from rotating with the wheel, care being taken to let the full weight of the blocks bear upon the wheel. The face of the wheel was freely supplied during the test with sharp rubbing sand and water and the friction produced was most intense. The results were all important and many extremely peculiar, the behavior of the marble and mosaics especially. They could not withstand the action of the wheel and their average resistance, indeed, was not as high as that of the woods.

One of the most curious results is shown in the action of the woods, where teak lost nearly double as much as the softer white pine, the wear being respectively 13-16 and 7-16 of an inch. Yellow pine showed the same wear as white pine, and the oak specimen lost the same amount as its great rival Oregon pine, which was reduced by 5/8 of an inch.

VANDERBILT'S FORESTS.

THE BILTMORE WOOD DOWN IN NORTH CAROLINA—HINTS BY WHICH LUMBERMEN MAY PROFIT.

THERE is no doubt that the Vanderbilt forest and arboretum in North Carolina constitute together one of the greatest undertakings that have ever been attempted by individual enterprise the world over; and ex-Secretary Morton of the United States Bureau of Agriculture, has himself declared that nothing owned by sovereign or subject will compare with it.

There are 110,000 acres of woodlands on the Biltmore estate, says *Milwaukee Journal*, according to the report of the North Carolina State Board of Agriculture, just issued, and the plan and endeavor will be to carry out only those exact principles of forestry which apply as well to Government forests as to timber owned by lumbering firms.

Mr. Vanderbilt has undertaken to furnish the highest possible example of the science of tree culture in every one of its branches; and to this end he has divided his immense tract into two distinct parts, each to be treated by entirely different methods. The first, containing 10,000 acres, lies in the valley of the French Broad river, and is known distinctively as the Biltmore forest. The merchantable timber has been cut out in former years, and so it was decided to grow only firewood there, an ample market being wide open in Asheville, and other near-by towns. The trees are chiefly oak and pine, and as the pine grew the fastest, the oaks were given a start when sapplings by growing them in separate groups, or by cutting back the pines when they

threatened to overtop and kill the oaks. A sufficiently dense covering has to be kept at all times so that the soil may not deteriorate. The other, and larger tract of nearly 100,000 acres, lies almost entirely in the mountains; and is known as Pisgah forest, so called from Mt. Pisgah dominating, which has an elevation of over 5,000 feet.

These are virgin woods and the timber is of large size, some trunks attaining seven feet in diameter, with frequent groups of yellow poplars averaging three or four feet in diameter. There are cherry, curly walnut, hickory and various valuable furniture woods in great abundance.

On this division the forestry department is growing only timber trees, and under this system the amount of either timber or firewood which shall be cut is fixed by what is known as the "sanctioned annual yield." From the amount of wood fiber added to a tree each year it is quite possible to deduce the amount of wood added to the whole forest each year. If no more than this increment is cut, the forests cannot be diminished. No trees are taken under a specified diameter. The mother trees are left to seed the ground again, which they do most liberally in that particular climate and location. Add, most important of all, the undergrowth is especially looked after. Every tree is felled carefully, the smallest possible amount of danger is done and the underbrush is sedulously cleared away.

Here are hints by which the lumbermen of the big woods and north shore might profit. Inordinate gain will alone tempt inordinate haste, else we could all secure from now on a lasting revenue. But odd-zooks! It is so much less trouble just now to haul out the logs this year, let the topplings lie and the fires run! And for the hereafter? Well, we discover simply a charred and unproductive waste.

Up to date the United States has been behind all other nations in the care and management of their timber lands but under the prospects of the great emoluments which this beginning in forestry forecasts (all praise to the genius who inspired it), the country may well congratulate itself that the scheme of segregating large forestry areas of the public domain, to be cared for by the Government, has not miscarried after all; and that the superlative reservations are to stand as defined by the Forestry Commission, except that entries may be made for milling purposes—a provision which is eminently proper and satisfactory.

Within six years a tree nursery has been established on the alluvial flats of the Swannanoa river, near Asheville, and since the erection of the first propagating house, between 3,000,000 and 4,000,000 of forest trees and shrubs have been turned over to the planters, and the annual output may now be estimated at something over 2,000,000 of plants. These are almost inconceivable figures, and yet they constitute only some of the preliminary steps toward the establishment of a vast museum, of living trees and shrubs, to be called the Biltmore Arboretum, in which will be living examples of every species and subspecies of woody vegetation, indigenous and introduced, that will thrive unprotected in the soil and climate of the locality. The line of display will appear like a continuous highway or drive traversing the valleys and slopes for a distance of twelve miles, including loop roads; and on either side, extending back for 200 feet or more, will be arrayed the trees and shrubs on permanent exhibition in their fullest perfection and pride of life, in isolated specimens in small masses and in bulk.



The management of this journal desires to extend a cordial invitation to all architects on this coast and elsewhere to contribute designs for publication.

Drawings should be made with perfectly black lines on a smooth white surface. Good tracings, if made with black ink, answer the purpose.

The designs selected will be published without charge. All drawings, whether accepted or not, will be returned to their authors, who must bear express charges both ways.

SKETCH of Residence on Clay street, Samuel Newsom, Architect.

RESIDENCE for Mr. Parker, Marinita Park, San Rafael, Samuel Newsom, Architect.

HOLY CROSS CHURCH, Cahill & Condon, Architects.

AT THE request of Mr. Cuthbertson we state that through a mistake of the lithographer the title of his "Study of a Church" in our last number was wrong. W. J. Mathews is the architect of St. John's Episcopal Church, Oakland.

WOLSEY AND ARCHITECTURE.

WOLSEY'S taste and knowledge of architecture must have been great. Who can see the tower of Magdalen College and doubt it? And Christ Church and Hampton Court, though mutilated, bear sufficient testimony to his knowledge and love of that excellent art of architecture which none but superior minds should venture to meddle with, for if it makes greatness and wisdom conspicuous to the world, it makes folly so too, and therefore the more contemptible. Architecture is the natural constructive instinct of a great mind, the throwing off into palpable form of high thoughts. It is part of that noble constructiveness which would build up institutions, the practical language of a governing mind. It is an empire in itself, in which genius

HOLY CROSS CHURCH.

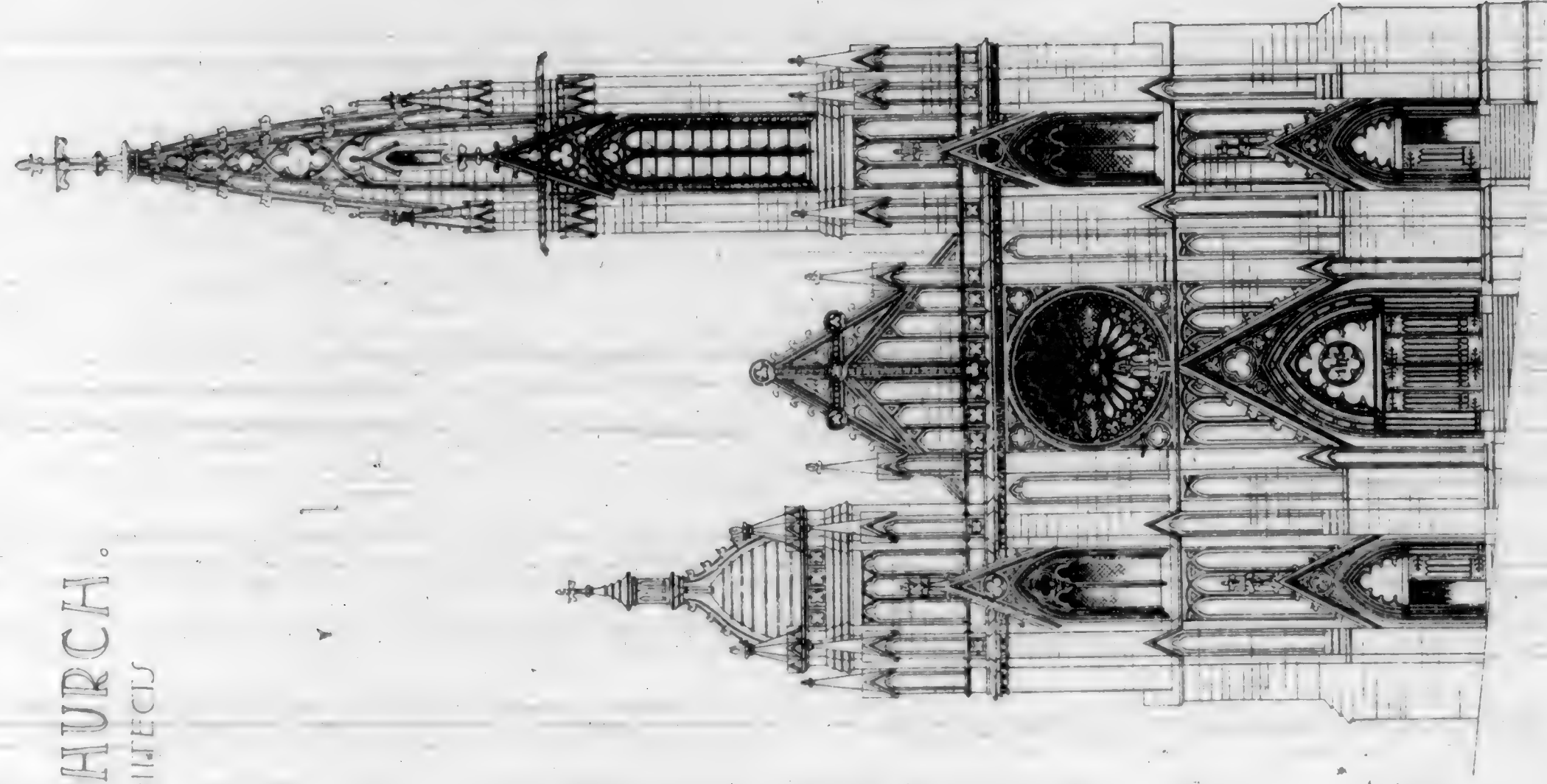
CAHILL & CONDON ARCHITECTS



CALIFORNIA ARCHITECT & BUILDING NEWS
SAN FRANCISCO.

ACCEPTED DESIGN.

BRITTON & REY, PHOTO-LITH.



ALTERNATE ELEVATION

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RESIDENCE FOR MR MARKER MARINITA PARK SAN RAFAEL.
 SAMUEL NEWSON ARCHT MILLS BLDG. SF.

