

## CHAS. J. WATERHOUSE

BOX 78 BUILDERS' EXCHANGE. PHONE BLACK 1807. BOX 132 BUILDERS' ASS'N.

OFFICE 421 MARKET STREET, S. F.

DEALER IN

## RELIABLE BUILDING MATERIALS

## ART MOULDINGS

## SAMUEL CABOT'S

CREOSOTE SHINGLE AND RUSTIC STAINS  
SHEATHING AND DECKING OIL  
MORTAR STAIN PULPS—BRICK PRESERVATIVE

## N. &amp; G. TAYLOR CO.'S

"OLD STYLE" ROOFING TIN  
"THE TAYLOR ROOFING TIN"  
"COLUMBIA ROOFING TIN"

## THE VAN DORN IRON WORKS CO.'S

VAN DORN STEEL JOIST HANGER

ALL ABOVE GOODS ALWAYS IN STOCK.

ALSO SELL FROM THE EAST FOR

THE E. T. BURROWES CO.  
Window and Door Screens.HUTTIG BROS. MFG CO.  
Hardwood Interior Finish.WASHINGTON SLATE CO.  
Roofing and Blackboard Slates

IVES PATENT

## Window Hardware Specialties

Leaders with Architects and the Trade

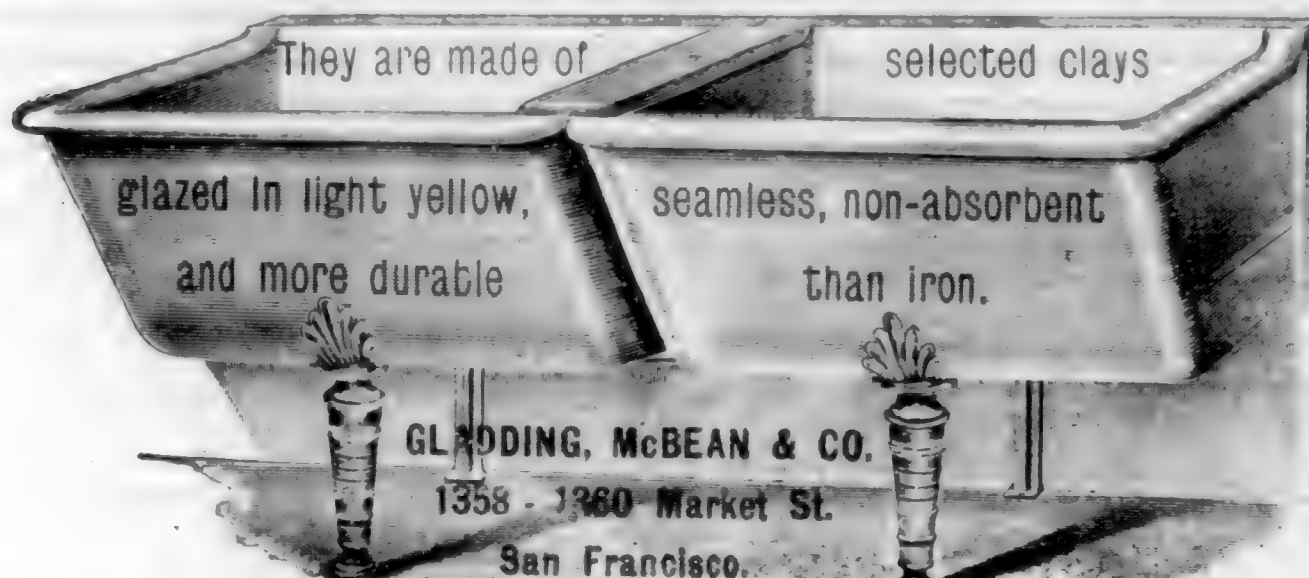
Thirty page Catalogue mailed free.

Manufactured only by

HOBERT B. IVES &amp; CO.

New Haven, Conn., U. S. A.

## The "LINCOLN" LAUNDRY TUBS and SINKS



They are made of selected clays

glazed in light yellow,  
and more durableseamless, non-absorbent  
than iron.GLADDING, McBEAN & CO.  
1358 - 1360 Market St.  
San Francisco.

## MEMBERS OF THE BUILDERS' EXCHANGE.

CORNER NEW MONTGOMERY AND MISSION STREETS.

| Box No.                    | Box No.                                            | Box No.                                          | Box No. |
|----------------------------|----------------------------------------------------|--------------------------------------------------|---------|
| S. H. Kent, President.     | Forrester Cornice Works; patent sky lights, roof   | O'Connor, Thomas, mason and builder.             | 47      |
| Gus V. Daniels, Vice-Pres. | ing, etc.                                          | Ogle, John; contractor and builder.              | 215     |
| Jas. A. Wilson, Sec.       | Portland Brick Co.                                 | O'Sullivan, D.; mason contractor.                | 277     |
| Edw. B. Hinds, Treasurer.  | Frazer, J. P.; painter and decorator.              | Pacific Bridge Co.                               | 40      |
| DIRECTORS:                 | Fuller, W. P. & Co.; paints, oils and glass.       | Pacific Refining & Roofing Co.                   | 346     |
| John Tuttle,               | Furness, John; contractor and builder.             | Pacific Lumber Co.                               | 365     |
| Gus V. Daniels,            | Geyer, Frank A.; Market Street Planing Mills.      | Pacific Manufacturing Co., Mill Work.            | 365     |
| D. McPhee,                 | Gillett, Secondo; artificial stone.                | Pacific Rolling Mills.                           | 192     |
| R. Herring,                | Gillegley, Geo.; teaming.                          | Pachiz, Gus J.; electrician, etc.                | 81      |
| Edw. B. Hinds,             | Givin & Eyre; Importers.                           | Palace Hardware Co.; builders' hardware.         | 292     |
| J. R. Tobin,               | Gladding, McBean & Co.; architectural terra cotta. | Paraffine Paint Co.; roofers, building paper.    | 144     |
| COMMITTEES:                | Golden West Iron Works; Dyer Bros.                 | Patent Brick Co.; brick.                         | 172     |
| R. Herring,                | Goodman, Geo.; artificial stone, etc.              | Pearce & Batchelor; masons and builders.         | 122     |
| MEMBERSHIP.                | Grannis, J. G. & Co.; steam heating, etc.          | Peterson Brick Co.; original red pressed brick.  | 98      |
| T. McLachlan,              | Gray Bros.; artificial stone and concrete work.    | Petersen, H. M. & Co.; concrete.                 | 245     |
| G. V. Daniels,             | Griese, Carl; artificial stone and concrete work.  | Phlogst, F. L.; hardware.                        | 76      |
| ARBITRATION.               | Hammond, Philip; metal roofers.                    | Plense, Henry; mason and builder.                | 299     |
| Jas. A. Wilson,            | Hansen, A.; planing mill.                          | Pool, Jas. R.; house mover and raiser.           | 217     |
| D. McPhee,                 | Hansen, F. L.; contractor and builder.             | Ree, James; stone contractor.                    | 156     |
| Gus V. Daniels,            | Hansen, M. & Co.; planing mill.                    | Reichley Geo.; contractors for stone work.       | 165     |
| D. McPhee,                 | Harmon Lumber Co.; lumber.                         | Reichley Geo.; contractor and builder.           | 109     |
| Gus V. Daniels,            | Harris & Jones; Lumber Dealers.                    | Reigel & Jamieson; machine white washing.        | 240     |
| D. McPhee,                 | Haustein, H.; tiles.                               | Reinhold Brick Co.; pressed stock and common     | 375     |
| Box No.                    | Heidt, W.; cornice works.                          | brick.                                           | 278     |
| 123                        | Henzel, Ed. F. & Co.; electricians.                | Richardson & Gale; masons and builders.          | 328     |
| 270                        | Herring, R.; mill work.                            | Richmiller, Geo.; door opener.                   | 355     |
| 170                        | Hille, Wm.; cornice works.                         | Riley John P.; masons and builders.              | 329     |
| 326                        | Hinds, Ed. B. & Co.; patent blinds.                | Ringrose, R.; mason and builder.                 | 18      |
| 138                        | Hobson, R. V.; painter.                            | Robinson & Gillespie; contractors and builders.  | 111     |
| 236                        | Hock, T. & Son; masons and builders.               | Rocklin Granite & Granite Work.                  | 96      |
| 11                         | Hoffman, V.; mason and builder.                    | Rosenbaum, Fr. H.; glass.                        | 219     |
| 75                         | Holmes, H. T.; Lime Co.; lime, cement, etc.        | Ruffino & Bianchi; marble.                       | 219     |
| 241                        | Hooper, C. A. & Co.; lumber.                       | Sacramento Transportation Co.; patents and stock | 352     |
| 241                        | Huber, Wellington; bay door, Cor. lumber.          | brick.                                           | 352     |
| 77                         | Harburt, R. P.; builder.                           | S. F. Lime & Mortar Co. C. Bennett.              | 246     |
| 34                         | Iskelheimer, Samuel & Bro.; plumbers.              | San Francisco Lumber Co.                         | 157     |
| 360                        | Ingerson & Goss; contractors and builders.         | San Francisco Novelty and Plating Works.         | 12      |
| 291                        | Jacks, Henry; contractor and builder.              | San Francisco Planing Mill; Wm. Crocker.         | 12      |
| 150                        | Jackson, P. H. & Co.; illuminating tiles.          | San Joaquin Brick Co.; brick.                    | 228     |
| 36                         | Jackson, W. E.; curbing.                           | San Jose Brick Co.; brick.                       | 5       |
| 240                        | Jesse, Geo. H.; stair builder.                     | Saunders, J. S. W.; contractor and builder.      | 250     |
| 28                         | Jordan D. & Son; masons and builders.              | Schroeder, Wm.; art glass.                       | 63      |
| 148                        | Joshua Hendy Machine Works.                        | Smith & Van Arsdale Lumber Co.                   | 163     |
| 296                        | Judson Mfg. Co.                                    | Sessions, M. P.                                  | 384     |
| 255                        | Kentling, M.; Artificial Stone.                    | Smith, J. W.; carpenter.                         | 71      |
| 63                         | Keller, M.; house raiser and mover.                | Smith & Young; building supplies.                | 374     |
| 225                        | Kendall, J.; Concrete and Artificial Stone.        | Smith & Quimby; street contractors.              | 101     |
| 300                        | Keefe, J. H.; painter and decorator.               | Snell, E. L.; lime and plaster.                  | 372     |
| 105                        | Kent, S. H.; contractor and builder.               | Snook, W. S. & Son; plumbers.                    | 372     |
| 282                        | Kern, P. W.; contractor and builder.               | Soule Bros.; carpenters.                         | 61      |
| 10                         | Kirtledge, E. H. & Co.; sash, doors and blinds.    | Steiger, A.; stone architectural terra cotta.    | 184     |
| 347                        | Knox & Cook; contractors and builders.             | Stevens, F. M.; patent chimneys.                 | 297     |
| 214                        | Kuss, P. N.; painter, decorator and wood finisher. | Stockton Brick & Terra Cotta Co.                 | 297     |
| 62                         | Lang, Geo. H.; mason and builder.                  | Stratton, Jno. S.; house mover.                  | 382     |
| 317                        | Larsen, H. H.; mason and builder.                  | Sullivan, J. E.; painter and decorator.          | 1       |
| 41                         | Leahy, D.; plasterer.                              | Sullivan, Tim; carpenter.                        | 63      |
| 280                        | Leahy, D.; plasterer.                              | Sullivan, M. F.; grading and teaming.            | 148     |
| 91                         | Leahy, D.; plasterer.                              | Sweeney, Daniel; carpenter.                      | 325     |
| 114                        | Leahy, D.; plasterer.                              | Sweeney, T. G.; plumber.                         | 135     |
| 24                         | Leahy, D.; plasterer.                              | Tacoma and Roche Harbor Lime Co.                 | 289     |
| 90                         | Leahy, D.; plasterer.                              | Tay, Geo. H. Co.; plumbers supplies.             | 321     |
| 389                        | Leahy, D.; plasterer.                              | Tobin, J. R.; plasterer.                         | 173     |
| 12                         | Leahy, D.; plasterer.                              | Towle & Broadwell.                               | 296     |
| 313                        | Leahy, D.; plasterer.                              | Towler, John; contractor and builder.            | 296     |
| 143                        | Leahy, D.; plasterer.                              | Tupper, O. M.; lime.                             | 291     |
| 218                        | Leahy, D.; plasterer.                              | Tuttle, John; teamster, plasterers' supplies.    | 79      |
| 35                         | Leahy, D.; plasterer.                              | Union Lumber Co.; lumber.                        | 335     |
| 42                         | Leahy, D.; plasterer.                              | Vermont Marble Co.                               | 284     |
| 283                        | Leahy, D.; plasterer.                              | Vulcan Iron Works.                               | 284     |
| 131                        | Leahy, D.; plasterer.                              | Wagner, Henry F.; painting and decorator.        | 312     |
| 139                        | Leahy, D.; plasterer.                              | Wagner, J. Ford; mason and builder.              | 181     |
| 34                         | Leahy, D.; plasterer.                              | Walker, George H.; carpenter.                    | 267     |
| 121                        | Leahy, D.; plasterer.                              | Warren, C. A.; grading.                          | 272     |
| 177                        | Leahy, D.; plasterer.                              | Washington Street Planing Mills.                 | 48      |
| 202                        | Leahy, D.; plasterer.                              | Waterhouse, C. J.                                | 78      |
| 64                         | Leahy, D.; plasterer.                              | Watson, W. C.; plasterer.                        | 98      |
| 232                        | Leahy, D.; plasterer.                              | Western Granite & Marble Co.                     | 316     |
| 72                         | Leahy, D.; plasterer.                              | Western Iron Works.                              | 171     |
| 180                        | Leahy, D.; plasterer.                              | White Bros.; carpenters.                         | 257     |
| 58                         | Leahy, D.; plasterer.                              | White Bros.; hardware lumber.                    | 145     |
| 80                         | Leahy, D.; plasterer.                              | White, H.; mason and builder.                    | 60      |
| 128                        | Leahy, D.; plasterer.                              | Williams, F. A.; contractor and builder.         | 176     |
| 53                         | Leahy, D.; plasterer.                              | Wilson, Bros. & Co.; lumber.                     | 334     |
| 254                        | Leahy, D.; plasterer.                              | Wilson, W. F.; plumber.                          | 228     |
|                            |                                                    | Wilkie, Andrew; planing mill.                    | 365     |
|                            |                                                    | Wilkie, Andrew, Jr.                              | 125     |
|                            |                                                    | Worrel, C. R.; mason and builder.                | 2       |
|                            |                                                    | West Coast Wire Works.                           | 273     |
|                            |                                                    | Western Expanded Metal & Fire Proofing Co.       | 349     |
|                            |                                                    | Yates & Co.; paints.                             | 349     |
|                            |                                                    | Young, S. T.; grading and teaming.               | 336     |

## WESTERN IRON WORKS.

MANUFACTURERS OF

## STEEL BUILDINGS AND WAREHOUSES.

Stairs, Elevator Enclosures, Roofs, Iron Fencing and Gates.

JAIL AND BANK WORK.

GAS HOLDERS, SHEET AND PLATE METAL WORK.

—FORGINGS.—

Telephone Main 737.

123-125 BEALE STREET, S. F.



TEL. DRUM 80

**W. HEIDT**

FORMERLY OF

FORDERER CORNICE WORKS

**ARCHITECTURAL SHEET METAL WORKS**

Metal Tile and Slate Roofing. Patented Ventilated Skylights and Spanish Tile

224-226 MISSION STREET, SAN FRANCISCO

JOBGING PROMPTLY ATTENDED TO

**GEORGE GOODMAN,**

PATENTEE AND MANUFACTURER OF

**ARTIFICIAL STONE,** IN ALL OF ITS BRANCHES.

(SCHILLINGER'S PATENT.)

**SIDEWALK AND GARDEN WALK A SPECIALTY.**

307 MONTGOMERY STREET,

NEVADA BLOCK, SAN FRANCISCO.

**50 YEARS' EXPERIENCE**

**PATENTS**

TRADE MARKS  
DESIGNS  
COPYRIGHTS &c.

Anyone sending a sketch and description may quickly ascertain our opinion free whether an invention is probably patentable. Communications strictly confidential. Handbook on Patents sent free. Oldest agency for securing patents. Patents taken through Munn & Co. receive special notice, without charge, in the

**Scientific American.**

A handsomely illustrated weekly. Largest circulation of any scientific journal. Terms, \$3 a year; four months, \$1. Sold by all newsdealers.

**MUNN & Co., 361 Broadway, New York**

Branch Office, 625 F St., Washington, D. C.

## Plans and Specifications Invited for an Hospital Building.

Public notice is hereby given to architects that competitive plans and specifications for the erection of an hospital building will be received by the Board of Supervisors on MONDAY AFTERNOON, September 12, 1898.

The proposed building to be of modern design and to be constructed of stone or brick, or of both, with all the latest scientific improvements.

The said hospital building to be erected on the lot of land commencing at the most southeasterly corner of a tract of land known as and designated, on the official map of the city and county of San Francisco, as the "Almshouse tract."

The said plans and specifications to be so prepared that the cost of the building shall not exceed in the aggregate the sum of three hundred thousand (\$300,000) dollars.

The architect whose plans are adopted will be appointed architect and superintendent of the building, and will be required to give a good and satisfactory bond to insure the completion and construction of the said building for the amount of the cost as made by the said architect. The architects submitting plans determined by the Board to be second, third and fourth in merit will receive premiums of \$1000, \$750 and \$500 respectively, with the understanding that any features of said plans and specifications which may be considered useful or necessary to be embodied in the plans adopted may be used without further cost of charge.

JNO. A. RUSSELL, Clerk.

## THE Rapid Safety Filter

is in use in San Francisco in all the leading Hotels, Schools, Stores, Saloons, Restaurants and THOUSANDS of Private Residences, including those of the leading PHYSICIANS, who endorse and recommend its general use.

No charge for fitting. Kept in order and cleaned by the Company. Leased only. Terms \$1.50 per month for private residences. Office and Show Room.

1209 MARKET ST., near Eight.

RUBEN H. LLOYD,  
President.W. D. MANSFIELD,  
Secretary.**P. H. JACKSON & CO**

Contractors for

**Wrought Iron Building Work****Sidewalk Lights, Floor Lights****Fire and Burglar-Proof Arched and Flat Sky Lights****Patent Water-Proof Sidewalk Doors****Basement Ventilators, Etc.**228 and 230 First Street, 7 and 9 Tehama Street  
SAN FRANCISCO.**WM. BATEMAN,**

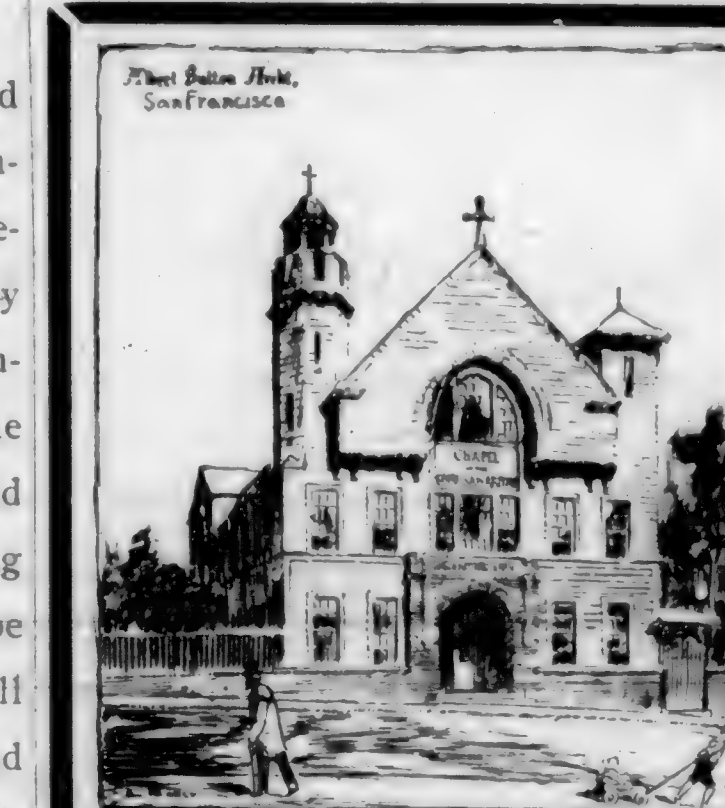
MANUFACTURER OF

**Wood Mantels, Interior Finish, Inlaid Floors,**

Banks, Offices, Stores and Steamboats Fitted Up

411 MISSION ST., Bet. 1st and Fremont.

SAN FRANCISCO, CAL.

**BEST FOR WARM CLIMATES**

Cannot Crack or Peel as Paint Does.

Being in the wood, and not wholly on the surface, like paint.

**CABOT'S SHINGLE  
CREOSOTE STAINS**

wear better and longer in warm climates than paint, which cracks and peels off under the hot sun. They are the only exterior colorings that do not turn black, and the only treatment

that will prevent the blackening of Redwood. No other Stains can contain Creosote, "the best wood preservative known," our patent giving us the sole right to make, sell or advertise Creosote Stains.

The Siding of the Kip Mission, above, is Creosote Stained. Samples and prices on application to

San Francisco, Depot: 421 Market St.

CHARLES J. WATERHOUSE, Agent.

SAMUEL CABOT, Sole Manufacturer, Boston, Mass.

Also: Cabot's Sheathing and Deafening Quilt, Cabot's Mortar Colors, Cabot's Brick Preservative, Cabot's Anti-Pyre.

**BUILDING NEWS.**

Second and Mission. Cabinet work; o. Wells, Fargo & Co.; a. Percy & Hamilton; c. W. T. and R. M. Veitch signed, June 1; filed, June 2; cost \$14,800. Rough carpenter work, etc.; c. W. T. and R. M. Veitch; cost \$4,500. Plastering, etc.; c. C. C. Morehouse; cost \$800. Marble and mosaic tiling; c. Ruffalo & Bianchi; cost \$650.

Seventh and Townsend. Excavations, etc., for 2-story brick; o. J. L. Flood and J. W. Mackay; a. Percy & Hamilton; c. Cushing, Wetmore Co.; signed, May 27; filed, May 28; cost \$400. Carpentry, roofing, etc.; c. F. H. Moscov; cost \$28,374. Brick and iron work; c. Miller & Beck; cost \$12,835. Plumbing, etc.; c. W. F. Wilson; cost \$2420.

Sixth near Clement. Cottage; o. Alexander W. McDonald; c. W. Horstmeier & Co; cost \$31250.

Taylor near Broadway. All work except plumbing, etc.; c. W. J. Gray; a. Martens & Coffey; c. C. Schmitt; signed, June 2; filed, June 8; cost \$150. Plumbing, etc.; c. H. Ernst; cost \$360.

Twentieth near Guerrero. To build; o. Mrs. Joseph Muller; a. T. J. Welsh; cost \$3197.

Third near Stevenson. Carpentry work, etc.; o. D. Kell; a. Edward Swaine; c. John W. Hensbrough; John M. Robertson; signed, May 28; filed, June 1; cost \$28,000. Plumbing, etc.; c. W. F. Wilson; cost \$2190.

Union and Divisadero. Carpentry, etc.; o. Mrs. E. G. Baldwin; a. Tharp & Holmes; c. Moore and Cameron; cost \$6373.

Union near Hyde. To build; o. Dennis Collins; a. W. O. Peterson; c. Wren and Peterson; cost \$3000. Concrete work; c. C. T. McGuire and Co; cost \$830.

Valencia near Hermann. Additions and alterations; o. Julia A. Moraghan; a. James Wolfe; c. Blanchard and McKenzie; cost \$3848. Painting, etc.; c. Kuse and Storz; cost \$175. Plumbing, etc.; c. J. Siebert; cost \$1135.

Van Ness Ave. and Post. Alterations; o. Mrs. A. E. Hecht; a. J. E. Kraft; c. S. C. Murray; cost \$689.

Vallejo near Pierce. To build; o. Mrs. F. M. Herlihy; a. G. Everett; c. J. E. Bundy; signed May 27; filed, May 31; cost \$3238.

Walnut Ave. and Octavia. To build; o. Mrs. Sarah M. Morris; a. Sullivan and Kohlberg; c. Peter Erickson; cost \$12,100. Gas fitting, etc.; c. Leckelheimer Bros; cost \$1909.

Washington near Walnut. Concrete work; o. James M. Allen; a. W. F. Smith; c. Carl Greiser; cost \$2175. Carpenter work; c. Thos. H. Day and Son; cost \$8156. Plumbing; c. James and Wm. Shepard; cost \$1400.

**BERKELEY**

Bancroft Way and Dana. Church; o. First Unitarian Church; a. A. C. Schwienfuth; c. Kidder and Cooper; cost \$4065.

Hilllegass property lot 15. To build; o. Jane Birdsell; a. Cunningham Bros; c. B. C. Allen; cost \$2978.50.

**BUILDING NEWS.**

Plans for a \$5000 addition to the State University, to be used as a Mining Laboratory, have been prepared by architect Van Treas.

**DECOTA**

Two-story brick. Owner, Masonic Orphans Home; a. W. H. Little; c. R. P. Hurlbut; signed, June 2; filed, June 3; cost \$16,300.

**EAST OAKLAND**

East 18th. To build; o. C. H. King; a. W. J. Mathews; c. C. Christensen; signed, June 13; filed, June 14; cost \$9897.

Ninth Ave. near Clinton. Wood and iron; o. Mrs. Mary R. Smith; a. W. J. Mathews; c. F. W. Knight; cost \$2488.

**HAYWARDS**

Main near St. Johns. To build; o. H. and Emma Reimers; a. J. L. Wellby; c. John H. Haar; cost \$4836.

**LIVERMORE**

Olea Vista Tract. Cottage; o. Marie T. Mel; c. A. R. Donke, Jr; cost \$760.

Olea Vista Tract. Gate; o. Phebe A. Hearst by F. Clark; a. Frank S. van Trees; c. Williams Bros; cost \$1650. Machinery, etc; engineers, Cobb and Hesselmeier; cost \$1855.

**OAKLAND**

Apex near Grove. To build; o. Marcel Lemer; c. W. Hutson; cost \$3075.

Webster near 14th. Alterations and additions; o. Mrs. D. H. Ward; a. Tharp & Holmes; c. Z. O. Field; cost \$2748.

Thirteenth near Washington. Three-story brick; o. E. R. Turt; a. F. D. Voorhees; c. J. C. Caldwell; cost \$7420.

Jackson and Lake. Re-modelling and additions; o. M. W. Kaies; a. J. M. Curtis; c. W. T. Veitch & Bro; cost \$7000.

**LOS ANGELES**

Interior store fittings, etc. Owner Coulter Dry Goods Co; a. John Parkinson; o. Home Mfg. Co; cost \$12,623.

**BUILDING NEWS.**

Third and Spring. Woodwork; o. estate of Thos. D. Timson; a. Reid Bros; c. Campbell and Pettus; filed, May 31; cost \$40,454.

Architects McCarthy and Mendel have prepared plans for H. L. Hovey; of an eight room, colonial, two story residence, to be built at Glendale.

Architects Howard and Train are preparing plans for E. S. Rowley; for two story nine room residence, to be built on Menlo avenue.

Architects Bradbeer and Russell are preparing plans for Mrs. W. W. Brinkner; of 65 Hope street, of an eight room cottage; on Blaine and Ninth.

Architect Preston is preparing plans for Mr. Rowley two two-stories; on West Twenty-fifth.

Architects Eisen and Hunt have prepared plans for J. M. Elliott and F. A. Gibson, for two cottages at Terminal Island.

Frank Spaulding has secured another church.

The special election to be held in this city is for the purpose of voting on the proposition of incurring a bonded indebtedness of \$100,000 for the acquisition of certain lands, the erection of buildings thereon for fire engines and apparatus.

Milo M. Potter, has just let the contract to Murphy and McLennan, for sixteen more flats to be built on Ninth and Hill.

Architects Bradbeer and Russell are preparing plans for Dr. Jones for two flats to be erected on Olive street.

Architects Greene and Greene, of Pasadena, have prepared plans for W. B. Fay for two-story frame, to be built on South Euclid ave.

Architect C. H. Brinkhoff has prepared plans for H. D. Thomson, of the Thomson-Boyle Co, for a two-story and basement frame residence, stable and carriage house to be built on corner of Bonnie Brae and Sixth streets.

The same architect is also preparing plans for L. W. Lowenthal, a capitalist, for a stone and brick mansion to be erected in Pasadena.

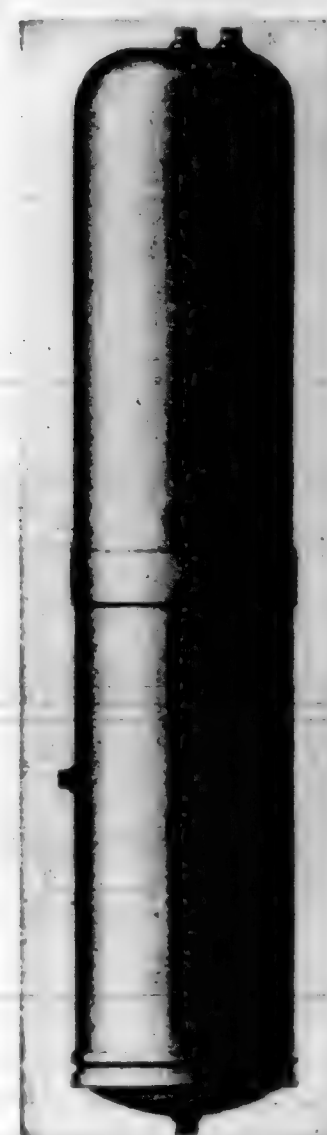
Architect B. B. Bisby is preparing plans for C. J. Fox for a two-story ten room house to be built on north side of Seventh street.

Plans have been drawn for Mrs. Amelia Smead for a two-story frame to be built on west side of Eldon avenue; H. W. Steward is the builder.

Architects Krause and Jenkins are preparing plans for Mrs. Mary R. Conway, for extensive alterations and additions on the corner of Second and Los Angeles streets.

Architect Brinkhoff has prepared plans for residence for G. W. Cox to be built on Orange street.





## For Sanitary Reasons

*You Should Specify the*  
**Brown Brothers' Cold Drawn Seamless Copper House**  
**Range Boiler.**

The smooth copper surface is heavily tinned inside. This absolutely insures against corrosion or rusting of any kind and affords no rusting place for sediment. You always get

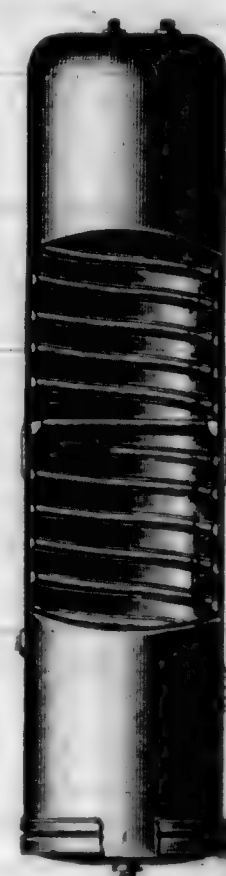
## Clean Hot Water

**rown Boilers** are made of two pieces of cold drawn copper, united under great hydraulic pressure, so that they are practically one piece. No seams nor rivets, means freedom from leaks. The inside spiral rib guarantees against collapse. Ordinary weight boilers stand a pressure of 150 lbs. to the square inch; extra heavy, 200 lbs.

Boiler Booklets sent on request.

**RANDOLPH & CLOWES, Sole Manufacturers**

BOX 47. WATERBURY, CONN.



PAINTERS-PLUMBERS-CONTRACTORS-CARPENTERS-GAS FIXTURES

**W. D. HOBRO,**  
**Plumber and Gas Fitter,**  
 728-730 Washington Street,  
 opposite the Plaza. SAN FRANCISCO.  
 Work done at Reasonable Rates. All orders  
 promptly attended to. Res. 2013 Clay St.,  
 bet. Steiner and Pierce

**CAMPBELL & PETTUS.**

**CONTRACTORS.**

Office, Builders' Exchange, San Francisco.

### THE NATIONAL BUILDER.

Each number contains a complete set of  
 architects plans for a low priced building.  
 Published at Chicago, Ill.

Main Office, Adams Express Building,  
 185 Dearborn street.

It maintains its standard as a high class practical  
 Builders' Journal.

### PLASTER OF PARIS.

Golden Gate Plaster Mills,  
 215 and 217 Main Street,  
 bet. Howard and Polson, SAN FRANCISCO.

**LUCAS & COMPANY,**  
 Manufacturers of  
 Calcined Plaster.  
 (PLASTER OF PARIS.)  
 Marble Dust, Land Plaster and Terra Alba.

## Scott & Van Arsdale Lumber Co.

**MATT HARRIS, Manager.**

Wholesale and Retail Dealers in

## SUGAR AND YELLOW PINE.

**Yellow Pine selected for Natural Finish**

Redwood, White Cedar, Oregon Pine, Spruce Shelving, Curly Redwood, Burl, Shingles.  
 Mills at Upton, McCloud River. TELMO & MAXWELL, Siskiyou Co.

Office and Yards:

**CORNER FIFTH AND BRANNAN STREETS**  
**R. W. Cargoes Furnished** San Francisco  
 TELEPHONE SOUTH 173

**W. J. Cuthbertson,**  
*Architect.*  
 Flood Building, Room 93.  
 Cor. Market and Fourth Sts.,  
 SAN FRANCISCO.

**Wm. Mooser & Son**  
*Architects*  
 Rooms 62 and 63, No. 14 Grant Avenue  
 SAN FRANCISCO.

**W. Curlett**  
*Architect*  
 Offices, 307 Phelan Building, Market Street,  
 SAN FRANCISCO.

**Pissis & Moore,**  
*Architects,*  
 307 Sansome Street, Rooms 16 and 17,  
 SAN FRANCISCO.

**R. H. White,**  
*Architect,*  
 104 Flood Building, Market and Fourth Sts.,  
 SAN FRANCISCO.

**B. McDougall & Son,**  
*Architects,*  
 330 Pine Street, Rooms 61 and 62  
 SAN FRANCISCO.  
 Take the Elevator.

**Seth Babson,**  
*Architect,*  
 403 California Street, Rooms 12, 13.  
 SAN FRANCISCO.

**John Cotter Pelton.**  
*Architect,*  
 Telephone Building, Bush St., Room 52.  
 SAN FRANCISCO.

**John M. Curtis & Co.,**  
*Architects,*  
 128 Kearny Street, between Post and Sutter,  
 SAN FRANCISCO.

**Oliver Everett,**  
 SUCCESSOR TO HUERNE & EVERETT,  
*Architects,*  
 126 Kearny Street, Room 41,  
 SAN FRANCISCO, CAL.

**Stone & Cahill,**  
*Architects.*  
 Room 89, Donohue Building, corner Market  
 and Taylor Streets, San Francisco.  
 Branch Office, 507 Central Bank Building,  
 Oakland Cal.

**Havens & Toepke,**  
*Architects,*  
 FLOOD BUILDING, Room 55.  
 San Francisco. Tel. Main 5429.

**Wm. H. Armitage,**  
*Architect,*  
 319-321 Phelan Building, Market Street,  
 SAN FRANCISCO.

**M. J. Welsh,**  
*Architect,*  
 Office, 1504 Market St., Cor. of 14th. Rooms 7-8.  
 SAN FRANCISCO.  
 Residence, 905 Treat Avenue.

**Harold D. Mitchell,**  
*Architect,*  
 136 KEARNY STREET.  
 Plans and Specifications prepared with the great-  
 est Accuracy.

**Edmund Kollofrath,**  
*Architect,*  
 Gutzkow Bldg., 833 Market St. Tel. Jessie 401.  
 SAN FRANCISCO.

**Emile Depierre,**  
*Architect,*  
 334 KEARNY STREET,  
 SAN FRANCISCO.

**T. J. Welsh,**  
*Architect,*  
 Room 95, Flood Building, Corner Market and  
 Fourth Streets.

**Chas. J. I. Devlin,**  
*Architect,*  
 Supreme Court Building,  
 N. W. Cor. McAllister & Larkin Streets,  
 SAN FRANCISCO.

**Fred. B. Wood,**  
*Architect.*  
 214 PINE STREET, Room 57.  
 San Francisco.

**Jas. E. Wolfe,**  
*Architect.*  
 FLOOD BUILDING Room 31.  
 San Francisco, Cal. Take Elevator.

**H. Geilfuss,**  
*Architect.*  
 120-122 Fulton St., bet. Polk and Van Ness Ave's,  
 SAN FRANCISCO.

**John T. Kidd,**  
*Architect,*  
 Furnishes Plans, Specifications, Superintendence  
 for the construction of every description of build-  
 ing. 410 Kearny St. Office Hours, 12 to 2, 3 to 4.

**A. C. Lutgens,**  
*Architect,*  
 Phelan Building, Room 325.  
 SAN FRANCISCO.

**Chas. S. Tilton,**  
*Engineer and Surveyor,*  
 426 Montgomery St. Take the Elevator.  
 SAN FRANCISCO.

**EMIL GUNZBURGER,**  
 SECRETARY  
**BUILDING and**  
**LOAN ASSOCIATIONS**  
 214 PINE STREET, ROOM 3.

**Loans on Real Estate**  
**EASY TERMS**  
 Information Willingly Furnished.



## FACTS ABOUT PAINTS.

### PHOENIX

The best paint is made of White Lead, Zinc and Linseed Oil.

PHOENIX PURE PAINT is made of these materials only.

To make perfect paint these materials must be finely ground and thoroughly mixed with heavy machinery.

### PURE

PHOENIX PURE PAINT is made in that way.

During the past five years PHOENIX PURE PAINT has been the one most generally specified by Architects on the Pacific Coast.

### PAINT

It is guaranteed absolutely pure and satisfactory on the building or we will replace it with any material the architect may select.

The New Wall finish or Washable Water Color.

Petrifies on the wall and will not crack or chip off.

Damp Walls do not affect it.

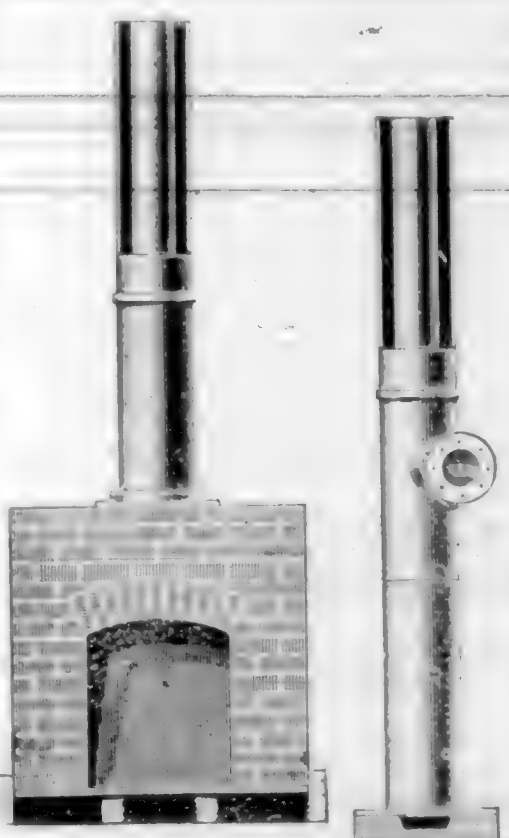
Can be washed any number of times and will not change color.

It strengthens the wall and prevents crumbling.

The strongest, most brilliant and most durable Wall finish made.

MANUFACTURED BY

**W. P. FULLER & CO.**



CLAWSON'S PATENT CHIMNEY.

**L. E. CLAWSON & CO.**

1340 MARKET STREET. SAN FRANCISCO.  
TELEPHONE SOUTH 257.

**CLAWSON'S PATENT HOOD OR THROAT AND ARCH-BAR COMBINED.**

The arch-bar forms a bond for arch in brick work. The hood being bolted on the arch-bar, forms a bond from brick work to mantel.

The throat is one solid piece, having lugs admitting three (3) inches adjustment, to suit depth of mantel.

This hood makes the bricklayer conform with mantel man's work, and guarantees you a safe chimney with a perfect draught.

Clawson's Patent Hoods, Thimbles and Chimneys, comply with the new Fire Ordinance.



See **CLAWSON'S LIVE VENTILATOR.** It is as much better than a dead one, as a live man is of a dead man.

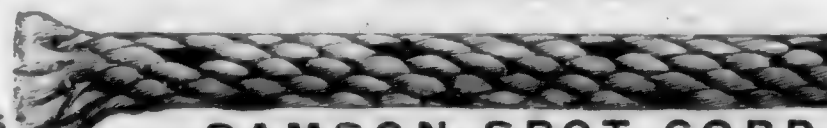
Price, \$2.50 for any size from 18 to 26 inches.

Send for illustrated circular.

**CLAWSON'S PATENT THIMBLE.**

IF YOU SPECIFY

SEND FOR SAMPLES

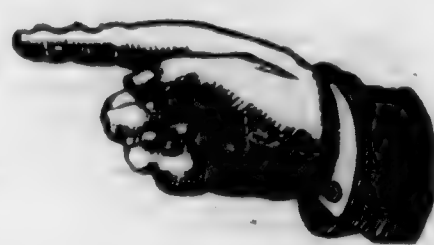


**SAMSON SPOT CORD,**

You can tell at a glance that no other cord is substituted. Warranted free from waste and imperfections of braid.

**SAMSON CORDAGE WORKS,**

BOSTON, MASS. Trade Mark.



# THE CALIFORNIA ARCHITECT AND BUILDING NEWS

\$3.00 PER YEAR

VOLUME XIX, No. 7.

JULY, 1898.

## CONTENTS:

|                                                     |        |
|-----------------------------------------------------|--------|
| Index to Advertisers.....                           | V1     |
| The Critic and the Architect.....                   | 74     |
| Cosmo Work.....                                     | 75     |
| Changing Form of Stone by Pressure.....             | 76, 77 |
| Illustrations.....                                  | 78     |
| Valuable Information Culled From our Exchanges..... | 79     |
| The Action of Sea-Water Upon Hydraulic Cements..... | 80     |
| Semi-Annual Summary of Building Operations.....     | 80     |
| Another Building Disaster.....                      | 81     |
| Correspondence.....                                 | 81     |
| For Steel Construction.....                         | 82     |
| The Survival of the Fittest.....                    | 82     |
| Cabot's Shingle Stains.....                         | 82     |
| Good Locks.....                                     | 83     |
| The Keely Motor Up-To-Date.....                     | 84     |

PRICE THIRTY CENTS

D.J. Patterson '98

OFFICE 408 CALIFORNIA ST



**For a modern house, get modern things!!**

**Be up to date.**

**Consider, in building, the innumerable advantages and economy of gas grates.**

## PERFECTION Gas Grates.



**Always ready.**

**Always clean.**

**Gets to work instantly.**

**Expense stopped when heat is not needed. This is not so with coal.**

Examine the various designs of Grates and Heaters of the  
**SAN FRANCISCO GAS & ELECTRIC LIGHT COMPANY.**  
**STOVE DEPARTMENT**

415 POST STREET, SAN FRANCISCO.

*A modern home for a modern man, planned by an up-to-date Architect is always sheathed with*

## P & B BUILDING Paper

PARAFFINE PAINT CO., Sole Manufacturers,

The only Water-proof and Vermin-proof paper on the market that is odorless.

Do you Specify it?



116 BATTERY STREET  
SAN FRANCISCO.

### A Tin Specification

To be drawn correctly should call for a **Guaranteed** brand of Roofing and one that is known to the architect. It should also stipulate that each sheet must be stamped with the brand, the thickness 10 or 12, and the maker's name.

## The Taylor "OLD STYLE" Brand

Is made exactly the same as roofing Tin was first made in Philadelphia in 1830. No other Roofing Tin is made like it or of the same materials.

**EACH SHEET IS STAMPED AND GUARANTEED.**

T. & G. TAYLOR CO., Sole Manufacturers, Philadelphia.

For Sale by **CHARLES J. WATERHOUSE**, 421 Market Street, San Francisco.

July, 1898.

THE CALIFORNIA ARCHITECT AND BUILDING NEWS.

iii

## BUILDING NEWS.

**Alms House Tract** near Chapel Building. One-story frame library; o. James D. Phelan; a. Curlett & McCaw; c. Z. O. Field; signed, June 21; filed, June 28; cost \$3850.

**Broadway and Laguna.** Two two-story frames; o. Florence N. Ward; a. Coxhead & Coxhead; c. Hannah Bros; signed, June 30; filed, July 2; cost \$6595.

**Bryant near 16th.** Cottage; o. J. E. Nieland and wife, Katharina C. Douglass & Co; signed, July 2; filed, July 5; cost \$1200.

**Chenery near Palmer.** Two one-story cottages; owner and contractor, A. Christensen; cost \$3200.

**Commercial near Montgomerys.** Repairs to brick building; o. Howard Estate; superintendent, Mr. Smith; cost \$7000.

**Clementina near 4th.** Two two-story brick building; o. H. E. Holmes & Co; a. Fred B. Wood; c. J. M. and C. B. Abrams; signed, July 1; filed, July 5; cost \$2250.

**Crescent Ave.** Cottage; o. Fred C. Douglass; c. Erik Boes; signed, July 11; filed, July 14; cost \$1370.

**Folsom near 18th.** Repairs; o. Klopstock & Co; cost \$1200.

## BUILDING NEWS.

**Dehon near 16th.** Cottage; o. Aerman Quast; c. Horstmeier & Co; cost \$1345.

**First Ave. near Clemon.** To build except brick work, painting, etc; o. Samuel McKelvey; c. Ed. Guiney; signed and filed, June 5; cost \$1295.

**Fifteenth and De Haro.** Alterations and construction; o. Sanitary Reduction Works; a. Thomas J. Welsh; c. G. H. and S. Walker; signed, June 22; filed, 22; cost \$1743.

**Fremont near Howard.** Two-story brick; o. W. F. Whittier; a. Edward R. Swain; signed, June 20; filed, June 22; cost \$997. Plumbing, etc; c. W. F. Wilson; cost \$2400.

D. H. GULICK

CHAS. WETHERBEE

**GULICK & WETHERBEE**  
**Plumbing and Gas Fitting**  
ESTIMATES GIVEN ON ALL WORK  
210 Mason Street  
San Francisco  
YOUNG MEN'S CHRISTIAN  
ASSOCIATION BUILDING  
TELEPHONE BUSH 16

**W. & P. SHINGLE STAINS**  
In soft and pleasing tints.  
Of highest grades of material.  
SPECIALLY ADAPTED TO REDWOOD. **PACIFIC COAST PRODUCT.**  
**PACIFIC REFINING & ROOFING CO.**  
113 NEW MONTGOMERY STREET, S. F.  
Sample Tablets on Application. Sold by Dealers.

A. ZELLERBACH &amp; SONS.

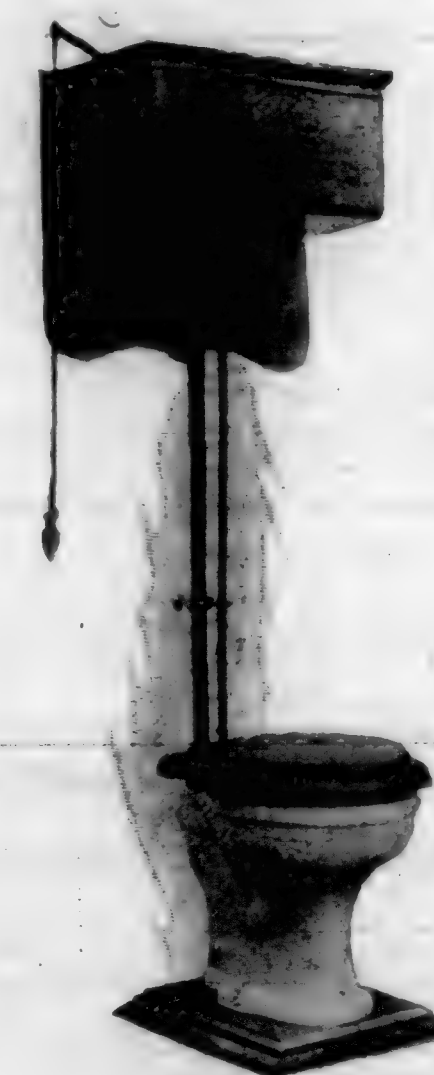
IMPORTERS  
AND  
DEALERS  
IN **PAPER** OF ALL KINDS.

419-421 CLAY STREET,

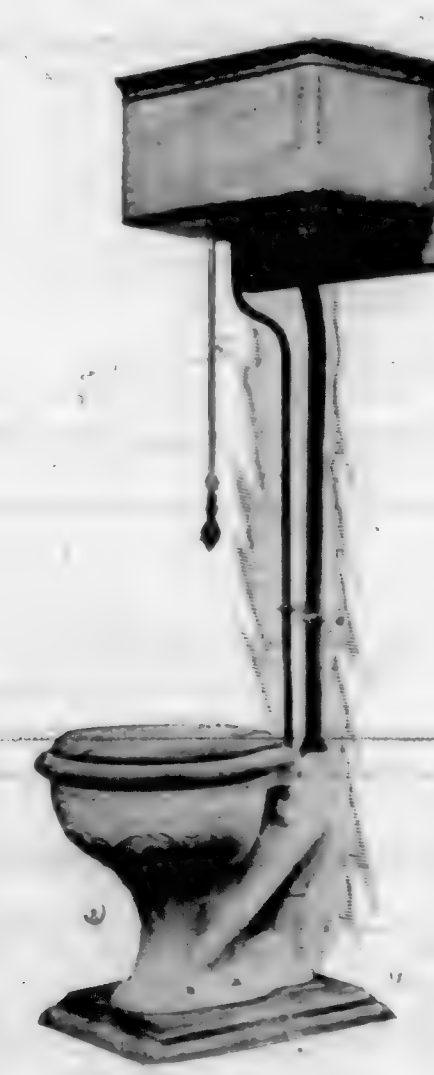
Bet. Sansome and Battery, San Francisco.

TELEPHONE 1133

**THE JOHN DOUGLAS COMPANY**  
CINCINNATI, PHILADELPHIA, ST. LOUIS, CHICAGO, SAN FRANCISCO.



CELSIS  
List Price, \$335.00



JUNO  
List Price, \$31.75



ELLWOOD  
List Price, \$28.50

Three Syphon Jet combinations, with seat attached to bowl; woodwork made of selected cherry quartered oak, and walnut. Polish finish.

For our other combinations, see '98 Catalogue or visit our showroom.

Ask for Catalogue. Correspondence solicited.

EDWARD DOUGLAS, Manager

**THE JOHN DOUGLAS COMPANY,**  
208 ELLIS STREET, S.F.



D. E. GARRISON, Jr., President. S. W. BACKUS, Secretary. C. F. RUNYON, Vice-President.  
N. L. BELL, Manager.

## WESTERN EXPANDED METAL AND FIRE PROOFING CO.

MAUFACTURERS OF AND CONTRACTORS FOR

Expanded Metal System of Fire Proof Construction.

Fire proof arches, solid partitions and attaching metal lath to ceilings, walls,  
columns, beams, etc.

**LATH ALWAYS IN STOCK.**

OFFICE: Rooms 414-15-16 CLAUS SPRECKELS BUILDING.

TELEPHONE Main 5829.

FACTORY: Corner Townsend and Clarence Streets, San Francisco.

F. E. KNOWLES, PRESIDENT

Telephone South 669

ABEL HOSMER, SECRETARY

## RAYMOND GRANITE CO.

INCORPORATED

(Successor to F. E. KNOWLES & Co.)

## CONTRACTORS FOR STONE WORK.

OF EVERY DESCRIPTION  
And Dealers in Dimension Stone

Proprietors of

**RAYMOND GRANITE QUARRY**

RAYMOND, MADERA CO., CAL.

Main Office and Yard:

Tenth and Channel Streets, San Francisco.

Branch Yard:

S. W. Cor. 7th and Castro Streets, Oakland

### BUILDING NEWS.

**Haigh** near Scott. Acceptance of building; o. Charles F. Doehring; a. Sullivan & K. H. Berg; c. C. Kreeker; accepted July 3; last recorded July.

**Hayes** near Laguna. To build; o. Jas. J. and Mary Silver; a. T. C. Cochrane; c. J. Pavert; signed, June 28; filed, June 30; cost \$6700.

**Hyde** near Jackson. Two-story frame; o. Thos. E. Dunne; a. A. J. Barnett; c. W. Paterson; signed, July 9; filed, July 11; cost \$4818.

**Jackson** near Taylor. All work except plumbing; etc.; o. Isabella W. Tindal; a. R. H. White; c. J. G. Adams; signed, July 7; filed, July 11; cost \$11,161. Concrete work; etc.; o. L. M. Zimmerman; signed, July 7; filed, July 11; cost \$1029. Plumbing; c. G. C. Sweeney; signed, July 7; filed, July 11; cost \$1449. Painting, etc.; c. Gus. V. Daniels; signed, July 7; filed, July 11; cost \$1234.

**Jeckson** No. 2380. Alterations and additions; a. F. A. Van Trees; c. T. O'Connor; signed, June 6; filed, July 11; cost \$2700.

**Jones** near Lombard. All work except mantels, etc.; o. Dennis P. Sullivan; c. Philip Rive; signed, June 28; filed, June 28; cost \$1600.

**Jones** and Telegraph Ave. To build; o. J. E. Wagner; a. Cunningham Bros; c. Anderson & Stockholm; signed, July 7; filed, July 12; cost \$1200.

**Liberty** near Church. Two-story frame; o. A. W. Wallace; c. W. A. Hicks; signed, June 28; filed, July 9; cost \$1855.

**Market** and Hayes. Alterations and additions; o. Bartlett and C. F. Doe; a. Edward R. Swain; c. Robinson & Gillespie; signed, July 6; filed, July 7; cost \$8835.

**Mason** near Pacific. Alterations and additions; o. Mrs. Annie Drossel; a. Kenitzer & Barth; c. C. Kreeker; signed, June 27; filed, June 28; cost \$1065.

**Main** near Harrison. Labor to tear down and cart to new location. Post Office building (out of Market street and build tool house; o. J. McArthur; a. J. W. Rowell; c. Moore & Cameron; signed, July 14; filed, July 15; cost \$1250.

**Natoma** and Russ. To build; o. Theresa Murphy; a. M. J. Welsh; c. A. McDonald; signed, July 11; filed, July 13; cost \$4400.

**Ninth** Ave. near Clement. All work except plumbing and painting; o. Frank de Courtou; a. W. H. Armitage; c. A. Dahlberg; signed, June 22; filed, June 23; cost \$3290.

**Pacific** Ave. near B. Elliott Alley. Two-story brick; o. Bartholomew Brignoll; c. D. Straub & Son; signed, June 16; filed, June 24; cost \$8400.

**Page** near Baker. Carpentry, plastering, etc.; o. Louis Hockele; a. Julius E. Kraft; c. Anderson & Greig; signed, July 6; filed, July 9; cost \$3300.

**Post** and Laguna. Plumbing, sewerage, etc.; o. Mrs. Rose Kahn; a. J. J. Laferme; c. Schanz & Grundy; signed and filed, June 27; cost \$1179.

**San Bruno** Road lot 33, gift map 4. To build; o. Richard and Robert Sternitzky; a. H. Gellfuss; c. W. Horstmeier & Co; signed and filed, July 11; cost \$2600.

**Seventh** and Mission. Structural iron and steel work; o. United States Government; a. U. S. Architect at Washington; c. Marshall & Co; cost \$154,715.

**Second** and Miss on. All roofing work; o. Wells, Fargo & Co; a. Percy & Hamilton; c. Paraffine Paint Co; signed, June 30; filed, July 8; cost \$1325.

**Second** Ave. near Clement. Cottage; o. J. M. Talbert; c. Philip Rive; signed, June 21; filed, June 22; cost \$1775.

**Stevenson** near 14th. One-story frame; o. Hugh Cavanagh; a. J. T. Kidd; c. Johnson & Secor; signed, June 21; filed, June 24; cost \$1439.

**Seventeenth** near Castro. To build; o. Mrs. F. R. Mannell; a. M. J. Lyon; c. George Elder; signed, June 18; filed, June 23; cost \$3200.

**Sickels** Ave. and Sears. Cottage; o. Jas. J. Casserly; c. Douglas & Co; signed, July 11; filed, July 12; cost \$1245.

**Stevenson** near Ridley. Three-story frame; o. Paul Strickert; a. Salfield & Kohlberg; c. Ph. Schweizer; signed, June 25; filed, June 28; cost \$2905.

**Third** and Stevenson. Carpentry, mill work, etc.; o. F. and A. Baruch; a. Percy & Hamilton; c. D. B. Munroe; signed, June 28; filed, June 30; cost \$13,577.

**Third** near Stevenson. Six-story brick and stone; o. Philip and Leah Meyer; a. M. J. Lyon; c. G. H. Moore; signed, June 11; filed, June 28; cost \$13,147.

**Third** near Stevenson. Electric elevator; o. David Kelt; a. Edward H. Swain; c. W. L. Holman; signed, July 15; filed, July 20; cost \$2240.

**Twenty-second** near Douglas. Cottage; owner and contractor, Jacob Heyman; cost \$1600.

**Union** near Webster. To build; o. John Muldoon; a. Shea & Shea; signed, June 20; filed, June 22; cost \$3500.

**Webster** near Hayes. Alterations; o. Edward Leopold; c. W. R. Grant; signed, June 21; filed, June 23; cost \$1025.

### ALAMEDA

Central Ave. near Union. Alterations and additions; o. J. J. Crawford; a. W. H. Lillie; c. C. P. Christensen; signed, July 8; filed, July 14; cost \$4500.

### AUBURN

The following work is under construction here. Central California Electric Co. is building a new plant; Bell Electric Co. is building a new plant.

### BERKELEY

Addition to Mining laboratory on grounds of University of California; donor, Thebe A. Hearst; a. F. S. Van Trees; c. Chas. and Walter Williams; signed, July 7; filed, July 8; cost \$10,845.

**Garber** near College Ave. To build; o. Kate, Annie and Bell Forester; a. F. M. May; c. O. G. May & Co; signed, June 11; filed, June 21; cost \$1900.

### OAKLAND

Broadway and 13th. Alterations and additions; o. Mrs. Ernestina Delger; a. Kenitzer & Barth; c. Ingerson & Gore; signed and filed, June 29; cost \$10,300.

**Knox** Park. To build; o. Jas. Coakley; a. W. Kirk; c. P. J. Brophy; signed, June 29; filed, July 2; cost \$2225.

**Becketts** 2d addition. To build; o. R. P. Bromley; a. A. W. Smith; c. C. M. McGregor; signed and filed, July 11; cost \$1900.

### EAST OAKLAND

**Marion** Tract. Cottage; o. Malinda Woodward; c. A. L. Whitney; signed and filed, July 19; cost \$1367.

Continued on page xii.

## The Yale & Towne Mfg. Co.

LOCAL OFFICE:

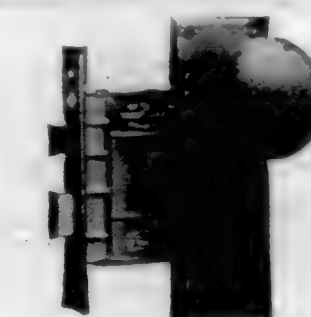
Mills Building, San Francisco.

The "Yale" Locks with new Paracentric Key, afford the highest standard



of security. They are made in hundreds of styles and sizes, adapted to almost every possible use.

The Builders' Hardware, made by this Company, and used in connection



with the "Yale," "Vulcan" and "Branford" lines of locks, forms collectively the largest assortment in the trade and covers respectively, as used with these locks, fine, medium and cheap goods.

The Art Metal Work (or Hardware of Ornament) as illustrated and listed



in the No. 16 Catalogue, includes the largest collection of Ornamentations and patterns of this class in the world; not only those usually required but also a vast variety of special pieces. In all Yale Art Metal Work an intelligent interpretation of design may always be found.

As to Prices. While the goods made by this Company are always "the best

for the money," the range of products and grades is such as to meet conditions where cost is a FIRST requisite, as well as where the greatest perfection of design and finish is alone considered.

GENERAL OFFICES:

Nos. 9, 11 and 13 Murray Street, New York City.



## GENERAL INDEX OF ADVERTISEMENTS.

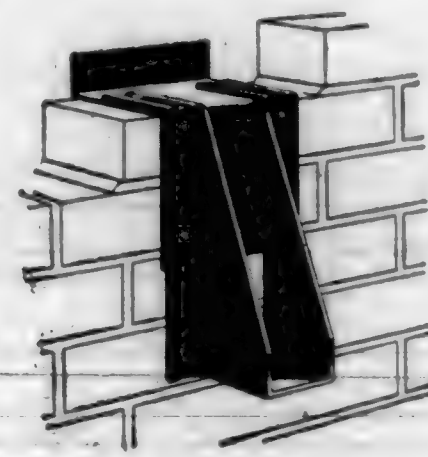
| CLASSIFIED INDEX.                                          | CLASSIFIED INDEX.                                                              | CLASSIFIED INDEX.                                                   |
|------------------------------------------------------------|--------------------------------------------------------------------------------|---------------------------------------------------------------------|
| <b>Architects.</b><br>Goodman, Geo..... xlii               | <b>Iron Hangers.</b><br>Van Dorn, Chas. J. Waterhouse, Agent..... xvi          | <b>Sash Locks.</b><br>Ives, H. B. & Co..... xiv                     |
| <b>Artificial Stone.</b><br>Randolph & Clowes..... xiv     | <b>Iron Works.</b><br>Western Iron Works..... x                                | <b>Sewer Pipes.</b><br>Gladding, McBean & Co..... xi                |
| <b>Boilers.</b><br>Smith & Young..... ix                   | <b>Iron Cornices.</b><br>Cronan, Wm..... xvi                                   | <b>Sewer Traps.</b><br>Ballmore, G. C..... viii                     |
| <b>Building Supplies.</b><br>C. J. Waterhouse..... x       | <b>Incandescent Lamps.</b><br>General Electric Co..... xiv                     | <b>Sash Lines.</b><br>Samson Cordage Works..... xvi                 |
| <b>Building and Loan Assn.</b><br>Gunsburger, Emil..... xv | <b>Lumber.</b><br>Scott and Van Arsdale..... xiv                               | <b>Shingle Stains.</b><br>(Cabots)—C. J. Waterhouse—Agent..... xlii |
| <b>Brick Preservative.</b><br>Cabot's..... xlii            | <b>Mantles Tiles, Etc.</b><br>Montague & Co., W. W..... xlii                   | <b>Sidewalk Lights.</b><br>P. H. Jackson & Co..... xlii             |
| <b>Cement Trays.</b><br>Bradley, Bros..... viii            | <b>Metal Lath.</b><br>Western Expanded Metal Lath and Fire Proofing Co..... iv | <b>Sliding Door Hanger.</b><br>Dunham, Carrigan & Hayden..... ix    |
| <b>Chimneys Patent.</b><br>Clawson..... xli                | <b>Mortar Color.</b><br>Cabot's Mortar Color..... xlii                         | <b>Stone.</b><br>Raymond Grady Co..... v                            |
| <b>Door Opener.</b><br>G. Rischmuller..... viii            | <b>Paint.</b><br>L. R. Butler and Co..... vii                                  | <b>Terra Cotta.</b><br>Gladding, McBean & Co..... xi                |
| <b>Engineers.</b><br>Tilton, Chas. S..... xix              | <b>Paraffine Paint Co.</b><br>Paraffine Paint Co., W. P. & Co..... xvi         | <b>Tin Roofing.</b><br>N. & G. Taylor Co..... ii                    |
| <b>Filters.</b><br>Rapid Safety Filter Co..... x           | <b>Paper.</b><br>Zellerbach & Sons..... viii                                   | <b>University.</b><br>Harvard..... vi                               |
| <b>Furniture and Upholstery.</b><br>Bateman, W..... xv     | <b>Plaster.</b><br>Lucas & Co..... xiv                                         | <b>Ventilators.</b><br>N. & G. Taylor Co..... ii                    |
| <b>Hardware.</b><br>Yale & Towne Lock Co..... v            | <b>Plumbers and Gasfitters.</b><br>Hobbs, W. D..... xix                        | <b>Water Closets.</b><br>John Douglas Company..... iii              |
| <b>Heating and Ventilating.</b><br>W. Morgan & Co..... xii | <b>Wood Preservative.</b><br>Cabot's..... xlii                                 | <b>Window Cord.</b><br>Samson Cordage Works..... xvi                |



No. 1-Steel joist hanger  
for wooden header

**VAN DORN'S**  
**Steel Joist Hanger**  
**CHAS. J. WATERHOUSE, Agent**

421 MARKET STREET, S. F.  
PHONE BLACK 1807.



No. 4-Steel joist hanger  
for brick walls.

**Sierra Lumber Company**

Manufacturers of and Dealers in

Doors, Windows, Blinds, Sugar Pine.

Yellow Pine, Spruce and Fir Lumber.

Corner Fourth and Channel Streets, San Francisco

**HARVARD UNIVERSITY.**

Lawrence Scientific School

OFFERS COURSES IN

Civil Engineering  
Mechanical Engineering  
Electrical Engineering  
Mining and Metallurgy  
Architecture  
Anatomy and Physiology (as a preparation for Medical Schools).

For Descriptive Pamphlet apply to

M. CHAMBERLAIN, Secretary.

N. S. SHALER, Dean. Cambridge, Mass.

**DIXON'S SILICA GRAPHITE PAINT**

FOR TIN OR SHINGLE ROOFS AND IRON WORK. Tin roofs well painted have not required repainting for 10 to 15 years. IT IS ABSOLUTELY WITHOUT AN EQUAL.

If you need any paint it will pay you to send for circular.

JOSEPH DIXON CRUCIBLE CO., Jersey City, N. J.

TELEPHONE SOUTH 224.  
**EAGLE SHEET METAL WORKS**

WM. CRONAN

Manufacturer of Plain and Ornamental

**Copper and Galvanized Iron Cornices**

Tin, Iron, Slate Roofing, Galvanized Iron Sky-lights  
and Cast-Zinc Work.

Steam, Hot Water and Warm Air Heating.

Power Fans for Heating and Ventilating Work.

ROOFS REPAIRED AND PAINTED GENERAL JOBBING ATTENDED TO  
Nos. 1213 1215 Market Street, Near Eighth  
SAN FRANCISCO, CAL.



A SYSTEM OF  
**WARMING AND**  
**VENTILATING**



A SYSTEM OF  
**VENTILATED FLUSHING**  
**WATER CLOSET**  
**AND URINAL RANGES**

FOR PUBLIC BUILDINGS.

**GUARANTEE:**

A system of warming and ventilating that shall have the capacity to warm and supply each room with enough pure air to renew the entire volume of air in said rooms from four to six times per hour without unpleasant draughts as from pen doors or windows.

**IMPORTANT**  
— TO —  
**ARCHITECTS**

**W. MORGAN & CO.** HEATING, VENTILATING AND SANITARY ENGINEERS. 108 First St., S. F. Cal.

**W. W. MONTAGUE & CO**  
**MANTELS**

**GRATES**

**TILES.**

Artistic Brass Bronze

Steel and Iron

WARM AIR

HOT WATER  
and STEAM

**Heating Apparatus**

For Warming Dwellings,  
Halls, Churches, School-  
Houses, and Public Build-  
ings.

**Wrought, Steel Ranges and French Ranges**

For Hotels, Restaurants, Clubs and Boarding Houses

COMPLETE KITCHEN OUTFITS  
MANUFACTURERS OF

**Corrugated Iron Roofing and Riveted Sheet Iron Water Pipe**  
SAN FRANCISCO LOS ANGELES SAN JOSE

**Subscribe for The California Architect.**



WASHABLE

TRADE MARK  
**ZINOLITH**  
LIQUID STONE

SANITARY

THE IDEAL FINISH FOR INTERIOR SAND FINISHED WALLS.

The only Water Color for Plastered Exteriors and Light Wells.

L. H. BUTCHER &amp; CO.

539 Mission Street, S. F.

A. BRADLEY

SUCCESSOR TO BRADLEY BROS.

CEMENT

LAUNDRY

TRAYS

I make a specialty of interior Painting, Frescoing and Paper Hanging.

Special Agent for Lincrusta-Walton; a large and complete stock always on hand.

Estimates cheerfully given.

G. ORSI.

17 Montgomery Avenue

INTERIOR DECORATOR

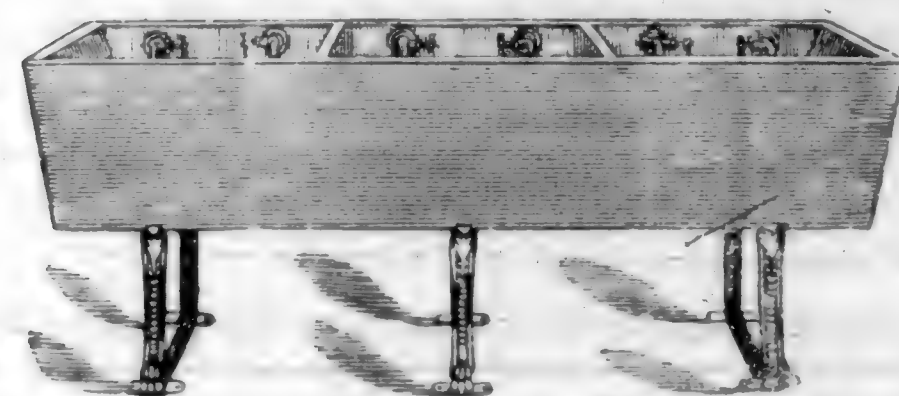
IMPORTER OF AND DEALER IN

Paints,

Oils,

Varnish,

Paper Hangings, Etc.



Manufactured of the best PORTLAND CEMENT and GUARANTEED not to LEAK, CRACK or SWEAT.

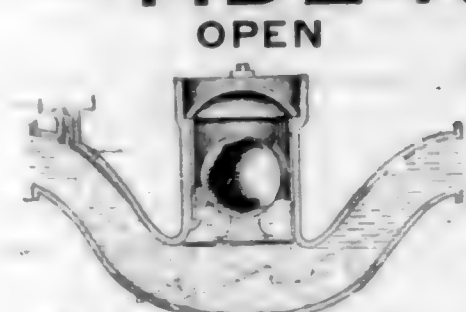
Office and Factory

53-57 Tehama St.

Between 1st &amp; 2d.

Architects are respectfully requested to specify them.

## The Titus Improved Patent Sewer Gas Trap TIDE AND FLUSHING GATE



OPEN

Isolates the House from the Main Sewer in Street, thus stopping the prolific cause of Sewer Gas Infection.

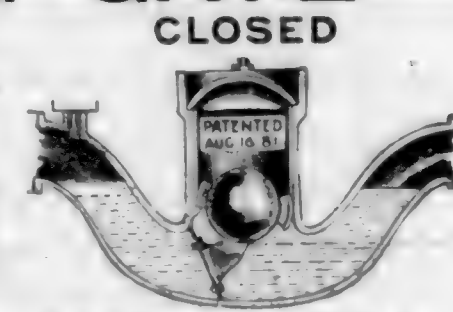
By Report of Board of Health, 33 per cent of deaths in this and other cities are caused by Zymotic Diseases arising from Sewer Gas Infection.

First Premium Mechanic's

Institute. Awarded 1882, 1883, 1884, 1885 &amp; 1886.

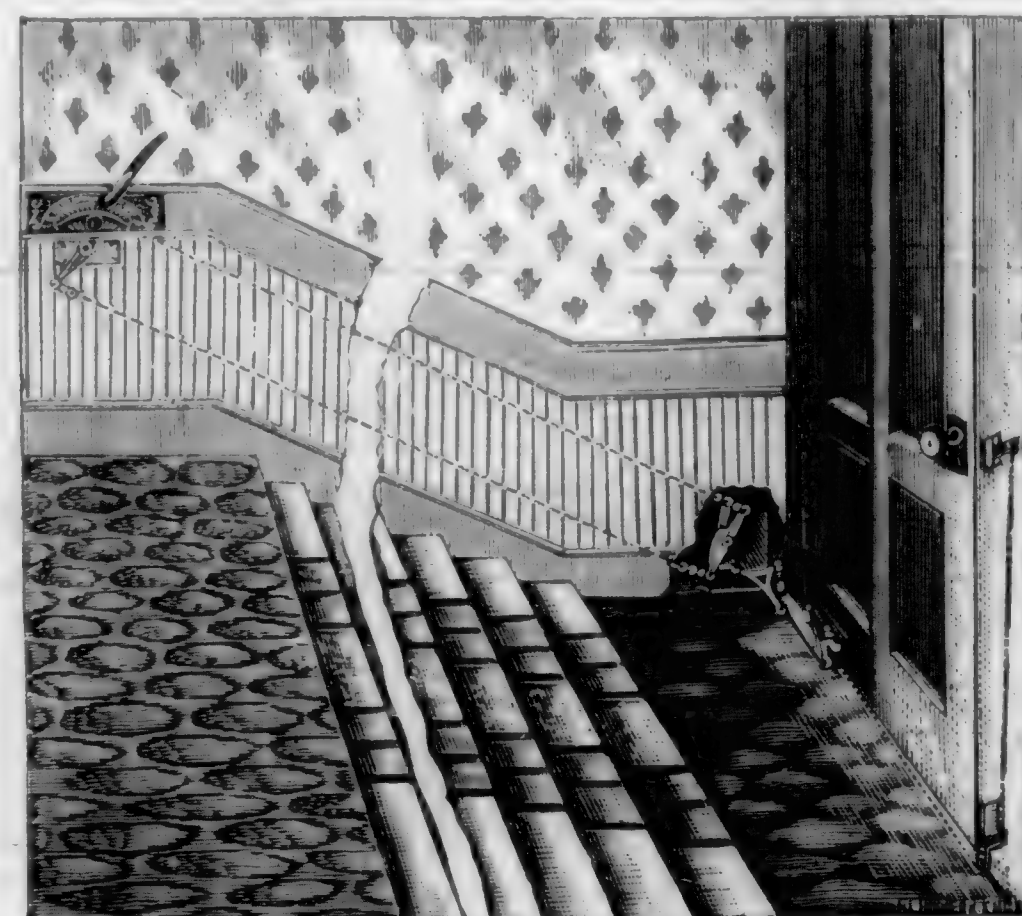
Testimonials, References and Traps can be seen at 414 DEVISADERO STREET, Telephone Pine 1405.

Manufactured by G. C. DALLAMORE, Practical Plumber, Gas and Steam Fitter.



CLOSED

Recommended by Members of Board of Health



# RISCHMULLER'S

PATENT DOOR OPENER

AND CLOSER.

Proven to be the only one CONSTRUCTED ON CORRECT PRINCIPLES.

It is durable and far the cheapest in the end.

Orders promptly filled by

G. RISCHMULLER,

No. 3446 Nineteenth St., S. F.



VOLUME XIX.

JULY 20th, 1898.

NUMBER 7.

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



ON U. S. Grant in the capacity of an aspirant for the Senatorship from California in presenting his views on public questions to the people of this State comes out boldly as an advocate of "Expansion" as the true future course of the nation.

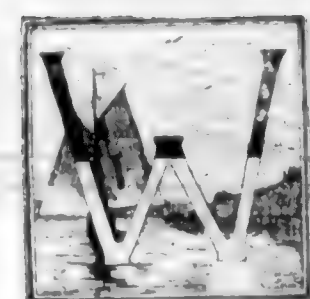
Of local benefits to be derived by such a national policy Mr. Grant expresses himself as follows:

"It is my belief that California, and indeed the nation, stands at the threshold of a new and most promising era. The national tendency toward expansion must benefit the West to an extent beyond all our calculations. We have before us a struggle and a hard struggle. This State must

control and must be supreme on this Western coast, and to California must come the vast trade that will properly belong to it, with the new doctrine of expansion. The Northwest will enter the contest for the trade which is to come from the Orient and the isles of the sea. The importance of close and intelligent attention to this subject seems to me to be of the highest importance. Our share of this trade, the definition of our status with respect to it, must be settled early after the present war ceases."

Here at least there will be common ground where the unity of interests will have so much in common and, so much in unity, that the combined forces shall be practically irresistible, and we of the far West should see to it that this policy of "expansion" become irrepressible.





WE HAVE published the following communication from Mr. B. J. S. Cahill relative to a notice appearing in the *Architectural Review*, Vol. IV. No. VII. The critique is undoubtedly an unjust one and well merits a reply. The architect explains that stress of work did not permit his giving the subject his attention earlier. — EDITOR.

In discussing the above alternate designs for a church appearing in outline transcript form in the *CALIFORNIA ARCHITECT* the critic of the *Architectural Review* solemnly delivers himself of the following announcement—"A church first and foremost should have a certain dignified, religious air, which" he goes on to say with more conviction and less truth "unfortunately this design" (No. 1) "does not possess."

Permit me to parody this profound statement. Any criticism first and foremost should have a certain air of justness and intelligence about it which quite fortunately for me, this criticism does not possess.

For instance, Mr. Critic says, with the only flash of dis-



cernment anywhere enlightening his review, "The general style is somewhat Mexican in its treatment," but then instead of logically following up the clue and seeing the architect's development of his theme in this light, he goes on to make the extraordinary assertion that "whatever ornament the edifice has, seems to recall rather the Masonic emblem than the motives usually observed in church architecture." The ornamental motives are Mexican truly enough, but I challenge anyone to show a single feature that has a Masonic rather than an ecclesiastical character.

The next statement of the critic is equally unfortunate. He says "the window openings are unstudied." As a mat-

ter of fact the window openings are very carefully studied throughout with reference equally to their size, portion, detail and diversity.

In the upper stories of the towers they are studiously ornate, those in the Bell tower being studiously different from those in the Baptistry tower. The large central window opening is studiously odd in its Mexican contour and is large because it faces south and illumines the entire church, while the windows in the towers at each side are small and quite studied in their position proclaiming as they frankly do that they light a stairway and not an aisle. That the low position of these front tower windows necessitates a large space of plain wall surface above is a matter that needs neither correction nor apology. Finally the square shaped window openings in the basement story of the towers, are studied in the massive simplicity peculiar to the Spanish American style. They are small, since, where little light is needed little light is shown.

The critic could not of course be supposed to know it, but the problem the architect had to solve was this. A Roman Catholic Church had to be planned to seat 800 people on a restricted lot. The building was to be so designed that it could be roofed in and ready for use at the least possible outlay. At the same time when the towers were added it should not be lacking in appropriate beauty and impressiveness.

This problem of combining Finance with Fine Arts seemed to the architect to be happily solved by adopting a Mexican or Spanish American style. This style permitted a solid simplicity of treatment up to the main roof line. It justified the candid use of stucco where plain wall surfaces occurred in the front as well as on the side. It dispensed with the costly exactions of ordinary classic and easily allowed a logical harmony of treatment to clothe the entire body of the building and so redeem it of the vulgar error of being a mere show facade of stone architecture with the balance of the walls in bare brick. With these advantages in the way of inexpensive simplicity in the first portion built the style demanded that the towers to be built afterwards should exhibit and express the full value and efflorescence of the architectural motives so sternly repressed in the lower parts. To further compensate for the severity of superficies throughout it was thought that the introduction of a red tile roof over aisles and porches would supply a pleasing note of color in contrast with the cream colored stucco and buff sandstone finish found in the main body of the church. Finally, the regulation Spanish green casings sash bars and grilles, and a gilded weather vane, orb and cross surmounting the towers would complete an effect not only admissible, but pictorially suitable and historically appropriate under the blue sky and in the strong sun light of California.

But all this is lost upon the critic whose next objections are that "the grotesque twisted columns of the front porch are not in scale with the entablature above, and the capping of the dome of the left tower is unfortunate in its profile." Though studiously unacademic in its proportions, the twisted columns in question do not merit the epithet grotesque. This porch with its round arches, deep reveals, lean-to tile roof, curved gable and unsophisticated bit of architectural finery in the shape of a rather ornate column and capital, etc., is meant to be in every feature reminiscent of the naïf spirit seen in the early California Missions. Considering all this, the critic's indication of faulty scale, etc., shows more of pedantry than point. Had he known a little more he would

have said a little less. The capping to the dome alluded to was changed to what appears above long before it was seen by the *Review*. It was originally in the form of a Font, such as one may see at Santa Barbara Mission and though rather "bossy" and solid quite defensible as a symbolic finial surmounting the roof over a Baptistry.

Concerning the Masonic rather than the religious air, which the design seems to possess according to the critic, he relates an anecdote: "It is said that Renan once happened to enter a church with a companion, and his friend

desperately *malapropos*. It reminds one forcibly of another story known to most of us. It tells of the man who had just heard a capital gun story, and being at a dinner was dying to recount it. No decent opportunity occurred in the trend of the conversation until a servant let a door close with a mild slam. Instantly our friend started as though he had been shot. "Dear me!" he exclaimed "what a shocking noise, I surely thought there was an explosion!" By the way, *talking about explosions* reminds me of an awfully good gun story I heard the other day," etc, etc.

The critic of the *Review* had evidently just heard this Renan story and on no other provocation than the sight of a triangular cartouche over the main entrance, must drag it in to give point to his paragraph at the expense of the architect's design and reputation. For, the architect whose design for a Catholic Church really reminds one of a Masonic Temple is surely as much an ass as the critic who can't distinguish one from the other.

The article concludes with a reference to Design No. 2: "Strangely enough the alternate elevation is a much more attractive building somewhat recalling the early Italian Gothic and showing a good deal of careful study and feeling. The fault most noticeable is the entire lack of cornice to the main tower; the spire rising from the square shaft without any break whatsoever."

It is of course very deplorable that a spire should be made to behave in that way—without any break whatsoever. And far more strange than that a building committee of a second rate parish should adopt the less expensive of two designs submitted, it is that a critic in a first-class review has not written a single paragraph on these designs without making any "break" whatsoever.

The man who sees Masonic Emblems in Catholic Symbols, and an *Early Italian* character in work that is distinctly *Late German* can of course trace resemblances anywhere in any thing. Were he suddenly confronted with a vision of his own precious organ of comparison he would as likely as not be instantly reminded of a parallel of latitude, or a purple cow, or any old thing.

In conclusion he is recommended to let criticism alone, and to devote his unique faculty to tracing the baffling connection said to exist between the Goodwin Sands and Tenterden Church steeple.

#### GISSO WORK.

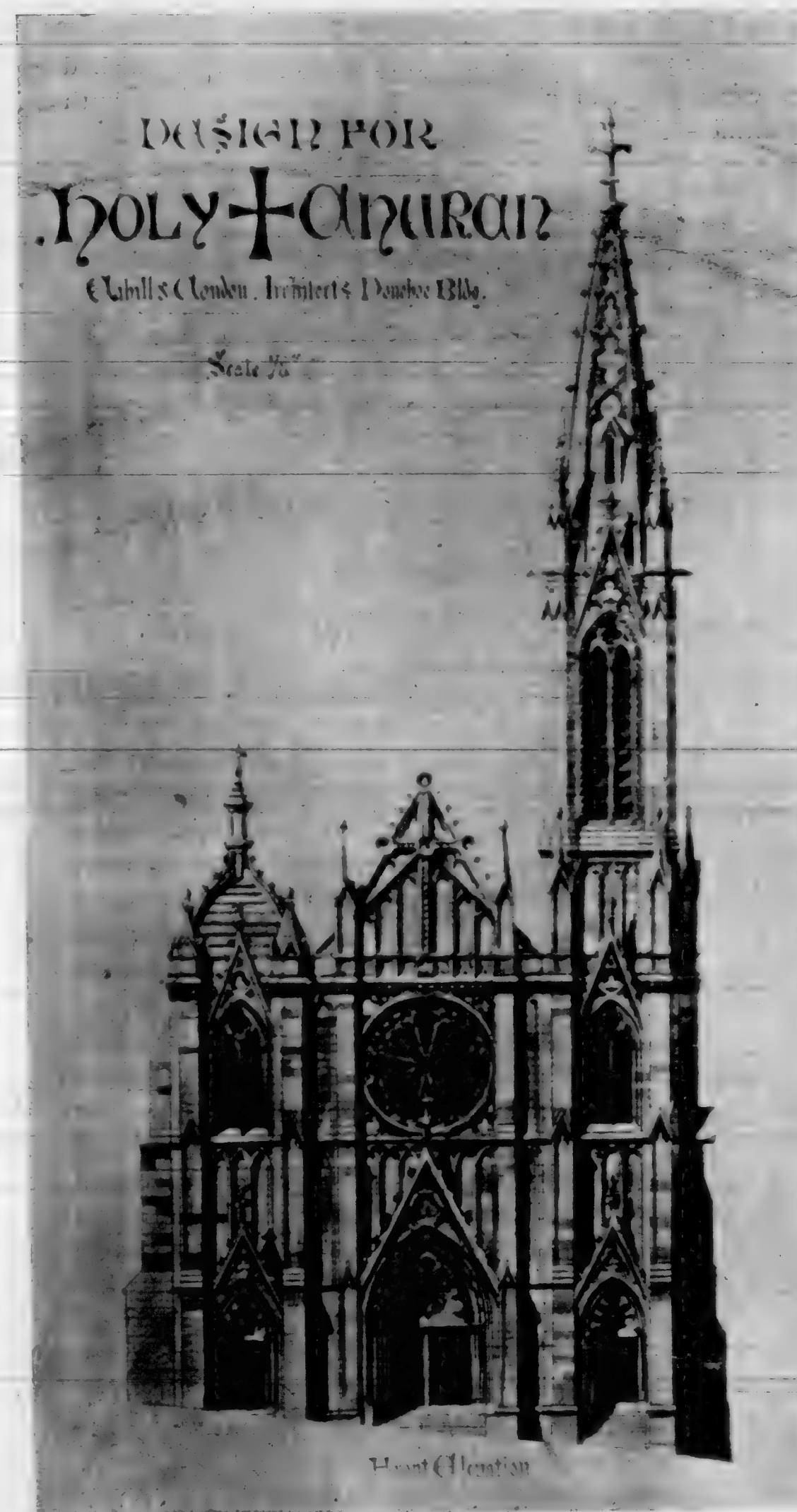


IF ALL the fascinating and interesting work that can be accomplished in the home, gesso work is far away in the lead. Already it is exceedingly fashionable. One sees it wherever one goes, as a mural decoration or as an ornamentation to furniture, and it never fails to add an air

of elegant comfort to the most unpromising surroundings.

It may not be generally known that many of the art schools are introducing this work as a branch of decorative skill, and it may also come as a surprise that many society men and women are deeply interested in this—the most modern of all arts.

Gesso work has certainly many recommendations. In



noticed that he removed his hat. "How is this Renan," he said "I thought that you had nothing to do with Mother Church?" "True" replied Renan, "but we still have a bowing acquaintance." If he had seen the church we have just described, it is a question if even this acquaintance would have been justified." The story itself is good enough but



the first place, next to no tools are required—all that are necessary being a few hog's hair and camel's hair brushes and a palette knife. Then, again, considering the quality of the work that can be turned out, the material is not so costly as to prevent even those whose pockets are slim from taking it up.

Gesso is made of the best glue and the finest plaster of paris. You put the glue in a jar, and melt it in the usual manner, the jar being placed in a saucepan of water, which is kept at nearly boiling point. Then add the plaster, stirring it carefully, and by drawing the saucepan further from the fire keep it below boiling point, so that the gesso may all get thoroughly heated and mixed without boiling.

Another mode of proceeding is to add scraped whiting to the glue, and to use a little resin, especially if very hardened figures in relief are required.

Both these methods are open to the objection that they are difficult to prepare and somewhat tedious, and learners would do well to avail themselves of the specially made composition that can be obtained at any art store. The difficulty in gesso work is the rapid hardening of the materials, but the composition alluded to is specially prepared and dries slowly, so that more care can be given to the modeling, alterations carried out, etc., as it takes quite half an hour to dry.

Beginners will do well to choose a bold design and to be satisfied with a low relief, and as their hands become more skilled they can attempt something more ambitious. The whole secret of success in gesso work lies in going slowly.

Take for a commencement a panel of wood and give it a coat of green metallic color; when dry, size and varnish it. This is called lacquering. On the green groundwork draw your pattern—a simple scroll, or something easy—then with a brush cover the design with the gesso mixture. Let it dry and give it a second coat. Each coat raises the decoration higher, and you can work up and model the design with the brush while the composition is soft. When dry add a few touches of silver and gold to intensify and bring out the design. Japanese papers will be found useful in supplying suitable designs for the early efforts of the gesso worker. They are generally bold and effective, but not complicated. The learner will find that their birds and flowers can be easily copied. The amateur should bear in mind that gesso work lends itself better to large patterns than to small details.

It will take some practice to perfect the worker in the simple form of gesso work described. When he had succeeded thus far he may attempt the more elaborate patterns.

Having made your drawing on paper copy it on the wood, on which you have laid a thin coat of gesso. You now proceed to work the design in relief with the gesso. You will find that you have to use your palette knife pretty freely in rounding your leaves and flowers.

The breast of a bird would look well done in high relief with fibrous gesso. For this you use cotton wool well pulled into little pieces. Each piece is dipped into a composition made of six parts of size to one of linseed oil. You lay the wool on the design and model it into proper shape. It requires a skilful manipulator to do this successfully, and it is perhaps better for the amateur to content himself with the easier method and produce a higher relief by adding one or more coats of the ordinary gesso mixture. You must let the design dry thoroughly and give it a coat of size if you want the colors you use to come out brightly.

For flowers I should use pale shades of red or pink, be-

cause the bird must be gorgeous. His brilliant tail should shine resplendent and this effect is easily attained by using metallic colors. You may on the other hand have a brilliant colored background and make your design in gold and silver. It would be a pity to make a panel all one color, like wood carving, as it would lose so much of the beauty of the spread tail and crest of the bird; but much depends of course on the purpose for which you require it.

There is in fact no end to the variety of changes possible to the successful worker in gesso. He has opportunities for modulation of tone, for happy color blending, for originality of design or for successful reproduction of the works of other decorators. Two prosaic facts should be noted—first, that it is well to pour out on the palette only a little at a time of the metallic paint; and second, that when you have finished your work you can clean your palette and brushes with turpentine.—*New York Herald.*



### CHANGING FORM OF STONE BY PRESSURE.

[CONTINUED FROM LAST NUMBER]



THE experiments show that limestone and marble, even when dry and at ordinary temperatures, possess a certain degree of plasticity, and can be made to flow, the movements set up developing many structures characteristic of rocks which have been squeezed or folded in the deeper portions of the earth's crust.

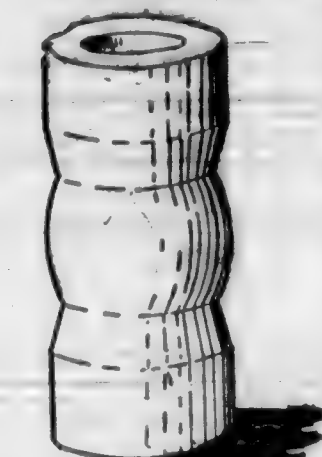
It is now the intention of Professors Adams and Nicholson to reproduce more accurately, if possible, the deformation and cataclastic structures of the interior of the earth. For this purpose they have invented an apparatus capable of generating great heat. With this they propose to surround the iron tube, and, by means of steam and heat, obtain those conditions which surround the plastic marble in the bowels of the earth. It has been shown by geologists that marble and other stone foundations become plastic in proportion to the depth they are found in mother earth. Thus, marble found five hundred feet below the surface of the ground is much less brittle than that found, say, at a depth of one hundred feet. The reason for these different degrees of plasticity consists in the fact that the former is subjected to far greater heat and moisture than the latter. By means of their new contrivance Professors Adams and Nicholson are confident that they can reproduce the conditions that prevail far beneath the surface of the earth, and they are awaiting with confidence the results of their future experiments.

The machinery used in all these experiments was designed



PROF. NICHOLSON

and manufactured at McGill, and its counterpart does not exist elsewhere on this continent. It is largely the work of students, who are thus trained in the principles underlying mechanics and hydraulics. The average pressure employed in moulding the marble is 80,000 pounds to the square inch.



THE CYLINDER AFTER FIRST APPLICATION OF PRESSURE.

This is obtained by a number of hydraulic cylinders, which increases the natural pressure of the water mains—130 pounds to the square inch—to the above astounding proportions.

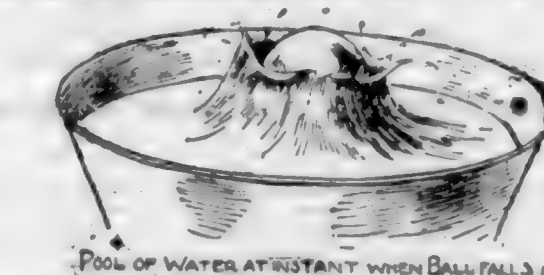
The opinion has been expressed that the experiments suggest a danger from the building of such sky-scrapers as are springing up in our cities. It has been said that if marble, one of the hardest of stones, yields to and becomes plastic under sufficient pressure, then clearly there must be a limit to the height to which one building stone can be heaped upon another in the erection of walls, without incurring the danger of such yielding of the stones of the bottom of the wall or building as will endanger the integrity of a building. For, short of the point at which the stone crumbles, there is apparently a point at which it may slowly change its shape under stress of heavy and long continued pressure.

In reference to the surmise Prof. Nicholson says: "The height of a uniformly thick brick wall required to crush brick work is about one thousand feet, and that of a stone wall to crush either sandstone or limestone about five thousand feet. Long before these heights could be reached the building would have failed from lack of lateral stability under wind pressure, unless the width of base was of similar proportion to the height. Chimneys from five hundred to six hundred feet in height have, it is true, been built, and are still standing, but they have, of course, a regular batter all the way up, reducing the load very much. The crushing pressures assumed by me in my computations on this subject are 800 pounds per square inch for brick work and 4,400 pounds per square inch for sandstone. There is not, therefore, nor can there be any sky-scraper a near approach to the moulding pressures, such as 70,000 to 80,000 pounds per square inch, employed in our experiments at McGill."

Another interesting question on which new light is thrown by this experiment is the perplexing one of the motion of the glaciers. As everybody knows a glacier is in effect a great river of solid ice. It is equally well known that the ice stream flows along its channel, slowly, to be sure, but just as surely as a stream of water. The early students of glaciers doubted this, but numberless careful observations, culminating with the famous ones of Professor Tyndall, have demonstrated the point beyond all controversy. Of course the bed of the ice stream is usually steep, and hence at first sight it seems nothing remarkable that the ice should slide along it. So the famous explorer of the Alps, de Saussure, who was among the first to recognize the motion of glaciers, explained this motion as a mere sliding of the ice. Very soon, however, other observers saw that this simple explanation by no means sufficed, for the most casual observation showed that the channel through

which the glacier moves—its banks or borders—is not usually of uniform width from beginning to end, but, on the contrary, widens and narrows as does the channels of a river. And, like the river of water, this river of ice at all times completely fills its channel, spreading out into lagoons of ice where the channel widens and narrowing into a slender stream as the walls contract. Clearly, then, the ice stream changes its shape just as the stream of water does; yet how is this possible, since ice is a solid, and a very brittle solid at that?

Numberless explanations have been put forward in elucidation of this puzzle, but the one that has seemed to have greatest plausibility and hence has gained greatest currency assumes that the ice in the depths of the glacier is being constantly melted by the pressure of the mass above it, and is constantly recondensed, being molded into new forms during the moment of transition. The justification for this hypothesis is found in the fact which was demonstrated by Professor James Thomson, the brother of Lord Kelvin, that

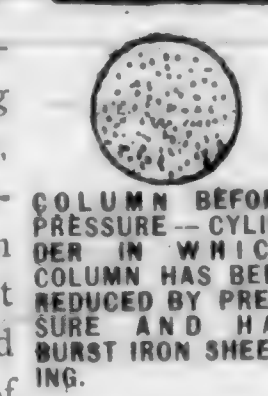
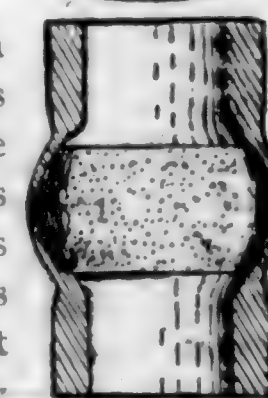
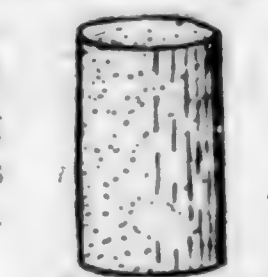


ARMOR PLATE PENETRATED BY CANNON BALL.

pressure, if sufficient, greatly lowers the melting point of ice; if cut into and broken into fragments will recondense into one mass if the parts are kept in contact. It was pointed out by the Scotch geologist and mathematician, Dr. Croll, that the sun's rays, beating upon the surface of the glacier, might penetrate into its transparent depths, and, being retarded at the bottom, might heat the ice at a depth to a temperature above that at the surface and this cause would manifestly act in conjunction with the increased pressure at the bottom of the glacier, to effect the melting of the ice there. At no time, however, would there be any great surplus of heat there and the portions of ice thus melted would be certain to recondense almost instantly, because of the large quantity of heat which is abstracted and rendered latent whenever ice changes into water. But during the instant of transition from ice to water and back to ice again, the particles of the mass might slightly change their form, under influence of pressure and of gravitation; and thus by an endless series of infinitesimal jerks, as it were, the glacier would creep on as it is observed to do.

Now, however, the experiments regarding the mobility of marble put quite a new complexion upon the question of glacial movement. For if it be proved that marble, a substance far harder than ice, and quite as brittle, can be molded by pressure alone into new shape, it seems perfectly plausible that a much less degree of pressure might mold ice into new forms by causing its molecules to slide over one another without the intervention of melting. In this view ice and marble, and, of course, all other solids, are to be regarded as merely very stiff or viscid liquids. Gravitation alone does not suffice to make them flow, as it does more limpid liquids, but when additional force is applied their mobility becomes apparent.

This view, indeed, as applied to such solids as iron and other malleable metals is not new, for the mobility of such solids under pressure, as when hammered, is widely known. A curious experiment recently made by Professor Sinclair



COLUMN BEFORE PRESSURE—COLUMN IN WHICH PRESSURE HAS BEEN REDUCED BY PRESSURE AND HAS BURST IRON SHEETING.



has illustrated this in a very vivid way. By means of an ingenious apparatus it has been possible to photograph the surface of a bowl of water at the moment a ball dropped from a height falls into it. The photograph being instantaneous, the water splashed up about the ball gives the impression of a solid crater. But the curious feature is, that exactly such crater as this is formed into a sheet of armor plate. About the mouth of the hole where the ball enters the iron is a bulging rim or crater of iron, which was manifestly splashed up exactly as the water splashes up about the miniature ball, making the observer feel that the iron and the water are really of one physical nature, one being merely a little harder than the other. The experiments at McGill make it clear, that the same thing is true of marble also; that, in short, in a broader view, brittle solids are only very fragile liquids, just as malleable solids are very tenacious liquids. Perhaps some day we may mould our statuary out of marble instead of slowly carving it, as is now done.—*Stone.*



*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.*

**C**OTTAGE for Mr. M. D. Hall at Palo Alto, Cal., W. J. Cuthbertson & E. A. Williams, Architects.

**S**KETCH for four Residence Interiors, Samuel Newsom, & Fred H. Meyer, Architects.

**S**KETCH of Stable and Lofts on the Elmwood Premises, Los Gatos, Cal., T. O'Connor, Del.

#### VALUABLE INFORMATION CULLED FROM OUR EXCHANGES.

**T**HE supreme court of Montana last week declared valid the contract between Bell & Kent, architects (formerly of Council Bluffs, Iowa, but now of Helena), and the Montana capitol building commission. The supreme court denied the petition of several competing architects for a writ prohibiting the architects to whom the plans were

awarded from proceeding with the work. As previously mentioned in these columns, the Montana law required the capitol architects to be citizens of the state, and the petitioning architects claimed that Bell & Kent, the successful bidders, did not meet the requirements of the law. The suit developed that Bell & Kent came to the state on March 18 and entered into a contract with the capitol building commission March 20. The court held that they had established a residence with bona fide intentions and in good faith, and refused to grant the injunction. The decision will permit work on the \$275,000 capitol building to be commenced next fall.—*The Construction News.*

**C**ONSIDERABLE agitation has been going on at Washington, D. C., over the height of buildings in general and in particular over the height of apartment buildings on residence streets. A bill has been introduced in the house of representatives to reduce the building limit, and the interpretation of the word "avenues" in the building ordinances is the subject of much contention between the commissioners and the builders of a proposed apartment house, 110 feet in height, on Sixteenth near K street. The building regulations provide that in no case shall a building exceed ninety feet in height on a residence street, nor 110 feet on a business street, "except on avenues 160 feet wide," where a height of 130 feet is allowed. The word "avenues," the owner contended, meant a thoroughfare, in the connection in which it was used in the building regulations, whether that thoroughfare happens to be designed in street nomenclature as avenue or street. The building commissioners refused to grant a permit for the building, and the builders filed an application for a mandamus to compel the commissioners to issue a permit to the complainant. Judge Cole denied the writ of mandamus on the ground that it was the intention of the ordinance to restrict buildings on all residence streets to a height of 90 feet. This decision is likely to be frequently cited as a precedent in future cases.—*The Construction News.*

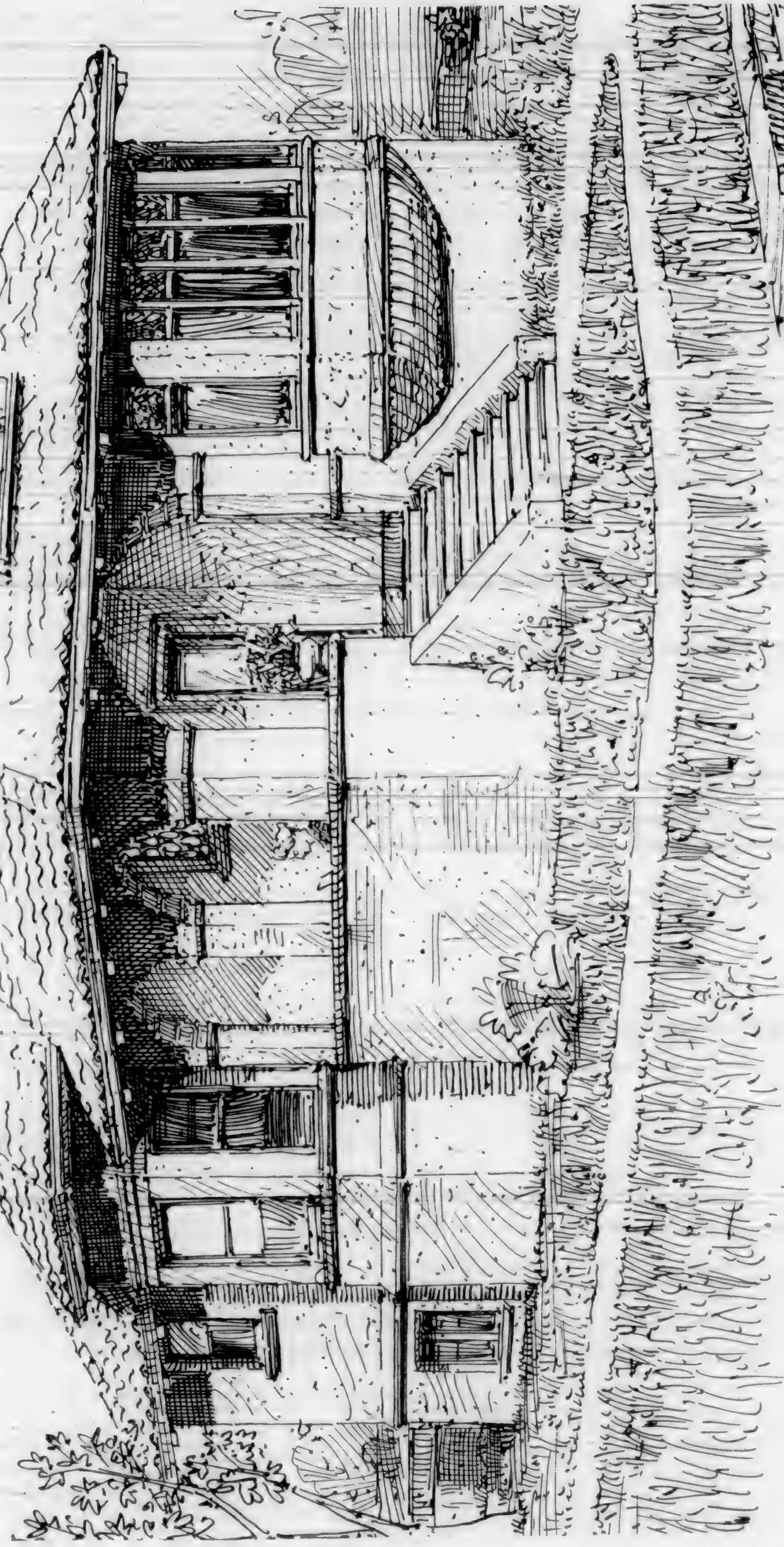
**I**N St. Augustine's Church, Brooklyn, N. Y., the tabernacle of the high altar is protected by probably the most novel safe ever devised. This is undoubtedly the first time in which practical science has been used as an adjunct in religious service. Of course, it was very essential that the beautiful altar itself should not be marred in any way by the safe and that it should be operated in a dignified and fitting manner. Unfortunately, in many churches, the richly jeweled receptacle for the sacrament has proved too often a bait for burglars, and many priests have tried to devise some scheme by which the security and sanctity of the tabernacle would be assured.

In the church to which we have referred the receptacle for the sacrament cost \$10,000. The safe consists of circular curving doors which slide together, closing the front toward the church. The safe weighs 1,600 pounds and consists of four pieces, the base, a curving piece of steel at the back that is stationary and the two doors which come together. The leaves of these doors are made of Harveyized steel an inch thick. They meet as they close under the dome and overlap each other tightly by a scarf joint. They turn on



COTTAGE FOR MR. M. D. HALL  
at PALO ALTO.

W. J. Cuthbertson } Architects.  
E. A. Williams. }

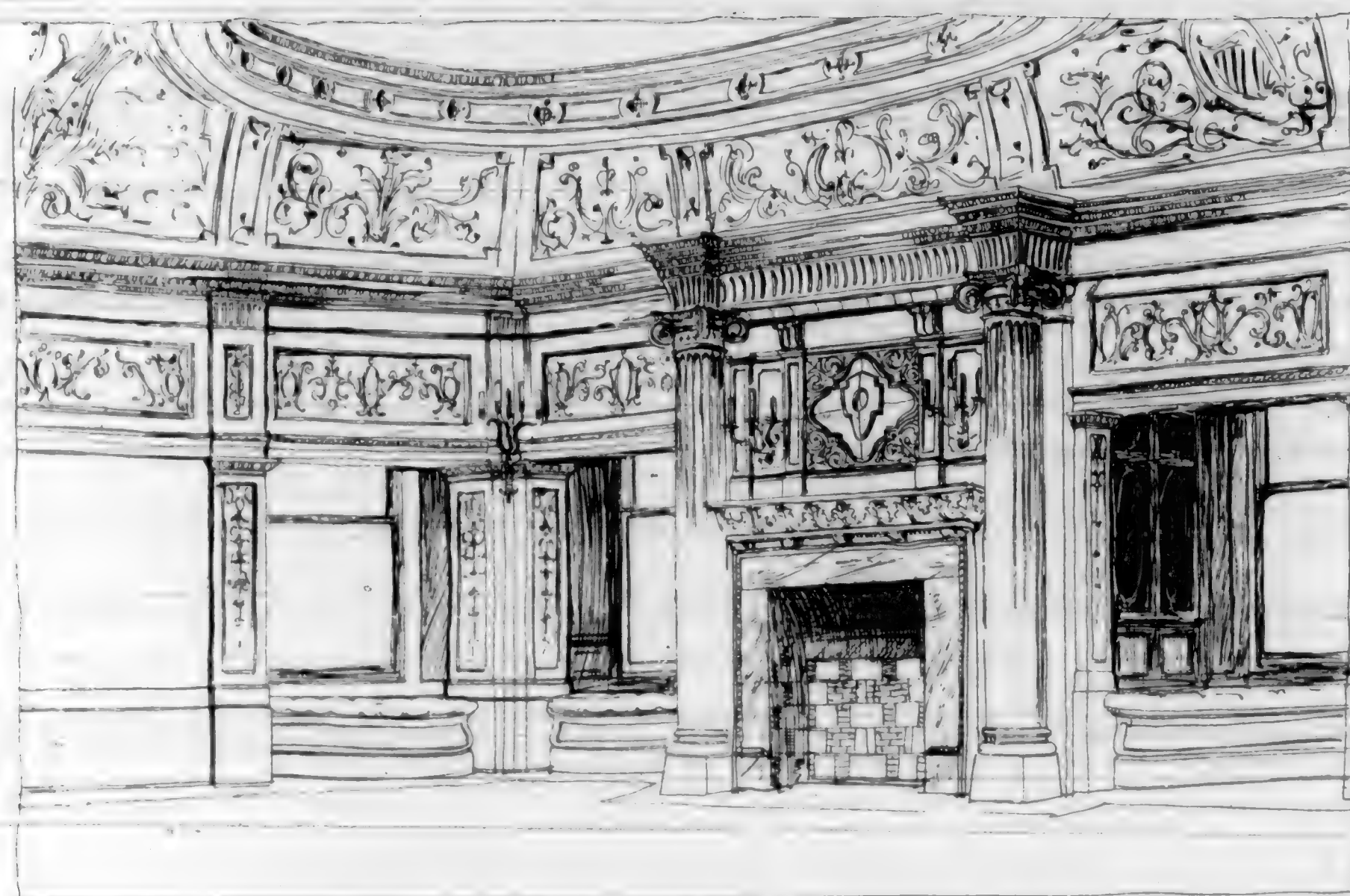


CALIFORNIA ARCHITECT & BUILDING NEWS  
SAN FRANCISCO

BRITTON & REV. PHOTO LITH.

VOL. XIX No. 7 JULY 1898



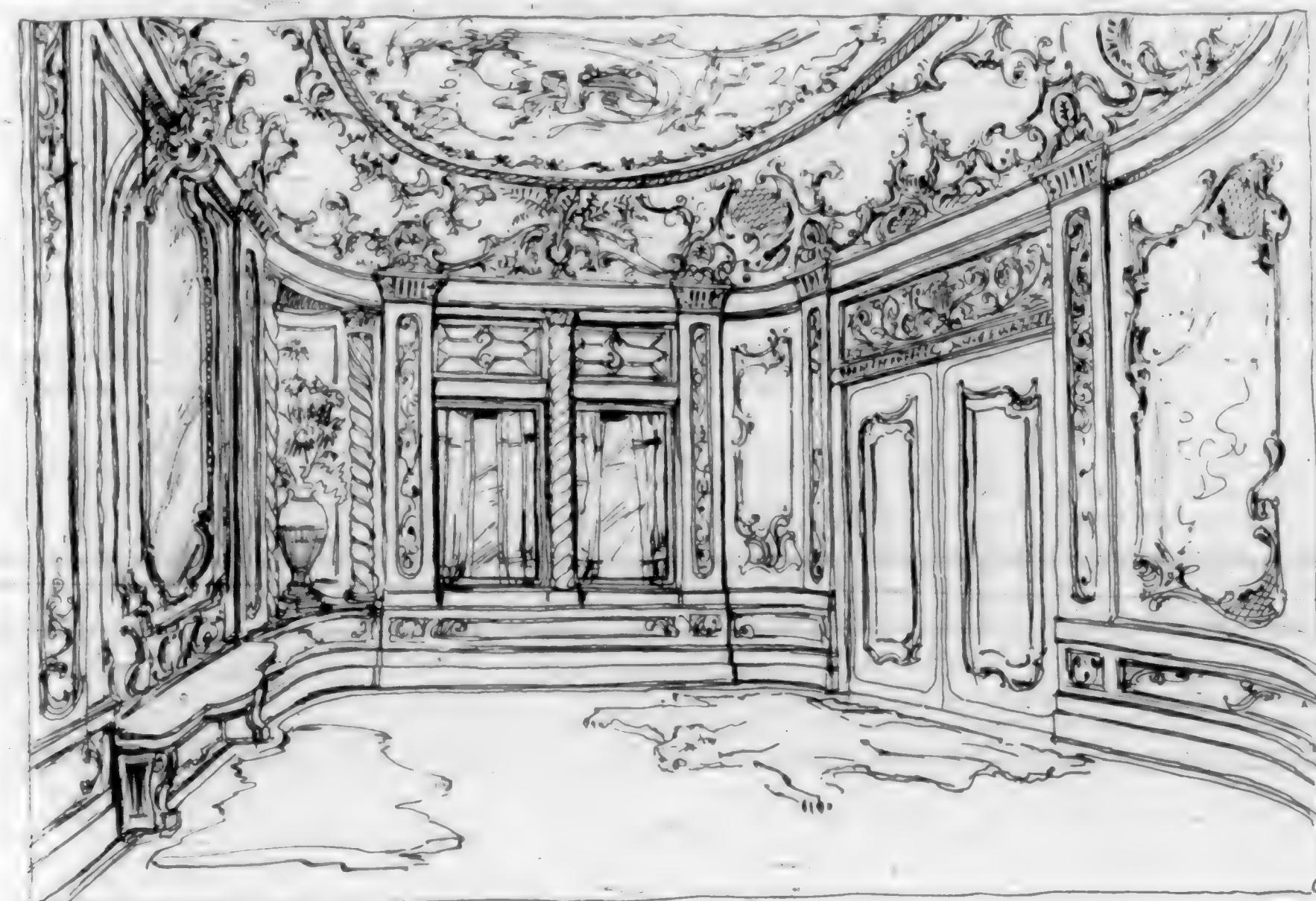


SKETCH OF LIVING ROOM  
& FIRE PLACE (INTERIOR)



SKETCH OF DINING ROOM  
INTERIOR LOOKING TOWARDS  
BREAKFAST ROOM

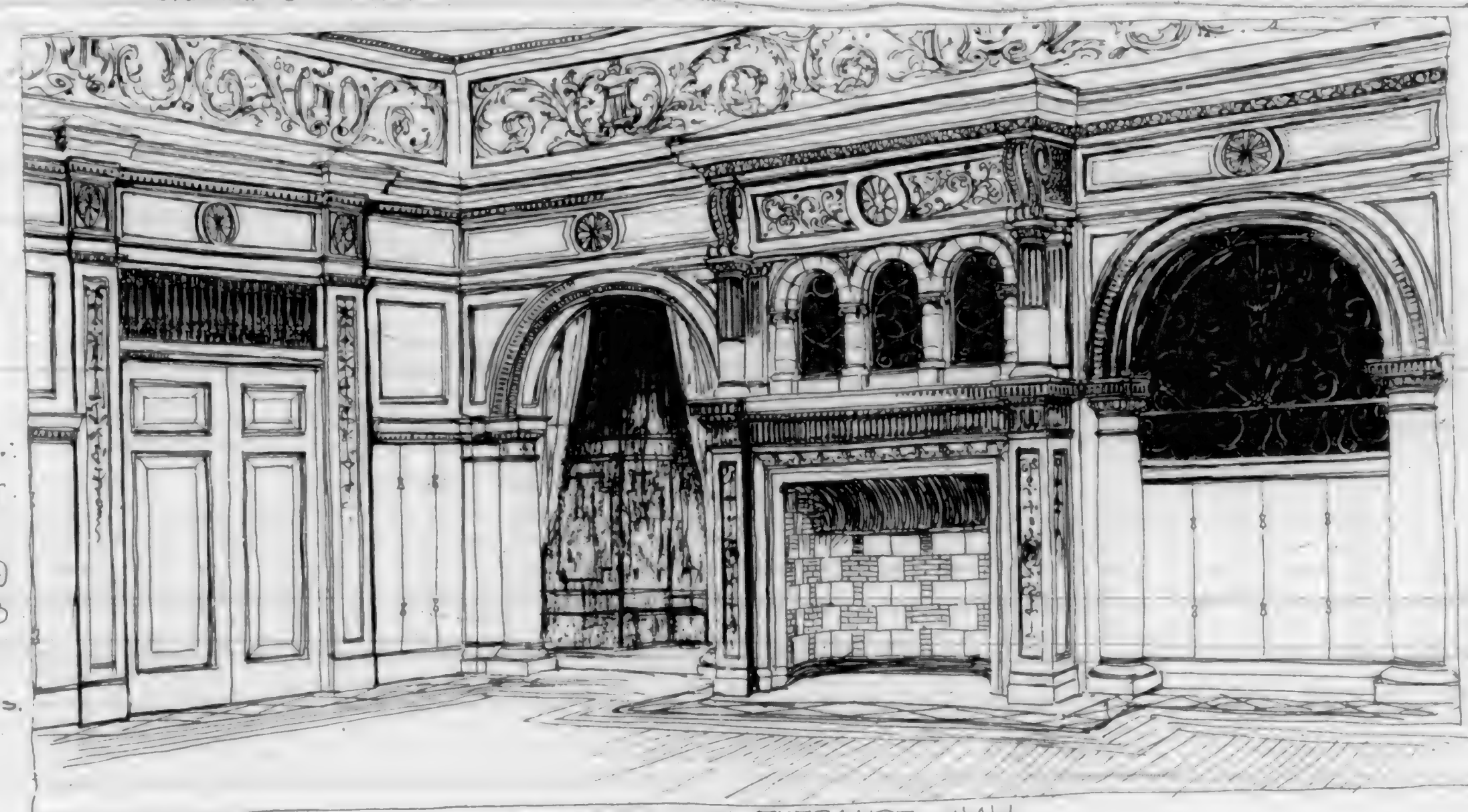
SKETCH OF DINING ROOM  
SIDE BOARD



RECEPTION ROOM  
INTERIOR IN ROCOCO STYLE  
CALIFORNIA & GOUGH STS.

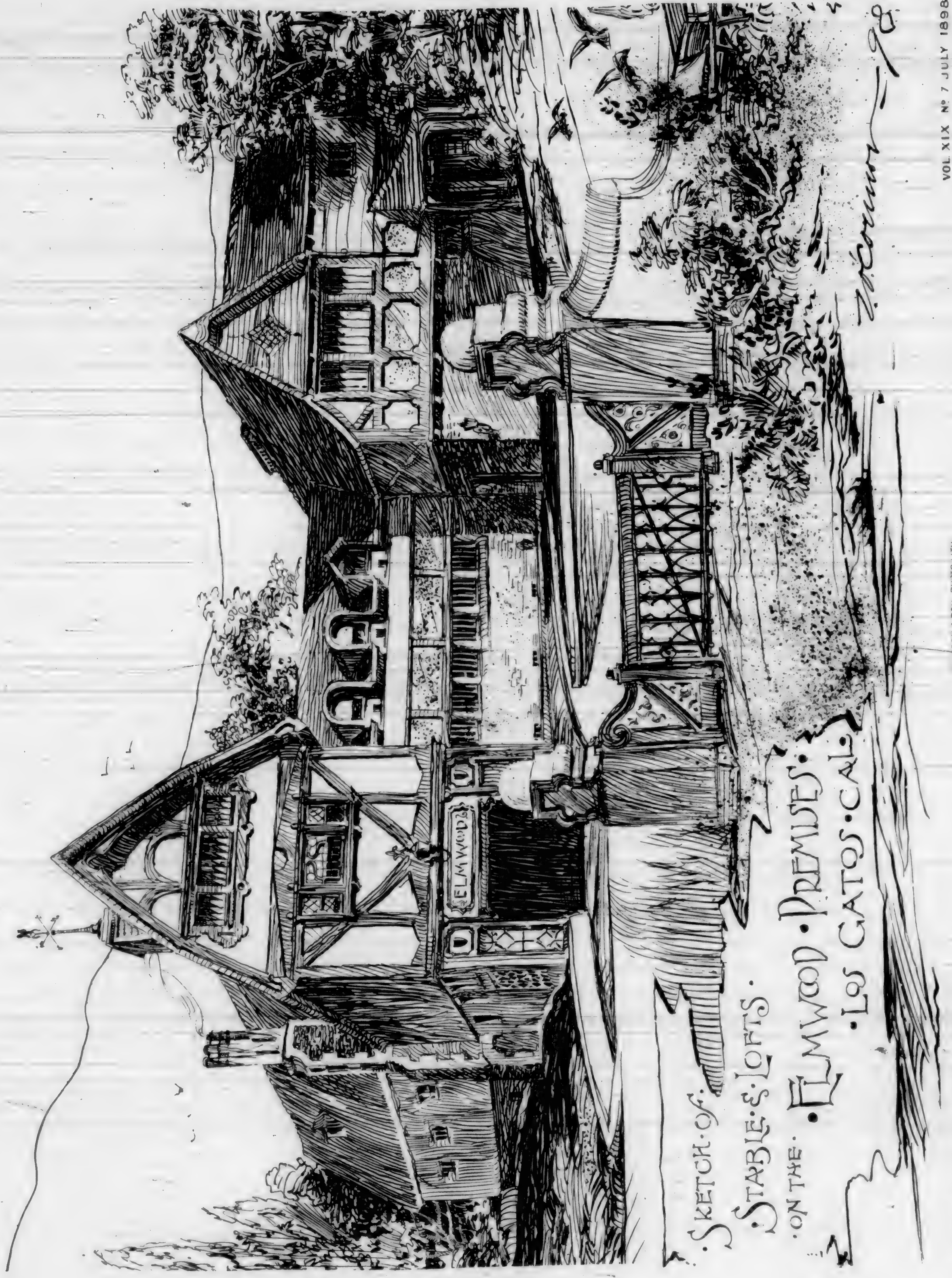
SKETCHES FOR FOUR (4)  
RESIDENCE INTERIORS

SAMUEL NEWSON  
FRED. H. MEYER ARCHITECTS



INTERIOR OF ENTRANCE HALL  
WITH STAIRCASE BEHIND GRILL  
ARCH & FIRE PLACE







roller bearings and they are operated by means of an electric motor. The safe is easily opened by manipulating buttons beside the tabernacle, but these push buttons will have no effect until the motor itself is set in motion in the vault below, the combination lock of the steel vault being known only to the priests of the parish. Electrical protection is also provided which would give notice at once to the nearest police station should the safe be tampered with. Masked in its covering of gold leaf, this steel shell is a superb piece of mechanism and is one of the most ingenious uses to which the electric motor has even been put. The same motor is used to drive a blower intended for the purpose of dusting the elaborately carved marble altar. An exhaust fan sucks away the dust.—*Scientific American*.

### THE ACTION OF SEA-WATER UPON HYDRAULIC CEMENTS.

BY DR. WILHELM MICHAELIS — TRANSLATED AND ABSTRACTED BY WALTER FRANCIS REID.

From *Proceedings of the Institute of Civil Engineers [England]* Vol. CXXIX.



WHEN a saturated solution of lime acts upon the combined hydrates of silica, compounds of ferric oxide and alumina are formed, containing respectively 3, 4 and 5 molecules of lime to 2 of the oxides, and these compounds are united with water in such proportion that at least 1 equivalent of water is combined with 1 equivalent of lime. Hydraulic cements rich in lime must, therefore, during the hardening process, segregate the lime as hydrate. In Portland cement the hardened mass is completely permeated with crystals of calcic hydrate. The hydrate of the combined aluminate and sulphate of lime ( $\text{Al}_2\text{O}_3 \cdot 3\text{CaO} + 3\text{CaOSO}_3 + 3\text{H}_2\text{O}$ ) has been observed when the compound was dried over sulphuric acid, and the following calculations are based upon this proportion of water, although in practice it must be far greater. Each molecule of alumina present in hydraulic mortar as the hydro-aluminate of lime can form about 12 parts of this double salt, and the hydro-ferrate of lime acts in the same way. The true Roman cements, containing 1 part by weight of silicate to 1.1 to 1.2 parts by weight of lime, are, from the chemical point of view, the best hydraulic mortars, because, during the hardening process, they form the most stable compounds, without unsaturated residues. Such cements are, however, burnt at so low a temperature that they are deficient in density, so that mortars made with them shrink considerably when exposed to the air through the evaporation of the water which they have absorbed. All water exceeding in quantity that required for the formation of calcic hydrate must be considered as water of expansion and is very loosely combined. Hydraulic limes, such as that of Teil, bear a close resemblance to Roman cements, but are even looser in texture. Of the 68.6 per cent of lime in Teil lime, 36.48 per cent only would combine with the other constituents during the setting process, leaving 32.12 per cent of lime in an uncombined state.

Portland cement, having been burnt at a higher tempera-

ture, is denser than Roman cement in the ratio of 5 to 3; but from the chemical point of view this cement is also defective, because, even supposing the richest calcareous compounds are produced during the setting process, there still remains an excess of uncombined lime. A Portland cement containing 61.04 per cent of lime would leave 13.79 per cent of lime unsaturated, while one containing 68.379 per cent would leave a similar residue of 29.1 per cent. In the case of a Portland cement of average composition, with 1 part of silicate to 2 parts of lime, 25 per cent of lime or 33 per cent of calcic hydrate would be segregated.

A body containing a substance of such strong chemical affinity as free lime cannot be regarded as stable. The free lime will continue to react until it forms a saturated compound. When the mortar hardens in the air or in water containing carbonic acid, the lime is converted into carbonate; but in sea-water it is chiefly the sulphates which act upon the lime. In the first instance it is the free lime that is converted into carbonate or sulphate, then the very unstable compound with ferric oxide, then the aluminate, and finally the silicate. The formation of the sulphate with two equivalents of water causes a considerable increase of volume, and may destroy the cohesion of the mass. With this formation of gypsum the production of lime aluminate-sulphate goes hand in hand, and this causes an enormous increase of volume, and a total destruction of the cohesion, for this double compound crystallizes with at least thirty, probably sixty, equivalents of water, and in doing so converts the strongest mortar into a mud, the only part of which retaining any cohesion being those protected by the formation of carbonate. Good Roman cements resist the action of sea-water well because they only contain enough sulphate of lime to form sixteen parts of the double salt which finds sufficient space for expansion in the pores of the mortar. In such hydraulic limes as that of Teil there is little alumina, and consequently the chief increase of volume is due to the formation of calcic sulphate and not to the double salt. One of the reasons why Teil hydraulic lime has proved more successful for marine work than Portland cement is that the blocks made with it are allowed to harden in the air for a long time before immersion, while Portland cement is generally exposed to the action of the sea-water at once. Even if Portland cement concrete blocks be exposed to the air until a protective skin of carbonate of lime is formed, such a skin cannot attain any considerable thickness, and the chemical reactions to which the destruction of the cohesion must be attributed will eventually take place. In order to ascertain the action of carbonic acid and sea-water upon the strength of Portland cement, a series of experiments were carried out. Two sets of briquettes were made according to the German standard rules, one composed of one part by weight of Portland cement to three parts by weight of standard sand, and the other of one part cement to five parts of standard sand. These briquettes were allowed to harden for twenty-four hours in the air, but protected from carbonic acid, and were then placed in boiled distilled water for 56 days, the vessel in which they were kept being hermetically closed. Half of the briquettes were then treated with moist carbonic acid for five weeks, and were finally returned to the closed vessels, in which they remained four weeks longer. When tested, the briquettes were therefore 120 days old. The 1:3 mortar protected from carbonic acid gave a tensile strength of 26.9 kilos per square centimeter, while the briquettes treated with that gas gave 28.5 kilograms per square centimeter (405.3 pounds per square inch). The crushing



strength was 309 kilograms per square centimeter in the first case and 338 kilogramme per square centimeter (4,806.3 pounds per square inch) in the second. The 1:5 mortar protected from carbonic acid broke at a tensile strain of 14 kilograms per square centimeter (199 pounds per square inch), and, treated with carbonic acid, the strength increased to 16.8 kilograms per square centimeter (238.9 pounds per square inch). The crushing tests gave 112 and 138 kilograms per square centimeter (1,592.6 and 1,962 pounds per square inch) respectively.

To be Continued.

### SEMI-ANNUAL SUMMARY OF BUILDING OPERATIONS.

IN the following tables we present the number and value of buildings erected in San Francisco during the first six months, it will be noticed that there is an increase in the amount of cost as compared with the first six months of last year while the number of buildings is much less.

FOR FIRST SIX MONTHS, 1898.

| 1898     | No. of Buildings | No. of Contracts | Brick Building Value | No. of Buildings | No. of Contracts | Frame Building Value | No. of Buildings | No. of Contracts | Alterations & Additions Value | No. of Buildings | No. of Contracts | Total Value |
|----------|------------------|------------------|----------------------|------------------|------------------|----------------------|------------------|------------------|-------------------------------|------------------|------------------|-------------|
| January  | 3                | 4                | \$8,901              | 19               | 11               | \$1,286              | 7                | 7                | \$7,338                       | 25               | 25               | \$107,525   |
| February | 0                | 10               | \$2,879              | 15               | 17               | \$2,984              | 6                | 13               | \$5,380                       | 30               | 30               | \$89,133    |
| March    | 3                | 7                | \$7,154              | 39               | 37               | \$12,362             | 11               | 13               | \$1,870                       | 55               | 55               | \$306,006   |
| April    | 3                | 15               | \$65,301             | 33               | 38               | \$39,221             | 16               | 19               | \$19,891                      | 52               | 52               | \$424,433   |
| May      | 4                | 12               | \$51,108             | 19               | 23               | \$7,380              | 9                | 15               | \$1,815                       | 32               | 50               | \$203,403   |
| June     | 8                | 20               | \$13,961             | 28               | 42               | \$57,476             | 14               | 18               | \$2,156                       | 40               | 80               | \$353,590   |
| Total    | 27               | 68               | \$99,907             | 153              | 171              | \$725,720            | 63               | 85               | \$306,650                     | 239              | 324              | \$1,922,286 |

To this amount has been added the further estimated sum of \$300,000 where costs have not been given, which would make the grand total for the year, \$2,222,286.

FOR FIRST SIX MONTHS, 1897.

| 1897     | No. of Buildings | No. of Contracts | Brick Building Value | No. of Buildings | No. of Contracts | Frame Building Value | No. of Buildings | No. of Contracts | Alterations & Additions Value | No. of Buildings | No. of Contracts | Total Value |
|----------|------------------|------------------|----------------------|------------------|------------------|----------------------|------------------|------------------|-------------------------------|------------------|------------------|-------------|
| January  | 12               | 18               | \$28,640             | 22               | 24               | \$3,324              | 3                | 3                | \$7,917                       | 37               | 45               | \$190,081   |
| February | 6                | 11               | \$18,282             | 21               | 21               | \$1,475              | 8                | 8                | \$28,025                      | 35               | 39               | \$280,631   |
| March    | 10               | 18               | \$25,112             | 44               | 47               | \$35,619             | 10               | 10               | \$7,234                       | 64               | 75               | \$405,975   |
| April    | 6                | 15               | \$15,762             | 71               | 73               | \$217,570            | 2                | 2                | \$9,780                       | 102              | 122              | \$723,912   |
| May      | 12               | 15               | \$110,956            | 40               | 43               | \$17,366             | 11               | 11               | \$13,080                      | 64               | 75               | \$277,427   |
| June     | 7                | 11               | \$8,718              | 45               | 48               | \$62,750             | 10               | 20               | \$10,091                      | 71               | 77               | \$261,462   |
| Total    | 54               | 101              | \$308,430            | 245              | 263              | \$788,123            | 76               | 77               | \$217,639                     | 373              | 411              | \$1,888,188 |

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

|                    |                    |
|--------------------|--------------------|
| 1885-754 contracts | value, \$4,267,375 |
| 1886-670           | 2,486,633          |
| 1887-516           | 3,269,914          |
| 1888-437           | 2,719,820          |
| 1889-546           | 3,910,600          |
| 1890-556           | 3,793,858          |
| 1891-583           | 3,916,973          |
| 1892-411           | 2,942,496          |
| 1893-475           | 3,024,498          |
| 1894-524           | 2,456,428          |
| 1895-517           | 2,625,024          |
| 1896-644           | 3,636,224          |
| 1897-433           | 2,388,488          |
| 1898-324           | 2,222,286          |

### ANOTHER BUILDING DISASTER.

FOLLOWING close in the train of the recent building disaster at London, Ont., with its terrible consequences, comes the news of the collapse on February 21, of the roof of a large music hall at Oshawa, Ont. The building is described as a three-story brick structure, with a large assembly hall on the upper floor. It was covered by a flat roof about 75x100 feet in size, which fell to the second floor, completely covering the seats in the music hall. The accident occurred at five o'clock in the morning. To this fortunate circumstance is due the fact that a number of lives were not sacrificed. On the preceding Saturday evening a large political meeting was held in the building, and on the evening of the day on which the accident took place an entertainment was to have been given at which it was estimated there would have been present 800 persons. How terrible, therefore, would have been the consequences had the accident been delayed but a few hours! Doubtless the immediate cause of the collapse was accumulation of snow on the roof, but the fact that the roof was a new one and that the building had recently undergone changes and repairs, at a cost of about \$5,000, is sufficient proof of structural weakness. These accidents unmistakably affirm the necessity of a standard of qualification on the part of those who undertake to design and erect buildings—particularly those of a public character. If the title Architect was restricted to persons who had passed a qualifying examination, as is now the case in the province of Quebec and the State of Illinois, the public would at least be enabled to know who were qualified to put up safe structures, and could then govern themselves accordingly. Under present circumstances anybody is at liberty to call himself an architect and to design and erect buildings of every class. So long as this condition of things shall continue, accidents involving injury and loss of life will be the inevitable consequence.—*The Canadian Architect and Builder.*



[The Editor is not responsible for anything which appears in this column.]

### BURNT CLAY HAS AN INNINGS.

NEW YORK, N. Y., July 15, 1898.

To the Editor of the California Architect and Building News,

SIR:—We have again to thank you for a copy of your interesting paper of May. It seems to us that the question at issue is primarily: "which is the best material for fireproofing purposes—burnt clay or concrete?" and the solution of this is within the reach of any one. Let him procure a piece of porous terra-cotta and one of cinder concrete such as is used in buildings; place both in any kitchen range; the

when heated red-hot, drop into a bucket of water and noting the result, from his own judgment.

To hold the material responsible for faulty construction such as is shown in your illustrations of the Park Row building in this city, is simply ridiculous; through an agreement entered into some time since between the master builders and unions, the manufacturer of hollow tile is debarred from getting any of his material in New York City, whilst the manufacturers of concrete control the entire operation from first to last.

Give the manufacturer of hollow tile equal privilege to erect his material, grant him at same time leeway to supply any petty deficiencies in the general fireproofing which his experience teaches him is vital and you will secure a structure as thoroughly impervious to fire as the present appliances of science furnishes—and thereby demonstrate clearly what is possible in fireproof construction of burnt clay when unhampered by other considerations than that of perfect efficiency.

The same authority that procured those illustrations could easily satisfy himself that the material is delivered in good condition at the building and that all blame for defective construction and broken tiles rests not with the manufacturer, who deplores, being vitally interested far more than *Engineering News*, such miserable work as you show.

And yet, despite defective setting, which *Engineering News* claims is almost universal in fireproof buildings constructed of hollow tile in New York City, such buildings have withstood the fiercest internal fires with little or no damage; and the Pittsburg fire so demonstrated, Mr. Jenny to the contrary notwithstanding.

If the Firewriters Association of the N. W., desire information as to the best fireproof construction for buildings, it could procure such based on actual experiences, by applying to the New York Board of Fire Underwriters.

A progressive manufacturer of burnt clay fireproofing aims to profit by the lessons which past experiences have taught him; to incorporate in its manufacture every improvement suggested by thoughtful ingenuity and unceasing experiments, but, "there are others".

The other systems of fireproofing which have sprung into recent existence from their very novelty, are limited in practical application to actual building operations and have thereby escaped so far any test of their efficiency in the light of subjection to actual conflagration. We know what to expect of a material which in its manufacture is exposed to a temperature of fully 3000 degrees Fahrenheit, and we have seen its conduct under subsequent fires in numerous instances, but what will result when the newer systems are called upon to prove their claims?

We have a report to the National Fire Protection Association of Boston on a fire of April 2, 1898, No. 278-288 Congress street. "Floors concrete, (Columbian construction). Cause of fire probably spontaneous combustion in the outside surface of three barrels. Did not burn through barrels and floor not scorched. Damage caused by fire starting a Grinnell Sprinkler, which was not discovered by watchman in time."

"The floors which were supposed to be water-proof, allowed water to run through and caused damage in four stories. The action of lime (in concrete) with water, passing through caused silver plated ware to be turned black, necessitating replating and polishing."

As unslaked lime, one of the essential elements of cement and therefore in concrete, is not only a conductor but one of

the greatest known absorbents of moisture, electricity will find its way through any moisture, containing material. The concrete system applied in a moist condition, retains its moisture for a more or less extended period and in these days of ever extending electrical appliances in our steel-frame buildings, the danger to that metal of electrolysis is one that is attracting the earnest attention of our Architects and one to be well considered. Hollow tile, on the contrary, is a perfect non-conductor and is absolutely dry when laid.

Yours truly,

HENRY MAURER & SON.

### THE CONTINENTAL FIRE INS. CO.'S ARCHITECTURAL BOOMERANG.

Editor California Architect and Building News.

DEAR SIR:—With your permission I desire to draw the attention of Architects to an announcement in the June number of the *Coast Review*, which states that the Continental Fire Insurance Company of New York has published a work containing plans and specifications of economical buildings, etc., a copy of which the company will send to any property owner desiring to build, if the said owner "will insure with the Continental."

This is a new departure, for a respectable corporation to take, but quite in keeping with the "beautiful present" or "something for nothing" idea so prevalent in these days among certain storekeepers.

How the Continental of New York, expects to be benefited in the long run by adopting these tactics is left to conjecture.

Fortunately Architects (and their clients) still have plenty of choice left in the matter of insuring their buildings, and with companies who do not offer plans and specifications as an inducement to obtain premiums and they still have sufficient intelligence left to exercise it.

The publication referred to is also said to contain (for the owners benefit of course) blanks for contracts with builders and "architects". I can only say that if these contracts are of the New York Standard policy type—"ironclad" and duly Harveyized—they would be as useless to an owner, as the said plans and specifications would probably be.

Yours respectfully,

ARCHITECT.

### IRON SHUTTERS VS. WOOD SHUTTERS.

New York, July 13, 1898.

To the Editor of the California Architect and Building News.

DEAR SIR:—In the June number of your Journal I read an article on "Iron Shutters" in which it states that the Fire Department of New York City has lost faith in iron shutters, and that a wood shutter lined with tin is the best shutter in the market today, known as the "Underwriter's Shutter" by the Department.

As one who has been in the business of manufacturing and erecting fire-proof shutters all over this country for twenty years and more, who makes a specialty of shutters, seeing



the ridiculousness of such a claim I take the liberty to write these few words.

If the comparison is made by Chief Bonner between common folded wire shutters and wood lined with tin, I agree with him, as common iron shutters will burst open in thirty minutes under an intense heat—I suppose this is what the Chief had in mind.

In 1886 a large building was erected in Chicago, Ill., designed by the late Mr. Richardson, the Architect, and who took special interest in the shutter question for that building. He selected a shutter which I saw placed in that building in round numbers, seven hundred and fifty in all.

Some six years after the said building was finished, I had a call to put in more shutters for this same concern. In my conversation with the Chief Engineer I asked him "how did the shutters wear in the old building?" His reply was this: "Two years ago we had a terrible fire across the street, burned the whole block and part of another, the shutters you put in were white with heat, then we placed our water on them from the inside as an experiment in our excitement, the shutters had room to expand in the channels and when the fire was all over we had only the painting to do on the shutters."

The above rolling steel shutter was invented by Clark, Bunnet & Co., London.

Yours very respectfully,

J. D. THOMAS, Supt., N. Y.

#### THE SURVIVAL OF THE FITTEST.

IT WAS Herbert Spencer who, when seeking to define his views, touching the Status of man, and the lower animals, in the visible universe, coined the above axiomatic phrase. This sententious deliverance of the great biologist, has long since abundantly justified the claim that

"Many a shaft at random sent  
Finds mark the archer's little meant."

in that it has been found—or made—to fit conditions its promulgator scarcely contemplated. With our characteristic tendency to exalt the apposite, we do not hesitate to utilize terms well befitting a "bacillus" to exploit—well, say for instance—a boiler, or to be quite explicit "A Copper Range Boiler."

If in preparation of plumbing Specifications, wherein the best goods obtainable, are demanded, architects would call for the "Brown Bros. Seamless Drawn Copper Range Boiler, they will certainly obtain what they seek, whereas the words "or equal" added to the specifications, will most certainly defeat the intention and provide an easy path for "the substitution evil."

This seamless drawn boiler is made of two solid seamless shells cold-drawn from pure Lake Copper and has no brazed seams or rivets. It has successfully withstood the test that tries all things—"time"—and is fully guaranteed by its makers not to collapse.

Architects will find that the experimental element does not enter into the "Brown," and he has the positive assurance that in this boiler, he is giving his client the very best article of its class in existence.

#### FOR STEEL CONSTRUCTION.

THE new building for the Wells, Fargo & Co's., Express consumed nearly 1000 tons of steel in the skeleton structure. To prevent corrosion to this vast amount of metal, covered and fire-proofed, as most of it will be with layers of concrete, the architects gave the preference to Dixon's Silica-Graphite Paint.

#### CABOT'S SHINGLE STAINS.

THOSE who required further evidence of the value of Cabot's Creosote Shingle Stains in this climate will find it in the brochure just issued from the office of the San Francisco agent, Mr. Charles J. Waterhouse, 421 Market street. This little book, which is illustrated with half-tones and line sketches of a number of handsome country-houses that have been actually stained with these Stains, contains also the testimony of architects and owners all through this section of their complete satisfaction with the coloring effects, preserving properties and durability of the Creosote Stains. Being in the wood, and not wholly on the surface like paints, they cannot crack or peel off, as paints do, which is a very important advantage in this climate, but perhaps their most unique advantage here is the fact that redwood shingles treated with them never turn black, as they always do otherwise. Mr. Waterhouse carries a full stock here, and Mr. P. H. Mathews, 238 South Main street, is Los Angeles agent.

#### ROOFING OF WELLS FARGO & CO'S BUILDING.

The Paraffine Paint Company have the contract for the roofing work and roofing material on the Wells Fargo & Co's new building, and the roof is now well in hand.

#### GOOD LOCKS.

SOME INTERESTING FACTS ABOUT A FAMOUS LOCK. THE PRINCIPLE AS OLD AS THE PYRAMIDS AND MODERN AS THE CENTURY.

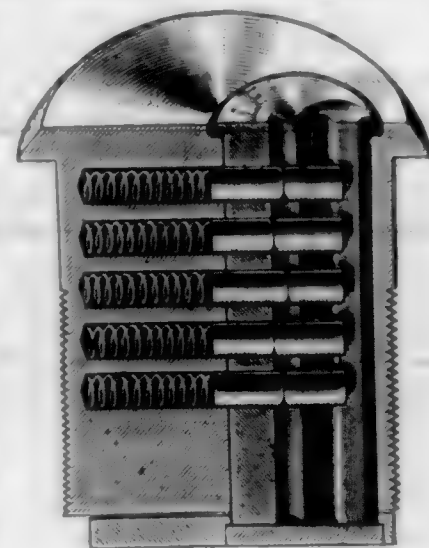


BELIEVING that the subject of locks has a peculiar interest to the class of readers whom our pages reach, we have gathered the following information on this subject:

It is a curious fact that both in England and America the name most prominently identified with locks is that of an American; in the former, that of A. C. Hobbs, and in the latter, that of Linus Yale, Jr.

While the makers of the Yale lock, The Yale & Towne Mfg. Co., of 84-86 Chambers street, New York, have associated the trade name "Yale" with many of their finer products, in connection with locks it can only properly be applied to the original invention of Mr. Yale and to the later improvements thereon which have been developed and introduced since his death by the Company.

The essential characteristics of the Yale system are shown in the accompanying illustrations, and consist in the separation of the key and tumbler mechanism from that of the bolt mechanism, and in the adaptation of a key of sheet metal to the actuation of the peculiar tumbler mechanism shown. The original Yale lock had a perfectly flat, thin key, which was the forerunner of the innumerable forms of flat key now so generally used. It is a common mistake to characterize any lock with a flat key as a "Yale Lock", and many persons are thus misled. The flat key was an incident in Mr. Yale's invention, but its chief importance lies in the form of tumbler mechanism adopted, the vast capacity for key changes which this affords, and the resulting immunity from liability to ac-



cidental interchange of keys. In common locks the key changes are counted by the dozen only; in the Yale lock they are counted by the thousand. The flat, steel key of the original Yale lock gave place later to the corrugated key, and this in turn to the latest form, the "Paracentric," which is shown by the illustration. The peculiar key-way



used with the latter adds greatly to the original security of the lock, while the intricate form of the key itself practically precludes illicit duplication.

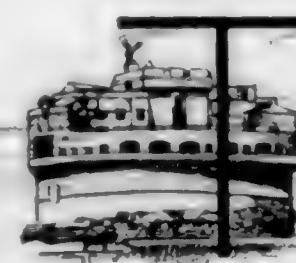
The Yale lock is a curious illustration of the adage that "there is nothing new under the sun". In the pyramids of Egypt locks have been found embodying the pin-tumbler system. Here, however, the resemblance ends. In the application of the principle, and in all refinements of mechanical detail, the difference is as wide as that between the civilization of Egypt under the Ptolomies and that of America at the close of the nineteenth century.

#### THE KEELY MOTOR UP-TO-DATE.

PROCEEDINGS OF ENGINEERS' CLUB OF PHILADELPHIA.

BY E. J. SCOTT, ACTIVE MEMBER.

CONTINUED FROM JUNE NUMBER.



THE VISITOR also saw the engine built to navigate an airship, recently described in a city journal as a new invention. He saw the engine, afterwards called a "Vibrodyne," which was to revolutionize all commercial machinery. This was not shown in operation. Keely also showed him a large book for the purpose explaining the principles of his vibratory philosophy. It was filled with heavy cardboard leaves, covered with pen drawings, all made by Keely with beautiful exactness. Nearly every one of the plates had one or more bars of music, showing the dominant chords or vibrations which governed certain combinations. The inscription on the Zuni tablets would have been quite as plain to the visitor, and Mr. Keely kindly enlightened him as to their meaning. In explanation of one of the simpler charts, Mr. Keely said: "The chord of polar negative attraction, so far as this sympathetic research is concerned, proves conclusively that the chord of the neutral center of the polar attractive currents of the earth represents the sympathetic chord of B flat, third octave, one-hundredth of a note below the octave, according to sympathetic sub-division."

The visitor had before noted that Keely's language, while sounding perfectly familiar so far as the words were concerned, did not convey any ideas. He soon learned that without a knowledge of the application made by Keely of the terms which fell so glibly from his tongue it would be useless to study the subject by question and answer. Some months afterwards he was given some manuscript of Keely's which was said to be the clearest exposition of his views on the great vibratory principle upon which his discovery is

based. The first paragraph of this paper, which serves as the introduction to the subject, reads thus:

"The peculiar sympathetic conditions whereby a magnet is conserved to polar and anti-polar currents of the earth show a duality of sympathetic inflow and outflow as to prove anything but perfect sympathetic equations, as between its reception and distribution in that part of the electrical field that represents one of the triplets that in celestial physics is classified as inter-atomic vibratory oscillation. Now, if this oscillation represents in its alternating action a vibratory wave-motion representing in its corpuscular field of action, say 128,400 exchanges per second between polar reception and anti-polar (or depolar) distribution (which sympathetic philosophy proves most conclusively), the fact is established of its perfect sympathetic concordance to that third of the electrical triplet representing the sixths as classified in sympathetic physics, and thus that line of sympathetic action as represented in the magnet when it is electrically sensitized becomes thoroughly subserved to polar sympathetic attraction as a medium through which a portion of a polar flow is diverted—not latent, but highly active under all conditions as long as its sensitization exists—that is its magnetic sympathy as electrically induced, and associates itself with every medium in nature where this latent element exists, viz: steel, iron, oxygen at a low temperature, etc."

As Keely has made vibratory physics the study of his life, it will be taken for granted that the statement just quoted is authoritative. At the same time the writer confesses that he does not understand it, although it sounds all right.

Mr. Scott left with the understanding that he should make a second visit at some date to be named. In the meantime he discussed the details of what he had witnessed with Mr. Addison B. Burk, President of the Spring Garden Institute, who agreed with him in some of his conclusions, and it was arranged that both would be present at the next visit to Keely, if agreeable to Mrs. Moore. That lady gave her consent, and named November 23, 1892, as the date. It was arranged between them that if the experiments was repeated, each would pay attention to certain details, so as to cover as many points as possible. At this visit the surroundings of the place and arrangement of the rooms constituting the laboratory were noted.

Entrance is made from the street through a large door into a room in which is a carpenter's workbench, some powerful winches, and an assortment of tools; and on one side was an immense box, bound with iron bands, with a cover so heavy that tackle was arranged above it for lifting it. It was closed and padlocked, and was said to contain machinery not now in use. A large door led into a room on the same floor at the rear of the first one, which was not opened on any of the visits. A stairway to the second floor leads to a landing on which are parts of abandoned machinery. A small room on one side of this contains a large desk, with books, instruments and drawings. On the opposite side of the landing is a room somewhat larger, with many expensive looking instruments, or machines, some of which he exhibited in operation. Back of both of these rooms is a large room the full width of the house, in which some of the apparatus was exhibited. To the rear of this is another room, a step or two higher. This last room is over the back room on the first floor, before referred to. To the north of this building is the central power station of the Columbia Electric Light Company.

One fact which may or may not be of importance, in con-



nection with all the visits, is that Keely required of Mrs. Moore twenty-four hours' notice of any visit at which exhibitions were to be made. On the second visit, at which Mr. Burk was present, Keely was asked to show the sensitized round steel bar before referred to. He produced it, and a measurement showed it to be  $7\frac{1}{2}$  inches long and 1-16 inches in diameter, with a small hole through it longitudinally which could be blown through but no light would pass through it; another larger hole was bored through the bar near one end. By striking it on the floor with one end, it would vibrate with a base note like an organ tone which would continue for more than a minute; a blow on the other end produced a note of high pitch not quite so persistent. Keely's explanation of this phenomenon made at the first visit, was that the bar had been "vitalized" and its proportions had been calculated to a nicety. His exact explanation was: "By vitalizing this bar it produces a molecular oscillation of three times the diameter of the molecule, whereas under ordinary circumstances with a piece of forged steel, the oscillation is only one-third of its diameter, 40,000 times a second, which is perfectly inaudible to the ear. By increasing the magnitude of the vibrations by the sensitizing process to three times the diameter, it gives a molecular swing that brings out an oscillation that produces a chord with three different notes."

Mr. Scott had formed a different theory and asked that the bar be weighed. At just this juncture Mr. Keely admitted a caller, a young man with whom he appeared to be well acquainted, and having no scales in his laboratory, he asked the young man to take the bar to a neighboring drug store and have it weighed. He returned, saying its weight was 3 pounds, 3 ounces. During his absence Keely explained that the sensitizing process consisted in treating the metal with hydrogen in an oven, which would sometimes reduce its weight to nearly half the normal. Making allowances for the rounded ends, the bar had evidently suffered a loss in weight, but not in that proportion. Mrs. Moore told the writer that the bar had created a sensation among scientific gentlemen in Europe, and that there was a standing offer of \$10,000 for the production of a similar bar.

To test the truth of this theory and not in the hope of reward, the investigators concluded to have a bar made. After several attempts with vibrating single bars inserted in a bored-out piece of steel, Mr. Burk succeeded in having an exceedingly good imitation made at the Spring Garden Institute, by inserting two ordinary tuning forks of different pitches in the bored-out steel, and concealing the work by screwing on an end piece and then turning the bar off in a lathe. It required more work, probably, than the hydrogen process, but the molecules had the requisite swing, and the notes the proper resonance and persistence. This simply shows that there is possibly more than one way of arriving at the same result. After the duplication of this bar, the original could not be seen.

Mr. Keely on this occasion showed his apparatus for sensitizing bars, and also the amalgam disks which form so conspicuous a feature in all his apparatus. It was a glass receiver, from which the air could be exhausted by an air-pump, with an opening at the bottom large enough to admit the object to be sensitized, which must be mounted on glass. The opening was closed with a screw cap. The objects to be treated must not be touched by the hand, as by so doing vibrations might be set up in the body which would defeat the purpose. When the treatment was completed the disks could be handled without detriment.

The disks referred to were about  $2\frac{1}{2}$  or 3 inches in diameter, of brass, and an inch thick, with the center turned out, making it like a cap, or cover of a jar. The cap was then filled with an amalgam and finished off smooth, like the obverse brass face of the disk. Keely said the composition of this amalgam had cost him some years of study. It melts at so low a temperature that he had caused much amusement by having spoons made of it, which when put into a cup of hot coffee would melt and disappear. The brass face of the disk was gold plated, which Keely said was essential.

On this visit the levitation experiment was exhibited again. The apparatus consisted of a cylindrical glass jar 41 inches high and about 10 inches in diameter. It was closed hermetically with a cap extending down the sides at least two inches. It was filled with what Keely said was pure water. On the bottom of the jar was one of the disks before described, standing on edge, also a globe covered with gold leaf about the size of an orange, with a small cylindrical projection on one side on which it rested. Keely said the globe was filled with shot. This jar stood on a small pine table upon a thick sheet of glass. In the cap of the jar Keely said there were copper and platinum strips which were responsive to certain vibrations. On the table near the jar he placed what he called a "Sympathetic Negative Transmitter," and connected this with a thumb-screw on the cap of the jar by a platinum wire. This transmitter was a large brass ball about eight inches in diameter, from one side of which protruded a straight cylindrical handle, or bar, which, by turning one way or the other, was projected into or drawn out of the ball. The movements resembled those made in operating the combination of a safe. On the outside of the ball was a small horn formed of a tube of increasing diameter, coiled with its large end outside. Also three small disks of metal into the circumference of which spines of metal of various length were inserted, forming a scale of tones when snapped. One was the diatonic scale, one harmonic, and one attuned to fifths.

Keely then placed a sensitized disk on top of the jar, and another at its base. He explained that the disks and the objects inside the jar were in sympathy with each other, and that it was essential thus to place them. Then turning the knob or handle of his transmitter a few times, as if to adjust it, he snapped the spines on the scales at different points, and soon the weights at the bottom of the jar began to quiver; the disk started slowly upward, followed by the shot weight, and with a slow, uniform motion they rose to the surface and bumped against the cap, bobbing up and down until they came to rest. The disk, which started first, moved faster than the globe. Keely explained that this was due to the difference in the rates of vibration of their chords of mass. This difference was 120 per minute, and he could, with care, make one ascend while the other descended or remained at the bottom. He played a few notes on a mouth-organ, disconnected the platinum wire from the jar and said the weights would remain at the top indefinitely. The jar was left while the visitors looked at other apparatus, and after a time they were found still on the top. Keely connected the transmitter and jar again by the wire, struck some chords, and the weights descended. He played a chord softly on the mouth-organ, repeating it at short intervals, and both started to rise; using the handle of the transmitter and changing the chord after they had risen three or four inches, the shot weight dropped to the bottom while the disk continued to the top.

To be Continued.

## DUNHAM, CARRIGAN & HAYDEN CO.

17 and 19 BEALE ST., San Francisco Cal.

WE show here an illustration of our AMERICAN SLIDING DOOR HANGER for which we claim unusual advantages, great saving in time and expense, and superior excellence in operation, together with the following features not obtained or claimed in other hangers.

**TRACKLESS**—We obviate the use of a track above or below, and the special framing necessary where a track is used.

**NO WHEELS**—There are no wheels to bind by reason of warped or sagging track. The movement is perfectly PARALLEL and insures against binding.

**NOISELESS**—The operation is noiseless and extremely easy.

**DOORS EASILY ADJUSTED**—The door can be readily adjusted plumb, raised or lowered by drawing them into the opening which gives easy access to the adjusting screws.

**QUICKLY PUT UP**—The Hangers can be put up in one-third the time required for overhead hangers.

**SUBSTANTIAL**—The parts are made to carry three times the weight of doors of the size given.

**ONE PACKAGE**—We pack the Hangers fully assembled and ready to attach, in one package, including all bolts and screws necessary.

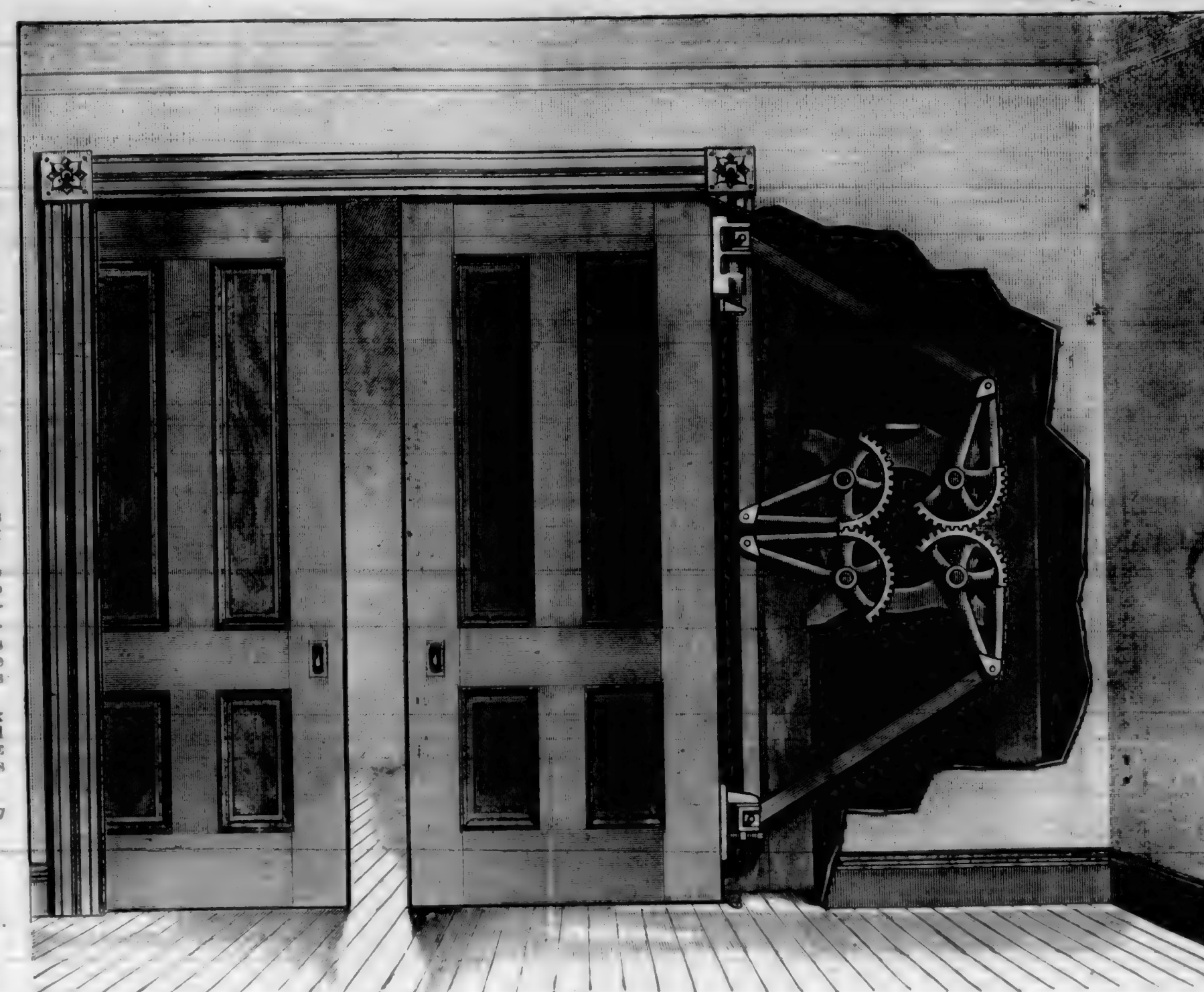
See a full size working model at our store.

WE SELL

The Yale & Towne Mfg Co.

CELEBRATED

YALE LOCKS.



## S. F. LIME & MORTAR CO.

Brick and Plasterers' Mortar

Machine Made Mortar.

Estimates made on jobs of more than

OFFICE: 1104 CLAUD SPRECKELS BUILDING.

Works: Montgomery Avenue and Bay Streets.

TELEPHONE MAIN 5977.

25,000 Bricks.

723 MARKET ST.  
San Francisco, Cal.

## SMITH & YOUNG BUILDING SUPPLIES

230 1/2 S. SPRING ST.  
Los Angeles, Cal.

OUR SPECIALTIES:

### FOUNDATION AND WALLS

**Marble.**  
Georgia White, Southern Marble Co  
Serpentine, Fire and Electric Proof

**Sandstone: (BUFF) GOODRICH QUARRY**

**Joist Hangers.** GOETZ PATENT  
Forged Wrought Iron

**Lath.** SHEET STEEL  
Painted and Unpainted  
WIRE LATH. G. & B. System

**Mortar Stain.** PECORA  
For coloring mortar, cement, and sand finish

**Paper.** (BUILDING) S & Y BRANDS  
Nos. 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18 and 19.

**Wall Ties.** MORSE'S PATENT

**McDonough Weather Strips.**  
Acts as a stop and prevents window from rattling.

**Alpine Cement Plaster**  
For brown and white coat

**Porcelite Enamel Paint**  
Does not craze or crack

**Oils.** S & Y Pure LINSEED  
Triple Boiled, Raw and Varnish

**Varnish.** S & Y TRANSPARENT

**Filler.** S & Y LIQUID AND PASTE

**Deadening Felt.** S & Y BRANDS  
1, 1 1/2 and 2 lbs. per sq. yd.

**Ornaments.** PRESSED WOOD

**Casing Blocks**  
Corner, head, center and base blocks

**Carvings.** [WOOD]

### INTERIOR FINISH

**Ceiling.** [STEEL CEILING]

**Chimney Hood.** CLAWSON'S PATENT  
To prevent smoky fire-places, and increase heat.

**Mouldings.** TURNED, CARVED AND PRESSED

**Shingle Stains.** DEXTER BROS.  
PERMANENT COLORS A PERFECT PRESERVATIVE  
Send for Samples.

**Paints.** S & Y EXTRA QUALITY  
"GRAPHITE"  
For metal and wood  
MIXED ROOFING AND HOUSE PAINTS

### EXTERIOR FINISH

**Roofing**  
Slate, Mastic and Steel  
"Ready-Rock" Asphalt Roofing.  
Strongest and most durable roofing in the market. Easily applied.

**Roofing Cement.** S & Y BRAND  
For repairing leaks about chimneys, sky lights, copings, and old tin and shingle roofs.

**OTHER SPECIALTIES**

**Insusorial Earth**  
Fire proof. Used for boiler and pipe covering

**Soapstone.** CRUDE, GROUND AND BOLTED

**Mineral Wool**  
For fire-proofing and deadening



## CHAS. J. WATERHOUSE

BOX 78 BUILDERS' EXCHANGE. PHONE BLACK 1807. BOX 132 BUILDERS' ASS'N.

OFFICE 421 MARKET STREET, S. F.

DEALER IN

## RELIABLE BUILDING MATERIALS

## ART MOULDINGS

## SAMUEL CABOT'S

CREOSOTE SHINGLE AND RUSTIC STAINS  
SHEATHING AND DEAFENING QUILT  
MORTAR STAIN PULPS—BRICK PRESERVATIVE

## N. &amp; G. TAYLOR CO.'S

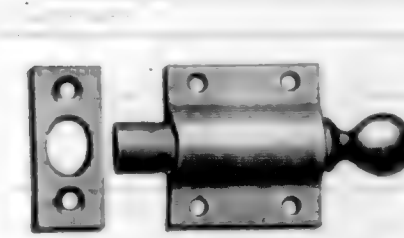
"OLD STYLE" ROOFING TIN  
"THE TAYLOR ROOFING TIN"  
"COLUMBIA ROOFING TIN"

## THE VAN DORN IRON WORKS CO.'S

VAN DORN STEEL JOIST HANGER

ALL ABOVE GOODS ALWAYS IN STOCK.

ALSO SELL FROM THE EAST FOR

THE E. T. BURROWS CO.  
Window and Door ScreensHUTTIG BROS. M'FG CO.  
Hardwood Interior Finish.WASHINGTON SLATE CO.  
Roofing and Blackboard Slates

Window Ventilating Bolt.

## IVES PATENT



Window Stop Adjuster

## Window Hardware Specialties

Leaders with Architects and the Trade  
Thirty page Catalogue mailed free.Manufactured only by  
**HOBART B. IVES & CO.**  
New Haven, Conn., U. S. A.Satisfaction guaranteed.  
There's no hanger like it  
Outlasts any Door.  
Well made and strong.  
Easy to adjust.  
Lasts a lifetime.  
Liked by architects.**STOWELL**  
Mfg. & Fdy. Co.  
South Milwaukee, Wis.

## The "LINCOLN" LAUNDRY TUBS and SINKS

GLADDING, McBEAN & CO.  
1358 - 1360 Market St.  
San Francisco.

CAMPBELL &amp; PETTUS.

CONTRACTORS.

Office, Builders' Exchange, San Francisco.

## MEMBERS OF THE BUILDERS' EXCHANGE.

CORNER NEW MONTGOMERY AND MISSION STREETS.

| Box No.                                        | Box No.                                                    |
|------------------------------------------------|------------------------------------------------------------|
| Adams, John G., contractor and builder..... 47 | O'Connor, Thomas, mason and builder..... 215               |
| Adams, John G., contractor and builder..... 47 | O'Sullivan, D., mason contractor..... 277                  |
| Adams, John G., contractor and builder..... 47 | Pacific Bridge Co..... 40                                  |
| Adams, John G., contractor and builder..... 47 | Pacific Refining & Roofing Co..... 40                      |
| Adams, John G., contractor and builder..... 47 | Pacific Lumber Co..... 365                                 |
| Adams, John G., contractor and builder..... 47 | Pacific Manufacturing Co., Mill Work..... 192              |
| Adams, John G., contractor and builder..... 47 | Pacific Rolling Mills..... 192                             |
| Adams, John G., contractor and builder..... 47 | Pacific Gas, J., electrician, etc..... 84                  |
| Adams, John G., contractor and builder..... 47 | Palace Hardware Co., builders' hardware..... 292           |
| Adams, John G., contractor and builder..... 47 | Paraffine Paint Co., roofers, building paper..... 144      |
| Adams, John G., contractor and builder..... 47 | Patent Brick Co., brick..... 172                           |
| Adams, John G., contractor and builder..... 47 | Peacock & Butcher, masons and builders..... 122            |
| Adams, John G., contractor and builder..... 47 | Petersen Brick Co., original red pressed brick..... 98     |
| Adams, John G., contractor and builder..... 47 | Petersen, H. M. & Co., concrete..... 245                   |
| Adams, John G., contractor and builder..... 47 | Pfingst, F. L., hardware..... 78                           |
| Adams, John G., contractor and builder..... 47 | Pleuse, Henry, mason and builder..... 290                  |
| Adams, John G., contractor and builder..... 47 | Pool, Jas. R., house mover and raiser..... 217             |
| Adams, John G., contractor and builder..... 47 | Rae, James, stone contractor..... 175                      |
| Adams, John G., contractor and builder..... 47 | Rainier Iron Works..... 109                                |
| Adams, John G., contractor and builder..... 47 | Raymond Granite Co., contractors for stone work..... 165   |
| Adams, John G., contractor and builder..... 47 | Reichley Geo., contractor and builder..... 109             |
| Adams, John G., contractor and builder..... 47 | Reigle & Jamieson, machine white washing..... 240          |
| Adams, John G., contractor and builder..... 47 | Reynold Brick Co., pressed stock and common brick..... 278 |
| Adams, John G., contractor and builder..... 47 | Richardson & Gale, masons and builders..... 228            |
| Adams, John G., contractor and builder..... 47 | Rieman, Geo., door opener..... 355                         |
| Adams, John G., contractor and builder..... 47 | Riley John F., masons and builders..... 228                |
| Adams, John G., contractor and builder..... 47 | Ringrose, R., mason and builder..... 18                    |
| Adams, John G., contractor and builder..... 47 | Robinson & Gillespie, contractors and builders..... 11     |
| Adams, John G., contractor and builder..... 47 | Rocklin Granite Co., granite work..... 69                  |
| Adams, John G., contractor and builder..... 47 | Rosenbaum, Fr. H., glass..... 95                           |
| Adams, John G., contractor and builder..... 47 | Ruffino & Bianchi, marbles..... 249                        |
| Adams, John G., contractor and builder..... 47 | Sacramento Transportation Co., patent and stock..... 382   |
| Adams, John G., contractor and builder..... 47 | S. F. Lime & Mortar Co., C. Bennett..... 246               |
| Adams, John G., contractor and builder..... 47 | San Francisco Lumber Co..... 157                           |
| Adams, John G., contractor and builder..... 47 | San Francisco Novelty and Planing Works..... 291           |
| Adams, John G., contractor and builder..... 47 | San Francisco Planing Mill, Wm. Crocker..... 12            |
| Adams, John G., contractor and builder..... 47 | San Joaquin Brick Co., brick..... 288                      |
| Adams, John G., contractor and builder..... 47 | San Jose Brick Co., brick..... 250                         |
| Adams, John G., contractor and builder..... 47 | Sanderson, J. S. W., contractor and builder..... 15        |
| Adams, John G., contractor and builder..... 47 | Schroeder, Wm., art glass..... 63                          |
| Adams, John G., contractor and builder..... 47 | Scott & Van Arsdel Lumber Co..... 193                      |
| Adams, John G., contractor and builder..... 47 | Sessions, M. P..... 324                                    |
| Adams, John G., contractor and builder..... 47 | Smith, A. W., carpenter..... 71                            |
| Adams, John G., contractor and builder..... 47 | Smith & Young, building supplies..... 374                  |
| Adams, John G., contractor and builder..... 47 | Smith & Quilley, street contractors..... 101               |
| Adams, John G., contractor and builder..... 47 | Spaulding, E. J., stone and plaster..... 101               |
| Adams, John G., contractor and builder..... 47 | Snook, W. S. & Son, plumbers..... 372                      |
| Adams, John G., contractor and builder..... 47 | Soule Bros., carpenters..... 61                            |
| Adams, John G., contractor and builder..... 47 | Stelger, A. Son, architectural terra cotta..... 134        |
| Adams, John G., contractor and builder..... 47 | Stevens, R. M., patent chimneys..... 15                    |
| Adams, John G., contractor and builder..... 47 | Stockton Brick & Terra Cotta Co..... 297                   |
| Adams, John G., contractor and builder..... 47 | Stratton, Jno. S., house mover..... 362                    |
| Adams, John G., contractor and builder..... 47 | Sullivan, J. P., painter and decorator..... 1              |
| Adams, John G., contractor and builder..... 47 | Sullivan, Tim, carpenter..... 88                           |
| Adams, John G., contractor and builder..... 47 | Sullivan M. F., grading and teaming..... 148               |
| Adams, John G., contractor and builder..... 47 | Sweeney, Daniel, carpenter..... 281                        |
| Adams, John G., contractor and builder..... 47 | Sweeney, G. C., plumber..... 135                           |
| Adams, John G., contractor and builder..... 47 | Tacoma and Roche Harbor Lime Co..... 289                   |
| Adams, John G., contractor and builder..... 47 | Tay, Geo. H. Co., plumbers supplies..... 94                |
| Adams, John G., contractor and builder..... 47 | Tobin, J. R., plaster..... 173                             |
| Adams, John G., contractor and builder..... 47 | Towle & Broadwell..... 296                                 |
| Adams, John G., contractor and builder..... 47 | Trotter, John, contractor and builder..... 251             |
| Adams, John G., contractor and builder..... 47 | Tupper, O. M., lime..... 28                                |
| Adams, John G., contractor and builder..... 47 | Tuttle, John, teamster, plasterers' supplies..... 79       |
| Adams, John G., contractor and builder..... 47 | Union Lumber Co., lumber..... 355                          |
| Adams, John G., contractor and builder..... 47 | Vermont Marble Co..... 254                                 |
| Adams, John G., contractor and builder..... 47 | Vulcan Iron Works..... 312                                 |
| Adams, John G., contractor and builder..... 47 | Warren, Henry F., painting and decorator..... 181          |
| Adams, John G., contractor and builder..... 47 | Wagner, J. Ferd, mason and builder..... 387                |
| Adams, John G., contractor and builder..... 47 | Walker, George H., carpenter..... 272                      |
| Adams, John G., contractor and builder..... 47 | Washington & Moen Mfg. Co..... 310                         |
| Adams, John G., contractor and builder..... 47 | Washington Street Planing Mill..... 48                     |
| Adams, John G., contractor and builder..... 47 | Waterhouse, C. J..... 92                                   |
| Adams, John G., contractor and builder..... 47 | Watson, W. C., plasterer..... 297                          |
| Adams, John G., contractor and builder..... 47 | Western Granite & Marble Co..... 316                       |
| Adams, John G., contractor and builder..... 47 | Western Iron Works..... 171                                |
| Adams, John G., contractor and builder..... 47 | White Bros., carpenters..... 145                           |
| Adams, John G., contractor and builder..... 47 | White Bros., hardwood lumber..... 60                       |
| Adams, John G., contractor and builder..... 47 | Whittle, H., mason and builder..... 20                     |
| Adams, John G., contractor and builder..... 47 | Williams, F. A., contractor and builder..... 178           |
| Adams, John G., contractor and builder..... 47 | Wilson, Bros. & Co., lumber..... 354                       |
| Adams, John G., contractor and builder..... 47 | Wilson, W. F., plumber..... 228                            |
| Adams, John G., contractor and builder..... 47 | Wilson, James A., mason and builder..... 221               |
| Adams, John G., contractor and builder..... 47 | Wilkie, Andrew, planing mill..... 305                      |
| Adams, John G., contractor and builder..... 47 | Wilkie, Andrew, Jr..... 125                                |
| Adams, John G., contractor and builder..... 47 | Worrel, C. R., mason and builder..... 2                    |
| Adams, John G., contractor and builder..... 47 | West Coast Wire Works..... 273                             |
| Adams, John G., contractor and builder..... 47 | Western Expanded Metal & Fire Proofing Co..... 349         |
| Adams, John G., contractor and builder..... 47 | Yates & Co., paints..... 349                               |
| Adams, John G., contractor and builder..... 47 | Yonge, S. T., grading and teaming..... 386                 |

## WESTERN IRON WORKS.

MANUFACTURERS OF

## STEEL BUILDINGS AND WAREHOUSES.

Stairs, Elevator Enclosures, Roofs, Iron Fencing and Gates.

JAIL AND BANK WORK.

GAS HOLDERS, SHEET AND PLATE METAL WORK.

— FORGINGS. —

Telephone Main 737.

123-125 BEALE STREET, S. F.



TEL. DRUM 80

**W. HEIDT**

FORMERLY OF

**ARCHITECTURAL SHEET METAL WORKS***Metal Tile and Slate Roofing. Patented Ventilated Skylights and Spanish Tile*

224-226 MISSION STREET, SAN FRANCISCO

JOBGING PROMPTLY ATTENDED TO

**GEORGE GOODMAN,**

PATENTEE AND MANUFACTURER OF

**ARTIFICIAL STONE,** IN ALL OF ITS BRANCHES.

(SCHILLINGER'S PATENT.)

**SIDEWALK AND GARDEN WALK A SPECIALTY.**

307 MONTGOMERY STREET,

NEVADA BLOCK, SAN FRANCISCO.

**50 YEARS' EXPERIENCE**

**PATENTS**

TRADE MARKS  
DESIGNS  
COPYRIGHTS &c.

Anyone sending a sketch and description may quickly ascertain our opinion free whether an invention is probably patentable. Communications strictly confidential. Handbook on Patents sent free. Oldest agency for securing patents. Patents taken through Munn & Co. receive special notice, without charge, in the

**Scientific American.**

A handsomely illustrated weekly. Largest circulation of any scientific journal. Terms, \$5 a year; four months, \$1. Sold by all newsdealers.

**MUNN & Co. 361 Broadway New York**  
Branch Office, 625 F St., Washington, D. C.

**BUILDING NEWS.**

Three-story hospital to be erected on east line of road leading to Reicher's house; o, Fred (inch Orphanage; a, Geo. A. Wright; c, Ingerson & Gor.; cost \$4475.

Pleasant and Fruitvale Ave. Carpenter; o, W. O. Balston; a, W. F. Smith; c, D. S. Brehaut; cost \$3425.

**MILL VALLEY**

Lot 28, Tamalpais Land Co. To build; o, J. Fred Schillingman; a, Edgar A. Mathews; c, Andrew S. Ruch; cost \$3455.

**PALO ALTO**

On grounds of the Leland Stanford, Jr. Stone work etc; o Mrs. Jane L. Stanford; a, Percy & Hamilton; c, Mc-Glavin Stone Co; signed, June 12; filed, July 14; cost \$70,380.

**PROSSER, WASH.**

J. B. Cape is having plans prepared for an hotel building.

**POMONA**

J. W. Pierce has plans ready for his new house, which will cost \$3500 to \$4000. It will be located at the old home place on Pasadena street, the old house having been moved to Gibbs street, south of Pasadena. Ferdinand Davis is the architect, and informs us that the house will have somewhat the appearance of Miss Becker's new house on West Holt.

**PASADENA**

Architect R. B. Young has prepared plans for the new St. Andrews church of Pasadena. The building will cover an area of 60x180 feet, with a seating capacity of 700. It will be of pressed brick with stone basement and slate or metal tile roof. The architecture is of the Romanesque style, and will be a picture of architectural beauty.

**SAN JOSE**

Seventh and San Salvador. Two frame cottages o, Mrs. Ida Stevens; a, W. Klinkert; c, C. H. Ames signed, July 4; filed, July 14; cost \$800.

**SEATTLE, WASH.**

The Hotel Denny is to be overhauled throughout the interior. Improvements will cost about \$25,000.

**REDLANDS**

Architect J. W. Forsythe is drawing plans for a \$3000 residence to be erected on Cajon street, near 11th by Dr. Jewett.

Architect O. H. Jones of Redlands is preparing plans for Carl Wells, for a two-story brick business building to be erected at that place. The same architect is also preparing plans for Mr. Rorer, for a cottage residence.

Albert Johnson is preparing plans for two residences to be built on Jefferson street between Orchard and Vermont avenues.

**BUILDING NEWS.****RIVERSIDE**

S. L. Alderman is about to commence the erection of a residence in Hildaigo Place, to cost \$1800.

Plans have been drawn for the rebuilding of the Methodist church. The new edifice will cost about \$4000.

The lumber dealers report a brisk summer trade and the architects are in a good frame of mind.

**LOS ANGELES**

Architect A. L. Haley is preparing plans for Mrs. A. Burgine o a two-story eight-room residence to be built on West Twelfth street.

Architects Smith & Elder have prepared plans for John Haddock of a two-story eight-room frame residence to be built at Bassett near 21 Monte.

Architect Frank D. Hudson has prepared plans for Frank Douglass of a two-story eight-room residence to be built on Burlington Ave.

Architect Fernand Parmentier has prepared plans for Mr. B. Meyer, for a two-story eight-room residence to be erected corner of Eleventh and Union Ave. Estimated cost about \$2000.

Architects Howard & Train have prepared plans for Dr. Pomeroy for extensive alterations to the residence corner of Washington and Taborian streets. The improvements will cost several thousand dollars.

Architect O. P. Dennis has prepared plans for Fred S. Langdon for a cottage to be built on Pasadena avenue.

Architect August Wackerbarth has prepared plans for O. E. Roberts of a one and a half story frame residence to be erected at Hollywood.

Architects Eisen & Hune have prepared plans for F. J. Thomas; for a complete remodeling of his residence on Flower street.

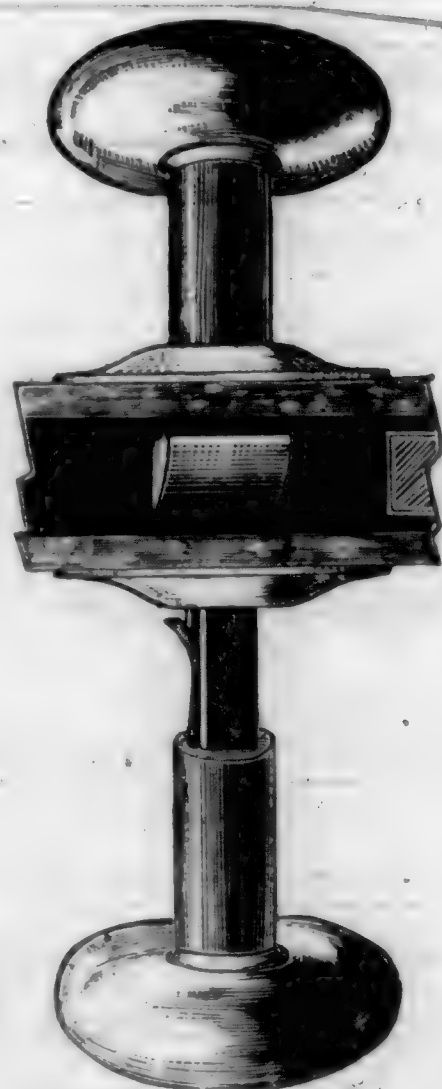
Architect C. H. Brown has prepared plans for A. A. Hubbard for a two-story brick stable and carriage house with cement floors and shingle roof to be built on the corner of Ninth and Burlington ave.

Architects Morgan & Walls are preparing plans for John H. Jones, of a brick block on Spring and West Fifth street.

Plans are being prepared for Geo. D. Rowan, for an up-to-date brick building to be erected on west side of South Broadway.

Architects Eisen & Hune have prepared plans for the San Gabriel Power Company of a one-story brick building to be used as an auxiliary power house to their present station on Los Angeles street near Third.

Preparations are being made for the erection of a building at the junction of East First and San Pedro streets. The property is owned by the Wilson estate but has been leased to parties who are making the necessary arrangements.

**SPECIFY**

**Weatherwax Screwless  
DOOR KNOB.**

## Plans and Specifications Invited for an Hospital Building.

Public notice is hereby given to architects that competitive plans and specifications for the erection of an hospital building will be received by the Board of Supervisors on MONDAY AFTERNOON, September 12, 1898.

The proposed building to be of modern design and to be constructed of stone or brick, or of both, with all the latest scientific improvements.

The said hospital building to be erected on the lot of land commencing at the most southeasterly corner of a tract of land known as and designated, on the official map of the city and county of San Francisco, as the "Almshouse tract."

The said plans and specifications to be so prepared that the cost of the building shall not exceed in the aggregate the sum of three hundred thousand (\$300,000) dollars.

The architect whose plans are adopted will be appointed architect and superintendent of the building, and will be required to give a good and satisfactory bond to insure the completion and construction of the said building for the amount of the cost as made by the said architect. The architects submitting plans determined by the Board to be second, third and fourth in merit will receive premiums of \$1000, \$750 and \$500 respectively, with the understanding that any features of said plans and specifications which may be considered useful or necessary to be embodied in the plans adopted may be used without further cost of charge.

JNO. A. RUSSELL, Clerk.

## THE Rapid Safety Filter

Is in use in San Francisco in all the leading Hotels, Schools, Stores, Saloons, Restaurants and THOUSANDS of Private Residences, including those of the leading PHYSICIANS, who endorse and recommend its general use.

No charge for fitting. Kept in order and cleaned by the Company. Leased only. Terms \$1.50 per month for private residences. Office and Show Room,

1209 MARKET ST., near Eight.

RUBEN H. LLOYD,  
President.W. D. MANSFIELD,  
Secretary.**P. H. JACKSON & CO**

Contractors for

**Wrought Iron Building Work****Sidewalk Lights, Floor Lights****Fire and Burglar-Proof Arched and Flat Sky Lights****Patent Water-Proof Sidewalk Doors****Basement Ventilators, Etc.**

228 and 230 First Street, 7 and 9 Tehama Street

SAN FRANCISCO.

**WM. BATEMAN,**

MANUFACTURER OF

**Wood Mantels, Interior Finish, Inlaid Floors,**

Banks, Offices, Stores and Steamboats Fitted Up

411 MISSION ST., Bet. 1st and Fremont,

SAN FRANCISCO, CAL.

**Cabot's Creosote  
Shingle Stains.**

The Original and Standard Shingle Stains, and the only Creosote Stains.

**Cabot's Insulating  
and Deafening 'Quilt'**

A soft, elastic cushion of dead air spaces. The perfect sound deadener.

House of A. W. Pooley, Millwood, Cal.,  
H. A. Klyce, Architect, Eastland.

**Mortar Colors and Brick Preservative.**

For mortar staining and waterproofing brickwork.

**Samuel Cabot, Sole Manufacturer, Boston, Mass.**

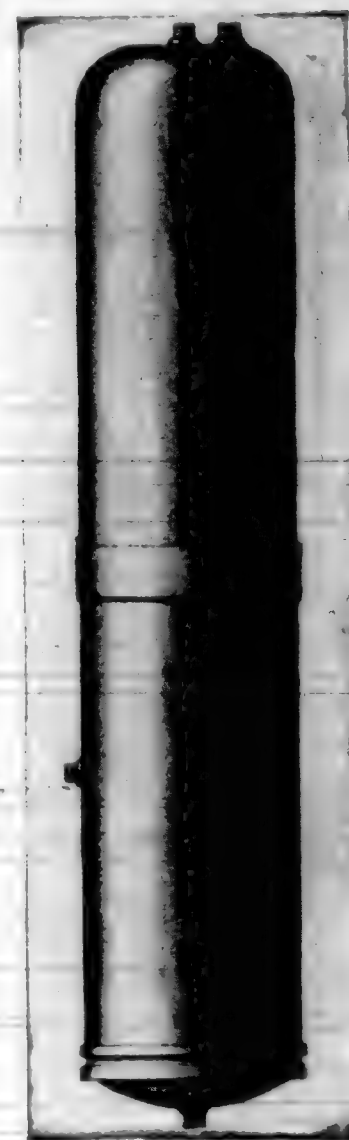
Stock carried in San Francisco by

**CHAS. J. WATERHOUSE, 421 Market Street.**

Stock carried in Los Angeles by

**P. H. MATHEWS, 238 South Main Street.**





## For Sanitary Reasons

*You Should Specify the*  
**Brown Brothers' Cold Drawn Seamless Copper House**  
**Range Boiler.**

The smooth copper surface is heavily tinned inside. This absolutely insures against corrosion or rusting of any kind and affords no rusting place for sediment. You always get

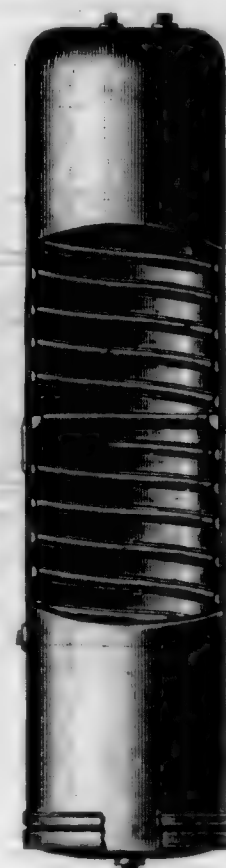
## Clean Hot Water

**own Boilers** are made of two pieces of cold drawn copper, united under great hydraulic pressure, so that they are practically one piece. No seams nor rivets, means freedom from leaks. The inside spiral rib guarantees against collapse. Ordinary weight boilers stand a pressure of 150 lbs. to the square inch; extra heavy, 200 lbs.

Boiler Booklets sent on request.

**RANDOLPH & CLOWES, Sole Manufacturers**

BOX 47. WATERBURY, CONN.



### Candelabra and Decorative Incandescent Lamps and Receptacles.

Adapted for decorative illumination of interiors of fine residences and hotels; and extensively used for that purpose (Catalogue No. 9044).

**X-RAY TUBES FLUOROSCOPES** Catalogue No. 9050  
**EDISON Decorative and Miniature Lamp Dept.**

(GENERAL ELECTRIC CO.)  
 HARRISON, N. J.

### Scott & Van Arsdale Lumber Co.

**MATT HARRIS, Manager.**

Wholesale and Retail Dealers in

### SUGAR AND YELLOW PINE.

**Yellow Pine selected for Natural Finish**

Redwood, White Cedar, Oregon Pine, Spruce Shelving, Curly Redwood, Burl, Shingles.  
 Mills at Upton, McCloud River TELMO & MAXWELL, Siskiyou Co.

Office and Yards:  
**CORNER FIFTH AND BRANNAN STREETS**  
**R. W. Cargoes Furnished** San Francisco  
 TELEPHONE SOUTH 173

### PLASTER OF PARIS.

Golden Gate Plaster Mills,

215 and 217 Main Street,  
 Bet Howard and Folsom, SAN FRANCISCO.

**LUCAS & COMPANY,**  
 Manufacturers of  
 Calcined Plaster.  
 (PLASTER OF PARIS.)  
 Marble Dust, Land Plaster and Terra Alba.

### THE NATIONAL BUILDER.

Each number contains a complete set of  
 architects plans for a low priced building.  
 Published at Chicago, Ill.  
 Main Office, Adams Express Building,  
 185 Dearborn street.  
 It maintains its standard as a high class practical  
 Builders' Journal.

### W. D. HOBRO, Plumber and Gas Fitter,

728-730 Washington Street,  
 Opposite the Plaza, SAN FRANCISCO.  
 Work done at Reasonable Rates. All orders  
 promptly attended to. Res. 2613 Clay St.  
 bet. Steiner and Pierce

**W. J. Cuthbertson,**  
*Architect.*  
 Flood Building, Room 93.  
 Cor. Market and Fourth Sts.,  
 SAN FRANCISCO.

**Wm. Mooser & Son**  
*Architects*  
 Rooms 62 and 63, No. 14 Grant Avenue  
 SAN FRANCISCO.

**W. Curlett**  
*Architect*  
 Offices, 307 Phelan Building, Market Street,  
 SAN FRANCISCO.

**Pissis & Moore,**  
*Architects,*  
 307 Sansome Street, Rooms 16 and 17,  
 SAN FRANCISCO.

**R. H. White,**  
*Architect,*  
 104 Flood Building, Market and Fourth Sts.,  
 SAN FRANCISCO.

**B. McDougall & Son,**  
*Architects,*  
 330 Pine Street, Rooms 61 and 62,  
 SAN FRANCISCO.  
 Take the Elevator.

**Seth Babson,**  
*Architect,*  
 408 California Street, Rooms 12, 13.  
 SAN FRANCISCO.

**John Cotter Pelton.**  
*Architect,*  
 Telephone Building, Bush St., Room 52.  
 SAN FRANCISCO.

**John M. Curtis & Co.,**  
*Architects,*  
 126 Kearny Street, between Post and Sutter,  
 SAN FRANCISCO.

**Oliver Everett,**  
 SUCCESSOR TO HUERNE & EVERETT,  
*Architects,*  
 126 Kearny Street, Room 41,  
 SAN FRANCISCO, CAL.

**Stone & Cahill,**  
*Architects.*  
 Room 89, Donohue Building, corner Market  
 and Taylor Streets, San Francisco.  
 Branch Office, 507 Central Bank Building,  
 Oakland Cal.

**Havens & Toepke,**  
*Architects,*  
 FLOOD BUILDING, Room 55.  
 San Francisco. Tel. Main 5420.

**Wm. H. Armitage,**  
*Architect,*  
 319-321 Phelan Building, Market Street,  
 SAN FRANCISCO.

**M. J. Welsh,**  
*Architect,*  
 Office, 1504 Market St., Cor. of 14th. Rooms 7-8.  
 SAN FRANCISCO.  
 Residence, 906 Treat Avenue.

**Harold D. Mitchell,**  
*Architect,*  
 136 KEARNY STREET.  
 Plans and Specifications prepared with the great-  
 est Accuracy.

**Edmund Kollofrath,**  
*Architect,*  
 Gutzkow Bldg., 933 Market St. Tel. Jessie 461.  
 SAN FRANCISCO.

**Emile Depierre,**  
*Architect,*  
 334 KEARNY STREET,  
 SAN FRANCISCO.

**T. J. Welsh,**  
*Architect,*  
 Room 95, Flood Building, Corner Market and  
 Fourth Streets.

**Chas. J. I. Devlin,**  
*Architect,*  
 Supreme Court Building,  
 N. W. Cor. McAllister & Larkin Streets,  
 SAN FRANCISCO.

**Fred. B. Wood,**  
*Architect.*  
 214 PINE STREET, Room 57.  
 San Francisco.

**Jas. E. Wolfe,**  
*Architect.*  
 FLOOD BUILDING Room 31.  
 San Francisco, Cal. Take Elevator.

**H. Geiffuss,**  
*Architect.*  
 120-122 Fulton St., bet. Polk and Van Ness Ave's,  
 SAN FRANCISCO.

**John T. Kidd,**  
*Architect,*  
 Furnishes Plans, Specifications, Superintendence  
 for the construction of every description of build-  
 ing. 410 Kearny St. Office Hours, 12 to 5, 8 to 4.

**A. C. Lutgens,**  
*Architect,*  
 Phelan Building, Room 325.  
 SAN FRANCISCO.

**Chas. S. Tilton,**  
*Engineer and Surveyor,*  
 430 Montgomery St. Take the Elevator.  
 SAN FRANCISCO.

**EMIL GUNZBURGER,**  
 SECRETARY  
 BUILDING and  
 LOAN ASSOCIATIONS  
 214 PINE STREET, ROOM 3.

**Loans on Real Estate**  
 EASY TERMS  
 Information Willingly Furnished.



## FACTS ABOUT PAINTS.

### PHOENIX

The best paint is made of White Lead, Zinc and Linseed Oil.

PHOENIX PURE PAINT is made of these materials only.

To make perfect paint these materials must be finely ground and thoroughly mixed with heavy machinery.

### PURE

PHOENIX PURE PAINT is made in that way.

During the past five years PHOENIX PURE PAINT has been the one most generally specified by Architects on the Pacific Coast.

### PAINT

It is guaranteed absolutely pure and satisfactory on the building or we will replace it with any material the architect may select.

The New Wall finish or Washable Water Color.

Petrifies on the wall and will not crack or chip off.

Damp Walls do not affect it.

### DURESCO

Can be washed any number of times and will not change color.

It strengthens the wall and prevents crumbling.

The strongest, most brilliant and most durable Wall finish made.

MANUFACTURED BY

**W. P. FULLER & CO.**

**L. E. CLAWSON & CO.**

1340 MARKET STREET, SAN FRANCISCO.  
TELEPHONE SOUTH 257

**CLAWSON'S PATENT HOOD OR  
THROAT AND ARCH-BAR COMBINED.**

The arch-bar forms a bond for arch in brick work. The hood being bolted on the arch-bar, forms a bond from brick work to mantel.  
The throat is one solid piece, having lugs admitting three (3) inches adjustment, to suit depth of mantel.

This hood makes the bricklayer conform with mantel man's work, and guarantees you a safe chimney with a perfect draught.

Clawson's Patent Hoods, Thimbles and Chimneys, comply with the new Fire Ordinance.

CLAWSON'S PATENT CHIMNEY.

See **CLAWSON'S LIVE  
VENTILATOR.** It is as  
much better than a  
dead one, as a live  
man is of a dead man.

Price, \$2.50 for any size  
from 18 to 26 inches.

Send for illustrated circular.

CLAWSON'S PATENT THIMBLE.

IF YOU SPECIFY

SEND  
FOR  
SAMPLES

**SAMSON SPOT CORD.**

You can tell at a glance that no other cord is substituted. Warranted free from waste and imperfections of braid.

**SAMSON CORDAGE WORKS,  
BOSTON, MASS.** Trade Mark.



# THE CALIFORNIA ARCHITECT AND BUILDING NEWS

\$3.00 PER YEAR

VOLUME XIX. No. 8.

AUGUST, 1898.

## CONTENTS:

|                                                               |        |
|---------------------------------------------------------------|--------|
| Index to Advertisers.....                                     | vi     |
| The Action of Sea-Water Upon Hydraulic Cements.....           | 86     |
| On the Saline Efflorescence of Bricks.....                    | 87     |
| The Use of Sheet Iron and Steel.....                          | 88     |
| Tests of Cast Iron Columns.....                               | 89     |
| Lesson From Fire and Panic.....                               | 90     |
| Illustrations.....                                            | 90     |
| Painting Ironwork.....                                        | 91     |
| Valuable Information Culled From our Exchanges.....           | 91     |
| The Protection of Iron from Rust.....                         | 92     |
| Experiments on the Behavior of Cast-Iron Columns in Fire..... | 93     |
| Notice of Meetings.....                                       | 94     |
| The Keely Motor Up-To-Date.....                               | 94, 95 |

PRICE THIRTY CENTS

DJ. Patterson '98

OFFICE 408 CALIFORNIA ST

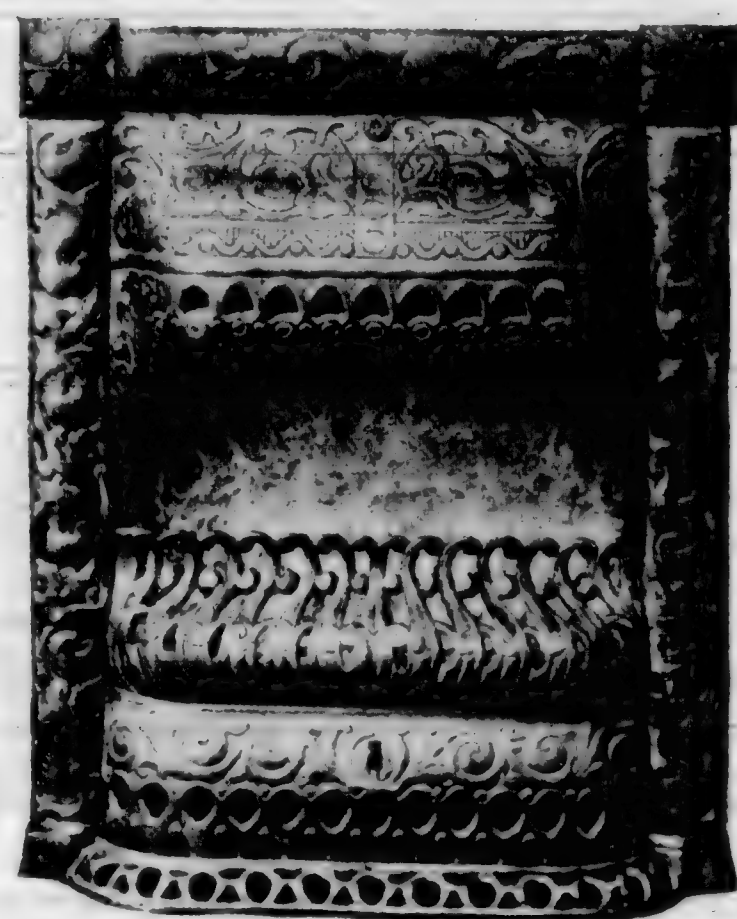


**For a modern house, get modern things!!**

**Be up to date.**

**Consider, in building, the innumerable advantages and economy of gas grates.**

## PERFECTION Gas Grates.



**Always ready.**

**Always clean.**

**Gets to work instantly.**

**Expense stopped when heat is not needed. This is not so with coal.**

Examine the various designs of Grates and Heaters of the  
**SAN FRANCISCO GAS & ELECTRIC LIGHT COMPANY.**

## STOVE DEPARTMENT

415 POST STREET, SAN FRANCISCO.

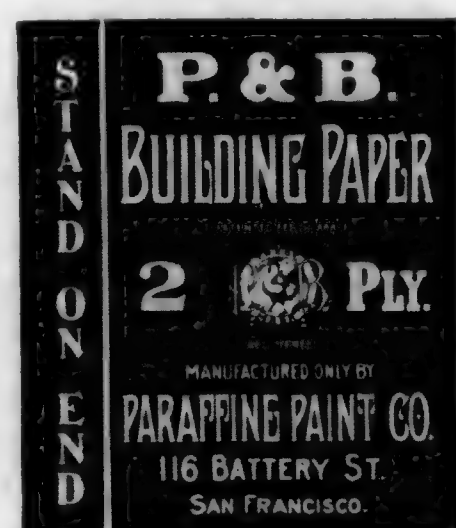
*A modern home for a modern man, planned by an up-to-date Architect is always sheathed with*

## P & B BUILDING Paper

PARAFFINE PAINT CO., Sole Manufacturers,

*The only Water-proof and Vermin-proof paper on the market that is odorless.*

**Do you Specify it?**



116 BATTERY STREET  
SAN FRANCISCO.

### A Tin Specification

To be drawn correctly should call for a **Guaranteed** brand of Roofing and one that is **known** to the architect. It should also stipulate that each sheet must be stamped with the brand, the thickness 1C or 1X, and the maker's name.

## The Taylor "OLD STYLE" Brand

Is made exactly the same as roofing Tin was first made in Philadelphia in 1830. No other Roofing Tin is made like it or of the same materials.

**EACH SHEET IS STAMPED AND GUARANTEED**

S. & G. TAYLOR CO., Sole Manufacturers, Philadelphia.

For Sale by **CHARLES J WATERHOUSE**, 421 Market Street, San Francisco.

### To our Customers and Friends on the Pacific Coast.

Through frequent complaints made to us, we have learned that unprincipled and dishonest dealers on the Pacific Coast have counterfeited our trademark numbers and substituted inferior, spurious goods as ours, when ours were distinctly ordered, thus defrauding their customers and injuring our trade and reputation.

Our goods are acknowledged to be the best, and are fully warranted by us, and are marked with our name or initials or with our well-known trademark and catalogue numbers.

We request direct notice if any goods alleged to come from us, or bearing our trademark or numbers, prove to be other than the best, and perfect in every respect, as we will follow up and expose such frauds for our customers' and our own protection. We have no exclusive agents on the Coast, but our goods are obtainable from all respectable dealers in drawing materials, stationery, hardware, artists' material, etc.

RESPECTFULLY,

**KEUFFEL & ESSER CO.,**  
New York.



D. H. GULICK

CHAS. WETHERBEE

**A. ZELLERBACH & SONS.**

**GULICK & WETHERBEE**  
**Plumbing and Gas Fitting**

ESTIMATES GIVEN ON ALL WORK

210 Mason Street

YOUNG MEN'S CHRISTIAN  
ASSOCIATION BUILDING

San Francisco

TELEPHONE BUSH 16

IMPORTERS  
AND  
DEALERS  
IN  
**PAPER**  
OF ALL KINDS

419-421 CLAY STREET,

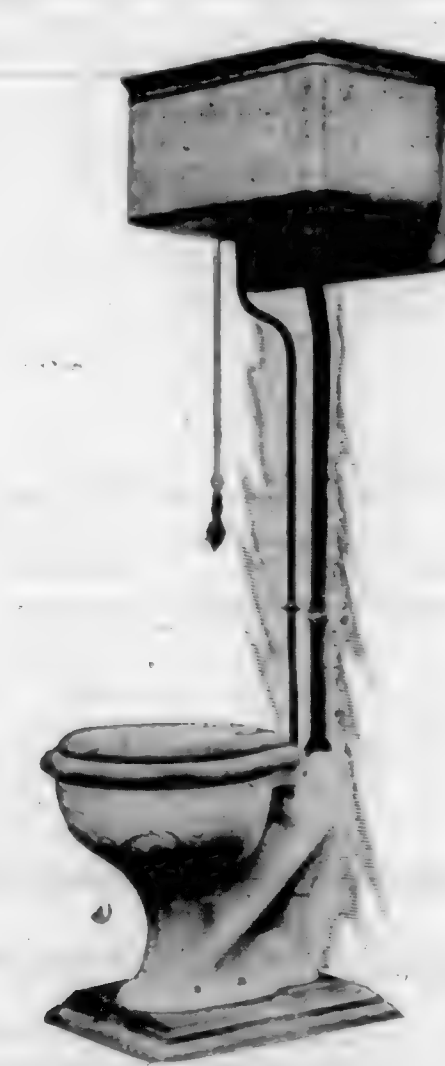
Bet. Sansome and Battery, San Francisco.

TELEPHONE 1133

**THE JOHN DOUGLAS COMPANY**  
CINCINNATI, PHILADELPHIA, ST. LOUIS, CHICAGO, SAN FRANCISCO.



**CELSIS**  
List Price, \$33.00



**JUNO**  
List Price, \$31.75



**ELLWOOD**  
List Price, \$28.50

Three Syphon Jet combinations, with seat attached to bowl; woodwork made of selected cherry quartered oak, and walnut. Polish finish.

For our other combinations, see '98 Catalogue or visit our showroom.

Ask for Catalogue. Correspondence solicited.

**EDWARD DOUGLAS, Manager**

**THE JOHN DOUGLAS COMPANY,**  
208 ELLIS STREET, S.F.



D. E. GARRISON, Jr., President. S. W. BACKUS, Secretary. C. F. RUNYON, Vice-President.  
N. L. BELL, Manager.

## WESTERN EXPANDED METAL AND FIRE PROOFING CO.

MAUFACTURERS OF AND CONTRACTORS FOR

Expanded Metal System of Fire Proof Construction.

Fire proof arches, solid partitions and attaching metal lath to ceilings, walls, columns, beams, etc.

### LATH ALWAYS IN STOCK.

OFFICE: Rooms 414-15-16 CLAUS SPRECKELS BUILDING.

TELEPHONE Main 5829

FACTORY: Corner Townsend and Clarence Streets, San Francisco.

#### BUILDING NEWS.

**Bay** near Lavenworth. To build; o. Neil O'Neill; a. A. W. Smith; c. M. Macgregor; signed, Aug. 8; filed, Aug. 11; cost \$2170.

**Broadway** near Sansome. Alterations and additions, etc.; o. Board of Education; a. T. J. Welsh; c. W. M. Fletcher; cost \$2230.

**California** near Walnut. To build; o. E. O. Williams; a. Martens & Coffey; c. R. Trost; signed, Aug. 15; filed, Aug. 17; cost \$2331.

**Caselli Ave.** near Falcon Ave. Cottage; o. P. Portwig; a. W. H. Armitage; c. D. Ross; signed and filed, Aug. 15; cost \$1910.

**Clayton** near Waller. Three flats; a. C. A. Meussdorffer; c. A. H. Wilhelm; signed, Aug. 13; filed, Aug. 15; cost \$4000.

**Chayton** near Hayes. All work except excavations, etc.; o. Mrs. William McCormick; a. T. J. Welsh; c. Wm. Plant; signed, July 30; filed, Aug. 1; cost \$2332.

**Fifty** near Van Ness. Grading, brick work, etc.; o. P. F. Butler; a. W. H. Lillie; c. John Furness; signed, Aug. 3; filed, Aug. 11; cost \$15,283. Sewers, plumbing, etc.; c. Ford Bros; signed, Aug. 3; filed, Aug. 11; cost \$1880. Painting, etc.; c. G. A. Peterson; signed, Aug. 3; filed, Aug. 11; cost \$1435.

**Ellis** near Jones. Brick and terra-cotta work; o. L. H. Sly; c. H. H. Larsen; signed, Aug. 15; filed, Aug. 16; cost \$6285.

**Fourteenth** near Guerrero. Alterations and additions; o. Mary I. Keating; a. M. J. Welsh; c. T. F. Foley and H. A. Planz; signed, June 22; filed, July 20; cost \$1488.

**Fremont** near Howard. Brick work, etc.; o. Jane F. and C. M. Belshaw; c. J. W. Wisinger; sub-c, J. A. Wilson; cost \$735.

**Franklin** and Ellis. Excavating, etc.; o. D. Juttin; a. C. A. Meussdorffer; c. R. Steplin; signed, Aug. 8; filed, Aug. 8; cost \$1638. Carpentry work, etc.; c. A. Olson; cost \$1765. Plumbing, etc.; c. G. C. Sweeney; cost \$840. Painting, etc.; c. J. F. Sullivan; cost \$615.

**Geary** near Mason. Alterations and additions; o. Mrs. M. V. Baldwin; a. W. H. Lillie; c. M. J. Savage; signed, July 27; filed, July 30; cost \$5230.

**Golden Gate Ave.** near Laguna. Excavation, etc.; o. Judah Bous; a. M. J. Lyon; c. W. J. Field; signed, Aug. 2; filed, Aug. 13; cost \$384.

**Golden Gate Ave.** near Hyde. Alterations and additions; o. Mrs. Isabella Boyde; c. Anderson Bros; signed, July 13; filed, July 13; cost \$1017.

**Guerrero** near 24th. Carpentry, brick work, etc.; o. Dominican Sisters; a. Shea & Shea; c. Robert Trost; signed, Aug. 8; filed, Aug. 9; cost \$2325.

**Green** near Fillmore. All work except plumbing, etc.; o. Amelia M. Burnett; a. W. Mosser & Son; c. Peterson & Person; signed, July 27; filed, July 1; cost \$3300.

**Herzog** Tract, lot 5, block 12. Two-story frame; o. William Strohmbeck; c. August Schoor; signed, Aug. 12; filed, Aug. 15; cost \$1535.

**Hoffman Ave.** near Elizabeth. To build; o. Jacob Heyman; c. Jacob Heyman; cost \$2250.

**Isabella** near San Pablo Ave. Two-story frame; o. Lee E. Andrews; c. Robert McBeth; signed, Aug. 9; filed, Aug. 10; cost \$1650.

**Laguna** near Washington. Cabinet work, etc.; o. Dr. A. Barkan; a. Pissis & Moore; c. Fink & Schindler; signed, Aug. 8; filed, Aug. 15; cost \$8370.

**Linden Ave.** near Gough. Two-story tenement house; o. Arthur Kanzer; a. B. C. Clinch; c. T. R. Bassett; signed, July 30; filed, Aug. 1; cost \$1432.

#### BUILDING NEWS.

**Lombard and Lyon.** All work except painting; o. Agness Herman; a. E. A. Garin; c. Cameron & McDonald; signed, Aug. 4; filed, Aug. 4; cost \$2888.

**Lombard and Baker.** To build; o. P. J. McGaffigan; c. John Kenally; signed, July 27; filed, July 28; cost \$1007.

**Market and Hayes.** Alterations and additions; o. Bartlett and C. F. De-administrators; c. Robert son & Gillespie; sub-c, L. J. Campmeccost; signed, June 12; filed, July 21; cost \$1800.

**Market and Spear.** Work for elevators; o. W. W. Young; a. Kenitzer & Barth; c. S. F. Novelty Works; signed, Aug. 10; filed, Aug. 12; cost \$1650. Electric elevator; c. Fraser Electric Works; signed, Aug. 10; filed, Aug. 12; cost \$4200.

**Mission and 14th.** Carpentry, iron work, etc.; o. Southern Pacific Co.; a. H. A. Schulze; c. Z. O. Field; signed, July 20; filed, July 26; cost \$13,730. Excavation, etc.; c. Quimby & Harrelson; cost \$495. Brick work, etc.; c. O'Sullivan & O'Connor; cost \$7500. Cast and wrought iron, etc.; c. H. Baisdon; cost \$1378. Plastering, etc.; c. Jesse B. Sierce; cost \$3172. Plumbing, etc.; c. W. F. Wilson; cost \$6008. Tinning, etc.; c. S. F. Cornice Co.; cost \$1450.

**Natoma and Russ.** All work except plumbing, etc.; o. Teresa Murphy; a. M. J. Welsh; c. Allen McDonald; signed, Aug. 4; filed, Aug. 4; cost \$1490.

**Pacific Ave.** near Webster. Excavation and brick work; o. Jonas Schoenfeld; a. Salfeld & Kohlberg; c. Miller & Beck; cost \$1200.

**Plymouth Ave.** and Broad St. To build; o. Herman Kiepen; c. Earl F. Crane; signed, Aug. 15; filed, Aug. 15; cost \$1925.

**Post** near Laguna. All work except plumbing, etc.; o. Leopold Auerbach; a. J. E. Wolfe; cost \$425.

**Powell and Vandewater.** Two-story frame; o. W. M. Nichols; a. M. J. Welsh; c. K. C. Gardner; signed, Aug. 10; filed, Aug. 12; cost \$445.

**Second and Mission.** Illuminating tiles and iron work for six-story brick; o. Wells, Fargo & Co.; c. P. H. Jackson & Co.; signed, July 28; filed, Aug. 2; cost \$2887.

**Silver** near Third. To build; o. Mrs. Emille Ursin; a. C. M. Rousseau; c. W. R. Kenny; signed, July 22; filed, July 26; cost \$3135.

**Stanyan and Beulah.** Three-story frame; o. Antonio Versalovich; c. R. J. Pavet; signed, Aug. 13; filed, Aug. 15; cost \$1575.

**Sixth** near Shipley. Alterations and additions; o. Gustave Harshall; a. Shea & Shea; signed, July 30; filed, Aug. 4; cost \$474.50.

**Seventh** near Howard. All work except plumbing; o. Adolph Cohn; a. P. Schwerdt; c. Bernard Dryer; signed, Aug. 15; filed, Aug. 16; cost \$2700.

**Texas** near 19th. To build; o. James Gallagher; sup. James Clacken; c. John Kenally; signed, Aug. 9; filed, Aug. 12; cost \$1147.

**Twenty-first** and Chattanooga. To build; o. Patrick Bannan; c. William Heibing; signed, July 20; filed, July 22; cost \$5500.

**Twenty-fourth** near San Bruno Ave. To build; a. T. J. Welsh; c. Donovan & Son; signed, Aug. 10; filed, Aug. 12; cost \$275.

**Van Ness Ave.** and Clay. To build; o. St. Luke's Church; a. Albert Sutton; c. Walker Brother Co.; signed, Aug. 13; filed, 15; cost \$32500.

**Washington** near Spruce. Excavating, etc.; o. H. Huddleston; a. Percy & Hamilton; c. Richardson & Gale; signed, Aug. 4; filed, Aug. 6; cost \$3900. Carpentry, etc.; c. Chris Christolm; cost \$15,000. Plumbing, etc.; c. W. F. Wilson; cost \$1750.

#### BUILDING NEWS.

**Webster** near Filbert. To build; o. Mrs. Agnes M. Goedje; c. W. F. Lloyd; cost \$2050.

#### OAKLAND

**Eight and Madison.** To build; o. Mary Eifen; a. Alexander Thomson; c. A. Thomson & Co; cost \$4414.

**Fourteenth and Kirkham.** Cottage; o. Ed Swain; a. A. W. Smith; c. D. McLeod; cost \$1240.

**Thirteenth** near Washington. To build; o. Abramson Bros; a. Chas. Mau; c. J. C. Caldwell; cost \$3885.

**Forty-first and Adeline.** To build; o. L. D. Fell; a. W. A. Graves; c. Geo. C. Nall; cost \$1095.

**Grove and 1st street.** Brick work, etc. for school; o. Roman Catholic Archbishop of San Francisco; c. E. A. Garin; c. Cameron & McDonald; cost \$7940.

#### EAST OAKLAND

**Fifteenth** near 18th. To build; o. D. C. Talbot; a. D. F. Oliver; c. Jacob House; cost \$1220.

#### CLAREMONT

Architect C. H. Brown is preparing plans for the Pearson Hall of Science, a new building to be erected at Claremont, Cal., at a cost of \$25,000. It is an imposing design of two stories high and basement, 60x90 feet, built of brick, faced with cream colored pressed brick and terra-cotta.

#### MILL VALLEY

**Mount Tamalpais.** One and one-half story frame; o. Mill Valley and Mount Tamalpais Scenic Railway; a. Percy & Hamilton; c. B. F. Ellis; cost \$1765.

#### BERKELEY

**L. 16, block 8, Antisell's Map of Villa Lots.** To build; o. P. P. Robertson; a. Cunningham Bros; c. J. C. Caldwell; cost \$2900.

#### BAKERSFIELD

**W. H. Scribner** has let the contract for a three-story brick building designed for a theatre to be built on Chester avenue.

#### REDLANDS

Architect J. W. Forsythe has prepared plans for J. H. Fisher for a three-story brick to be on the corner of Orange street; total cost about \$14,000.

#### DUTCH FLAT

A public school building at Dutch Flat will be built soon; bids close on September 3d; P. F. Martin, architect, cost \$4500.

#### LOS ANGELES

A. S. Rendall will erect this fall a brick building on the lot at the corner of Los Angeles and Boyd Sts. Architect G. F. Costerline is preparing plans for the trustees of San Fernando school district for an addition of two rooms to their school building. Plans will be ready for bids about Aug. 1st.

Architects Eisen & Hunt have been instructed by the board of supervisors to prepare plans for a one-story brick building to be used as an insane ward on the county hospital grounds on Mission Road and the probable cost will be about \$2500.

Architects Locke and Munsell have prepared plans for Hugh Ehippe of a two-story frame residence to be built on Maryland street.

Architect Chas. L. Strange is preparing plans for a two-story frame and stone residence to be built on W. Adams street. He is also preparing plans for four two-story residences to be erected at Riverside.

Architect John Parkinson has prepared plans and

Continued on page xii.

## The Yale & Towne Mfg. Co.

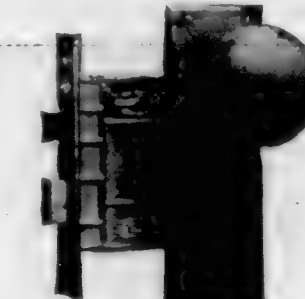
LOCAL OFFICE:

Mills Building, San Francisco.

The "Yale" Locks with new Paracentric Key, afford the highest standard of security. They are made in hundreds of styles and sizes, adapted to almost every possible use.



The Builders' Hardware, made by this Company, and used in connection with the "Yale," "Vulcan" and "Branford" lines of locks, forms collectively the largest assortment in the trade and covers respectively, as used with these locks, fine, medium and cheap goods.



The Art Metal Work (or Hardware of Ornament) as illustrated and listed in the No. 16 Catalogue, includes the largest collection of Ornamentations and patterns of this class in the world; not only those usually required but also a vast variety of special pieces. In all Yale Art Metal Work an intelligent interpretation of design may always be found.



As to Prices. While the goods made by this Company are always "the best for the money," the range of products and grades is such as to meet conditions where cost is a FIRST requisite, as well as where the greatest perfection of design and finish is alone considered.

GENERAL OFFICES:

Nos. 9, 11 and 13 Murray Street, New York City.



## GENERAL INDEX OF ADVERTISEMENTS.

| CLASSIFIED INDEX.         | CLASSIFIED INDEX.                      | CLASSIFIED INDEX.                |
|---------------------------|----------------------------------------|----------------------------------|
| Architects.               | xv Iron Hangers                        | Sash Locks.                      |
| Artificial Stone.         | Van Dorn, Chas. J. Waterhouse, Agent.  | Ives, H. B. & Co.                |
| Goodman, Geo.             | xii Iron Works                         | Sewer Pipes.                     |
| Boilers.                  | Western Iron Works.                    | Gladding, McBean & Co.           |
| Randolph & Clowes.        | xiv Iron Cornices.                     | Sewer Traps.                     |
| Building Supplies.        | Crown, Wm.                             | Dallimore, G. C.                 |
| Smith & Young.            | Wm. Heidt.                             | Sash Lines.                      |
| C. J. Waterhouse.         | ix Incandescent Lamps                  | Samson Cordage Works.            |
| Buiding and Loan Assn.    | General Electric Co.                   | Shingle Stains.                  |
| Ginsbarger, Emil.         | xv Lumber.                             | (Cabots)—C. J. Waterhouse—Agent. |
| Brick Preservative.       | Scott and Van Arsdale.                 | Pacific Refining and Roofing Co. |
| Cabot's.                  | Sierra Lumber Co.                      | Sidewalk Lights.                 |
| Cement Trays.             | xiii Mantles Tiles, Etc.               | P. H. Jackson & Co.              |
| Bradley, Bros.            | Montague & Co., W. W.                  | Sliding Door Hanger.             |
| Chimneys Patent.          | Bachman.                               | Dunham, Carrigan & Hayden.       |
| Chawson.                  | xii Metal Lath.                        | Stowell.                         |
| Door Opener.              | Western Expanded Metal Lath and Fire   | Stone.                           |
| G. Rischmuller.           | Proofing Co.                           | Raymond Granite Co.              |
| Engineers.                | xv Mortar Color.                       | Terra Cotta.                     |
| Tilton, Chas. S.          | Cabot's Mortar Color.                  | Gladding, McBean & Co.           |
| Filters.                  | xviii Paint.                           | Tin Roofing.                     |
| Rapid Safety Filter Co.   | L. R. Butler and Co.                   | N. & G. Taylor Co.               |
| Furniture and Upholstery. | G. Orsi.                               | University.                      |
| Bachman, W.               | Joseph Dixon Crucible Co.              | Harvard.                         |
| Hardware.                 | Paraffine Paint Co.                    | Ventilators.                     |
| Stale & Towne Lock Co.    | Fuller & Co., W. P., & Co.             | N. & G. Taylor Co.               |
| Heating and Ventilating.  | x Paper.                               | Water Closets.                   |
| W. Morgan & Co.           | Zellerbach & Sons.                     | John Douglas Company.            |
|                           | P. and B. Building Paper.              | Window Cord.                     |
|                           | Cabot's Sheathing and Lendering Quilt. | Samson Cordage Works.            |
|                           | xv Plaster.                            | Wood Preservative.               |
|                           | Luens & Co.                            | Cabot's.                         |
|                           | Plumbers and Gasfitters.               | Pacific Refining & Roofing Co.   |
|                           | Hobbs, W. D.                           |                                  |
|                           | Gulich & Wetherbee.                    |                                  |

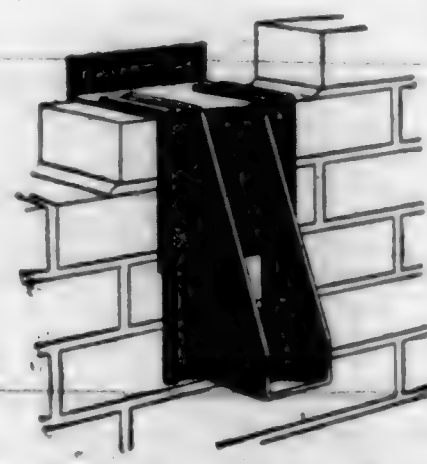


No. 1—Steel joist hanger for wooden header

**VAN DORN'S**  
Steel Joist Hanger  
**CHAS. J. WATERHOUSE, Agent**

421 MARKET STREET, S. F.

PHONE BLACK 1807.



No. 4—Steel joist hanger for brick walls.

Sierra Lumber Company

Manufacturers of and Dealers in

Doors, Windows, Blinds, Sugar Pine.

Yellow Pine, Spruce and Fir Lumber.

Corner Fourth and Channel Streets, San Francisco.

**HARVARD UNIVERSITY.**

Lawrence Scientific School

OFFERS COURSES IN

Civil Engineering  
Mechanical Engineering  
Electrical Engineering  
Mining and Metallurgy  
Architecture  
Anatomy and Physiology (as a preparation for Medical Schools).

Chemistry.  
Geology.  
Biology.  
General Science.  
Science for Teachers.

For Descriptive Pamphlet apply to

M. CHAMBERLAIN, Secretary.

N. S. SHALER, Dean. Cambridge, Mass.

**DIXON'S SILICA GRAPHITE PAINT**

FOR TIN OR SHINGLE ROOFS AND IRON WORK. Tin roofs well painted have not required repainting for 10 to 15 years. IT IS ABSOLUTELY WITHOUT AN EQUAL.

If you need any paint it will pay you to send for circular.

JOSEPH DIXON CRUCIBLE CO., Jersey City, N. J.

TELEPHONE SOUTH 224.  
**EAGLE SHEET METAL WORKS**

**WM. CRONAN**

Manufacturer of Plain and Ornamental

*Copper and Galvanized Iron Cornices*

Tin, Iron, Slate Roofing, Galvanized Iron Sky-lights and Cast-Zinc Work.

Steam, Hot Water and Warm Air Heating.

Power Fans for Heating and Ventilating Work.

ROOFS REPAIRED AND PAINTED GENERAL JOBBING ATTENDED TO  
Nos. 1213 1215 Market Street, Near Eighth  
SAN FRANCISCO, CAL.



A SYSTEM OF  
**WARMING AND  
VENTILATING**



A SYSTEM OF  
**VENTILATED FLUSHING  
WATER CLOSET  
AND URINAL RANGES**

FOR PUBLIC BUILDINGS.

**IMPORTANT**

— TO —

**ARCHITECTS**

**W. MORGAN & CO.** HEATING, VENTILATING AND SANITARY ENGINEERS. 108 First St., S. F. Cal.

**W. W. MONTAGUE & CO**  
**MANTELS**

**GRATES**

**TILES.**

**Fire Place Trimmings**

Artistic Brass Bronze  
Steel and Iron

WARM AIR  
HOT WATER  
and STEAM

**Heating Apparatus**

For Warming Dwellings,  
Halls, Churches, School-  
Houses, and Public Build-  
ings.

**Wrought, Steel Ranges and French Ranges**

For Hotels, Restaurants, Clubs and Boarding Houses

COMPLETE KITCHEN OUTFITS

MANUFACTURERS OF

**Corrugated Iron Roofing and Riveted Sheet Iron Water Pipe**

SAN FRANCISCO

LOS ANGELES

SAN JOSE

**Subscribe for The California Architect.**



WASHABLE **ZINOLITH** <sup>TRADE MARK</sup> SANITARY  
LIQUID STONE

THE IDEAL FINISH FOR INTERIOR SAND-FINISHED WALLS.

The only Water Color for Plastered Exteriors and Light Walls.

L. H. BUTCHER & CO.

539 Mission Street, S. F.

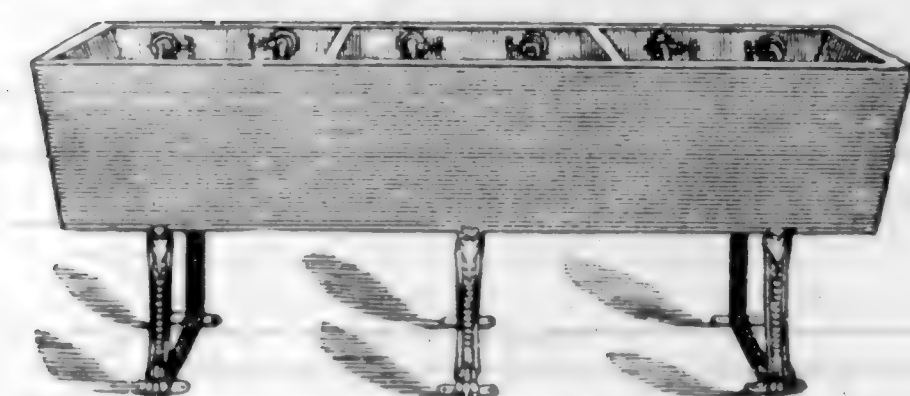
A. BRADLEY

SUCCESSOR TO BRADLEY BROS.

CEMENT

LAUNDRY

TRAYS



Manufactured of the best PORTLAND CEMENT and GUARANTEED not to LEAK, CRACK or SWEAT.

Office and Factory 53-57 Tehama St. Between 1st & 2d.

Architects are respectfully requested to specify them.

G. ORSI.

17 Montgomery Avenue

INTERIOR DECORATOR

IMPORTER OF AND DEALER IN

Paints,

Oils,

Varnish,

Paper Hangings, Etc.

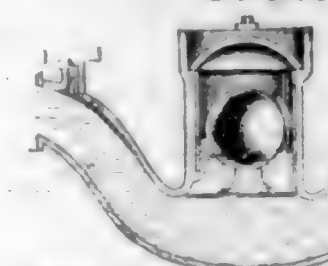
I make a specialty of interior Painting, Frescoing and Paper Hanging.

Special Agent for Linerusta Walton; a large and complete stock always on hand.

Estimates cheerfully given.

The Titus Improved Patent Sewer Gas Trap  
TIDE AND FLUSHING GATE

OPEN



Isolates the House from the Main Sewer in Street, thus stopping the prolific cause of Sewer Gas Infection.

By Report of Board of Health, 33 per cent. of deaths in this and other cities are caused by Zymotic Diseases arising from Sewer Gas Infection.

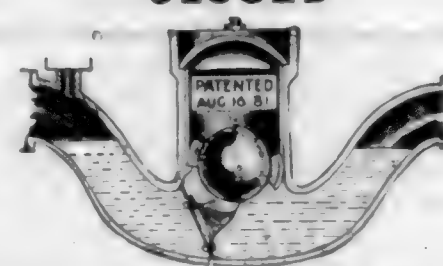
First Premium Mechanic's

Institute. Awarded 1882, 1883, 1884, 1885 & 1896.

Testimonials, References and Traps can be seen at 414 DEVISADERO STREET, Telephone Pine 1405.

Manufactured by G. C. DALLAMORE, Practical Plumber, Gas and Steam Fitter.

CLOSED



Recommended by Members of Board of Health

**RISCHMULLER'S**  
PATENT DOOR OPENER  
AND CLOSER.

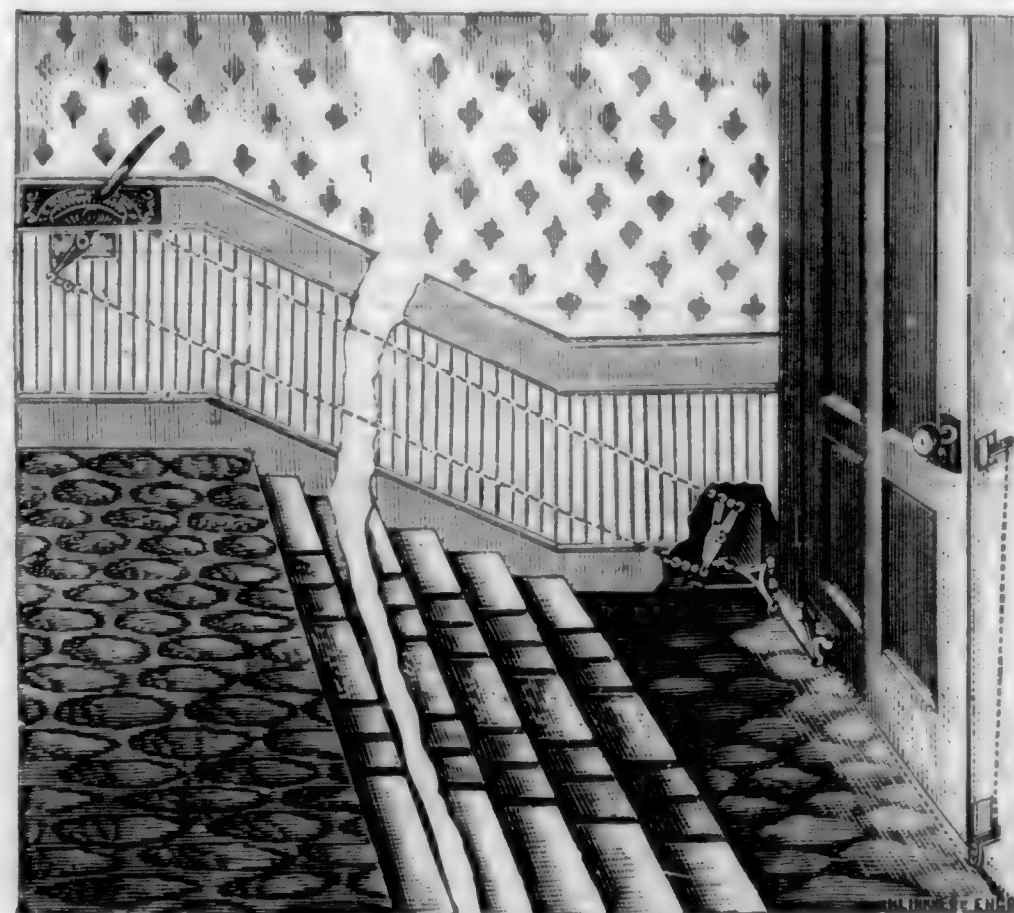
Proven to be the only one CONSTRUCTED ON CORRECT PRINCIPLES.

It is durable and far the cheapest in the end.

Orders promptly filled by

G. RISCHMULLER,

No. 3446 Nineteenth St., S. F.



THE CALIFORNIA ARCHITECT AND BUILDING NEWS

ESTABLISHED IN 1879

PUBLISHED ABOUT THE 20th OF EACH MONTH

BY E. H. BURRELL LESSEE, PUBLISHER.

OFFICE 408 CALIFORNIA ST. SAN FRANCISCO CAL.

INCORPORATED 1889

ESTABLISHED IN 1879

NOW IN THE NINETEENTH YEAR.

ESTABLISHED IN 1879

ESTABLISHED IN 1879

VOLUME XIX.

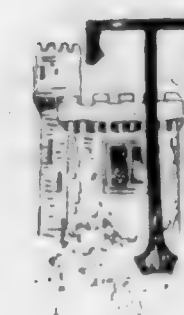
AUGUST 20th, 1898.

NUMBER 8.

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

CAUTION—Pay no money to persons representing themselves to be connected with the CALIFORNIA ARCHITECT AND BUILDING NEWS unless a written authority to receipt for the same is shown and accept no receipt unless it be on our printed blanks. All Checks and Drafts are to be made payable to the order of E. H. Burrell.

NOTICE is hereby given that Mr. Tom M. Grant is no longer connected with this Journal.—E. H. Burrell, Lessee and Publisher.



THE Editor of the *Architectural Record* endorses the scheme of the Classical Design and Detail Company, Limited, because of the "substantial benefits to architects" in an apology to his readers under the caption "Architecture Made Easy". It is unique in its way so we print it verbatim:

"It is not our practice to admit commercial reading into these pages of the magazine, but, in the case of the circular that follows we have deviated from our fixed policy because

of the substantial benefits the "Classical Design and Detail Co." offers to the architectural profession and to the cause of classical art. We are sure nobody will deny that the present conditions of practice demand the formation of a concern like the one just incorporated, which certainly fills most satisfactorily "a long-felt want."

The prospectus of this C. D. and D. Co., is rather startling in many of its announcements which, of course, amounts to innovations as for instance the opening paragraph which boldly declares that "it is well-known that the chief drawback to the successful practice of architecture in the United States is the enormous burden imposed upon the architect by his office expenses." Whereas we were always somewhat inclined to the opinion that a "lack of business" had con-