



BRITTON & REY PHOTO LITH.

PUBLISHED BY THE
CALIFORNIA ARCHITECTURAL PUBLISHING CO.
SAN FRANCISCO, CAL.



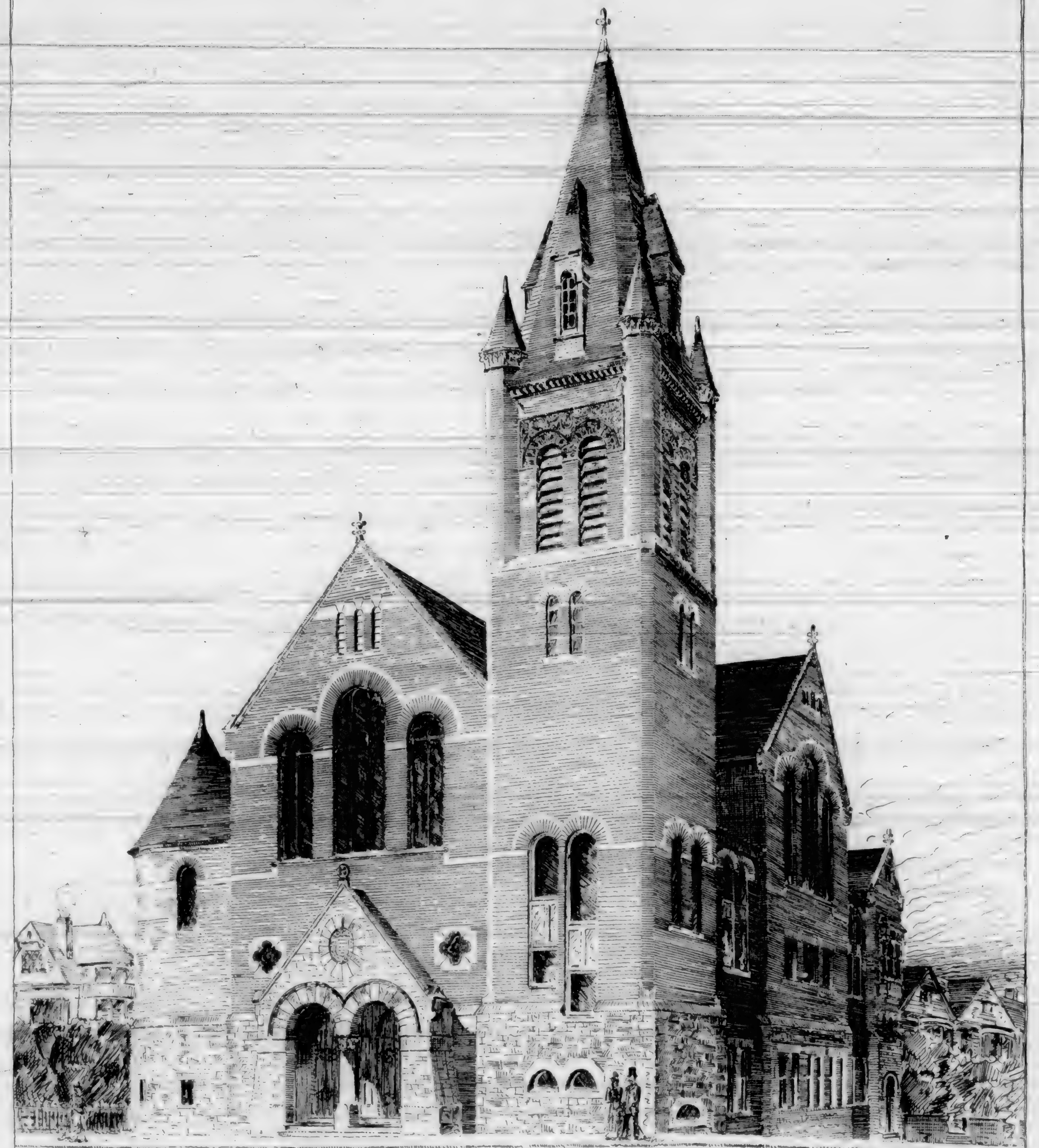
ROUNTREE BRO'S. BLOCK.
COR. WASHINGTON & BUCHANAN STS.
W.H. LILLIE, ARCHT. - RMS. 28-29 ST. ANN'S BLDG.



BRITTON & REY PHOTO LITH.



PUBLISHED BY THE
CALIFORNIA ARCHITECTURAL PUBLISHING CO.
SAN FRANCISCO, CAL.



BRITTON & REY PHOTO-LITH.

RUSH STREET METHODIST CHURCH,
CHICAGO, ILL.

DESIGNED BY THE
CALIFORNIA ARCHITECTURAL PUBLISHING CO.
SAN FRANCISCO, CAL.



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.

The double page illustration is a block of dwellings in course of erection on the corner of Washington and Buchanan streets in this city. Messrs. Rountree Brothers are the owners. W. H. Lillie, Architect.

On the single page we show an illustration of the Bush street Methodist Church—San Francisco. Messrs. Percy & Hamilton, Architects.

The two dwellings shown on single page are for Mrs. Annie Hendry, at Piedmont, and for Mr. Clayton Smith at Berkeley, California. Mr. B. J. S. Cahill, Architect.

NOTICE OF MEETINGS.

SAN FRANCISCO CHAPTER, AMERICAN INSTITUTE OF ARCHITECTS, meets second Friday of each month at 408 California street.

GEO. H. SANDERS, Pres.	OLIVER EVERETT, Vice-Pres.
H. T. BESTOR, Sec.	JOHN M. CURTIS, Tres.

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

JOHN RICHARDS, Pres.	L. WAGONER, Vice-Pres.
OTTO VON GELDERN, Sec.	GEO. F. SCHILD, Treas.

CALIFORNIA ELECTRICAL SOCIETY, meets the first and third Monday evenings of each month at the Academy of Sciences Building.

GEO. P. LOW, Pres.	C. O. POOLE, Vice-Pres.
W. I. CROSETT, Sec.	O. BROOKS, Treas.

MASTER PAINTERS' ASSOCIATION OF THE PACIFIC COAST.

E. M. GALLAGHER, Pres.	H. G. JARMAN, Sec.
------------------------	--------------------

A special meeting of the San Francisco Chapter of the American Institute of Architects was held on the 9th inst. at their rooms, 408 California street, to take into consideration the subject of an exhibition and entertainment by the Chapter. After a general discussion it was decided to defer the exhibition to some time later in the season, and that the Chapter give an entertainment and dinner. The members of the Chapter will be notified in due time.



THE ELECTRICAL RAILWAY IN THEORY AND PRACTICE, by Oscar T. Crosby and Louis Bell, Ph. D., published by the W. J. Johnson Company, New York, 1892, and for sale by Osborn & Alexander, 401 Market Street, San Francisco, California, price \$2.50.

This work treats on the general principles, methods, results and a detailed study of motors. Specific instruction are given in the construction and working of motors and car equipments; the line, track, car houses and stations. The efficiency of electric traction by the steam engine, also by the storage-battery, in connection with high speed service and commercial considerations are given in full. An appendix follows with instructions to linemen, expenditures of electric street railways, and a chapter on lightning protection.

ARCHITECTURAL IRON AND STEEL, AND ITS APPLICATION IN THE CONSTRUCTION OF BUILDINGS, is a new work by Wm. H. Birkmire, published by John Wiley & Sons, New York, and for sale by Osborn & Alexander, 401 Market street, San Francisco, Cal. Price \$3.50.

This work is intended for Architects, Architectural Students and Builders, and treats the subject of iron and steel in its latest forms of application to building construction of the modern type. It takes in a very wide field; commencing with the pig iron through the processes of the manufacture of wrought iron, steel and cast iron, showing the strength and economic use of each. The strength and construction of floors, girders, lintels, trusses, struts, columns of cast and wrought iron, stairways, ornamental iron work, doors and shutters are all described in detail.

Sash, Doors, Blinds, Mouldings, Stair work, Mantles, and all kinds of interior and exterior finish for joiner work; also the latest styles of embossed, ground, and cut glass. Published by Rand, McNally & Company, Chicago, and for sale by Osborn & Alexander, 401 Market street, San Francisco, Cal. Price \$2.00.

This work is nearly all illustrations of designs for doors, sash, wainscot finish, verandas, scroll work, brackets, newels and balusters for stairs and verandas, mantels, sideboards, desks and seats, mouldings, etc.

In the FORTNIGHTLY REVIEW for April, Robert S. Ball discusses the subject of "How Long can the Earth Sustain Life," and Juliette Adam treats of "Woman's Place in Modern Life."

The COSMOPOLITAN for May, has an article by S. P. Langley on the subject of "Mechanical Flight."

LIPPINCOTT'S for May, has a short chapter on "After-dinner Botany," by P. Hemsley.

The LANCET, CLINIC, April 2d, contains an interesting article on "Laboratories of Hygiene," by Dr. John S. Billings, of the U. S. Army. It is proposed to erect and equip buildings especially for the purpose.



Building is quite brisk at Sebastopol.

It is proposed to build a \$100,000 market in Oakland.

A condensed yeast factory is to be erected at Santa Rosa.

Boston capitalists are about to form a new steam ship line here.

The building business in the country districts is quite lively.

The Methodist church of West Berkeley has contracted for a new organ.

Work has been commenced on the new silk factory to be erected at Petaluma.

The citizens of Reno are agitating the project of building a fruit cannery.

The citizens of Santa Maria are moving themselves to establish a public library.

The great tunnel for the Southern Pacific near San Louis has been commenced.

Considerable lumber is being hauled to Alameda from the saw mills in this immediate vicinity.

The haying, harvesting and threshing machines are being put in order for the large harvest in view.

Orange county capitalists have organized to build an extensive pickle factory at Westminster.

A cannery building is in course of erection in Santa Maria, and a large dairy building is under consideration.

The Chicago Historical Society is about to erect a new building from the designs of H. I. Cobb, architect.

The Portuguese Catholics are erecting a building near Petaluma in which to celebrate the ceremonies of the day of Pentecost.

Terra-cotta tiles, glazed or unglazed, are now made in different colors and shapes, thus giving the designer more freedom in composition.

The late Rev. Dr. Benton left a property site at Berkeley to the Pacific Theological Seminary. The trustees have decided to build on the property.

A new paving material now being introduced in London, is composed of granulated cork and bitumen, pressed into blocks, which are laid as brick or wood pavements. A pavement of this material is very elastic and pleasant to the feet, and affords an excellent foothold for horses. There is almost an entire absence of noise.—*Exchange.*

EXPIRED PATENTS RELATING TO BUILDING.

J. Sweet—Sash Holders.....	160,554
E. C. Underwood—Weather Strips.....	160,555
J. B. Cornell—Wrought Iron Column.....	160,574
W. Johnson—Door Hanger.....	160,598
J. Gorton—Chimney Cops.....	160,668
H. L. Dorr—Wood Filling Compound.....	160,010
W. H. Gedney—Construction of Floors for the Passage of Pipes.....	160,014
A. Brandt—Cooling Floors for Breweries.....	160,077
L. Brandt—Slate Roofs.....	160,078
J. Beanland—Quadrant for Opening, Shutting and Fastening Windows.....	159,741
S. W. Gough—Window Ventilators.....	159,800
G. B. Adams—Fastenings for the Meeting Rails of Sashes.....	159,880
E. L. Barnes—Spirit Level.....	159,882
H. C. Parker—Flume for Conveying Timber.....	159,959
J. M. Withers—Fastening for the Meeting Rails of Sashes.....	159,984
J. Hale—Saw Machine.....	160,768
T. T. Loomis—Steam Pile Driver.....	160,781
J. H. Mathes—Molds for Angle Brick.....	160,832
M. S. Motor—Machine for Sawing Lathes.....	160,838
G. B. Smith—Apparatus for Preserving Wood.....	160,846
H. Winn—Locks for Doors, etc.....	160,859
John Gehr—Sawing Machine.....	160,862
W. P. Hale—Sawing Machine.....	160,869
S. Hiler—Knob Roses.....	160,897
S. Hiler—Door Knobs.....	160,908
M. M. Miller—Sawing Machines.....	160,939
E. A. Rowley—Machines for Relishing Tenons.....	160,957

The above list of recently expired patents, relating to buildings, is supplied us by Alexander & Davis, Patent Attorneys of Washington, D. C. We have engaged this firm to supply us regularly with lists of expired patents relating to this line of inventions, and these lists will appear regularly hereafter, so that our readers will be kept promptly advised of the patents that become public property. Copies of these patents may be had of the above firm at the official cost (10 cts.) with postage added.

LEGAL DECISIONS.

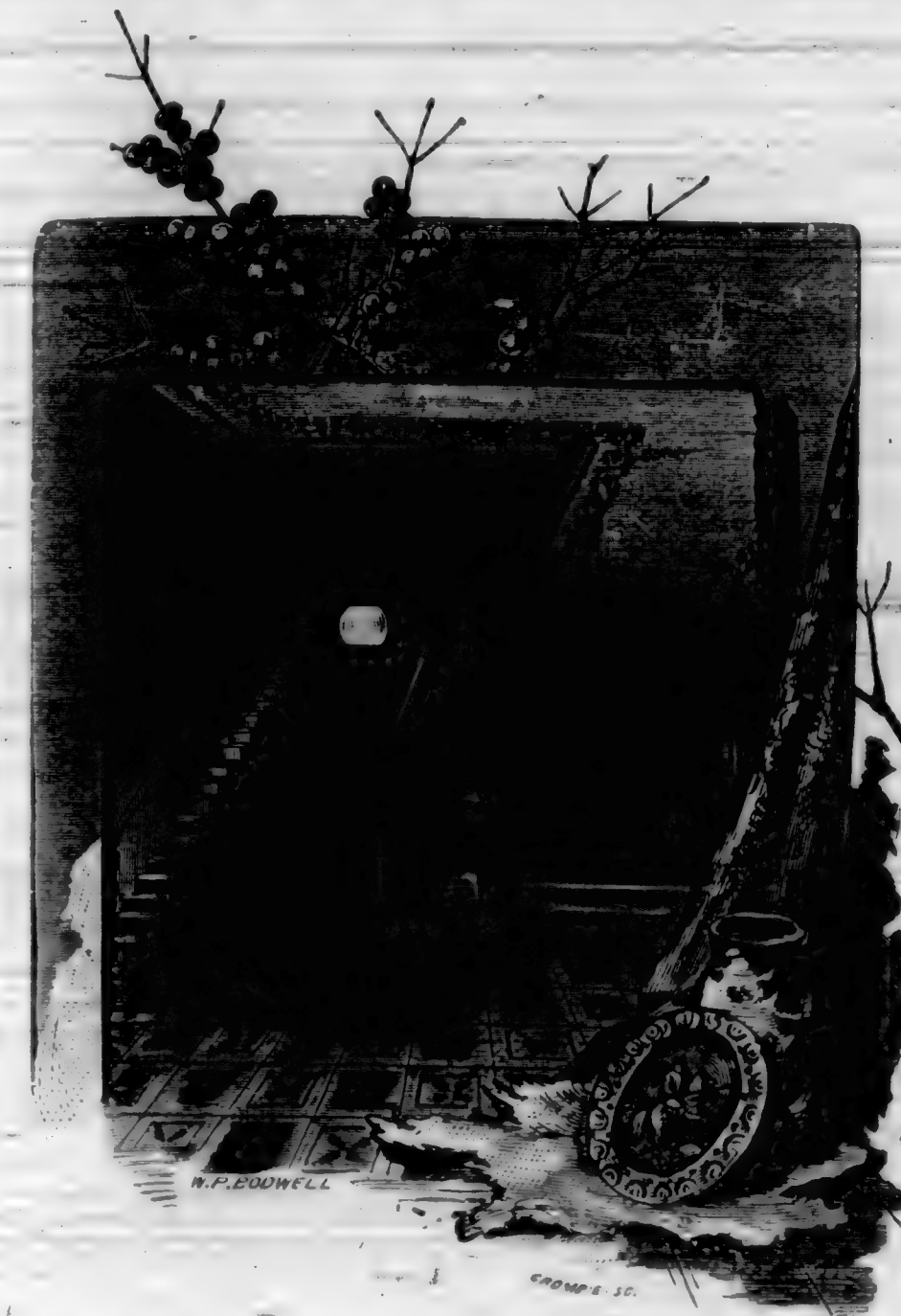
From a large number of Legal Decisions of the higher Courts of the different States of the Union, we select and publish in this column, such as appear applicable to this section of the country.

MATERIAL LIEN IN SOUTH DAKOTA.—A sub-contractor who furnishes materials, lumber, or labor, not to the owner, but to the contractor, for the erection of a new building, can, under the provisions of sections 5469, 5470, Comp. Laws, acquire and enforce a lien on the building and on the interest of the owner of the real estate on which the building stands, to the extent of the value, or the price agreed to be paid by the contractor for the material, lumber, or labor furnished. It is not the contract between the original contractor and the owner which supports the lien under the statute, but it is the use of the materials and work upon the premises, the putting of them into the building and attaching them to the freehold, whereby the owner is benefited by them, which entitles the party furnishing them to a lien to the extent of their value. *Albright v. Smith, Supreme Court, of South Dakota, 51 N. W. Rep. 590, (151C).*

LIMITATION OF ACTION FOR EXTRAS UNDER BUILDING CONTRACT.—Where a written building contract provides that extras shall be paid for at such rates as shall be agreed upon by the parties, the amount due for such extras is an amount due under a written contract, though the price was a verbal agreement, and the statute of limitation as to written contracts applies to it. *Wilkinson v. Johnston, Supreme Court of Texas, 18 S. W. Rep. 746, (61C).*

The October number of the CALIFORNIA ARCHITECT AND BUILDING NEWS will contain a supplement.—The price for single number will be fifty cents. No extra price to regular subscribers before that date.

Burglars at this season of the year being less active than during the winter, is no reason why provision should not be made for the time when it will be needed. Burglar alarms have become a necessity in modern houses. The system used by the Electrical Storage and Supply Co., shows the slightest irregularity in the proper adjustment of windows



and doors which is communicated by alarm signals to any location desired. It can be arranged to work with the doors and windows only, or to turn on the light in whole or part of the house, or all in combination as wished. The circuit lines can be turned on or off as wanted, and when turned on any protected point, when tampered with, will give the alarm. For further particulars see advertisement of the Electrical Storage and Supply Co. on page xii.

N. & G. Taylor Co's. American Tin Plate has become a standard article. The materials, coating and general good qualities give satisfaction wherever used. The plate is of even thickness, soft and pliable, and hammers down without cracking; the coating heavy and evenly applied, and has a clean and superior finish with all the qualities requisite for durability. Workmen in this line say it works and solders well. On account of its many excellent qualities it is gaining in favor wherever a good article is desired.

The Ives Mortice Door Bolt is easily set in place, as it only requires a hole made with a bit in which to insert the bolt. Insert the turn key and screw on the escutcheon and the job is finished. One of the good points for which this bolt is famous is that one turn of the key runs the bolt fully out or back as wanted, so that the user knows at once whether the door is locked or unlocked. The knob and escutcheon is made plain or ornamental to suit any style of hardware in use. The Ives Sash Lock is made with double eccentric mechanism which easily draws the sashes together and locks them securely. This sash lock is well adapted for either light or heavy sashes, and is made ornamental to suit any style of hardware. See advertisement on page x.

Attention is called to the Hercules Gas Engine which works without the electric attachment. All the gas is consumed and used for power; consequently, no smell from unburned gas. It is so completely under control and can be run with so much economy that any person who proposes to use a gas engine should inquire further. See advertisement on page xix.

Carbolineum Avenarius is guaranteed by the Pacific Coast Agents, Messrs. Muecke & Co., 319 California street, San Francisco, to preserve any kind of wood, above or under ground or water, and to prolong its life at least 100 per cent. While a wood-preserved in the truest sense of the word, Carbolineum must also be of great interest to owners of Vessels and to parties using and handling Ropework, Canvass, etc. Messrs. Muecke & Co. claim Carbolineum the only article which will render Rope and Canvass absolutely water proof and make rot or decay an impossibility.

Rope and canvass treated with Carbolineum will be soft and pliable and remain always in this condition without cracking or breaking. Rust from Iron Hinges or Hooks will not in the least affect rope or canvass on which Carbolineum has been used. It is claimed one gallon of it will go as far as four or five gallons of best tar.

The Byrkit-Hall Sheathing Lath is formed of board about one inch thick and five inches wide, having the surface worked out in dovetailed grooves as lock joints to hold the plastering, as shown in the advertisement on page x. The laths are worked in long lengths, ten or twelve feet or more. These laths are especially useful wherever earthquakes are liable to occur, as they add strength to the walls and ceilings. The damage by the late "shake" would have been much less if this lath had been used. The plastering cannot fall off from any considerable space because of the peculiar form of the key. They answer the purpose of a combined sheathing and lath, and when put on at an angle they form a thorough bracing, which is at once apparent to any person experienced in building.

Joists Hangers of metal will soon be placed on the market by James A. Maguire, 661 Market street. The principle of the construction of this hanger will be readily understood by the profession by a glance at the cut as shown in the advertisement on page xi. It will be made out of the best metal, thoroughly tested. The T shaped shank at the back of the hanger is built into the brick wall, leaving the "shoe" hanging entirely outside of the wall. The joists rest in these shoes and are notched in the bottom to correspond with the projection on inside bottom of the "shoe" of the hanger thus making a complete tie to the walls, and at the same time leaving joists free to fall out without prying down the walls, in case of fire.

You will notice that by this method the joists are entirely out of the wall, and the walls are built solid without a break. In light party walls, slow burning construction, framing around chimneys, and preventing dry rot to end of joists, these hangers will have no equal.

Wm. H. Birch & Co., is one of the oldest manufacturers of elevators on the Coast. The devices in use by this firm are simple, safe and easily worked, and the machinery is of the most complete description, which, with the air brake and air cushion renders their elevators the safest and most economical of any in the market.

The Pacific Press Brick Company has for several years been engaged in the manufacture of Fine Bricks, during which time their bricks have enjoyed the highest reputation for color, beauty, accurate bond and durability. The demand for a superior article has induced the company to increase its facilities, and they are now prepared to furnish this superior brick in any size lots as may be wanted. They will be pleased to furnish such information as may be desired by persons interested in this material.

The successful advertiser is one who has something that everybody wants and would buy if he only knew where to get it.

The J. L. Mott Iron Works for this month show a set of their Imperial Porcelain Roll-rim Wash Tubs. These fixtures for the Laundry Room have marble back slabs, and non-absorbent floors, and the tubs supported upon metal standards. By the methods adopted by this company, absolute cleanliness can be had with very little labor. See page xiii.

The firm of Hopper & Schroeder has been dissolved and the business will be carried on by Wm. Schroeder as sole proprietor. Another new furnace for bending glass has been put in. The Embossing room is separate. All descriptions of "art glass" work is done by Mr. Schroeder at the manufactory, 39 1/2 Fremont St., San Francisco.

The new building on California street, for the German Saving and Loan Society, is having the front windows fitted with Clark's Self Coiling Steel Shutters by the Pacific Coast Agents, Edw. B. Hinde & Co., 411 Mission Street, San Francisco.

Browell's Patent Chimneys have given satisfaction wherever used. They are considered earthquake-proof, and are recommended by the highest authorities. In buildings where the recent "shake" damaged so many brick chimneys, the loss would have been much less if these chimneys had been used. Manufactured and put up by J. Browell, 727 Montgomery street, San Francisco.

Rischmuller's Door Opener or Closer is a practical device for opening or closing the entrance door of tenements, flats, etc., without descending one or more sets of stairs. The mechanism is strong and simple, and is entirely concealed from view. The appliance is worked by means of a handle from any desired position, such for instance, as placed at the top of stairs, or in another room, and is always under the complete control of the person operating it.

TENDERS TO BE RECEIVED.

Treasury Department, Office Supervising Architect, Washington, D. C., May 5, 1892. Sealed proposals will be received at this office until 2 o'clock p. m. on the 3rd day of June, 1892, and opened immediately thereafter, for all the labor and materials required for the excavation, foundations, cut stone work, and brick work of the basement and area walls, basement columns, first floor iron beams and wood joists, manhole and sewer connection, for the U. S. Post Office Building at Cedar Rapids, Iowa, in accordance with the drawings and specification, copies of which may be had on application at this office or the office of the Superintendent at Cedar Rapids, Iowa.

Each bid must be accompanied by a certified check for a sum not less than 2 per cent. of the amount of the proposal.

The right is reserved to reject any and all bids and to waive any defect or informality in any bid, if it be deemed in the interest of the Government to do so. All proposals received after the time stated, will be returned to the bidders.

Proposals must be enclosed in envelopes, sealed and marked, "Proposal for excavation, foundations, cut stone work and brick work of the basement and area walls, etc., for the U. S. Post Office Building at Cedar Rapids, Iowa," and addressed to

W. J. EDBROOKE,
Supervising Architect.

Treasury Department, Office Supervising Architect, Washington, D. C., May 4, 1892. Sealed proposals will be received at this office until 2 o'clock p. m. on the 26th day of May, 1892, and opened immediately thereafter, for all the labor and materials required, for the plaster models of the ornamental copper, plaster and woodwork for the U. S. Post Office, Lansing, Michigan, in accordance with drawings and specification, copies of which may be had at this office or the office of the Superintendent at Lansing, Michigan.

Each bid must be accompanied by a certified check for a sum not less than 2 per cent. of the amount of the proposal. The right is reserved to reject any and all bids and to waive any defect or informality in any bid, if it be deemed in the interest of the Government to do so. All bids received after the time stated will be returned to the bidders. Proposals must be enclosed in envelopes, sealed and marked, "Proposal for Plaster Models of Ornamental Copper, Plaster and Wood Work for the U. S. Post Office, Lansing, Michigan," and addressed to

W. J. EDBROOKE,
Supervising Architect.

CITY BUILDING NEWS.

Baker near Fulton. Carpenter, brick work, etc.; owner, G. Cipollino; architect, J. J. Clark; contractor, J. Gadamis; surety, T. Dolan; cost, \$4,270; signed, April 7; filed, April 8; payments, \$1,000, when contract is signed.

Baker near Grove. Two story frame; owner, Annie Kelly; architect, W. H. Little; contractor, Geo. R. Lang; cost, \$4,470; signed, April 21; filed, April 22; payments, \$670.50, frame up; \$670.50, enclosed; \$670.50, brown coated; \$670.50, completed; \$1,117.50, 35 days.

Baker near Sutter. Alterations and additions; owner, Jane McEwen; architect, R. H. White; contractors, Bradt & Bateman; cost, \$4,465; signed, April 14; filed, April 22; payments, \$800, frame up; \$815, ready for brown coat; \$815, standing finish on; \$815, completed; \$1,120, 35 days.

Battery and Halleck. Two concrete floors; owner, Rosenda Campbell; architect, T. J. Welsh; contractor, Geo. Goodman; sureties, J. Mahoney, \$375; cost, \$1,500; signed, April 12; filed, April 19; payments, \$1,125, completed; \$375, 35 days.

Battery near Vallejo. Alterations and additions; owner, Achille Paladini; architects, B. McDougall & Son; contractors, A. Massa & N. Toce; cost, \$8,700; signed, March 31; filed, April 22; payments, \$1,000, 1st tier of joists in position; \$1,000, frame up and rustic on; \$1,200, brown coated and sidewalk lights set; \$1,400, white coated and sidewalk laid; \$1,825, completed; \$2,175, 35 days.

Belcher near Ridley. To build; owner, Julia E. Lewin; contractor, J. C. Sloan; sureties, C. R. Egan and W. T. Wheatly; cost, \$3,450; signed, April 11; filed, April 12; payments, \$300, basement frame up; \$400, frame up and rustic on; \$400, ready for lathing; \$400, plastering completed; \$400, exterior has 1st coat paint; \$885, completed; \$885, 35 days.

Broadway near Franklin. Three story flat; owners, J. H. and Mary Hatch; architect, James E. Wolfe; contractor, James R. Whalen; sureties, J. Levi, Sr. and Mendd Esberg; cost, \$9,825; signed, April 16; filed, April 18; payments, \$1,200, diagonal boarding on, and floors laid; \$1,400, rustic on and chimneys built; \$1,800, inside stairs up and brown coated.

Broadway near Franklin. Plumbing and gas-fitting; owners, J. H. and Mary Hatch; architect, J. E. Wolfe; contractor, H. Williams; cost, \$1,050; signed, April 21; filed, April 21; payments, \$450, gas and water pipes in; \$540, completed; \$290, 35 days.

Broderick and California. Granite and sand stone work for a brick church; owner, Rush M. E. Church; architects, Percy & Hamilton; contractors, Wm. H. Johnston; bond, \$5,500; cost, \$6,000; signed, April 11; filed, April 19; payments, 1st Saturday of each month 75 per cent. as work progresses.

Buchanan near Filbert. Mechanical works; owner, S. Jancovich; architects, Townsend & Wyneken; contractor, Ivory Wells; cost, \$2,200; signed, April 25; filed, April 25; payments, \$550, foundation in, frame up, chimneys half up; \$550, enclosed; \$550, completed; \$550, 35 days.

Bush and Chelsea. To build; owner, Mrs. M. Newman; architect, P. R. Schmidt; contractor, Jas. Cochran; cost, \$25,200; signed, April 1; filed, April 2; payments, 1st day of each month 75 per cent. of work done; balance 35 days.

Bush and Chelsea Place. Gas and plumbing work; owner, Mrs. N. W. Newman; architect, P. R. Schmidt; contractors, California Mills; cost, \$50; signed, April 4; filed, April 22; payments, \$1,200, rough gas and water pipes in; \$800, sinks, bathtub, water closets and washtraps set; \$1,000, completed; \$1,000, 35 days.

Bush and Chelsea Place. Mill work; owner, Jas. Cochran; architect, P. R. Schmidt; contractors, California Mills; cost, \$50; signed, April 4; filed, April 16; payments, 75 per cent. as work progresses; balance 35 days.

California near Montgomery. Grill work, screens, ventilators; owners, German Sav. and Loan Society; architects, Smith & Freeman; contractors, Winslow Bros. & Co.; sureties, John Hammond and John J. Mahoney; cost, \$6,214; signed, April 8; filed, April 14; payments, \$1,600.50, completed; \$1,533.50, 35 days.

California near Montgomery. Fresco painting and tinting; owners, German Sav. and Loan Society; architects, Kenitzer & Kollofrath; contractors, E. A. Otto; sureties, E. L. Hueter and Chas. Mayer, Jr.; guaranteed; cost, \$3,500; signed, April 8; filed, April 14; payments, 75 per cent. as work progresses; balance 35 days.

California near Montgomery. Interior finish, counters, chairs; owners, German Sav. and Loan Society; architects, Kenitzer & Kollofrath; contractors, F. W. Krelling & Son; bond, \$6,500; cost, \$13,942; signed, April 8; filed, April 14; payments, 1st and 15th day of each month 75 per cent. of work done; balance 35 days.

California near Gough. To build; owner, Joseph Hyman; architects, Salfeld & Kohlberg; contractor, David Perry; cost, \$6,409; signed, April 21; filed, April 23; payments, \$1,200, frame up; \$1,000, enclosed; \$1,000, floors laid, partitions set and outside mill work on; \$1,500, standing finish on; \$2,124, completed; \$2,375, 35 days.

California and Larkin. Carpenter work; owners, Cal. St. Cable R. R.; architects, H. H. Macy; contractor, J. J. O'Brien; cost, \$1,430; signed, March 18; filed, April 2; payments, \$500, frame up; \$572.50, completed; \$572.50, 35 days.

City Hall. Bronze work and statuary; owner, F. Happersberger; contractors, Whyte & De Rome; bond, \$5,000; cost, \$20,000; signed, April 20; filed, April 20; payments, \$2,000, 1st group cast; \$2,000, 1st group finished; \$1,500, 7th group cast; \$500, 2nd cast; \$500, 2nd group finished; \$500, 3rd and 4th cast; \$500, 3rd and 4th cast; \$500, 3rd and 4th finished; \$200, 8th group cast; \$200, 8th finished; \$375, 5th cast and finished; \$2,000, 35 days.

Clippier near Noe. To build; owner, Mrs. M. Whitney; contractor, James E. Schulz; bond, \$800; cost, \$1,150; signed, April 9; filed, April 11; payments, \$267.50, frame up; \$267.50, brown coated; \$267.50, 35 days.

Cumberland near Sanchez. To build; owner, A. J. Kleinhaupt; architect, A. E. Hornum; contractor, Wm. Belyea; cost, \$6,505; signed, April 14; filed, April 14; payments, \$500, foundation in and 1st floor joists on; \$1,000, frame up and roof ready for tinning; \$1,000, brown coated and roof tinned; \$1,000, white coated and house primed; \$1,305, completed; \$1,305, 35 days.

Devisadero near Jackson. Frame building; owner, Anna Waterman; architect, J. E. Kraft; contractors, Schmidh & Volswinkel; sureties, J. Rudenach and Fritz Krug; cost, \$4,000; cost, \$7,200; signed, April 18; filed, April 23; payments, \$1,200, building sheathed and chimneys built; \$1,200, brown coated; \$1,200, plastering and wainscoting on; \$1,800, completed; \$1,800, 35 days.

Dore near Harrison. To build; owner, H. B. Myers; architect, Edward Burns; contractor, Jno. Mann; cost, \$4,000; signed, Jan. 8; filed, April 3; payments, \$1,000, frame up and siding on; \$1,000, brown coated; \$1,000, completed; \$1,000, 35 days.

Douglass near Jersey. First story and basement; owner, Mary McConologue; contractor, Richard Searle; cost, \$1,800; signed, April 13; filed, April 18; payments, \$325, frame up; \$325, 1st coat of plaster on; \$325, completed; \$325, 35 days.

Drum near California. Pile driving and capping; owner, H. Braunschweiler; architects, Kenitzer & Kollofrath; contractors, California Bridge Co.; sureties, N. W. Spaulding and A. W. Burdett; cost, \$2,885; signed, April 26; filed, April 27; payments, \$1,000, piles all driven; \$1,355, completed; \$750, 35 days.

Farallones near Capitol. To build; owner, Frank N. Montrose; contractors, Morrison & Cook; cost, \$1,350; signed, April 11; filed, April 11; payments, \$500, brown coated; \$500, completed; \$500, 35 days.

Fell near Octavio. To build; owner, Bernhard Fross; architects, B. McDougall & Son; contractors, Brennan Bros.; cost, \$4,270; signed, April 12; filed, April 13; payments, \$300, old house underpinned and stairs up in front; \$800, frame up for new houses; \$800, old house brown coated, plumbing roughed in and brown mortar on new houses; \$800, white coated; \$2,020, completed; \$1,067.50, 35 days.

Fifth Ave near Clement. To build; owner, Wm. Menge; contractor, Caspar Zwierlein; cost, \$1,550; signed, April 11; filed, April 14; payments, \$500, brown coated; \$662, completed; \$662, 35 days.

Filbert near Laguna. Two-story frame; owner, Jon. Devlin; architect, Chas. M. Roseau; contractor, H. C. Bigge; cost, \$2,700; signed, April 27; filed, April 28; payments, \$675, roof on; \$675, brown coated; \$675, completed; \$675, 35 days.

Geary near Hyde. All work to build; owner, Edward C. Hsigen; architect, T. J. Welsh; contractor, Andrew Christensen; sureties, D. H. Bibb and O. W. Greenwald; cost, \$7,180; signed, April 26; filed, April 28; payments, \$1,346, frame up; \$1,346, brown coated; \$1,346, white coated; \$1,346, completed; \$1,796, 35 days.

Guerrero near 14th. To build; owner, N. Bullerdelick; architect, Henry Gelfuss; contractor, Flek Cebaner; cost, \$4,215; signed, March 30; filed, April 1; payments, \$832, frame up; \$832, partitions set; \$832, brown coated and basement work done; \$832, inside standing finish on; \$832, completed; \$1,035, 35 days.

Guerrero near 28th. Alterations and additions; owner, Annie M. Harrison; architects, Colley & Lemmer; contractors, Greenwood Contracting Co.; cost, \$1,400; signed, April 20; filed, April 20; payments, \$500, ready for lathing; \$550, brown coated; \$550, white coated; \$550, 35 days.

Guerrero bet. 19th and 20th. One story frame; owner, Jos. Baker; contractor, Geo. Tressler; surety, Chas. Wesson; cost, \$2,135; signed, April 11; filed, April 20; payments, \$500, frame up; \$500, brown coated; \$550, white coated; \$500, completed.

Howard and Lafayette. Alterations and additions; owner, Michael Curran; architect, W. H. Bayless; contractors, Doyle & Sons; cost, \$6,500; signed, April 18; filed, April 24; payments, on the fifteenth of each month 75 per cent. as work progresses; balance 35 days.

Hyde street. Two-story frame; owner, Helen Chase; contractor, Henry Jensen; cost, \$3,400; signed, April 26; filed, April 27; payments, \$850, frame up; \$850, brown coated; \$850, white coated; \$850, completed.

Larkin near Lombard. To build; owner, W. H. H. Tobey; contractor, Geo. Healing; cost, \$2,550; signed, March 31; filed, April 4; payments, \$480, frame up; \$480, brown mortar on; \$480, doors hung; \$470, completed; \$640, 35 days.

Leavenworth near Ellis. Alterations and additions; owner, Chr. Fling; contractor, F. V. Steinman; cost, \$3,000; signed, April 4; filed, April 5; payments, \$850, building raised and rustic on; \$700, brown coated; \$700, completed; \$750, 35 days.

Lot 892, block 97. All work for a brick building; owner, Levi Strauss; architects, Wrights & Sanders; contractor, Thos. M. McLachlan; cost, \$16,400; signed, April 11; filed, April 25; payments, 1st day of each month 75 per cent. as work progresses; balance 35 days.

Market and Powell. Plumbing, gas-fitting, etc.; owner, Annie Donahue; architect, C. I. Havens; contractor, Wm. F. Wilson; cost, \$19,400; signed, April 9; filed, April 9; payments, 75 per cent. of work done on first day of each month; balance 35 days.

Mason near O'Farrell. Four-story frame; owner, J. P. Riordan; architect, Jno. J. Clark; contractor, Jno. G. Adams; surety, S. H. Harmon; cost, \$2,610; signed, April 28; filed, April 28; payments, \$2,600, frame up and rustic on; \$2,610, brown coated; \$2,610, inside finish complete; \$2,625, 35 days.

Mason near Vallejo. Three-story frame; owner, Catho Tate; contractor, Harry Wyatt; sureties, R. K. Patridge, \$4,000; cost, \$4,000; signed, April 18; filed, April 19; payments, \$1,500, enclosed and floor laid; \$1,000, brown coated; \$500, completed; \$1,000, 35 days.

McAllister near Broderick. Brick, carpenter and plumbing work; owner, Jno. Boyd; architects, B. McDougall & Son; contractors, McKay & McLean; cost, \$10,452; signed, April 23; filed, April 21; payments, \$1,000, brick wall built and 1st floor joists set; \$1,000, frame up; \$1,500, window frames and partitions set; \$2,500, plastered and first coat of paint on outside; \$1,000, second coat paint on, plat forms finished; \$875.50, completed; \$2,612.50, 35 days.

McAllister and Jones. Iron stairways, doors and frames; owners, Hibernal Savings and Loan Society; architects, Pissis & Moore; contractors, Western Iron Works; cost, \$1,921; signed, Feb. 9; filed, April 4; payments, 1st and 15th day of each month 75 per cent. of work done; balance 35 days.

McAllister and Jones. Art glass work; owners, Hibernal Savings and Loan Society; architects, Pissis & Moore; contractor, Jno. Mullon; cost, \$4,483; signed, Feb. 6; filed, April 4; payments, 1st and 15th day of each month 75 per cent. of work done; balance 35 days.

Meacham Place near Post. To build; owner, Wm. Sullivan; contractor, B. K. Albreton; surety, P. Ashe; cost, \$1,000; signed, April 4; filed, April 11; payments, \$300, 1st floor joists on; \$500, roof on; \$800, brown coated; \$900, white coated; \$300, completed and accepted.

Minerva near Plymouth. To build; owner, Jno. F. McGrath; contractor, Thos. Curry; cost, \$1,080; signed, April 9; filed, April 11; payments, \$270, frame up; \$270, brown coated; \$270, completed; \$270, 35 days.

Mission and Lands of the S. P. Co's. To build; owner, Ann Levell; architect, W. H. Bayless; contractors, Doyle & Sons; cost, \$1,040; signed, April 28; filed, April 28; payments, 75 per cent. as work progresses; balance on completion.

Mission and Stuart. Three-story and basement brick building; owner, W. J. Lowey; architects, Kenitzer & Kollofrath; contractor, W. B. Kroger; cost, \$20,960; signed, April 23; filed, April 26; payments, 1st day of each month 75 per cent. as work progresses; balance 35 days.

Mission and Stuart. Brick and stone work; owner, W. J. Lowey; architects, Kenitzer & Kollofrath; contractors, McGowan & Butler; cost, \$7,732; signed, April 26; filed, April 26; payments, \$2,500, basement and 1st story walls built; \$5,232, completed; \$2,000, 35 days.

Mission Road near 34th. All work necessary to build; owner, Anna M. Eccles; architects, Townsend & Wyneken; contractor, J. P. Rines; cost, \$1,518; signed, April 25; filed, April 26; payments, \$400, frame up; \$400, completed; \$318, 35 days.

Montgomery near Green. Carpenter work, etc.; owner, Louisa Gauthier; architect, S. Hatfield; contractor, George Connon; cost, \$2,110; signed, April 3; filed, April 8; payments, \$500, framing and roof boarded; \$500, plastering completed; \$532, completed; \$528, 35 days.

Page near Devisadero. To build; owner, Michael J. Slattery; contractor, Henry Jacks; cost, \$5,048.75; signed, April 12; filed, April 13; payments, \$500, sewers, brick work and 2d floor joists on; \$650, brown coated; \$650, white coated; \$488.75, completed; \$762, 35 days.

Pierre and Sacramento. Nine two-story residences; owner, Mrs. K. D. Casey; architect, Henry A. Schulze; contractor, Rhody Ringrose; cost, \$5,700; signed, April 21; filed, April 26; payments, 1st day of each month 75 per cent. as work progresses; balance 35 days.

Pine near Sansome. Incandescent light work; owner, Daniel Meyer; architects, Salfeld & Kohlberg; contractors, Cal. Electrical Supply Co.; cost, \$1,000; signed, April 14; filed, April 23; payments, \$75, completed; \$275, 35 days.

Post near Jones. Concrete and brick work; architects, Hamilton & Mahoney; contractors, Ransome & Cushing; cost, \$7,500; signed, April 2; filed, April 2; payments, \$570, 1st floor joists laid and basement arches finished; \$1,875, completed; \$1,875, 35 days.

Powell Street Theatre. Tinting and decorating; owners, Denicke & Siebe; architects, Wood & Lovell; contractors, Spierling & Linden; cost, \$3,375; signed, March 31; filed, April 5; payments, 1st and 15th day of each month 75 per cent. of work done; balance 35 days.

Sacramento near Laguna. Two-story frame; owner, Jno. Siebe; architect, Henry Gelfuss; contractors, Schutt & Kreeker; cost, \$12,720; signed, April 28; filed, April 28; payments, \$2,382, frame up; \$2,385, partitions set; \$2,385, inside standing finish on; \$2,385, completed; \$1,180, 35 days.

Sacramento near Laguna. Plumbing and gas-fitting; owner, John D. Siebe; architect, Henry Gelfuss; contractor, H. Williamson; cost, \$3,700; signed, April 28; filed, April 28; payments, 1st and 15th day of each month 75 per cent. as work progresses; balance 35 days.

Sacramento near Maple. Five room cottage; owner, Geo. Schaefer; contractor, Geo. Healing; cost, \$1,480; signed, April 8; filed, April 19; payments, \$370, frame up; \$370, brown coated; \$370, completed; \$375, 35 days.

Sixteenth near Dolores. To build; owner, S. Scorpio; architect, W. C. Dickerson; contractor, J. C. Rogers; cost, \$4,000; signed, April 6; filed, April 6; payments, \$1,200, frame up; \$1,200, building enclosed and brown mortar on; \$1,250, completed; \$1,250, 35 days.

Sutter near Broderick. To build; owner, J. Jacobs; architects, Salfeld & Kohlberg; contractor, W. F. Judson; cost, \$4,140; signed, April 7; filed, April 9; payments, \$1,000, frame up; \$1,000, brown coated; \$1,100, completed; \$1,040, 35 days.

Sutter near Broderick. Plumbing, gas-fitting, etc.; owner, J. Jacobs; architects, Salfeld & Kohlberg; contractors, Striegel & Ponder; cost, \$560; signed, April 8; filed, April 9; payments, \$226, rough plumbing done; \$300, completed; \$145, 35 days.

Sutter near Taylor. Plumbing; owners, Golden Gate Bldg. Ass'n.; architects, Smith & Freeman; contractors, W. S. Snook & Son; cost, \$3,118; signed, April 1; filed, April 12; payments, \$1,215, rough plumbing in; \$1,149, completed; \$784, 35 days.

Sutter near Taylor. Plastering; owners, Golden Gate Bldg. Ass'n.; architects, Smith & Freeman; contractor, Chas. Dunlap; cost, \$3,800; cost, \$3,800; signed, April 1; filed, April 12; payments, \$800, lathed; \$1,000, 2nd coated; \$800, 3rd coated; \$250, completed; \$950, 35 days.

Sutter near Taylor. Painting; owners, Golden Gate Bldg. Ass'n.; architects, Smith & Freeman; contractor, Jos. Thomas; cost, \$1,240; signed, April 1; filed, April 12; payments, \$500, work is second coated; \$430, completed; \$314, 35 days.

Sutter near Taylor. Carpenter work; owners, Golden Gate Bldg. Ass'n.; architect, Smith & Freeman; contractor, T. H. Day; cost, \$21,230; signed, April 1; filed, April 12; payments, \$1,400, 2d story joists on; \$1,400, rafters on front building; \$4,000, ready for plaster; \$8,000, ready for painter; \$1,122, completed; \$5,308, 35 days.

Sutter near Taylor. Terra cotta work; owners, Golden Gate Bldg. Ass'n; architects, Smith & Freeman; contractors, A. Steiger & Son; cost, \$3,450; signed, April 1; filed, April 12; payments, \$1,000, 2d story including belt course completed; \$1,000, 3rd completed; \$357, completed; \$357, 35 days.

Sutter near Taylor. Iron work; owners, Golden Gate Bldg. Ass'n; architects, Smith & Freeman; contractors, J. K. Firth & Co.; cost, \$5,645; signed, April 1; filed, April 12; payments, \$300, 1st walls are up; \$800, beams and columns set; \$1,800, trusses set; \$1,033, completed; \$1,412, 35 days.

Sutter near Taylor. Mason work; owners, Golden Gate Bldg. Ass'n; architect, Wm. F. Smith; contractor, J. H. Wilson; cost, \$20,750; signed, April 1; filed, April 2; payments, \$2,300, concrete foundation in; \$2,000, ready for 1st story joists; \$5,000, ready for 2nd; \$5,000, ready for roof; \$1,262, completed; \$5,188, 35 days.

Tennessee and Susquehanna. Two-story frame; owner, Chas. M. Rousseau; architect, Chas. M. Rousseau; contractor, Louis Mendus; cost, \$2,250; signed, April 25; filed, April 27; payments, \$462, roof on; \$562, brown coated; \$562, completed; \$562, 35 days.

Turk and Scott. Two-story frame; owner, Jno. Otten; architect, A. C. Lugens; contractor, J. J. O'Brien; cost, \$5,015; signed, April 19; filed, April 25; payments, \$500, first story joists set; \$800, roof ready for tinning; \$800, brown coated; \$800, white coated; \$861.25, completed; \$1,231.25, 35 days.

Twenty-third and Delores. To build; owner, Jno. Clency; contractor, Droge & Munster; cost, \$1,300; signed, April 7; filed, April 18; payments, \$800, frame up; \$800, brown coated; \$800, white coated; \$800, completed; \$1,000, 35 days.

Valparaiso near Mason. Three-story frame; owner, V. Gamba & wife; contractor, Edmund Pleassey; cost, \$3,900; signed, April 14; filed, April 16; payments, \$75, rear house in place; 1st floor joists of new house set; \$75, enclosed and roof on; \$75, brow coated; \$75, completed; \$1,000, 35 days.

Walnut near Jackson. Two-story frame; owner, Henriette Keating; architect, Wm. H. Wharf; contractors, E. C. Worden & Son; sureties, Kinnead & Shaw; cost, \$3,236; signed, April 20; filed, April 25; payments, \$800, rustic on; brown coated and roof completed; \$800, completed; \$886, 35 days.

Washington near Central Ave. To build; owner, Mary E. Marshall; architect, W. H. Little; contractor, R. M. Murray; surety, \$5,000; cost, \$1,500; signed, April 6; filed, April 6; payments, \$1,485, frame up; \$1,485, enclosed; \$1,485, brown coated; accepted; \$1,485, standing finish on; \$1,485, completed; \$2,475, 35 days.

ALAMEDA COUNTY.

Beaudy and Peladeau Tr., Oakland. To build; owner, Robert Knowles; architect, Joseph A. Leonard; contractor, Luther Hill; cost, \$1,300; signed, April 6; filed, April 9; payments, \$25, frame is up; \$25, brown mortar on; \$25, completed; \$25, 35 days.

Blasdel Tr., Bk. 2. To build; owner, H. G. Blasdel; contractor, J. A. Eastman; cost, \$5,000; signed, March 31; filed, April 6; payments, \$1,250, when work is completed; \$1,250, rough coat mortar on; \$1,250, completed; \$1,250, 35 days.

Bowditch and Channing Way, Berkeley. To build; owner, Mrs. E. C. Head; architect, S. Edgar Fisher; contractor, J. B. Sprague; cost, \$10,500; signed, March 25; filed, April 6; payments, \$2,625, 1/4 frame up; \$2,625, 1/4 brown coat mortar on; \$2,625, 1/4 completed; \$2,625, 35 days.

Buon Vista near Willow, Ala. To build; owner, Miss E. S. Hirschory; contractors, A. W. Pattiani & Co.; cost, \$2,070; signed, March 31; filed, April 1; payments, \$400, rustic and roof shingles on and chimney built; \$500, window frames set; coat brown mortar on; \$450, completed; \$520, 35 days.

Castro and 5th, Oakland. Alterations and building; architect, E. C. McManus; owner, Patrick Hanley; contractor, David Baxter; cost, \$1,185; signed, April 11; filed, April 14; payments, \$25, brick foundation in and second story frame up; \$25, stairs up, first coat of paint on; \$25, completed; \$300, 35 days.

Central Ave. near Union, Alameda. Two-story dwelling; owner, Mary Cashman; architect, Chas. H. Shaner; contractors, Brebant & Diamond; sureties, E. F. Dunne & A. B. Vectors; J. B. Elger; cost, \$5,000; signed, April 25; filed, April 25; payments, \$87, frame up and roof shingled; \$87, enclosed roof and cornice on; \$87, brown mortar on, and verandas built; \$87, all plastering and wood work done; \$1,250, 35 days.

Clinton, Portion of blk. 4. To build; owner, W. S. Goodfellow; architect, H. A. Schulze; contractor, C. E. Nichols; cost, \$4,082; signed, April 13; filed, April 18; payments, 1st day of each month 75 per cent. as work progresses; 25 per cent. 35 days.

Columbus and Maple, Oakland. Frame building; owner, Mrs. J. B. Mosier; architect, C. H. Wedgenwood; contractor, W. W. Miller; cost, \$2,400; signed, April 22; filed, April 22; payments, \$510, rustic and roof on; \$510, hard finish on; \$510, completed; \$510, 35 days.

Dwight Way near Sacramento, Berkeley. Frame building; owners, Henry and Anna Rutfish; architect, L. L. Nicholas; contractor, C. E. Nicholas; cost, \$1,078; signed, April 16; filed, April 22; payments, \$300, enclosed and roof shingled; \$300, outside finished and brown mortar on; \$338, 35 days.

Eight near Alice, Oakland. To build; owners, Lang Bros.; architects, Jonh & Balczanski; contractors, Herbst & McLeod; cost, \$1,875; signed, April 11; filed, April 13; payments, \$400, frame of cottage and stable is up; \$300, building enclosed, roof and brown mortar is on; \$300, completed; \$475, 35 days.

Filbert and 14th, Oakland. Frame building; owner, Mrs. P. Bruenn; architect, S. Edgar Fisher; contractor, J. B. Sprague; cost, \$2,550; signed, April 25; filed, April 26; payments, \$87.50, frame up; \$87.50, brown mortar on; \$87.50, completed; \$87.50, 35 days.

Fourteenth and Franklin, Oakland. Gallery in Presbyterian Church; owners, church trustees; architect, Samuel Newsom; contractors, W. F. Vetch Bros.; cost, \$4,770; signed, April 21; filed, April 22; payments, 15th day of each month 75 per cent. as work progresses; 25 per cent. 35 days.

Fourteenth near 28th Ave., Alameda. Two-story building; owner, Frank Bider; architect, A. W. Smith; contractor, John Bannan; cost, \$3,515; signed, April 22; filed, April 22; payments, \$1,000, frame up; \$820, enclosed; \$820, brown mortar on; \$875, 35 days.

Franklin and 7th, Oakland. Three-story brick; owner, Octave Lamarche; architect, Chas. Mau; contractor, Remillard Brick Co.; cost, \$3,948; signed, April 23; filed, April 28; payments, 75 per cent. in four installments as work progresses; 25 per cent. 35 days.

Franklin and 7th, Oakland. Three-story brick building; owner, Octave Lamarche; architect, Chas. Mau; contractors, Herbst & McLeod; cost, \$6,000; signed, April 25; filed, April 25; payments, \$1,500, work done; \$1,500, 1/2 work done; \$1,500, 1/2 work done; \$1,500, completed; \$2,000, 35 days.

Fruit Vale Ave. near 14th St., Fruit Vale. Two-story dwelling; owner, Edward Marned; architects, J. C. & E. A. Mathews; contractors, Baudin & Ebers; cost, \$3,285; signed, April 18; filed, April 21; payments, \$300, frame up; \$1,150, enclosed, brown mortar on and one coat of oil on finish; \$1,037.50, completed; \$821.25, 35 days.

Garden Tr., Hd. To build; owner, Catherine Jones; contractors, Langtry & Johnson; cost, \$1,280; signed, April 4; filed, April 8; payments, \$300, frame up, roof on; shingled, building enclosed with rustic; \$300, brown mortar on; \$300, completed; \$380, 35 days.

Graves and Taylor Tract, Oakland. One-story frame cottage; owner, Joseph Coxen; contractors, Eby & Jewett; cost, \$1,645; signed, April 16; filed, April 18; payments, \$411.36, house enclosed and roof on; \$411.36, brown mortar on; \$411.36, completed; \$411.36, 35 days.

Haight Ave. near 7th, Alameda. To build; owner, Thomas Mills; contractor, A. R. Denke; cost, \$2,450; signed, April 6; filed, April 9; payments, \$50, frame up; \$500, 1 coat plaster, \$500, completed; \$500, 35 days.

Lake Merritt, Park Tract, Oakland. To build; owner, Wm. N. Holway; architect, Jno. Conant; contractor, A. W. Cornelius; cost, \$3,800; signed, March 28; filed, April 4; payments, \$1,500, brown mortar on; \$1,300, carpenter work done and ready for painting; \$1,000, 35 days.

Ninth Ave. near 15th, Oakland. Cottage; owners, A. J. Read and wife; contractor, T. R. Goth; cost, \$1,570; signed, April 21; filed, April 23; payments, \$370, ready for plastering; \$1,200, to be paid in a dead deed right and title to be vested in party of second part to all that portion of land situated in the town of Los Gatos.

Oak St., Alameda. To build; owner, J. F. Fleiter; architects, Percy & Hamilton; contractor, C. L. Lombard; bond, \$5,000; cost, \$10,191; signed, April 6; filed, April 6; payments, 75 per cent. of the value of work done and materials furnished 1st of each month; 25 per cent. 35 days.

Oxford St., Berkeley. To build; owner, Mary B. Metcalf; architect, Walter J. Mathews; contractors, Vetch & Vetch; cost, \$3,900; signed, April 6; filed, April 6; payments, \$500, when 1/2 of work is completed; \$1,000, 1/2 completed; \$1,000, completed; \$1,000, 35 days.

Paradise St., Lorin. To build; owners, Lorin Hall Ass'n; architects, Martens & Coffey; contractor, Andre Johanson; cost, \$3,745; signed, March 29; filed, April 11; payments, \$500, frame up; \$500, rustic and roof boards on, etc.; \$821, brown mortar on; \$500, outside finished, one coat paint on; \$500, completed; \$924, all receipts, from contractors, etc., are presented and signed as paid.

Park Hd., blk. 26, Alameda. Cottage; owner, Mrs. J. M. Graham; architect, C. M. Jenkins; contractors, F. G. & E. C. Cary; cost, \$2,071; signed, April 22; filed, April 23; payments, \$517.75, frame up; \$517.75, enclosed; \$517.75, plastered; \$517.75, 35 days.

San Jose Ave. near Grand, Ala. To build; owner, Wellesley Moore; contractors, A. W. Pattiani & Co.; cost, \$3,825; signed, March 28; filed, April 3; payments, \$1,030, rustic and roof shingles on and chimney built; \$550, window frames set; coat brown mortar on; \$867, completed; \$867, 35 days.

San Pablo near Alcatraz, Oakland. Frame building; owner, Balthasar Emerick; contractors, Maruse & Lemmel; cost, \$1,073; signed, April 21; filed, April 22; payments, \$288, frame up; \$288.75, brown mortar on; \$288.75, completed; \$288.75, 35 days.

Santa Clara Ave., Alameda. To build; owner, Wm. J. Smith; contractors, Maruse & Remmel; cost, \$3,400; signed, April 6; filed, April 9; payments, \$550, frame up; \$550, brown coat mortar on; \$550, completed; \$550, 35 days.

Santa Clara Ave., Oakland. Frame building; owner, Chas. Miller; contractors, Maruse & Remmel; cost, \$3,000; signed, April 21; filed, April 25; payments, \$225, frame up; \$225, shingled and wainscoting completed; \$225, completed; \$225, 35 days.

Seventeenth near Clay, Oakland. To build; owner, Eliza A. Tompkins; architect, Elmer Childs; contractors, Bandin & Co.; cost, \$5,356; signed, April 6; filed, April 8; payments, \$700, frame up; \$1,000, brown coat mortar on; \$1,000, outside completed; one coat paint on; \$1,317, completed; \$1,336, 35 days.

Seventeenth near Clay, Oakland. To build; owner, F. L. Adams; architect, Elmer Childs; contractors, J. P. Bandin & Co.; cost, \$5,356; signed, April 6; filed, April 8; payments, \$700, frame up; \$1,000, brown coat mortar on; \$1,000, outside fully completed and one coat paint on; \$1,317, completed; \$1,336, 35 days.

Shattuck Ave. and Cedar, Berkeley. Two-story frame; owners, Boysen & Anderson; contractor, W. B. Mells; cost, \$2,200; signed, April 19; filed, April 20; payments, \$550, frame up; \$550, brown mortar on; \$550, completed; \$550, 35 days.

Stan Tr., Lot 25, block B, Oakland. To build; owner, W. S. Merriam; contractors, Caldwell & Nickerson; cost, \$2,158; signed, April 7; filed, April 7; payments, \$400, frame up and sheathing on roof; \$400, enclosed and inside finish on; \$400, brown mortar on; \$400, completed; \$400, 35 days.

Telegraph Ave. and 24th, Oakland. To build; owner, M. M. Dunn; architect, Chas. Mau; contractor, Jas. Toling; cost, \$5,500; signed, March 28; filed, April 4; payments, \$1,025, 1/2 materials furnished, 1/2 work done; \$1,025, 1/2 furnished, 1/2 done; \$1,035, 1/2 furnished, 1/2 done; \$1,000, completed; \$1,375, 35 days.

Telegraph Ave. near 17th St., Oakland. To build; owner, Chas. Sexton; architect, Howard Burns; contractors, Burpee & Libbey; cost, \$4,781; signed, April 25; filed, April 25; payments, \$1,185, walls to second story; joists set; \$1,185, roof on and floor laid; \$1,185, completed; \$1,185, 35 days.

Thirty-fifth near Grove, Oakland. To build; owner, Geo. G. Baker; architect, R. Gray Frise; contractor, Alexander Wahlstrom; cost, \$2,200; signed, April 19; filed, April 19; payments, \$550, frame up, building enclosed; \$550, roof on, floors laid, rough plumbing done and brown mortar on; \$550, plastered, windows hung and building primed; \$550, 35 days.

Twenty-fourth near Valley St., Alameda. To build; owner, James Lyng; architect, Howard Burns; contractor, Peter Crinnion; cost, \$2,700; signed, April 22; filed, April 22; payments, \$675, frame and brick work completed; \$675, enclosed and brown mortar on; \$675, completed; \$675, 35 days.

Thirty-fifth near Grove, Oakland. Frame building; owner, Geo. G. Baker; architect, R. Gray Frise; contractor, Axel Wahlstrom; cost, \$4,400; signed, April 28; filed, April 28; payments, \$1,100, building enclosed; \$1,100, roof on, floors laid, brown mortar on and rough plumbing done; \$1,100, plastered, primed inside finish on; \$1,100, 35 days.

Washington and 31st, Oakland. Millwork; owners, Condon & Shay; architect, Chas. Mau; contractors, Juyler & Atkinson; cost, \$3,300; signed, March 31; filed, April 1; payments, \$825, outside frames are set; \$825, standing finish on; \$825, completed; \$825, 35 days.

Wood and Atlantic, Oakland. To build; owner, M. Good; architect, C. H. Foster; contractor, A. W. Smith; cost, \$1,075; signed, March 31; filed, April 1; payments, \$275, frame up; \$275, enclosed, ready for lathing; \$288, completed; \$275, 35 days.

Mathews. To build; owner, Wallace Everson; architect, Walter J. Mathews; contractor, Patrick Maloney; cost, \$3,747; signed, April 1; filed, April 5; payments, \$936.66, 1/3 work done; \$936.66, 1/3 done; \$936.66, completed; \$937, 35 days.

The California Architect and Building News.

Copyrighted 1891, by the California Architectural Publishing Company.

OFFICE, 408 CALIFORNIA STREET,

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

VOLUME XIII.

JUNE 20th, 1892.

NUMBER 6.

A MONTHLY JOURNAL DEVOTED TO THE ARCHITECTURAL INTERESTS OF THE PACIFIC COAST.

Published on or about the 20th of each month by The California Architectural Publishing Company. The Stockholders being Architects and others interested in the profession.

SUBSCRIPTION TO THE JOURNAL,

\$3.00 PER YEAR IN ADVANCE.

ESTABLISHED 1879.

INCORPORATED 1889.

NOW IN THE THIRTEENTH YEAR.

W. J. CUTHBERTSON, President.

OLIVER EVERETT, Secretary.

ADVERTISING RATES:

Space	1 Month.	3 Months.	6 Months.	12 Months.
1 Inch.....	\$ 1.50	\$ 4.00	\$ 7.50	\$ 13.00
2 Inch.....	3 00	10 00	18 00	35 00
3 Inch.....	4 50	15 00	27 00	50 00
4 Inch.....	6 00	20 00	36 00	65 00
5 Inch.....	7 50	25 00	45 00	80 00
6 Inch.....	9 00	30 00	54 00	95 00
7 Inch.....	10 50	35 00	63 00	110 00
8 Inch.....	12 00	40 00	72 00	125 00
9 Inch.....	13 50	45 00	81 00	140 00
10 Inch.....	15 00	50 00	90 00	155 00
11 Inch.....	16 50	55 00	99 00	170 00
12 Inch.....	18 00	60 00	108 00	185 00
13 Inch.....	19 50	65 00	117 00	200 00
14 Inch.....	21 00	70 00	126 00	215 00
15 Inch.....	22 50	75 00	135 00	230 00
16 Inch.....	24 00	80 00	144 00	245 00
17 Inch.....	25 50	85 00	153 00	260 00
18 Inch.....	27 00	90 00	162 00	275 00
19 Inch.....	28 50	95 00	171 00	290 00
20 Inch.....	30 00	100 00	180 00	305 00

Remittances should be in the form of postal orders, payable to THE CALIFORNIA ARCHITECTURAL PUBLISHING COMPANY, and all communications addressed to the office of the Company, 408 California Street, San Francisco, Cal.



Index to Advertisers.....	VI
Corona School—Denver, Colo.....	62
Electrical Illumination.....	62
The Government Timber Tests.....	64
Notes and Comments.....	66
Illustrations.....	66
Books and Periodicals.....	67
Notice of Meetings.....	67
Popular Talks on Law.....	68
Expired Patents.....	68
Legal Decisions.....	68
Business Mosaics.....	69
Tenders to be Received.....	70
Building News.....	70

THE subject of high buildings for business purposes has attracted the attention of architects for a number of years and many predictions have been made concerning the limit to which such structures may be carried. In Chicago, where the most noted examples of high business blocks may be found, the Common Council has passed an ordinance limiting the height of buildings. The ordinance was passed by a vote of thirty-nine yeas to nine nays. The question elicited a spirited discussion with regard to the rights of the public and the business and sanitary interests of the city. The ordinance provides that for buildings upon streets of not

more than 80 feet in width the height shall not exceed 125 feet; that upon streets of not more than 40 feet in width the height shall not exceed 100 feet; the extreme height in any case shall not exceed 150 feet. The ordinance does not prohibit the erection of towers, spires, domes, etc., under certain conditions.

In this matter the Council has taken into consideration the right of the commonwealth as well as the rights of the owners of high buildings. The danger from fire for this class of structures has for some time occupied the attention of fire underwriters. A committee from several prominent Insurance Companies has recently made a report recommending that the height of buildings should not exceed four stories or 50 feet as a standard risk. This height is based on fire-proof buildings of modern construction.

We should infer from this that Insurance experts rate the fire risk as increasing with the excess of height above 50 feet.

The streets and buildings of a city are the creation of the inhabitants, each individual being directly interested in any matter pertaining to the public welfare, therefore, we see no reason why the height of buildings should not be restricted to a safe limit as time and experience may determine.

With the growth of cities the importance of sanitary provisions becomes more pronounced and measures must be adopted to prevent the increased disease and death rate due to overcrowding. It has come to be an acknowledged fact that many forms of disease are propagated and carried about in the air, the danger from which may be lessened by a free movement of the air as in the rural districts. High buildings and narrow streets have a tendency to prevent free circulation, consequently the disease germs are multiplied and concentrated and the death rate increased. Thus from a sanitary point it seems proper that some restriction should be placed upon the excessive height of buildings.

At a meeting of the Board of Health, held on May 20, 1892, the following resolutions introduced by Dr. Bucknall, were adopted:

In accordance with the recommendation made to the Board at its last meeting, by the Plumbing Inspector, I offer the following:

Resolved. That all persons building New houses, or altering Old ones, demand a certificate from the Plumbing Inspector of the Health Department before accepting.

Resolved. That all property owners putting down permanent sidewalks, should have an intercepting trap, with air-pipe, on outer edge of sidewalk, as sanitary precaution against Sewer Gas permeating their premises.—JAS. W. KEENEY, M. D., Health Officer.



CORONA SCHOOL, DISTRICT NUMBER ONE, DENVER, COLO.

A recent issue of the *Granite Cutters Journal* contains a report from a committee from the Granite Cutters National Union in reference to a communication to that body from the Granite Manufacturers' Association of New England. The following paragraphs are taken from this report as they contain some reasonable advice to employers generally.

"We are also told that competition in the trade is so close and the margin of profit so low that they cannot afford to do anything. With whom is this competition? Surely not with the workman at the banker. When an association or its members say that they are handicapped by the unfair competition of their own members, it is time for that association to take steps to bring its members to a healthy state of fair dealing one with another, and not endeavor to foster that system of unfair competition by throwing the burden on the workmen. We believe the system on which the Manufacturers' Association is founded is a wrong one, and its members should at once remedy its defects, and endeavor to elevate the trade instead of trying to destroy it. * * * It is better for them to live in peace and harmony with all men than to lie awake nights scheming how to get the better, not only of their workmen, but of their associates as well."

WE are again indebted to *Books*, published in Denver, Colo., for the School Building herewith illustrated. The building was designed by Mr. Robert S. Roeschlaub, Architect, of Denver. The plans present features not usually meet with in school architecture.

With such buildings for school purposes as this and the High School shown in our April number, together with the facilities for study afforded by the Denver Library, it is no wonder that its citizens claim superiority over less favored places.

Well planned school buildings are the pride of the inhabitants of every city and town, and as architects are giving more thought to this class of structure than formerly, the present school houses are showing a marked improvement to those erected a few years ago.

ELECTRICAL ILLUMINATION.

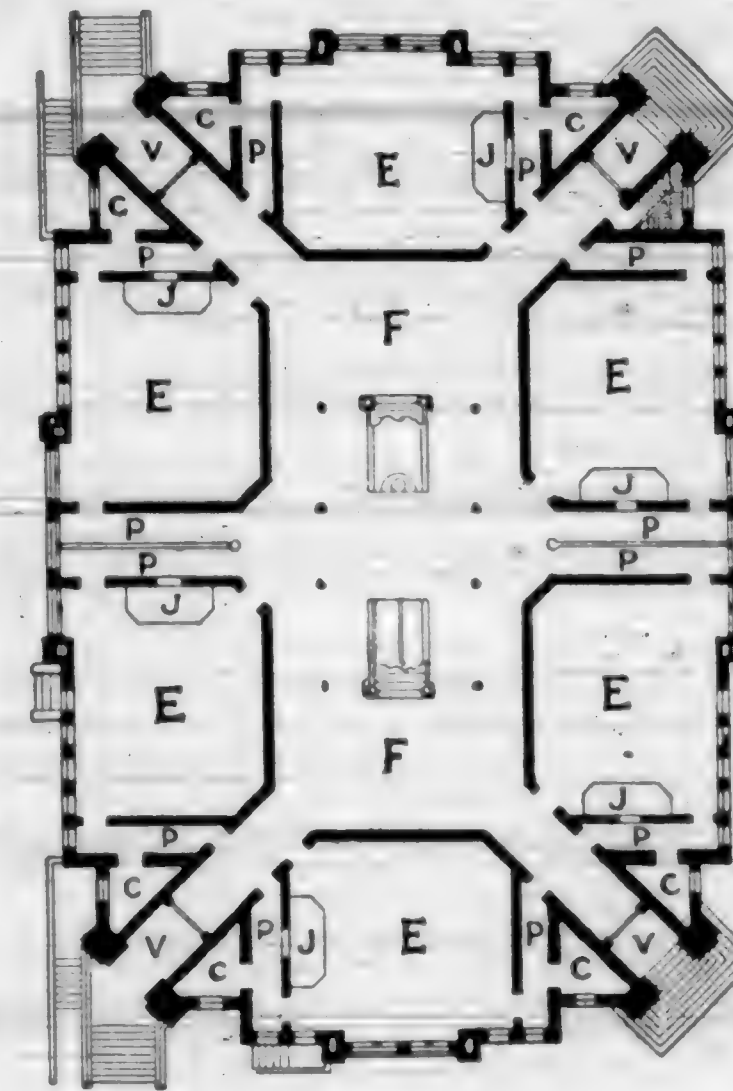
FROM time immemorial there has been a call for more light, and history leads us through a long line of development from the "torch" by way of the "tallow dip" to gas and more recently to electricity, which has brought into the field new and important problems for the consideration of the Architect. From the *Journal of the Royal Institute of British Architects* we reprint an abstract of a paper on this subject by Mr. W. H. Preece, F. R. S.

THE INTERNAL ILLUMINATION OF BUILDING.

"The art of internal illumination of buildings, the author considers, is just born, and will be an art in the future. Electricity is rendering theatres bearable and houses healthier, while the architect is brought face to face with a new art, in which the aid of the electrician is required to solve some of the difficulties. History is silent as to the origin of tallow, pitch, wax and oil, but gas as an illuminant came in with the present century. From the earliest days history, whether culled from paintings or writings, teaches that lights have been dim and crude until the middle of the

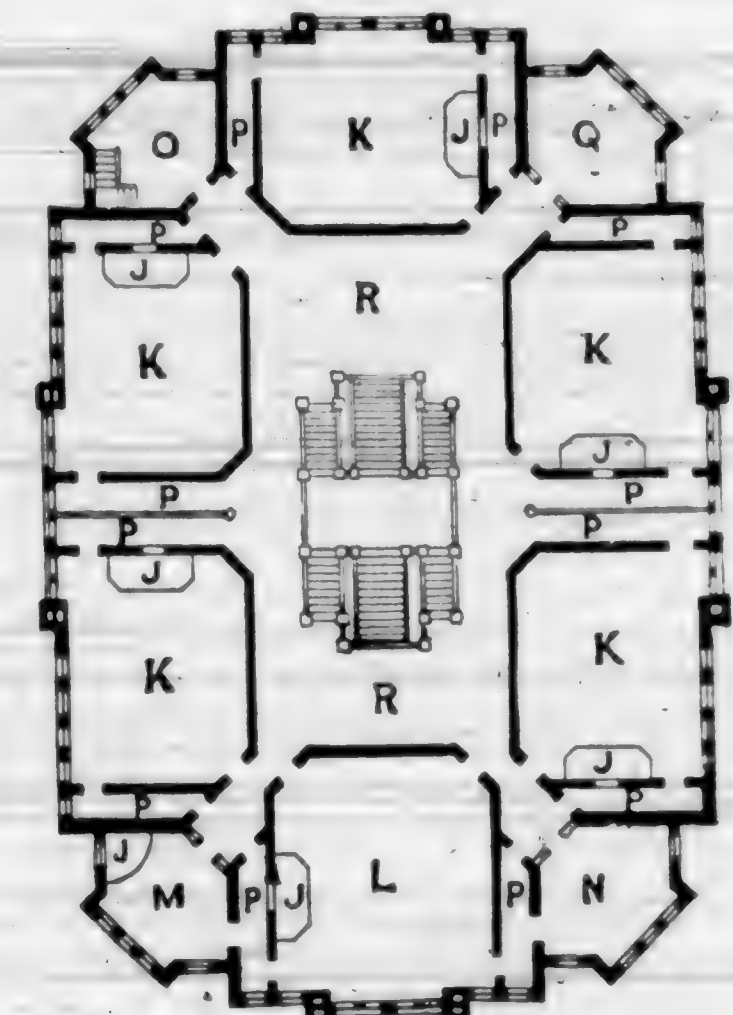
present century. Light, by whatever means generated, follows the same laws, and is due to the rapid rhythmic undulation of the medium, called the ether, that fills all space. Wherever there is light there is heat, and the hope of the philosopher to supply light without any heat at all is at present but a dream. Light cannot be produced without heat, and the higher the temperature the brighter the light. Color varies with the rate of vibration of the ether, while changes of color are due to the changes of wave-motion of the ether. Light may become so intense that all sense of color is lost, and every bright illumination causes all colors to appear whitish. If light emanates from a point, its intensity diminishes with the square of the distance. The candle is the British standard source of light, and the bright surface produced by it at a distance of one foot the standard illumination by which to measure the amount of light distributed by any other means. This standard Mr. Preece calls a "lux". A sixteen-candle power glow lamp is a lamp which gives a light equal to that of sixteen British standard candles concentrated on one spot, and it will at a distance of four feet give the illumination of a lux. Thus one-candle power at one foot, four candles at two feet, nine candles at three feet, fifteen candles at four feet, twenty-five

the number of sixteen-candle power lamps required, fixed eight feet high; these being increased or diminished according to the purposes of the room, its form and height, etc. The adaptability of the eye to nearly every degree of light is very great, and it is almost impossible for it to judge accurately of the amount of light present; but it is not as a mere source of light that the glow lamp is superior to the gas-burner. The former can be put anywhere and used without the adventitious aid of match or fire. It does not vitiate nor unnecessarily warm the air, and it simplifies the problem of ventilation, while it lends itself above all to the aesthetic harmony of furniture and decorations. Electric light is not always absolutely safe; security is to be obtained only by good design, perfect materials, first-class workmanship, and rigid inspection. Imperfect materials erected by cheap contractors lead to many disasters; on the other hand, it is stated no fire has occurred in buildings fitted up under the rules and regulations, and inspected by the officers of the insurance companies in this country. Mr. Preece advocates keeping everything as much as possible in view, and not hiding the conductors under wainscots or floors or above ceilings. The glow lamp excited by three watts per candle is at present the most perfect



First Floor.

E—School Rooms, 27 x 33 feet
F—Corridor
P—Wardrobes
V—Vestibule
C—Closets
J—Platforms



Second Floor.

K—School Rooms, 27 feet 8 inches x 33 feet 4 inches
L—School Room, 33 feet 4 inches x 33 feet 6 inches
M—Recitation Room
N—Principals Room
O—Teachers Room
P—Wardrobes

candles at five feet, give exactly the same illumination, viz., one lux, on the paper on which we write or on the page from which we read. The great problem is to diffuse light throughout a room so that it be distributed uniformly over the working surfaces with an intensity of a lux. Sixteen-candle glow lamps suspended eight feet above the floor, and fixed in eight feet squares, effects this very well; and groups of four such lamps fixed sixteen feet high produce a similar result. The light a lamp gives is owing to the expenditure of energy in its carbon filament; an electric current is driven through this filament by electric pressure, its resistance is overcome, it is intensely heated by the proceeding, and the result is pure unadulterated light. The energy expended per second by an *ampere* (the standard current), driven by a *volt* (the standard pressure), is called a *watt*. A sixteen-candle glow lamp takes sixty-four watts, which, assuming the lamps to be fixed eight feet high, means that one watt per square foot of surface is required to secure ample illumination from lamps so fixed. Therefore, in designing the normal illumination of rooms, Mr. Preece takes the floor area in square feet and divides it by sixty-four, which gives

source of domestic light, and when the patent expires—in a year or two—will be obtainable at one-third the present price. It is scarcely fair, Mr. Preece thinks, to say all light should come from the side of a room, as Lord Beaconsfield stated in *Lothair* when describing the lighting of Belmont. The House of Commons is one of the best-lighted chambers in London, and is lighted from the roof, a false glass ceiling excluding the heat and glare, and admitting only the light. What is wanted is to avoid the glare of the incandescent filament in the eyes, and to prevent the lamp from being too obtrusive; it can be shaded from the eye without its effectiveness being destroyed, and without the flow of light being obstructed or its quality being deteriorated. Judging from the Crystal Palace Exhibition, at which several leading firms have not exhibited, the electric light fitter has not seized upon the spirit of the age—which is the rule of science over mere conventional aestheticism. Two exhibits at the Crystal Palace, however, the author considers, especially deserve inspection. The one is a Tudor ribbed ceiling erected by Messrs. Allen & Mannoch, who have applied glow lamps to the moulded intersecting pendants in

such a way that the feeling of the artist is maintained by day, and is rather intensified, and not marred, by the artificial illuminant at night. The other is a bold attempt of Messrs. Rashleigh, Phipps, and Dawson to design in iron-work the whole of the fittings of a dining-room, so that they shall, in combination, convey an idea. The artist (Mr. Reynolds) has attempted to symbolize the solar system, the centre light has been introduced. Having described several pictures in which artificial light has been introduced with more or less successful results, Mr. Preece, in conclusion, considers that science is advancing with giant strides. Science has subdued nature so as to bring it within the compass of the human intellect, and Art must follow the knowledge thus acquired. These two being the chief instruments of modern civilisation, the architect and engineer must work hand in hand.



TERRA-COTTA CAPITAL FROM THE MUSEUM NATURAL HISTORY AT KENSINGTON, ENG.

THE GOVERNMENT TIMBER TESTS.

THE U. S. Department of Agriculture has issued Bulletin No 6, compiled by B. E. Fernow, Chief of the Forestry Division. This work "TIMBER PHYSICS," deals with a practical question of great interest to architects and builders, and we shall, from time to time, make copious extracts from this and the following reports. Mr. Fernow's letter to the Secretary of the Department of Agriculture, and the introduction states the case clearly.

"This is the first of a series of bulletins which are to record the results of an extensive investigation into the nature of our important woods, especially their mechanical and technical properties, and the dependence of these upon structure and physical condition and upon the conditions under which the wood was grown.

The present bulletin is entirely preliminary in its nature. Its object is to serve as a basis for the work which is to follow and is partly begun. It discusses the need, object, and scope of the investigation, gives references to the work which has preceded the present investigations, and explains the methods pursued in these latter, including the forms of record and illustrations of the machinery in use."

"INTRODUCTORY.—Scientific research is satisfied with its results without any reference to their practical application. Increase of knowledge is its self-sufficient aim. Whether this may in the end bring us an increase of power to control nature's forces or to utilize them to better advantage is not the concern of science, and yet all increase of this power has come directly or indirectly from such scientific research. Acknowledgment or ignorance, then, from a scientific point of view, is sufficient to establish the need of

an investigation. From a practical and economic point of view, however, it would still remain necessary to point out whether and why the need is a pressing one and what direct benefits may be expected from such an investigation.

It will be admitted by all who have to handle wood in building, engineering and manufacturing, that our knowledge regarding the properties of our various timbers is not very satisfactory, and that while attempts more or less systematic have been made to determine these properties, and knowledge gained from experience exists among those who have handled certain classes of woods for certain purposes, there does not exist much reliable published information for general use.

It is also a well-known fact that from this ignorance of the value of our varied timber wealth, and its special adaptation to particular uses, large quantities of valuable material have been wasted. Everybody is familiar with the waste of our fine black walnut timber for fence rails, posts, and firewood. Until twelve or fifteen years ago many million feet of hemlock were left to rot in the woods, after the bark had been taken for tanning purposes, or this timber was not cut at all because its value for building purposes was not understood or was underrated.

In Alabama, along the Louisville and Nashville Railroad, a few years ago a large amount of chestnut oak was felled for the tan bark alone, the wood of the trees being allowed to rot, because railroad people did not know its value for railroad ties. The Division of Forestry, by a little circular, called their attention to the superiority of this timber for tie purposes, and now the wood is utilized, and thus for this region alone a saving of from \$40,000 to \$50,000 annually was effected, or more than three or four times as much as the annual appropriations for the Division of Forestry.

Even now many thousand cords of this valuable wood are lost there and in other regions when the bark is taken for tanning purposes, while the wood itself, which contains as much and more tannic acid per cord than the bark, is left unused, because it cannot be profitably transported in its original form. Presently a new wealth will be developed for the tanners, where it was not looked for. * * *

It would be impossible to estimate the direct and indirect losses which the country suffers from our ignorance as to the true values and strength of our building timbers. Such losses occur by using kinds unsuited for given purposes, or by employing either more or else less timber than necessary. Engineers and architects are fully aware of this deficiency in our knowledge, which approaches "a state of ignorance" remarkable to contemplate when it is considered that timber has always been a foremost building material. * * *

Not only are our engineers' tables, giving values of strength, uncertain, unreliable for practical use, based upon European timbers, etc., but probably not one in a hundred engineers or architects, who specifies timber for work, is capable of determining whether a given stick of timber is or is not capable of doing the duty it is designed to do. Even if he recognizes the species of timber, which he rarely can do with accuracy, he would fail to recognize any relation between the appearance or structure of the material and its expected or desired quality. And if he be better informed than the majority it will be only through dearly-bought experience. Empiricism in this branch of engineering still reigns supreme.

It is only six years ago that Prof. Lanza showed that tests made on small specimens, and on which our tables for engineers' use are based, may give results more than twice as high as those made on full-sized sticks; and although a factor of safety of 4 may have been applied in the specification, when it is found that material may have actually a strength .50 per cent. less than that given in the tables, we may often strain our material, without knowing it, to its full capacity and feel safe in so doing.

The following statement, which occurs in one of the letters referred to, may serve as an illustration. Mr. D. H. Burnham, engineer of construction for the World's Columbian Exposition, writes:

"When I was appointed engineer of construction, World's Columbian Exposition, August 1st, I found it necessary to make changes in most of the buildings because I did not dare to use as high unit stress in timber as was used by my predecessor, although he claimed to be perfectly safe in his strains, and brought forward authorities—Trautwine and others—to prove his statements.

Inquiries from woodworkers in all branches show that the same lack of reliable knowledge exists with regard to the adaptation of woods to technical purposes. Especially are the ideas as to the relation of properties to structure, physical condition, locality of growth, etc., entirely at variance and lacking a sound basis derived from accurate observation and research. It would then appear that from a practical point of view the need of an investigation exists, the more so since our forest resources begin more decidedly to show the signs of lavish wastefulness, and proper economy would dictate a more careful employment of our wood materials.

Lastly, since we are beginning to plant forests and since forestry does not concern itself with the production of wood simply, but is to produce wood of given quality, we need this knowledge in order to proceed intelligently in the selection of plant material with reference to locality and in order to be able to control in a measure the quality of the product.

It is of interest to inquire why our ignorance exists and has prevailed so long, and to find out what is necessary in order to remove it.

There is one important factor of difference between other materials of construction and timber. It is the factor of life. Life means variety, change, variability. Each individual differs from every other in its development, and each part of the individual differs from its other parts in structure, and hence in qualities. Each living tree of the same species, therefore, converted into building material offers a different problem as to its properties, especially its strength, and each stick taken from a different part of the tree shows different quality.

This endless variability it is that has kept us in ignorance as to the capabilities of our timbers. While, by experience, we have learned that these differences exist, and even learned to find some relations between physical appearances, anatomical structure, and mechanical properties, the enormity of the enterprise has baffled investigators and deterred them from carrying on, in a systematic and comprehensive manner, such tests and examinations as would furnish us not only with reliable data as to the range of capacity of our timbers, but also as to the exact relation of their properties to their structure and physical condition.

In order to establish fully for any one species the possibilities of its adaption to our use, it is necessary to test a very large number of specimens. In order to formulate laws of relation between physical condition, anatomical structure, and mechanical properties, each test specimen must be carefully examined. In order to establish laws of relation between the physical and mechanical qualities and the conditions under which the specimen has grown, it is necessary to perform the testing and the examination on a large number of specimens of known origin.

Almost all the investigations made in this line are deficient in one or more or all of these points. Not only have there been few tests made on a sufficient quantity of material to allow generalization, but rarely have there been sufficient data furnished regarding the nature and origin of the test specimens to enable us to form a judgment.

Whatever laws of interrelation between physical structure and mechanical properties have been established or indicated, we owe almost entirely to European investigators on European timbers. Our engineers' tables are mainly made up from European sources, and while the extensive tables of the Tenth Census, prepared by Prof. C. E. Sharples, give us an indication as to the relative values of our many species, they can hardly claim to furnish data for practical application; in fact the author himself distinctly disclaims this. Anyhow, no attempt has been made to find out the causes of variation in properties or even to give data from which argument might proceed or a relation between properties and structure might be inferred.

It is to supply this absolute gap in our knowledge—which causes thousands and millions of dollars of waste annually—that the Forestry Division has entered upon a comprehensive and systematic investigation which has become known under the name of "The Government Timber Tests."

This investigation, the most comprehensive of the kind ever undertaken anywhere, in this country or in Europe,

differs from all former attempts in similar direction in this, that it starts out with the fullest recognition of three facts:

(1) That in order to establish reliable data as to mechanical properties of our timbers, it is necessary to make a very large number of tests, by which the range as well as average capabilities of the species is determined.

(2) That in order to enable us to make the most efficient practical application of the data thus obtained, it is necessary to know the physical and structural conditions of the test material and bring these into relation with the best results.

(3) That in order further to deduce laws of relation between mechanical properties and the physical and structural conditions, as well as the conditions under which the material was produced, it is necessary to work on material the history of which is thoroughly known.

Briefly, then, to solve the problems before us, it is necessary to make our tests on a large number of specimens of known origin and known physical condition. While the tests in themselves appeal at once and first to the engineer, inasmuch as, by their great number, they will furnish more reliable data regarding the capabilities of the various timbers, the chief value and most important feature of the work lie in the attempt to relate the mechanical properties to the structure of the material and to the conditions under which it was produced.

We are not only concerned to know that a stick of this species of tree will bear a given load, but we want to be able to tell why this stick of the species will bear so much and why the other stick of the same species will bear only half as much; why the timber grown in this locality is found generally superior to that of the same species grown in another locality, etc.

When we have established such knowledge, then it will be possible for an engineer not only to specify his timbers intelligently, but also to inspect them and to know whether or not they come up to his specifications. To be sure, we are not now quite without some knowledge regarding these matters, although few users of wood seem aware of it. But not only is this knowledge scanty, it is not quite certain or capable of general application, and the results and deductions of one investigator may often be found contradicted by another or by the same authority after further investigation. We know that there are differences in quality, at least for some timbers, in sticks from different parts of the tree: not only the heartwood differs from the sapwood, but also the butt log from the top log.

While some experiments would lead us to believe that specific weight is a fair expression of the strength of timber of the same species, yet it would be hazardous to rely upon this factor without regard to other physical conditions and structural features of the timber.

Such "ring-porous" woods as the oaks and ash show the greatest strength and elasticity when their annual rings are wide, while the slow-grown mountain oak seems to excel in stiffness. From conifers, on the other hand, according to Hartig, the slow-grown timbers seem to exhibit superior quality; hence those from rich soils are not desirable. This again has appeared doubtful, or at least true only within unknown limits, from Bauschinger's experiments, who showed that tensile strength in pines was independent of the total width of the annual ring, but dependent on the ratio between the spring wood and summer wood.

That wet soil produces brittle, dry or fresh soil tough timber, is believed but needs proof. Contrary to general opinion, the time of felling seems to be without influence on the strength of pines. The degree of seasoning, on the other hand, seems to increase the strength, although it would still have to be found out whether the manner and rapidity of seasoning may not change this result. Toughness or capacity for bending without rupture, on the contrary, is claimed to be inversely proportionate to seasoning.

Carriage-makers claimed "that the white oak when grown in the South loses its peculiar toughness, by which it excels in the North." We have shown by actual tests that this is not the case, and claim the exact opposite from physiological reasons."



Work on the Yolo City Hall is to be begun immediately.

Work will soon be commenced on the Nevada Bank at Reno.

The Insane Asylum at Stockton is now lighted entirely by natural gas.

The lumber mills in Seattle and vicinity have formed a combination to maintain prices and stop the cutting of rates.

In London it is proposed to make the use of fire-resisting materials compulsory in the construction of important and extensive buildings.

Wharf and Pier room along the water front of San Francisco is getting scarce. A number of passenger and freight vessels are awaiting wharf accommodation.

The house laundry comes in for a large share of benefits from the gas heater, while the irons of the ironing table are warmed up to the work by the same means.

Gilroy, California, a town of about 1,600 inhabitants, has recently voted \$50,000 bonds for the improvement and extension of its water-works system. Good water in abundance is a convenient sanitary necessity, and an economical fire protection.

The uses of wood pulp are being extended from time to time into the various departments for finishing and decorating of buildings. It now being used as the basis of a plastic compound to serve as a substitute for lime mortar in covering and finishing walls.

IRON IN BUTTE.—Though no iron has ever been worked in this county yet several large deposits of it are known to exist. One of these is on the land of J. M. Rutherford, a little northeast of Wyandotte. This would not be more than seven or eight miles from the Northern California railroad. The deposit is said to be very rich. Another valuable bed of chrome iron is found near Magalia. This is twenty-four miles north of Oroville, the county seat, and in the mountains at an altitude of something over 2,000 feet. The bed is large and extensive, yet little attention has been paid to it, and we are not able to give any details concerning it.—*Oroville Register.*

Prof. Sorokin, of Kajan, in dealing with the various parasitical destroyers of wood, and particularly the dry-rot (*Merulis lacrymans*), finds that a current of air destroys the parasite in twenty-four hours; light is also an obstacle to its growth. When exposed to the simultaneous action of light and a draft of air, drying up ensues within a few hours. The sprinkling of wood with a solution of common salt prevents the appearance of dry-rot. The greater the concentration, the more durable is the protective effect. A solution of sulphate of copper, particularly if concentrated, is preferable to the solution of common salt. Carbolic acid destroys the *Merulis* very rapidly. Ordinary birch tar is a very efficacious agent against dry-rot. Beams and interior surfaces of boards should be coated with it to make it effective.



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.

THE Works of the Edison Light and Power Company in course of erection on Jessie street, San Francisco, California, is from designs by Messrs. Percy & Hamilton, Architects of this city. The building has a frontage of 165 feet, a depth of 80 feet, and a height of 53 feet. All the foundations are of cement concrete, walls faced with stock bricks. The foundation for stack is a single slab of concrete 28 feet square and 9 feet thick. The stack is 18 feet 6 inches for outside diameter at base, and 175 feet in height, and the flue 12 feet in clear. The inside of flue is lined 9 inches thick to a height of 57 feet 6 inches with fire-bricks, and thence with common bricks to top. The cup of stack is of concrete 17 feet 6 inches diameter and 16 feet in height.

The building is divided into two portions, engine and boiler rooms. The boiler room is the entire height with no intervening supports, the whole roof being supported by steel trusses 17 feet deep. The trusses are made of this depth for the support of coal bunkers, the coal being dumped into hoppers under sidewalk, and carried by endless hoists to the bunkers, and from thence through chutes to the boilers. The engine room portion will have three floors and gallery, all hung from the roof trusses, except the first floor which will be supported from basement. The foundations for engines are of concrete 9 feet thick. In the boiler room there are twenty-seven boilers of 7,000 horse power.

The building throughout is built in a most substantial manner to withstand the continual jarring of machinery and dynamos. Elevators are provided for lifting machinery, etc.

The Edison Light and Power Co., are the successors of the California Electric Light Co., and the building illustrated is known as "Station C".

DESIGN for a house to be erected at Hyde Park, Kansas City, for Miss Annie Bernard. Mr. Willis Polk of San Francisco, Architect. The exterior finish will be of California red-wood shingles to sill-course, and above this Oregon split shingles, all set 2½ inches to the weather. The wood work of the principal rooms will be of red-wood finished to retain their natural color.

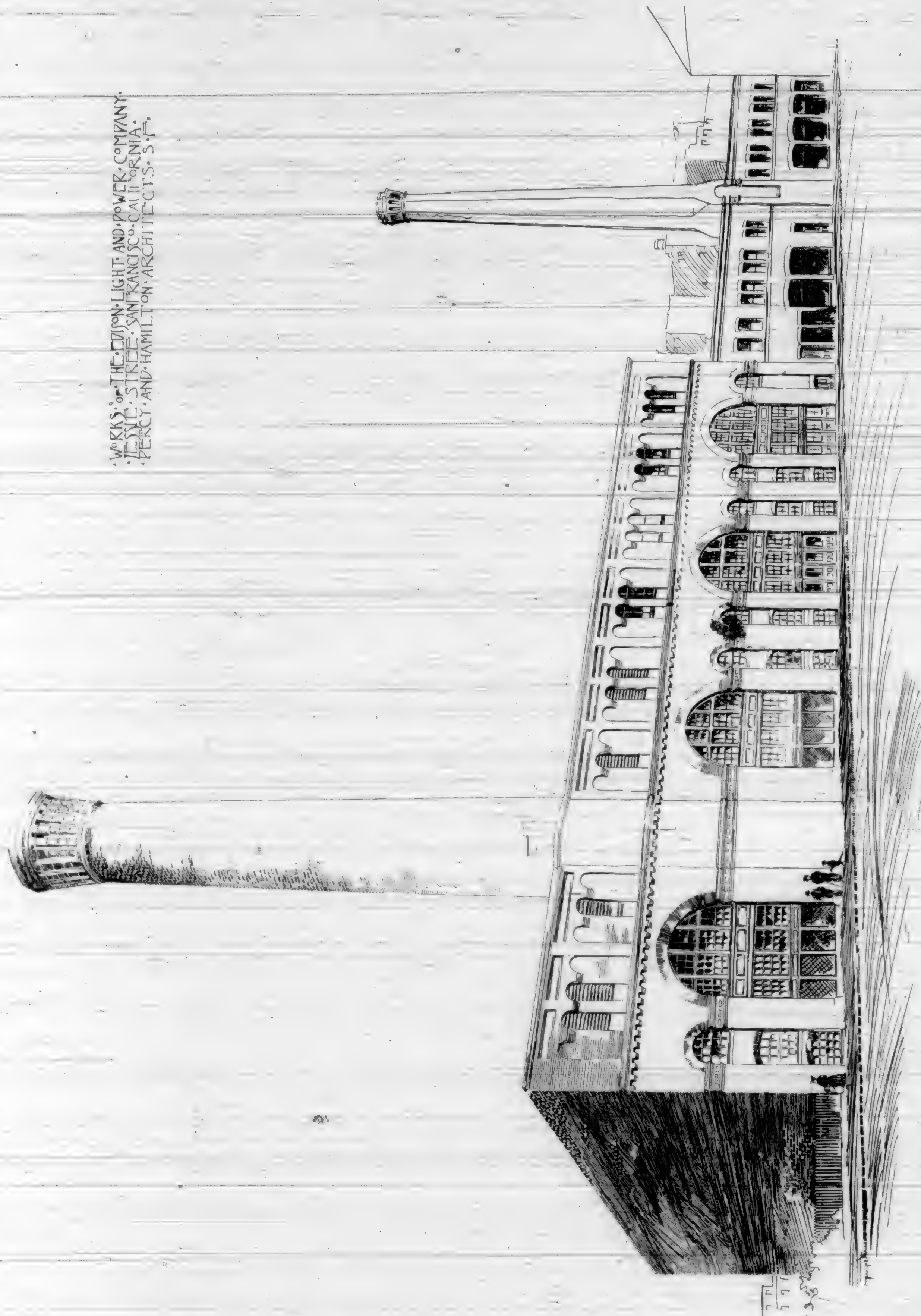
The design has been worked out by Mr. Daniel Polk, brother of Mr. Willis Polk, who will go to Kansas City to superintend this structure, with other work in hand there.

THE design for a Suburban Residence is by Mr. Clarkson Swain.

WE are indebted to the Japanese Journal of Architecture *Nagata Chio Ichime*, Tokyo, for the illustration of the Building in Japan.



WORKS OF THE OILY LIGHT AND POWER COMPANY.
741-743, STREET, SAN FRANCISCO, CALIFORNIA.
PERCY AND HAMILTON ARCHITECTS, S.F.



PUBLISHED BY THE
CALIFORNIA ARCHITECTURAL PUBLISHING CO.
SAN FRANCISCO, CAL.

BRITTON & REY PHOTO LITH.



宇治本寺院

左

鳳凰正堂面分毫之圖

圖之伏案帳座

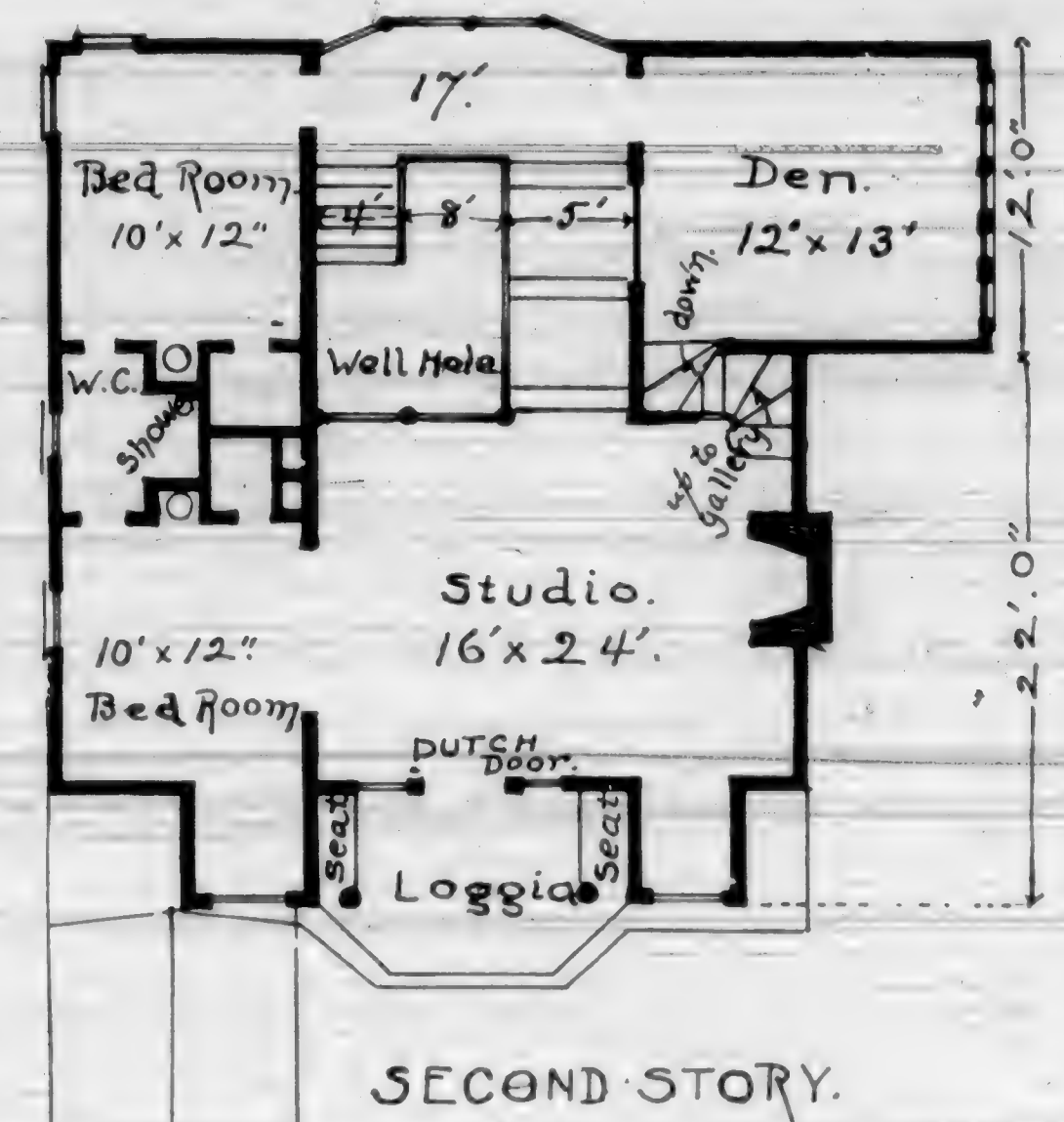
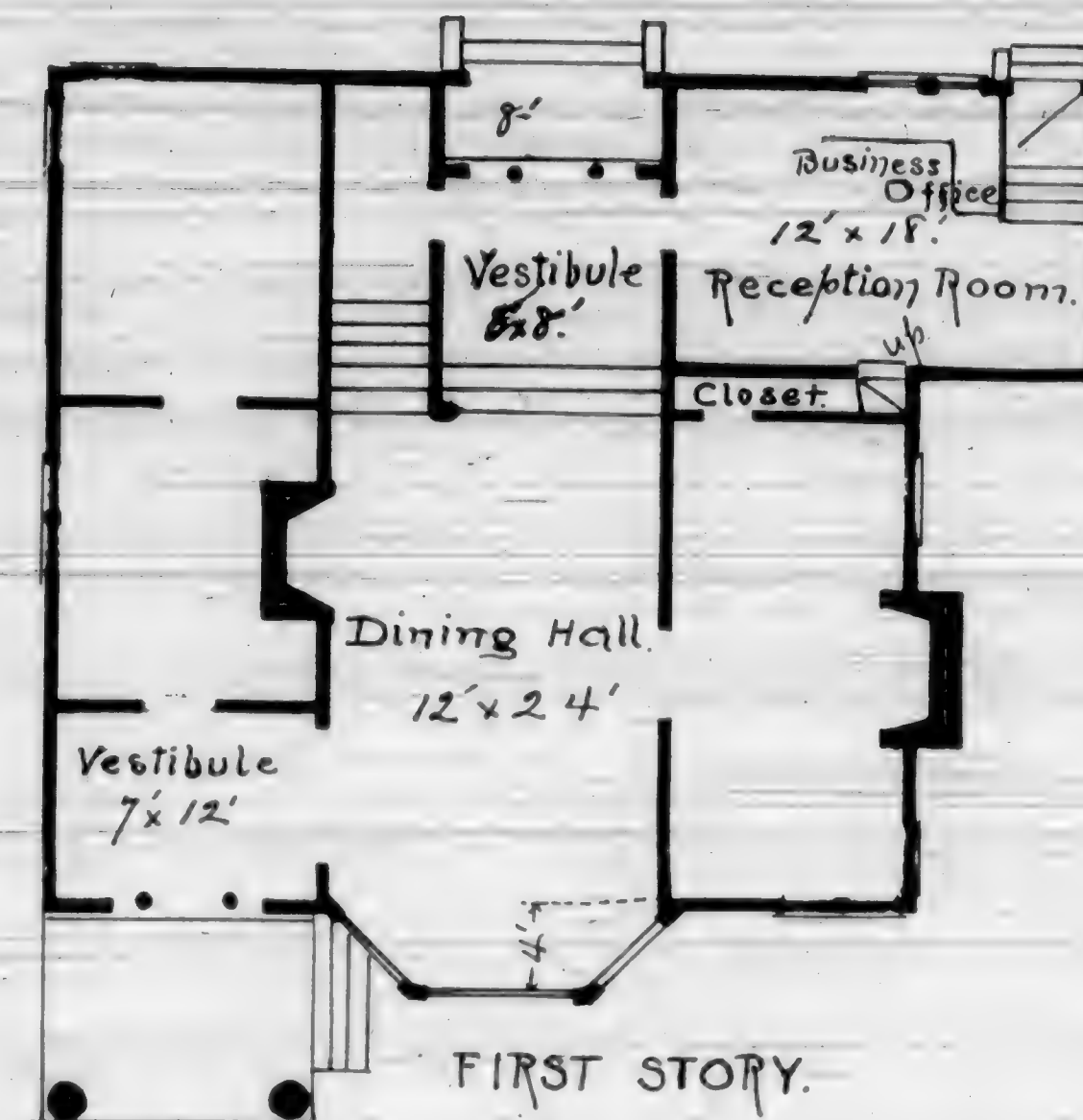
Plan

右

PUBLISHED BY THE
CALIFORNIA ARCHITECTURAL PUBLISHING CO.
SAN FRANCISCO, CAL.

Building - Japan.

BRITTON & REY PHOTO LITH.



BRITTON & REY PHOTO LITH.

PUBLISHED BY THE
CALIFORNIA ARCHITECTURAL PUBLISHING CO.
SAN FRANCISCO, CAL.



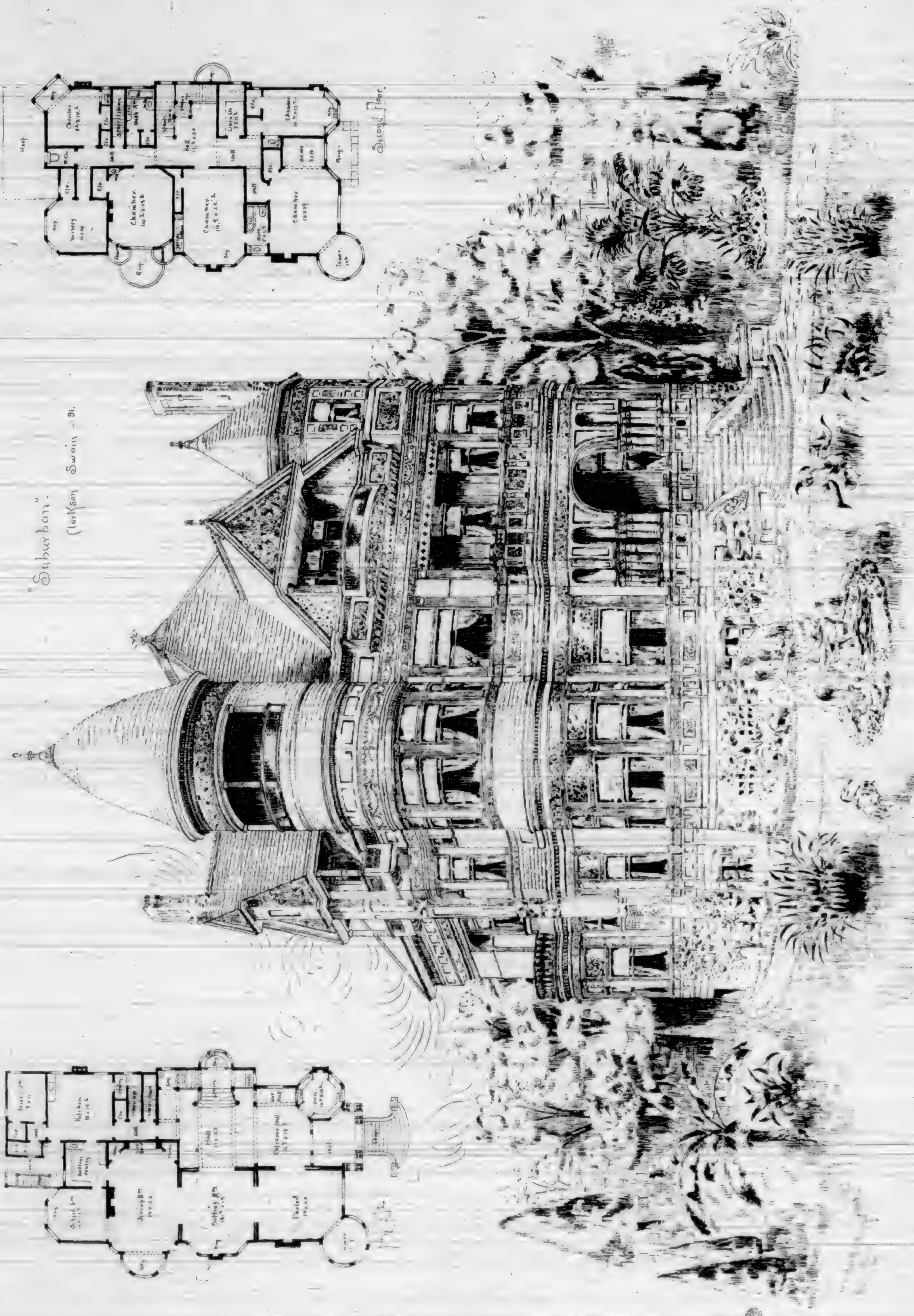
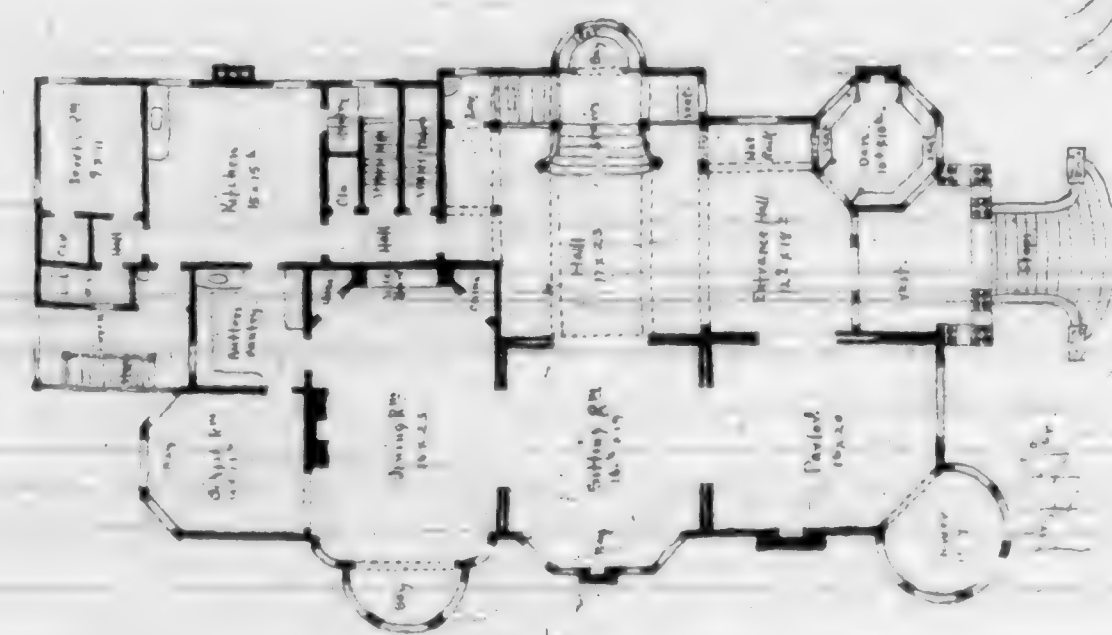
JUNE 1892.

THE CALIFORNIA ARCHITECT & BUILDING NEWS.

VOL. XIII. NO. 6.



"Suburban."
(London) Swain - 91.



DESIGNED BY THE
CALIFORNIA ARCHITECTURAL PUBLISHING CO.
SAN FRANCISCO, CAL.

BRITTON & GREY PHOTO LITH.