



BUILDING INTELLIGENCE.

SAN FRANCISCO.

Haight, near Octavia. Three-story frame—six flats.
O.—G. G. Burnett.
A.—Wolfe & Son.
C.—H. A. Sheldon.
\$11,000.

Post, near Octavia. Two-story and basement frame.
O.—L. Auerbach.
A.—Wolfe & Son.
C.—F. Klatt.
\$9,000.

Ridley, near Pearl. Two-story frame.
O.—J. E. Youngberg.
A.—Wolfe & Son.
C.—J. Doherty.
\$5,000.

Sutter, near Stockton. Additions.
O.—Druids Society.
A.—Wolfe & Son.
C.—H. C. Hook.
\$2,500.

Page, near Laguna. Two-story and basement frame.
O.—Mrs. Kennedy.
A.—C. Giddis.
C.—S. D. Matthews.
\$5,500.

724 Union. Additions.
O.—H. Hefen.
C.—Klatt.
\$1,000.

Union, near Dupont. Two-story frame.
O.—C. Carrara.
C.—G. Rocco.
\$3,000.

Greenwich, near Powell. Repairs.
O.—C. Wise.
C.—S. M. Hills.

Greenwich, near Larkin. One-story frame.
O.—J. Walsh.
\$1,000.

Hyde, near Green. Alterations.
O.—Miss K. Adams.
C.—M. Shea.
\$2,000.

Vallejo, near Union. Two-story and basement frame.
O.—W. Cluff.
A.—Newsom Bros.
C.—J. Doherty.
\$10,000.

Webster, nr. Pacific. Two-story and basement frame.
O.—Mrs. Britton.
A.—J. C. Felton.
C.—J. Doherty.
\$5,000.

Octavia, corner Pacific. Additions.
O.—J. Wignmore.
B.—W. Simon.
\$2,500.

Kearny, corner Broadway. Three-story frame.
O.—P. Pettinati.
A.—B. J. Lynch.
C.—W. F. Fitzgerald.
\$8,000.

Sacramento, near Davis. Four-story brick.
O.—Leaning, Palmer & Co.
A.—T. A. Eisen.
C.—W. B. Krager.
\$25,000.

Webster, corner Pacific. Three two-story frames.
O.—Mr. Goodwin.
A.—Smith.
C.—J. Treadwell.
\$13,000.

Washington, corner Polk. Alterations.
O.—J. M. Taylor.
C.—W. Simon.
\$12,500.

California, near Octavia. Improvements.
O.—C. De Young.
A.—W. Patton.
C.—R. Smilie.
\$15,000.

Commercial, nr. Kearny. Two-story brick.
O.—Mr. May.
C.—F. Grasshoff.
\$2,700.

Laguna, corner Ellis. Remodeling.
O.—D. Hunter.
A.—H. T. Bestor.
Day's work.
\$15,000.

Stockton, near Lombard. Two-story frame.
O.—G. Rossi.
A.—W. Bayless.
C.—C. Mills.
\$3,000.

Valley, cor. Dolores. Two-story frame.
O.—T. H. Downing.
A.—G. A. Bordwell.
\$2,500.

Buchanan, near Turk. Two-story frame.
O.—J. Baumeister.
A.—G. E. Voelkel.
C.—H. Thom. Wohrden.
\$4,000.

Sutter, corner Webster. Three two-story and basement frames.
O.—B. Schoenwasser.
A.—H. C. Macy.
C.—J. Doherty.
\$14,000.

Union, near Mason. One-story and basement frame.
O.—J. Levi.
A.—W. Mooser.
C.—T. W. Kern.
\$5,000.

Mission, near Main. Additions.
O.—C. S. Laumeister.
A.—T. A. Eisen.
C.—T. Maxwell.
\$2,500.

Mission, nr. Third. Four-story and basement brick.
O.—C. W. Crocker.
A.—Wright & Sanders.
C.—Terrill & Slaven.
\$50,000.

Jackson, near Franklin. Two-story and basement frame.
O.—J. M. Johnson.
A.—H. C. Macy.
C.—Mahoney Bros.
\$16,000.

Taylor, near Sutter. Two-story and basement frame.
O.—Mrs. Morrell.
A.—A. Pissis.
C.—W. Langstaff.
\$4,500.

Eddy, near Leavenworth. Additions.
O.—Mrs. Botsford.
A.—Leonard & Son.
C.—J. T. O'Brien.
\$1,300.

Fifth, x Harrison and Bryant. Additions.
O.—Charles Vallet.
A.—A. Laver.
C.—Neal & Grey.
\$1,200.

Cliff House. Alterations.
O.—A. Sutor.
A.—A. Laver.
C.—Crichton.

Mission, x Fifth and Sixth. Improvements.
O.—Thomas Sawyer.
A.—A. Laver.
C.—J. T. O'Brien.
\$1,175.

California, corner Mason. City residence.
O.—J. C. Flood.
A.—A. Laver.
C.—For Connecticut brown stone, Mr. Spurr, of New York.

Main, nr. Mission. Three-story frame.
O.—W. F. Buswell.
A.—T. A. Eisen.
C.—T. Maxwell.
\$3,000.

Larkin, near Ellis. One-story frame.
O.—Hibbard & Bock.
A.—Huerne & Everett.
C.—F. Buckley.
\$1,000.

Broadway, cor. Dupont. Two-story frame.
O.—Koch & Apel.
A.—B. E. Henriksen.
C.—G. Krohn.
\$7,500.

Folsom, corner Seventh. Two-story frame.
O.—E. Mercier.
A.—T. J. Welsh.
C.—H. Lehaus.
\$3,500.

Bryant, near Ninth. Two two-story frames.
O.—B. J. H. Thom.
Wohrden.
\$5,000.

Shotwell, near Twentieth. Three two-story frames.
O.—G. Edwards.
B.—J. Adams.
\$5,000.

Octavia, near Post. Additions.
O.—Monahan.
A.—T. J. Welsh.
C.—J. P. Mackeney.
\$2,200.

Eddy, near Webster. Two two-story frame.
O.—Brady & Smith.
A.—T. J. Welsh.
Days work.
\$8,000.

Main, x Market and Mission. Four-story and basement brick.
O.—Louis Taussig.
A.—Schmidt & Havens.
Brickwork.—McGowan & Butler.
Carpenterwork.—Mahoney Bros.
\$40,000.

Oak and Buchanan. Two-story frame stable.
O.—W. F. Wenzell.
A.—Schmidt & Havens.
C.—T. Maxwell.
\$2,500.

Birch Av., Larkin and Polk. Five two-story frames.
O.—Mrs. A. Skae.
A.—Schmidt & Havens.
C.—R. Smilie.
\$16,000.

Fifteenth, x Noe and Sanchez. Two-story frame.
O.—Chas. Schmidt.
A.—Schmidt & Havens.
C.—T. Maxwell.
\$4,000.

Twenty-ninth, near Harrison. Two-story frame.
O.—J. Whelan.
C.—F. Hogan.
\$1,800.

Mission, nr. Fourth. Four-story and basement brick.
O.—H. D. Hanks.
A.—Percy & Hamilton.
C.—J. C. Gibson.
\$35,000.

Thirteenth, near Harrison. Additions.
O.—B. J. S. Wieland.
\$1,500.

Folsom, near Sixteenth. Additions.
O.—Enterprise Brewery.
C.—W. F. Howe.
\$3,500.

Channel, nr. Seventeenth. One-story frame.
O.—J. B. Williams.
C.—W. Wickersham.
\$2,500.

Dolores, nr. Twenty-ninth. One-story frame.
O.—L. Spott.
C.—Grace & Loftus.
\$850.

SAN JOSE.

Stockton Avenue. Two-story frame.
O.—A. B. Miner.
A.—L. Goodrich.
C.—W. S. Boyles.
\$6,000.

Third, near St. John. Two-story frame.
O.—F. J. Lacoste.
A.—L. Goodrich.
C.—M. D. Green.
\$8,000.

Berryessa. Two-story frame.
O.—School District.
A.—L. Goodrich.
C.—J. S. Selby.
\$4,500.

San Pedro, near Market. One-story frame.
O.—J. N. Cora.
A.—A. Vincent.
C.—S. J. Mill Co.
\$1,200.

Market, near Santa Clara. Two-story brick.
O.—G. Raggio.
A.—A. Vincent.
C.—S. J. Mill Co.
\$3,500.

Julian Avenue. One-story frame.
O.—C. Hellison.
C.—J. Lenzen.
\$2,000.

Market, near Santa Clara. Two-story brick.
O.—J. S. Lynden.
A.—A. Vincent.
C.—C. Drew.
\$2,800.

Vine. One-story frame.
O.—Karl Klein.
C.—J. Lenzen.
\$1,700.

Fourth. One-story frame.
O.—M. Glubetach.
C.—J. Lenzen.
\$3,500.

Delmas Avenue. One-story frame.
O.—Van de Castelle.
C.—J. Lenzen.
\$3,200.

Stockton Avenue. Two-story frame.
O.—E. C. Singletary.
C.—J. Lenzen.
\$13,000.

Market, cor. Bassett. Two-story frame.
O.—Mrs. Morrison.
C.—J. Lenzen.
\$6,500.

OAKLAND.

Filbert, near Eighteenth. One-story frame.
O.—R. Murphy.
A.—C. F. Man.
C.—Parrish & Hughes.
\$2,200.

Eighteenth, near Grove. One-story frame.
O.—B. E. Clark.
\$1,800.

Telegraph Avenue, nr. Seventeenth. Four one-story frames.
O.—W. Collins.
A.—C. F. Man.
C.—Borden & Milwain.
\$6,400.

Linden, corner Sixteenth. Two-story and basement frame.
O.—Campbell.
C.—J. E. Hanna.
\$5,500.

MISCELLANEOUS.

Alameda. Encinal Avenue, near Chestnut. One-story frame; O. and B., H. C. Brown; \$1,600.

Woodland. One-story frame; O., J. D. Lawson; C., Wm. Carson; \$2,500. One-story frame; O., H. P. Eakle; \$1,500. Cacheville. Two-story frame; O., Geo. Greene; C., G. K. Glenn; \$2,500.

Fresno. Two-story frame; O., C. Hutchinson; A., H. T. Bestor; \$3,000. Brooklyn. Highland Park; two-story frame; O., W. J. Stuart; A., W. G. Copeland; C., — Brown; \$3,000.

Petaluma. Two-story frame; O., Rodd & Kiel; A., T. J. Welsh; C., J. F. Cleary; \$4,500. Mission San Jose. Additions to Church; A., T. J. Welsh; C., — Binet; \$2,900.

MARKET REPORTS.

LUMBER—Pine

Common Rough, up to 40 feet, per M feet	\$23 50
“ 41 to 50 “ “ “ “	23 50
“ 51 to 60 “ “ “ “	24 50
“ 61 to 70 “ “ “ “	26 50
“ 71 to 80 “ “ “ “	28 50
Refuse Rough	18 50

Common Rough, sized with planer \$2 additional on above rates, per M feet.

No. 1 Flooring, 6 inches and over, “ “ “ “	33 50
“ “ “ “ and under, and 1½x4 and 1½x6	40 00

Flooring and Stepping 23 50 |

Rough Clear for Flooring, \$1 less than above rates. 23 50 |

Second Quality Flooring and Stepping.....per M feet 23 50 |

Ship Plank, Rough..... “ “ “ “ 23 50 |

“ Planed 1 side..... “ “ “ “ 32 50 |

“ “ 2 sides..... “ “ “ “ 35 00 |

Deck Plank, Rough..... “ “ “ “ 33 50 |

“ Dressed..... “ “ “ “ 37 50 |

Laths..... “ “ “ “ per M 3 75 |

Wood Slat..... “ “ “ “ 10 00 |

Shakes..... “ “ “ “ 12 00 |

Redwood Posts..... “ “ “ “ per piece 17 50 |

Redwood.

Rough Merchantable.....per M feet \$22 50 |

“ Refuse..... “ “ “ “ 18 50 |

Surface No. 1..... “ “ “ “ 40 00 |

“ 1x6..... “ “ “ “ 37 50 |

“ No. 2..... “ “ “ “ 27 50 |

Rustic, No. 1, 1x8..... “ “ “ “ 37 50 |

“ No. 1, 1x10..... “ “ “ “ 40 00 |

“ No. 2..... “ “ “ “ 35 00 |

“ Under 10 feet..... “ “ “ “ 35 00 |

T. & G., 1½x4 and 1½x6..... “ “ “ “ 40 00 |

“ 6 in. 12 ft. and over..... “ “ “ “ 37 50 |

“ “ 7 to 11 feet..... “ “ “ “ 32 50 |

“ “ under 7 feet..... “ “ “ “ 30 00 |

“ “ No. 2..... “ “ “ “ 30 00 |

T. & G., Beaded, 12 feet and over..... “ “ “ “ 40 00 |

“ “ 7 to 11 feet..... “ “ “ “ 32 50 |

“ “ under 7 feet..... “ “ “ “ 30 00 |

Half-inch Surface..... “ “ “ “ 32 50 |

Pickets, fancy..... “ “ “ “ 30 00 |

“ Rough, Pointed..... “ “ “ “ 20 00 |

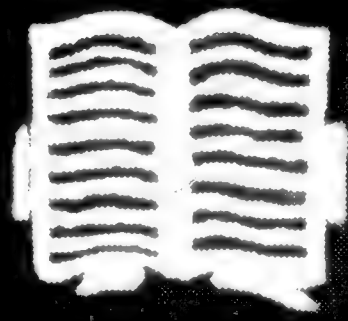
“ “ Square..... “ “ “ “ 17 50 |

Siding, ½ inch..... “ “ “ “ 27 50 |

Shingles..... “ “ “ “ per M 2 50 |

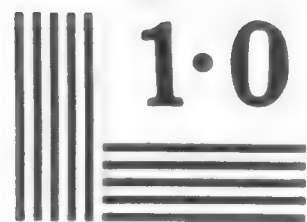
Battens, ½ inch, lineal feet..... “ “ “ “ 10 |

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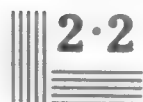
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7.1



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4.5



1.8



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MICROCOPY RESOLUTION TEST CHART

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2

TITLE THE CALIFORNIA ARCHITECT AND
BUILDING NEWS

FORMERLY THE CALIFORNIA ARCHITECT AND
AUTHOR BUILDING REVIEW
FORMERLY THE QUARTERLY ARCHITECTURAL
REVIEW

VOLUMES 5-8

DATE 1884 - 1887

PUBLISHER WORLD MICROFILMS PUBLICATIONS in association with THE
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REVIEW
VOLUME V
DATE 1884
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Advertisements alone inserted that refer to materials used in the construction and furnishing of houses, and to matters and trades belonging to the building interest.

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Advertisements inserted for three months or less are payable in advance; payable quarterly when inserted for a longer period.

When money is sent for subscriptions, the receipt of a copy of this journal is an acknowledgment that it has been received. Unless requested we do not send receipts.

Our Fifth Volume.

WITH this issue we present the first number of Volume 5 of this journal. We are well pleased with the encouragement received during the year, and that the general public may know the extent of the good-will manifested towards us by those interested in the different branches of the building interests, we will say that, during the year just closed, we have added to our subscription list

EIGHT HUNDRED AND NINETY-THREE new subscribers.

The mammoth supplement issued last September had much to do with this large increase. We distributed

FIFTY-TWO THOUSAND

Of that issue, and are more than pleased with the result. Such was the favor with which it was received, and the encouragement offered so large that we will, in the near future, print supplement No. 3, and will positively guarantee an issue of

ONE HUNDRED THOUSAND COPIES.

Eastern advertisers will do well to inquire of us in regard to space, as our past experience has proved that it is but little trouble to fill up all the room we can spare for advertisements, because those favoring us feel assured that the number of copies are printed that we promise.

Our Competition.

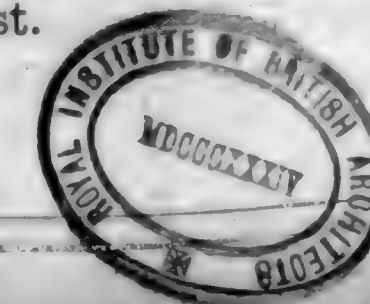
WE are well pleased at receiving so many letters from architects all over the country inquiring in regard to the COMPETITION announced in our last and present issue. For the benefit of many inquirers, we would say that it is not confined to the architects of this coast, but is open to all. The professional standing of the gentlemen composing the committee on the awarding of premiums is such that there can be no question upon the result of their decision being strictly just to the various competitors.

Every architect in the State should insert his professional card in our columns, and thereby prove that he is endeavoring to assist in building up an architectural journal that will take rank with any printed. The charge is small. We want the influence your names will give, and we promise to spare no efforts in making the "California Architect" fully represent the views of a majority of the Profession on this Coast.

Business Prosperities.

BUT few if any year in the history of California as a State, has closed more satisfactorily, in a comprehensive sense, to the people of the State, than 1883; and seldom, if ever, have the prospects for the year to come presented brighter and more cheering indications for the future. In all directions, in all lines of trade and commerce, in all mechanical, manufacturing, and labor spheres and circles, there has been a large degree of substantial successes; and the dawn of 1884, and the indications for the year are full of encouragement—that the current twelve months will yield their full quota of good things to all classes.

While there have been a few individual failures and non-successes in business, there are but very few of the entire inhabitants of the Pacific Coast who are not able at the present time to make a better financial showing than they could one year ago. Nor is this general prosperity confined to any particular class of individuals, but reaches, in respective degree, from the millionaires down through all gradations of business pursuits to the humblest toiler for daily bread. The thrifty and economical mechanics and workers, who, a few years ago, found it difficult to make all ends meet, have, during the past and preceding year, been able to secure comforts, and make considerable advance in the direction of better circumstances, and scarcity against the various adversities to health and fortune, which are possible to come to any one at any moment without warning. There is no better nor more reliable criterion for judgment as to a general state of prosperity among the people of any city or State than that furnished by the building activities. When architects are busy, building contractors full of work, prices of material high, the working forces of skilled and unskilled labor fully employed, it is safe to assert that "times are good" and "everybody doing well." This has been, and is now, the state of the case in California, and it is safe to urge the assertion as a fact, in prospect, that there will be a greater amount of money expended in building operations during the current year than there has been within the twelve months of either of the preceding ten years. The demand for moderate cost tenements, houses, and flats continues, and it matters not what additional number may be erected this year, they are likely to find ready tenants. There is but slight probability that building will be overdone, as the demand has kept full pace with the supply, and still remains unsatisfied.



A Wrong Statement Corrected.

"San Francisco erected over 2,000 buildings last year, at an aggregate cost of \$11,000,000."

The above wild statement appeared in the local columns of the daily *Examiner*, January 6th. The information is entirely at variance with the facts as given in the columns of this journal, and there is no foundation whatever for the figures quoted. We have in our employ several whose sole duty it is to take cognizance of every new building erected. The values, as given in this journal, are approximately correct. In our December issue we gave the amount of work for 1883 as

803 BUILDINGS OF THE VALUE OF \$5,261,689, And this statement is as nearly correct as careful inquiry and conscientious attention can command. We notice the above merely that mechanics from abroad will not be deceived as to the amount of work in progress, and thus form wrong conclusions in regard to the value of building activities in progress in this city.

Testing Paints Ground in Oil.

A VERY simple test for determining the comparative value of any white paint ground in oil—namely, weigh out say 100 grains of each paint to be compared, add three drops of linseed oil to each, and spread them with a steel spatula on sheets of glass 6x12 inches as nearly as possible in the same manner. Place the samples thus prepared between yourself and the light, and you will have no difficulty in deciding which is most opaque. The sample which has obscured the light the most, or appears the darkest when held between yourself and the light, must have the greatest body or covering capacity.

THE *Architect*, of London, predicts an early revolution of taste in architecture, which, it thinks, may possibly result in a revival of Greek models. It notes decided symptoms of change in public feeling toward the recent craze for mediæval styles, and a decline in the popularity of "the very remarkable furniture fashion which has found its way into a certain ascendancy in English architecture, under the name of 'Queen Anne'—more properly Low Dutch, and sometimes very low Dutch indeed." Lord Coleridge, since his return to England, has made public his opinion that the new Gothic law courts are "uncharacteristic, inappropriate and inconvenient," and, as the *Architect* slyly adds, the Lord Mayor has recently, at a Guildhall banquet, quoted Homer in the original, with a display of classic learning unusual in Lord Mayors. There are more substantial signs than these of the declining popularity of prevailing styles, and a growing regard for classic models; and this authority expects that the competitive designs for the new War Department buildings will include many examples based upon the Greek.

Bound volumes now ready. Price, \$2.50 each.

San Francisco Chapter of Architects.

OWING to the regular evening for meeting following so closely the holiday season, the Chapter did not meet this month. It is expected that every member will be present at the next meeting. We are pleased to announce that the President has so far recovered from his indisposition as to be able to resume his usual business activities.

Our Exchanges.

We have made arrangements with the editors of the following journals, by which we are enabled to offer quite a reduction to any one subscribing for any one of them in connection with this journal.

(The figures in parenthesis denote the price of the journals alone.)

CALIFORNIA ARCHITECT AND BUILDING NEWS.

Terms, \$2.00 per annum.
With *American Architect* (\$6.00), \$7.00 per annum.
With *Builder and Wood Worker* (\$1.00), \$2.50 per annum.
With *Carpentry and Building* (\$1.00), \$2.50 per annum.
With *American Artisan* (\$1.00), \$2.50 per annum.
With *Brick, Tile, and Metal Review* (\$1.00), \$2.50 per annum.
With *Building* (\$1.00), \$2.50 per annum.
With *North Western Lumberman* (\$4.00), \$5.00 per annum.
With *Scientific American* (\$3.20), \$4.50 per annum.
With *Leffels' Mechanical News* (\$1.00), \$2.50 per annum.
With *Decorator and Furnisher* (\$4.00), \$5.00 per annum.
With *American Machinist* (\$2.50), \$4.00 per annum.
With *The Wood Worker* (\$1.00), \$2.50 per annum.
With *The Builder* (\$2.00), \$3.50 per annum.
With *American Inventor* (\$1.00), \$2.50 per annum.
With *Hall's Journal of Health* (\$1.00), \$2.50 per annum.
With *Cincinnati Building Review* (\$1.00), \$2.50 per annum.

We will add to the above list from time to time, as our arrangements are perfected with the publishers. We are prepared to furnish any journal printed at the shortest possible notice.

Wheeler's Patent Wood Filler.

WHEN this celebrated preparation was first introduced on this coast, it was recommended to give a perfect finish to hard wood. But by actual experience, it has been found to be equally applicable to redwood, and to the latter it gives a natural and perfect finish, such as is not obtained by the application of any other article. Its effect upon curly redwood is very fine. Such being its qualities, it should be used by every one who desires to have all the finishes of their houses present a smooth and natural finish. This FILLER can be obtained from the various dealers in paints, etc., throughout the city and State.

The "California Architect" is now in the Sixth Year of Publication.

Competition Designs!

ONE HUNDRED AND FIFTY DOLLARS

Cash Premiums!

FOURTH PRIZE,

Box of Drawing Instruments.

In order to promote a general desire to excel among Architects and Draughtsmen in the preparation of drawings for this Journal we have concluded to offer the following premiums for the best 4 designs of a Country Dwelling, the successful plans to be published in the CALIFORNIA ARCHITECT AND BUILDING NEWS.

1st, a Cash Prize of \$60.00
2d, " " 50.00
3d, " " 40.00
4th, Box of Drawing Instruments.

Notice to Competitors.

All plans to be in the office of the CALIFORNIA ARCHITECT ON OR BEFORE the 1st of May, 1884.

All plans not accepted will be subject to the order of the owner, and will be returned upon receipt of the necessary postage.

We claim the right to reproduce in this journal all drawings of which honorable mention is made, and yet not entitled to a prize.

A *non de plume* to be used on all drawings; a letter to accompany the latter, addressed with the name used, containing also the real name and address of the contestant. This is done solely that the person's name and residence will not be known until the committee have made the awards.

A scale of $\frac{1}{4}$ inch to the foot to be used. Detailed estimate of cost to accompany the drawings. QUANTITY and PRICE of each material used to be given, so that allowance can be made for difference of price between the various sections of the East and this Coast.

Drawings are to show front, rear, and side elevations, with plans of the different floors.

The value of the house when finished to be ABOUT FIVE THOUSAND DOLLARS.

This competition is open to Architects in every portion of the United States.

Drawings to be made on card or bristol-board; to be line shaded; no color but JET BLACK to be used.

All competitors will receive one year's subscription to this journal FREE, that they may see the various plans adopted.

The merits of the various designs will be decided by a committee appointed by the San Francisco Chapter of Architects.

All inquiries in regard to the above will be answered by addressing a letter to the office of this journal, 240 Montgomery St., San Francisco. WOLFE & SON, Editors and Publishers.

James E. Wolfe.

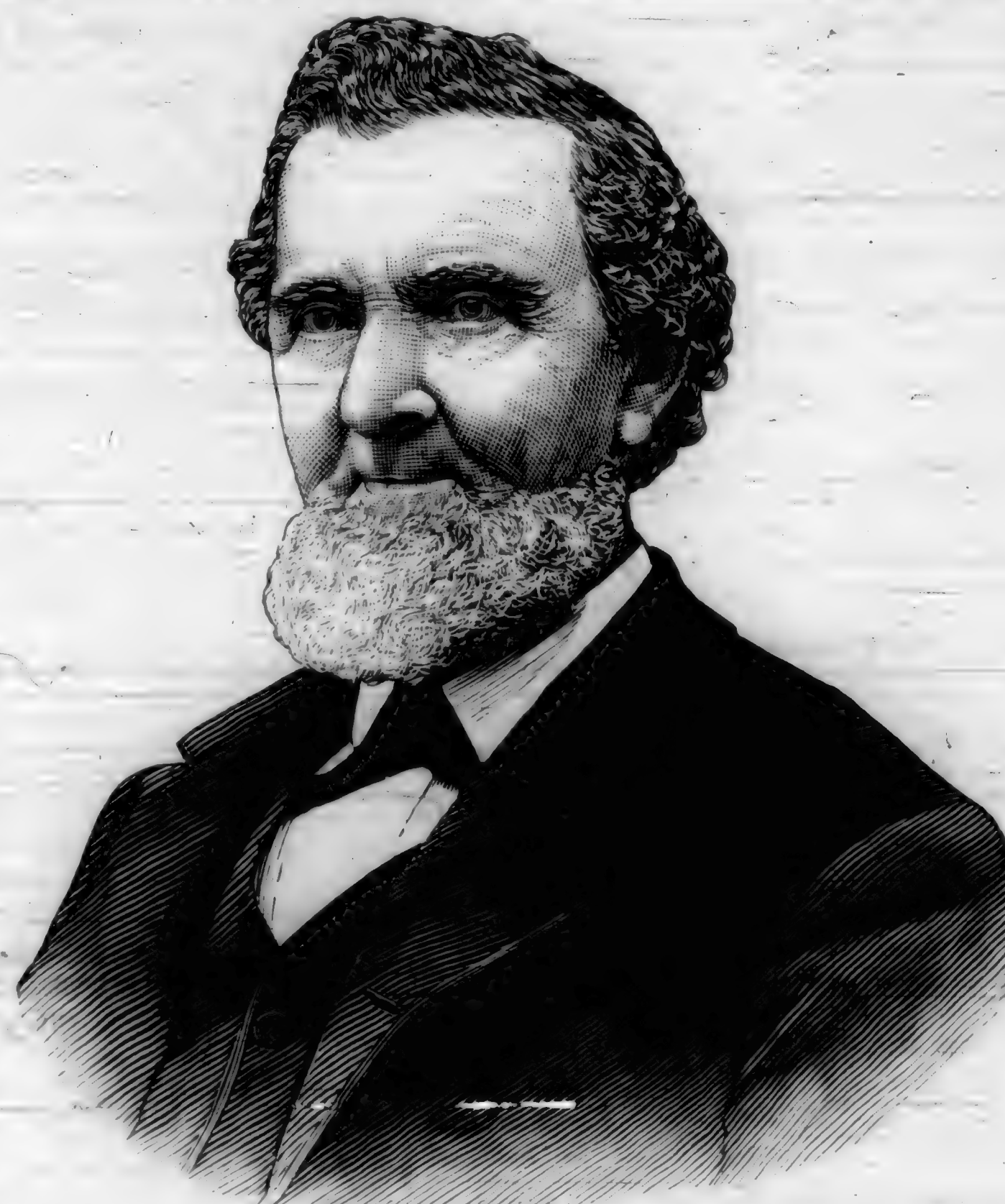
FOUNDER AND EDITOR OF THE CALIFORNIA ARCHITECT AND BUILDING NEWS.

HAVING completed arrangements which will enable us to produce monthly, two or more faithfully executed, life-like likenesses of the leading architects of the Pacific Coast, we commence our series in present issue with that of the founder, editor in chief, and joint proprietor and publisher of the CALIFORNIA ARCHITECT AND BUILDING NEWS. Our reasons for placing Mr. Wolfe first, is the fact that he was first to venture upon the unpromising task of

establishing upon the Pacific Coast, a journal devoted to the Architectural, Construction, Sanitary and Kindred Sciences. His editorial work was commenced in 1879—the most discouraging, disastrous and unpropitious period within the history of the Pacific Coast, when all interests, public and private were crushed beneath the Hydra-Headed Monsters—Kearny-ism—Sand Lot-ism—New Constitution-ism etc., etc.,—when thousands of mechanics and others who had not thitherto known what privations and want were, were reduced to a state of actual destitution and suffering;—when the wheels of every clasp of mechanical, commercial, manufacturing and other businesses turned slowly or not at all, and cheerful countenances were nowhere seen among the intelligent classes. It was during such times as these when this journal made its first appearance, and it required all the energy, determination, judgment and good management possible in one single individual, to overcome the surrounding difficulties, and bear the struggling waif safely through the terrible period to more auspicious times. How well this has been done, aided since 1880 by the junior editor and business manager, the present standing and success of this journal fully attest.

The subject of this notice arrived in San Francisco July 2, 1851, and therefore enjoys the many advantages of nearly thirty-three years personal experiences in the ups and downs, and exciting scenes of California life. During 1851, he devoted himself to architectural and constructive pursuits, but in 1852 was allured into a disastrous investment in a saw-mill enterprise, then located at the town of old Saucelito, Marin County, which swept away the accumulations,—the result of preceding financial successes. In 1855 he

was attracted to the mines of California, and after several years spent in planning and constructing quartz mills in this State, and a sojourn of two years at Victoria, V. I., which was spent in architecture and constructive pursuits, he returned in 1861 to San Francisco since when he has devoted his entire time to the practice of the architectural profession, less part of 1863-64, when, with tens of thousands of others, he was drawn into the terrible vortex of the then generally unsuccessful mining enterprises which swept away fortunes—even mortgaged homesteads, jewelry and valuables of every kind, and impoverished



JAMES E. WOLFE.

perhaps one-half the entire population of this State.

Since 1861, Mr. Wolfe's architectural experiences have been extensive, and many fine edifices attest his qualifications as an architect. With a well preserved advanced age, his numerous friends will doubtless join in hoping that many additional years may be added to those already past, and that the columns of this journal may be made the more interesting by the product of his brain and pen. He is a member of the American Institute of Architects, and takes great interest in its proceedings. He is also one of the oldest practicing architects in the city. Mr. Wolfe was born in the city of Baltimore, Maryland, Nov. 6, 1820.

The Victory Is Ours.

We have come up through five, and have entered upon our sixth year of publication work, including the quarterly of '79, and with each year have gained in every substantial particular; and as we have run along, we have endeavored to pick up and utilize the lessons and teachings of experience, being well satisfied that we are not yet too old to learn—to the end that we may be able to present to our patrons a journal of standard and increasing merit. This is, and will be, our aim and object, and we renew the pledge of former years, to continue our best efforts in making this—the only California journal of its kind—equal in every essential particular to the best of our Eastern or European contemporaries. We have secured a victory over the many things against which we have been required to contend, and are now well fortified to meet all reasonable probabilities of the future.

Our Advertising Rates.

THEY are published on first page of reading matter, and, unless for large ads, or small ones running a long time, we do not make any reductions. ON AND AFTER THIS ISSUE THE PRICE OF A FULL PAGE ADVERTISEMENT FOR ONE INSERTION WILL BE FORTY DOLLARS. For a longer period special prices will be given. Our large increase in circulation fully justifies us in this step. With improvements constantly being added, and with the aid of our next supplement, we expect and intend to gain at least ONE THOUSAND NEW SUBSCRIBERS this year. Material men will do well to consult us in regard to future contracts, as now is the time to make them, our busy season beginning in April.

A TOOL after it has been forged should be so-hardened or tempered that it will never want to come to the fire again until it is so worn down that it requires re-forging. This accomplishes two things: First, it saves the time lost in the second hardening; and in the second place, it avoids the damage always done to the cutting power by re-hardening without forging.

A LARGE number of cases of diphtheria are reported in West Cleveland. It is supposed that the disease is caused by the stench from offal used as a fertilizer on a farm in that vicinity.

The Old House Altered.

BY A. CURTIS BOND.

WITH the accumulation of wealth and the assumption, whether understood or not, of the aesthetic and the *recherche*, the disposition is created to branch out and ignore to a considerable extent the humble, or at any rate unpretentious associations of our earlier life. In a degree this is not so strongly marked as it was a very few years ago, and many persons have discovered that the unpretentious may be made quite presentable, and fill the eye of the artist with pleasure, while retaining the delightful memories which do, or should, cling about the familiar objects of the past.

This tendency to tear down and build up again has been more universally shown in architecture, and especially the architecture of country houses, than in any other branch of art. So soon as the new heir acquired possession, he would renovate by removing entirely, and in place of the old-fashioned, rambling, comfortable house, there arose a majestic affair of brick or stone or elaborately cut and painted wood. Thus, perhaps not from choice but from an erroneous idea that it is impossible to alter the old house so as to accommodate the new or the increased family, an expense is incurred, and a building is erected that may not possess any of the attractions of the old one. That this may be avoided in the majority of cases I will cite a short chapter in my own experience to show. I do not by any means claim that it is *always* better to re-make the present house in preference to having a new one. I only consider it frequently desirable, how frequently is a question that must be determined by the owner and his architect.

In my sketches I have shown the house as it was when it came into my possession, and as it probably had been ever since it was originally projected. The accommodations were not sufficient for a family of more than two, and in order to make it available for renting, a consideration of no little importance in our part of the country where no one is expected to live in one's own house, it was necessary to enlarge its capacity. Builders, friends of mine, advised me to clear away the property, tear down the cottage and begin all over again. The appearance of the thing was rather unpromising, I admit, and the suggestions of the builders were not entirely without their effect, for I felt very much disposed to do as they would have me. One day, however, I met another friend, an architect, a young man with all the fresh ideas of the nineteenth century about him, combined with a slight touch of the medieval, which latter trait, perhaps, prompted him to discourage my iconoclastic scheme of destruction and urged the renovation of the existing wreck. There were only four small rooms in the entire building, but the architect figured and planned so that he evolved six goodly sized apartments, and in addition a snug bath-room large enough for all the practical uses to which a bath-room is put (see sketch). As the cost of these alter-

ations was certainly one-third what the building of a new house, even on the same unpretentious scale as this one, would be, it was decided to try the experiment. The success of the scheme may be measured by the accompanying illustration, where is shown the old and the new in excellent contrast; the renovated house is by no means elaborate or showy in its appearance, but it is very comfortable, has many pleasing features, rooms that are capable of easy and attractive furnishing and decorating. That the relative conditions of the two places may be judged it might be well to give a short description of both.

The old house had a short hall entered immediately from the front door; from this hall doors led into the dining-room on one side and the parlor on the opposite side; adjoining the parlor was a bed-room having a closet, and off of the dining-room was the kitchen, with a closet built box-fashion in one corner of it. The stairs leading to the attic were an eye-sore in every sense, clumsy, rickety and dilapidated: they were boxed off of the dining-room making a very illy shaped room with seven corners; from the kitchen a door lead onto a plain board stoop of three or four steps. Marauding boys had appropriated the outside shutters and made the house a target for their mud balls, so that the paint was hardly discernable, and the weather had united with the boys to make awful havoc.

That was the condition of the building when the architect commenced on it. He began by removing the partition between the parlor and the bed-room directly behind it, making thus one large room which was transformed from the old parlor into a new dining-room. The door which led into the kitchen was left as it had been, and the closet that belonged to the bed-room was utilized for a dining-room pantry; in the rear partition of this pantry a small window or slide was cut, intended to pass through dishes to and from the kitchen. Another pantry similar to this one already built was put at the back of the first one and extended on a line with it into the old dining-room. This second pantry opened by a door into the kitchen, and through the slide or small window communicated with the original pantry, and so with the dining-room. The boxed-in stairs were then removed from the old dining-room and upon the outside of the house, at the side of this room, an extension was built extending to the rear of the house and then following it around until it stopped at the kitchen L. From this extension the stairs which were removed from the old dining-room, are contained and the old dining-room itself becomes square, as is shown. This extension is built out a little over four feet. These stairs from the floor above, turn with a landing and end in the further part of the extension, where is formed a small square hall, having a door at the very foot of the stairs opening onto a back porch, a door opposite the stairs leading into the kitchen and the other side of the square an arch is hung with a handsome *pertice* and discloses the parlor.

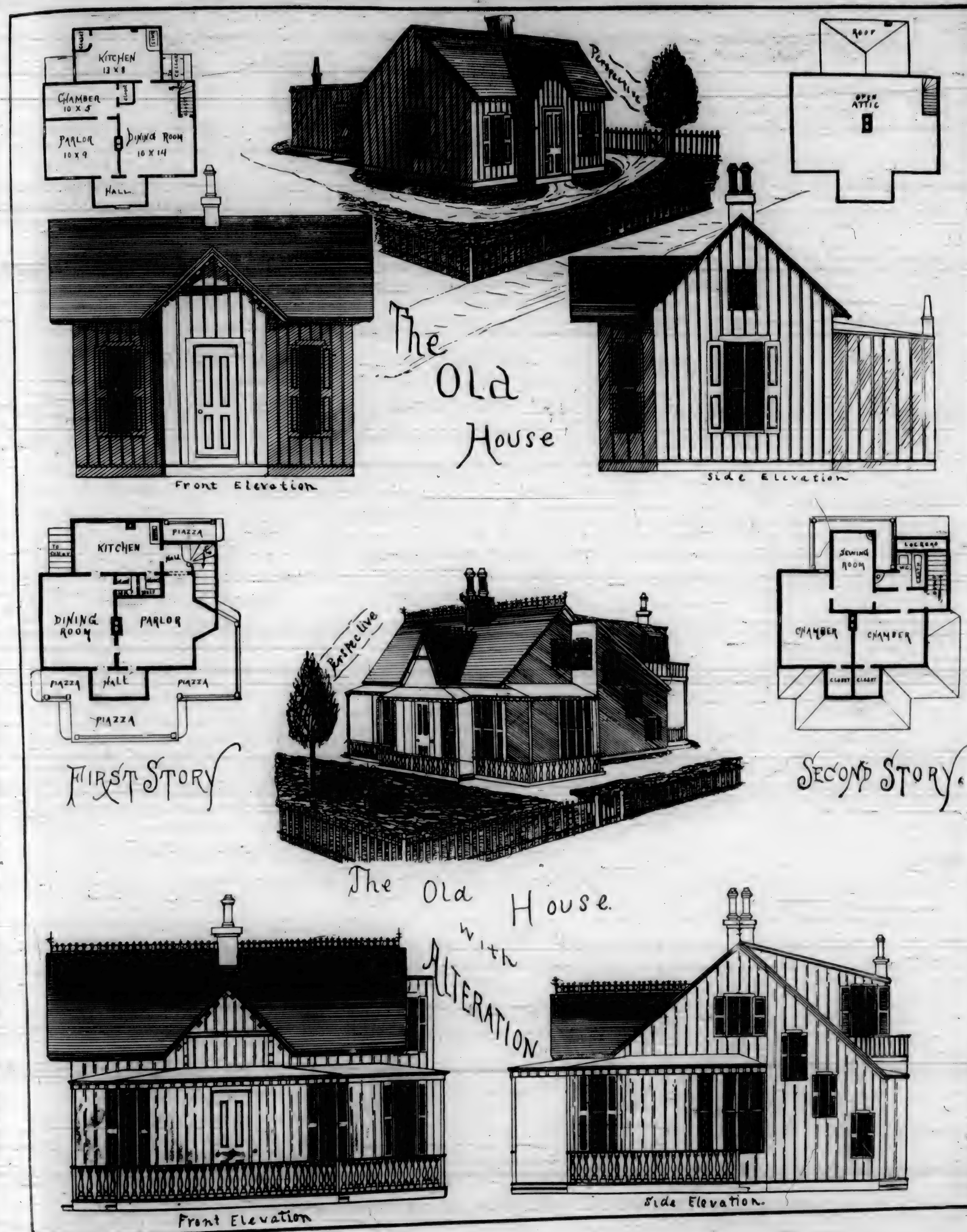
The new post at the foot of the stairs is pretty and effective, and long, narrow windows, having the same rake as the stairs, extend up to the floor above. The end of the extension at the side here is finished out with a slant making a bay-window in the parlor; this bay appears from the interior to contain three windows while in reality there are but two; the third side being a glass door opening to a closet under the stairs. When circumstances seem to warrant, this closet can be converted into a stair leading down into what is now a cellar but which might be made, with very little expense, a basement.

The old closet in the kitchen was removed, the old door changed to a window having beneath it an entrance to the cellar, and a door cut at the rear of the room. Around the entire front and side having the new extension, has been put an attractive piazza, covered and with a balustrade.

The open attic was partitioned off as shown on the plan and an extension built over the kitchen making a nice sewing room with a balcony from the window. Over the extension built for the rear hall is located the bathroom and water-closet, being almost directly over the sink of the kitchen, bringing thus all the water arrangement of the building together and saving considerable in the matter of plumbing bill.

The ceilings and walls were cleaned and covered with white muslin to secure a smooth surface, upon which was laid a neat wall paper with a pretty all-over design, a suitable dado and frieze; the rough board floor was all cleaned off and the floor laid carefully with the following: The boards, being thoroughly cleaned and planed, had the holes and crevices filled with paper putty made by soaking newspaper in a paste made of wheat flour, water, and ground alum, thoroughly mixed. With this same paste then the entire floor was coated uniformly and smoothly, and upon it was laid a thickness of manilla paper, over which another layer of paste was placed and a second thickness of manilla paper put on. This was then allowed to dry perfectly, and finally a thinner layer of paste was applied, over which a layer of fine pattern wall paper was laid and pressed hard. This paper was then sized with a sizing composed of one-half pound of white glue and two quarts of hot water, and when thoroughly dry finished with hard oil and varnished. This gave a floor that was firm and hard and bid fair to be lasting.

In this manner was the old structure made over into a new place. It is neat, tasteful, and inviting, and it has well repaid the investment in the satisfaction given in looking at it. This same result can no doubt be attained by many homeowners, and I hope the experience may be of some value to a portion of my readers, but I would impress upon them that it is necessary in order to bring about this most satisfactory conclusion, to have the aid of an intelligent architect and a conscientious builder.



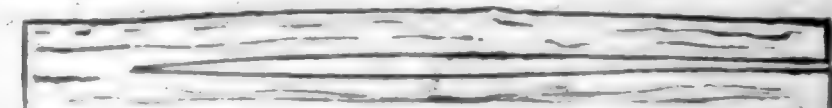
Something about Shrinkage.

THERE is but very little material that keeps the same size under all circumstances. Metals shrink and expand—some very much more than others—according to change of temperature.

I don't wish to treat of the shrinkage of metals in this article, but wholly upon the shrinkage of woods. Like metals different woods vary much in shrinkage. But all woods of the same variety will shrink in size, in proportion to the amount of water or sap contained in the wood. One variety of wood may contain four times the quantity of sap and still not shrink near as much as others. Lumber sawed from trees growing on a side, hill, or near the water, or on the south side of a grove, will shrink very irregularly. Some parts will shrink very much more than others, more particularly endways. The same is true with a tree that grows very much out of perpendicular. Suppose a tall tree was growing at an angle of 45°, the tree itself being perfectly straight, as soon as the tree was cut down, it would partially assume the shape of a rainbow.

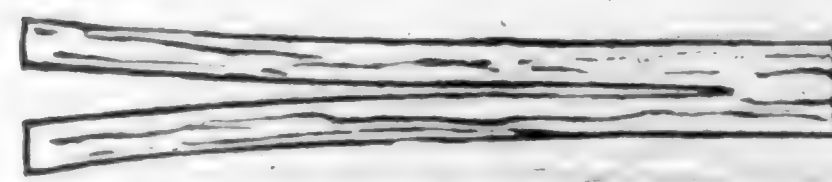
Nearly all lumber shrinks more or less endways. Some lumber will shrink on one side and expand on the other the moment it is sawed. This is very noticeable in sawing lumber from logs. For instance, the first board sawed from a log may be longer than the log, or *vice versa*, according to which side the sawing was commenced.

It is also very noticeable in ripping up lumber; sometimes, when the saw gets well into the board, it begins to *pinch* and has to be wedged, but after the saw gets nearly through the cut, begins to open as illustrated in cut No. 1.



CUT No. 1.

Or it may open instead of pinch as shown in cut No. 2.



CUT No. 2.

This is all done by shrinkage and expansion. In No. 1 the inside shrinks while the outside expands; and in No. 2 exactly the reverse. We will suppose that No. 1 and No. 2 each represents a board 12 or 14 ft. long, 1 inch thick and 12 inches wide. Now if a piece one inch wide is sawn out of the center of No. 1 the piece would be shorter than either side; and if the same had been done to No. 2 the piece would be longer. Straight edges can never be made of such lumber.

It is doubtful if there is any lumber known that shrinks as much endways as redwood. That wood shrinks on an average $\frac{1}{4}$ of an inch in 12 feet; but there are cases when it is four times that amount. When window-casings are nailed to green-rustic, oftentimes the

latter in shrinking will pull the frames open and let the sash out.

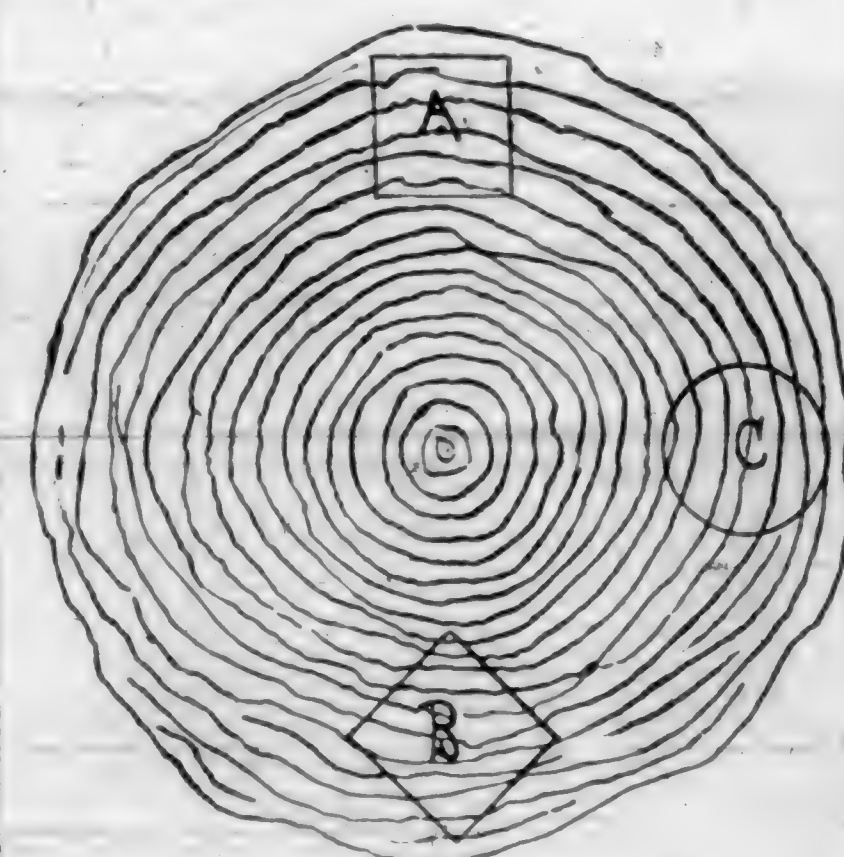
I wish to show now *why* lumber checks in seasoning. Nine-tenths of all the cracking or checking in seasoning lumber is caused entirely by LIGHT and not by HEAT. Lumber can be seasoned very rapidly by intense heat, without even a check, provided not one ray of light is allowed to reach the lumber during the process of seasoning. I also wish to show why a log will split while seasoning. For example, let me take a section of a green log of madrone, blue gum, or any other of that class of woods (which comprises at least one-half of the woods known); we will take a log 18 inches in diameter and saw off a section 6 inches long, and let it season (in the dark if you please).



CUT No. 3.

Here we have it at cut No. 3, thoroughly seasoned and find it about the same diameter and circumference that it was before seasoning; we find that the depreciation in size lies in the V-shaped cleft; and this cleft is caused by the wood shrinking very much in circumference, and in diameter hardly perceptible, consequently the fiber must be torn asunder.

To illustrate this more fully we will take another section of the same log and cut three pieces out as shown in No. 4, two pieces being 4 inches square, and 1 piece round and 4 inches in diameter.



CUT No. 4.

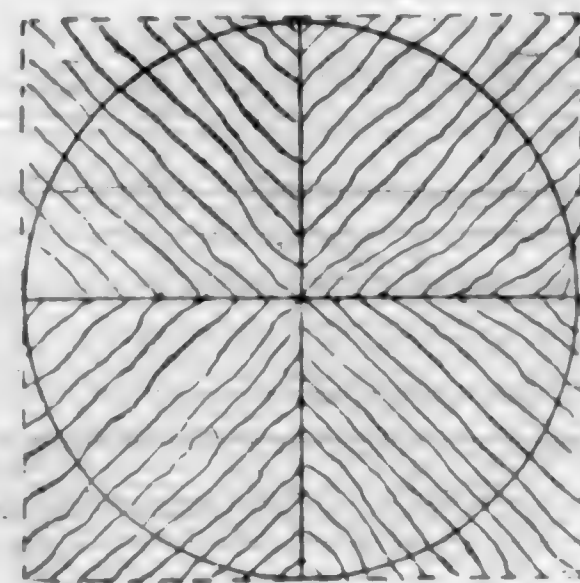
We find them as shown after seasoning to be in the shape as shown in cut No. 5.



CUT No. 5.

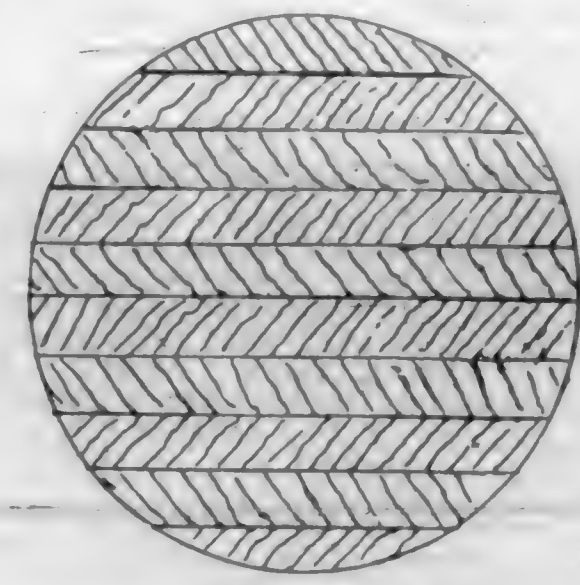
We find that A has shrunk in width at the top $\frac{1}{4}$ inch and at the bottom 5-16 inch, while from top to bottom it has only shrunk 1-32 inch. B we find has shrunk from right to left $\frac{3}{8}$ inch, while from top to bottom it has only shrunk 1-16 inch, which leaves it in the shape of a diamond. C we find to be egg-shaped; the longest way has shrunk 1-32 inch, while the shortest has shrunk $\frac{1}{4}$ inch. "Well," says one, "what are we to do about this shrinkage, we can't help it, can we?" That is very true you can't stop the wood from shrinking, but you can help using that shrinkage in the wrong direction.

Suppose you have a solid cylinder to make, say 12-inch diameter and 3 feet long, to be and keep perfectly round. This cannot be made of one piece (even if you had it), neither can it be made of several pieces, unless glued up in the right manner, and with the right kind of lumber, or with lumber having the grain the right way, which should be at an angle of 45°. It makes no difference how many pieces are used, provided there is no less than four.



CUT No. 6.

Cut 6 is a section glued up of 6-inch square timber.



CUT No. 7.

Cut 7 is formed of $1\frac{1}{4}$ -inch plank glued together with the grain running like either No. 6 or 7; once made it will always keep round; whereas if the timber is put together with the grain running as it did in the log, it will not make so good a job as if made of only one piece.

The reason that articles made of pieces glued together will not warp and twist as

much as if made of one piece, is owing to the MIXING of the grains, which generally gets mixed more or less, but without any regard to it on the part of the workman.

Wood-workers, bear this in mind,—wood shrinks in circumference of the grain, but comparatively nothing in diameter.

Santa Clara.

E. H. DAVIES.

How to Square a Circle.

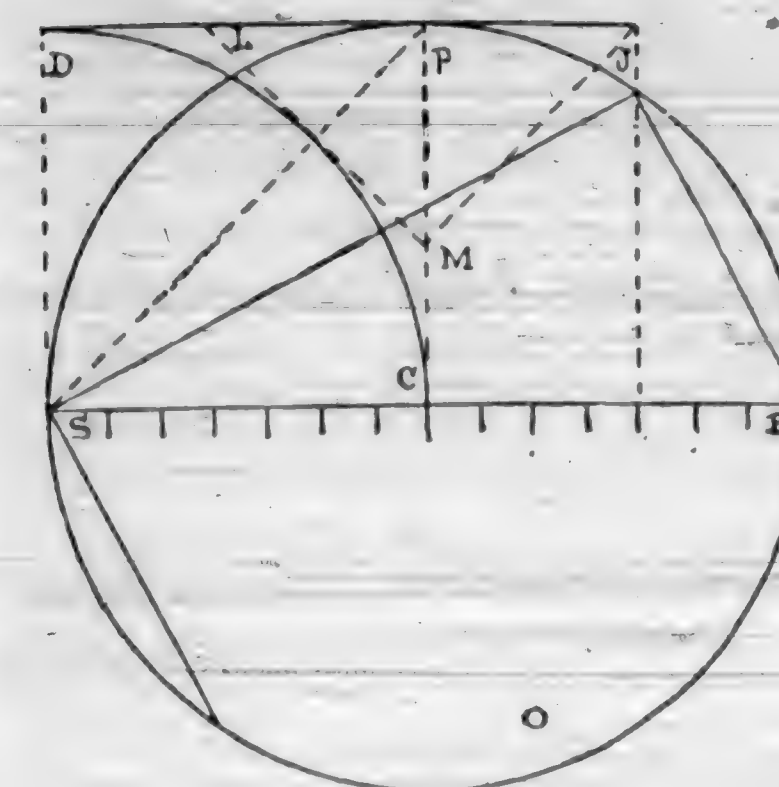


FIG. 1.

NEWARK, December 13, 1883.

EDITOR CALIFORNIA ARCHITECT AND BUILDING NEWS:

To square the circle is to find the circumference when the radius is given, and for effecting this it is necessary to know the ratio of the diameter to the circumference.

To find the circumference when the radius is given Geometrically:

FIG. 1.—Let CS equal the radius; from the points C and S as centers, describe the circle and arc CD; tangent to the arc and circle draw DP. Join SP; at right angles to SP draw LM tangent to the arc DC, and MJ equal ML parallel to SP. Then DJ equals one-fourth ($\frac{1}{4}$) of the circumference of the circle, and SJ equals the side of a square equal in area to the area of the circle.

To find the ratio of the diameter to the circumference:

Divide SB, the diameter, into fourteen equal parts, eleven of the parts equals DJ or one-fourth of the circumference, multiplied by four equals forty-four divided by two equals twenty-two; fourteen divided by two equals seven; equal to seven twenty-seconds, the ratio required.

L. D. GOULD.

A Liniment for Rheumatism.

THE *Quarterly Therapeutic Review* says, mythyl salicylate (oil of wintergreen) mixed with an equal quantity of olive oil or linimentum saponis applied externally to inflamed joints affected by acute rheumatism, affords instant relief, and, having a pleasant odor, its use is very agreeable.

Bound volumes now ready. Price, \$2.50 each.

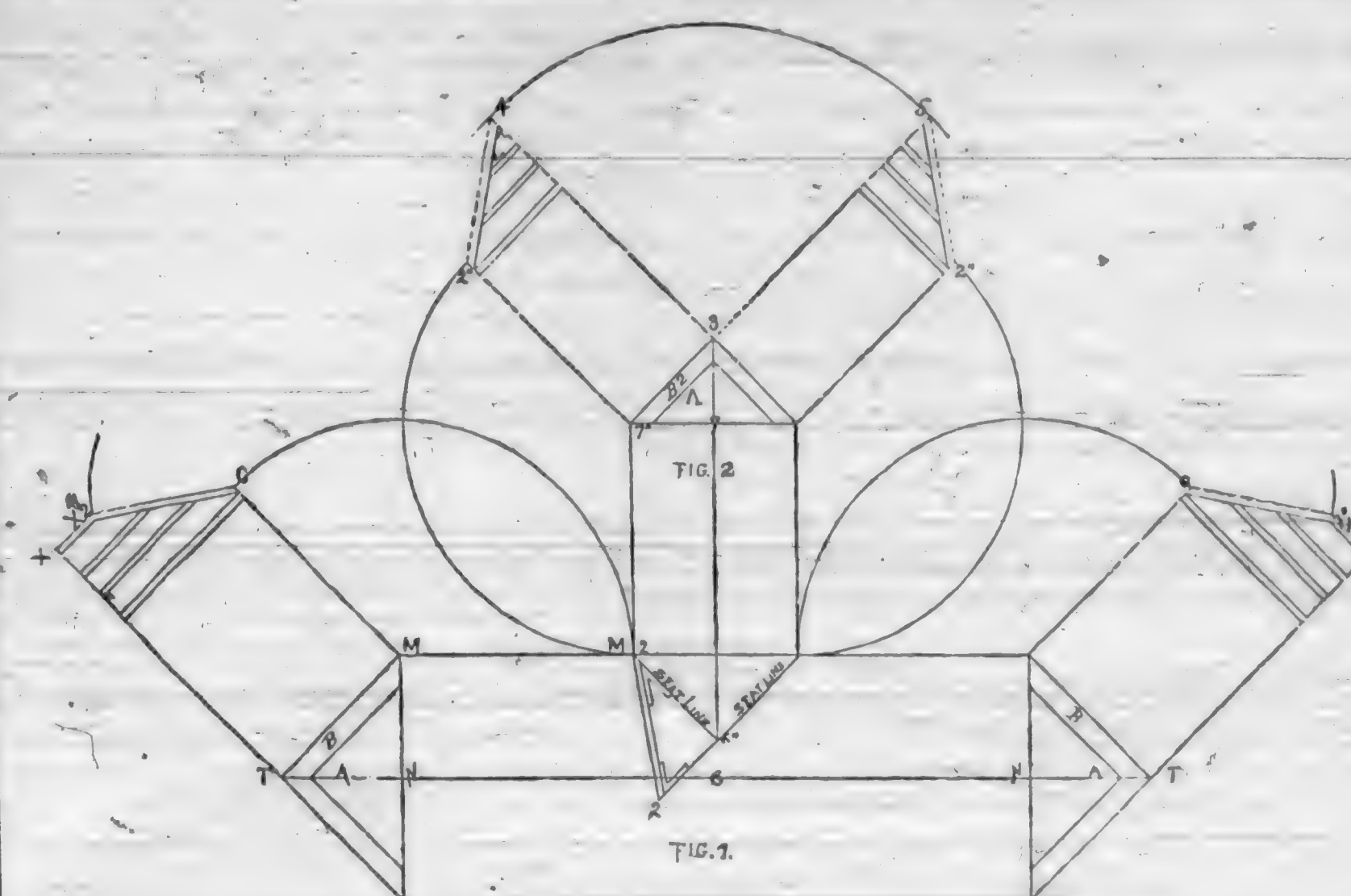


FIG. 2.

A Graphic Method Showing the Cuts and Timbers in Position, over Unequal Ground Plans and Unequal Pitches of Roofs.

A A A ARE elevations to their respective ground plans. B B B2 are the common rafters.

Square from the back of the common rafters B B B2 as shown and take the distance 6 N in the compass at Fig. 1, and stand on the point of gable at T and describe a circle at X X on both ends.

Now square down indefinitely from X T to X2 both ends. Set the compass to the distance M M. Stand at M; cut MC at both ends.

Set compass to the distance found at seat line, namely, 2 2 in the compass, and stand at C, cutting X2 that has already been indefinitely squared from X T at both ends, then C X2 and C X2 will be the valley rafter to stand correctly over seat line.

FIG. 2.—Make elevation and square out from back of common rafters. Set the compass to the distance 7.6". Stand at 3 on the point of the gable, cutting 4 and 5, take the distance 7" 2 and describe circle, cutting 2", then 2" 4 and 2" 5 are the correct lengths of valley rafters to stand in position over ground plan. Cut along the dotted lines. Hinge on the back of the common rafters at B B B2. Also hinge on the plate lines at N N and 7. Now fold up and you will have the covering of building with all the timbers and cuts in position. The bevels are shown on the ground plan.

The above and other cuts I have called the attention of the professional architects, engineers, and builders to, and have received their warmest indorsement, as being the most simple and ready way of illustrating constructive carpentry ever exhibited. M. J. MARION.

It is especially desired that all subscriptions begin with the month of January. Promptly forward amount of same, so that you will have a full volume at close of year.

How to Use a Hammer.

THE following floating paragraph appears to supply a long-felt want: Those who "never can drive a nail without splitting the board" may readily overcome this. Looking at a nail you will perceive that for some distance under the head the nail is broader than it is below; now a nail must always be driven so that this broad side is on a line with the grain, not at right angles to it; if at right angles, the wood is sure to split, as every blow with the hammer tears apart the fibers; whereas, if the nail be driven with broad side on a line parallel to fiber or grain of wood, the broader part wedges in lengthwise, and makes the nail hold strongly. To drive a nail well, however, needs practice. Never get a cheap iron hammer, such a one as you will see lying in a tray in front of a Cheap John hardware store, at 25 cents, having only an iron face; the striking surface soon becomes rounding, and one is as likely to crush a finger or mar the surface of the wood as to drive a nail home with such a hammer.—*Building*.

TO REMOVE INDIA-INK MARKS.—Blister the part with a cantharides plaster a little larger than the mark; then keep the place open with basilicon ointment for a week finally dress with simple ointment to heal it. As the new skin grows, the tattoo will disappear.

A HOME-MADE FOUNTAIN PEN.—Take two ordinary steel pens of the same pattern and insert them in the common holder. The inner pen will be the writing pen. Between this and the outer pen will be held a supply of ink, when they are once dipped into the inkstand, that will last to write several pages of manuscript. It is not necessary that the points of the two pens should be very near together, but if the flow of ink is not rapid enough the points may be brought nearer by a bit of thread or a minute rubber band.

San Francisco Chapter of Architects—Its Aims and Its Objects.

MANY of the leading members of the architectural profession on this coast have long been solicitous in regard to a lack of a proper school and other facilities, through which students connected with the different offices could receive instruction in the principles of the art to which their time is devoted. To meet this want, and to secure a united and harmonious action and friendly feeling among the members of the profession, are two of the principal reasons for the formation of the San Francisco Chapter, American Institute of Architects.

With the system now in vogue, the pupil meets with a serious drawback from the first start in his career. As a general thing he is placed in an office and allowed to shift for himself. Beginning with *tracings*, and gradually working up to *details*, his mind receives the ideas alone of the one for whom he may be working, and they become, as it were, inculcated in his brain, so that in after years he but reproduces in a modified form, the designs of him under whom his apprenticeship has been served. His thoughts have been led in one continuous and perhaps monotonous channel, and he becomes incapable of exemplifying the two greatest lessons to be learned, *beauty with originality*.

The art of any undertaking being first its aim, and next its manner of accomplishment, it may be asked, By what means does the Chapter propose to better the conditions of the student, so that his mind may be free to receive thoughts calculated to do him most good?

In the first place, classes have been formed in the various departments incident to a thorough knowledge of architectural science, and competent and willing teachers have been found, who have made their work a labor of love. In perspective, flat drawing, modelling, carving, geometry, and other branches, thorough instruction is weekly given to rapidly growing classes, and this without a cent of cost to the student. Nobly have some of the first members of the profession given one night each week to this object, that the members of the classes may receive the true fundamental principles of their calling. This is what the Chapter has already done.

In the second place, it is the intention in the near future to place before the students a prize that will be eagerly competed for, and when obtained be held as a memento symbolizing devotion to art. To set apart a fund that shall be devoted to him who, in a certain period of time, shows the most marked improvement, enabling him to visit the Old World and study the works of the great masters. The question may be asked, Of what use is it to those that remain, that one should be selected to go abroad, and be enabled to perfect himself in the architectural profession, while those that studied equally as hard, are compelled to follow on for another period in the same beaten tracks?

We answer, Do not follow the "beaten tracks." We propose that the one who is fortunate enough to gain the name of the "traveling student" shall, before he starts on his journey, enter into an agreement by which his progress from time to time shall be communicated to the Chapter. He must, as occasion offers, forward sketches of different phases of architectural beauty, with which he may come in contact; these, with his correspondence, to be placed before the regular meetings of the Chapter. Thus, those that stay behind will have a new avenue of thought opened to them, and each successive competitor be enabled to stand higher in his examination than his predecessor. The Chapter reserves the right to watch over the conduct of the successful candidate, and while traveling, if he should stray from the right path, have the power to withdraw its patronage.

Mr. C. A. Adams, in his address before the Architectural Association of London, thus speaks of the benefits derived from the younger members of the profession joining a Chapter: "He joins the Architectural Association, and there finds an organized system at work, inducements for study, and if he enters his name on the lists, friendly rivalry and competition. If he has anything in him, he is sure to get on, and win his way without fear or favor, and in the struggle with his fellows, finds his level, and measures his strength with his antagonists in friendly encounter."

Are we aiming too high in our endeavors to excite the ambition of students connected with the Chapter? We think not. Already two prominent gentlemen have signified their intention of placing at the disposal of the Chapter, the sum of FIVE HUNDRED DOLLARS EACH, to enable us to carry out the idea mentioned, and we have no doubt others will be found equally as willing to assist. It remains for the Chapter, as well as the individual members thereof, to so exert their endeavors to promote a general good feeling among those connected with the profession, that the lovers of true art will gladly welcome the opportunity to subscribe to a fund for the general advancement of the young students."

(To be continued.)

How to make a rattail file that will cut faster and last much longer than any cut file ever made. Draw out a piece of steel to the size you want the file to be. Make it square and tapering to a point at one end; then twist it like any auger, but closer; heat it to a dull red, and chill it in water, dipping it straight down. Draw but little temper. You will be surprised to find how fast it will cut and how long it will last.—*Blacksmith and Wheelwright*.

THERE is a tooth pick factory near Harbor Springs, Mich., which annually consumes 20,000 cords of wood.

Subscribers will greatly oblige us by forwarding promptly the amount of their subscription.

The Uses of Turpentine and Benzine.

TURPENTINE spirits is derived from the turpentine extract of several species of pines. It is used in medicine. There are many liniments which owe all their virtue to this spirit. Benzine is a spirit distillation of petroleum and is used in the arts and manufactures. Turpentine as used by painters is called a thinner, to dilute oil paints for inside work, or it may be used alone as a vehicle for flat or dead colors. All paint mixed with turps dries quickly, and when oil is added the drying is slower, leaving a gloss proportioned to the quantity of oil used. The use of boiled oil darkens light paints by giving them a yellow shade on all interior work; for this class of paints, raw oil is used with turpentine, white japan, or sugar of lead. The effect of benzine turps in painting is too rapid drying, it being too volatile as a vehicle to hold the mixture in easy solution while spreading the pigment. Where benzine is used in painting it should be compounded lightly with oil paints, as this retards its action and allows the painter sufficient time to flow the color before it can set. Its use in oil paints is much less injurious; it causes the drying to be more rapid, and does not affect the gloss as much as turpentine spirits. In all outside exposures, when painting, this mineral turps should only be used as a dryer and lubricant of the oil paint in use. In such work, the presence of this dryer is of so short a duration that the paint soon sets and dries with an even gloss, whereas, when turpentine is used, being of a much stronger nature, it cuts more literally the filament of oil, and the consequent result is the impairment of the gloss finish. Then again when painting in the shade, oil paints are more difficult to spread than when the warm rays of sunlight are present to suffuse the work with its gentle heat. It is here a volatile lubricant is needed to do for the oil what the solar rays does on work, and benzine is the only turps that as yet the laboratory has evoked, that will do this without any disadvantage to work done in the shade. In cold, chilly weather, when the paint inclines to thicken from frost, a liberal use of benzine turps will enable the painter to spread the color with more freedom and yet not impair the general effect of the work. In varnishes of the lower grades, when manufactured with benzine, it plays a very important part, for the B varnish is made more serviceable to the artisan. In all lacquers its working is so rapid that the fluid color is laid instantly on metal goods without a blemish. Turpentine varnishes, if diluted much, lose the beauty of their gloss. Oil in this kind of varnish, when added by the workmen, leaves a sticky surface and is detrimental and is not safe to use. In housework the benzine furniture grade can be diluted with pure linseed oil in a fair proportion, and it will give an elastic coating of a high gloss of great endurance, equal to some foreign elastic brands.

J. W. C.

Augustus Laver.

To this gentleman does the San Francisco Chapter of Architects, in a great measure, owe its successful standing as one of the most prosperous in the United States. In the early part of 1881, he was elected President of the Pacific Coast Association of Architects; not content with a local organization from the outset, Mr. Laver labored earnestly to make the Association a branch of the American Institute. Being the only member of that body residing in this State, it was impossible to form a Chapter without new members were added to the parent institution, sufficient to form a branch in this city.

It was by Mr. Laver's efforts and recommendation that six of our leading architects were enabled to join the American Institute, and thus form the nucleus for the present chapter.

Mr. Laver, wherever he has been, has always been identified with the leading societies in the locality in which he has resided. At present he is a Fellow of the American Institute of Architects, the Institute of Engineers of New York, the Institute of Engineers and Architects of Montreal, and for eighteen years a Fellow of the Royal Institute of British Architects, of which he has been made an Honorable Fellow, and corresponding member. A thorough, constant and enthusiastic student of all the details of his profession, his advancing years promise to bring only greater eminence and success in the art to which he has devoted the best energy and interests of his life.

Mr. Laver was born in Folkestone, England, on Sept. 20, 1834. Previous to his coming to the United States, he practiced his profession in London, principally in the service of the British Government. In 1857 he came to the United States and settled in Ottawa, Canada. There his professional ability soon gained him distinction, and shortly after his arrival (the Queen's decision making Ottawa the seat of government) he won the first place in an open competition, and was employed, with his then partners—Thomas Ful-

ler and Mr. Stent—by the government to design and erect permanent legislative buildings. The corner stone of this structure was laid by the Prince of Wales on September 1, 1859. Many other buildings lay claim to his ability, principal among which was the remodeling of the Roman Catholic Cathedral of Montreal. After leaving the Canadian seat of government he again became professionally associated with Mr. Thomas Fuller, of New York. While associated with that gentleman, they conceived the plan, and carried into execution, the construction of the magnificent building known as the State Capitol at Albany. Over twenty millions of dollars were expended on this superb structure.



AUGUSTUS LAVER.

About this time the growing opportunities of the Pacific Coast attracted Mr. Laver's attention, and in the fall of 1870 he settled in San Francisco. The work which has brought him most prominently before the citizens of this coast, and the best evidence of his architectural ability, is the New City Hall of San Francisco. Mr. Laver entered the open architectural competition established at the projection of that work, gained the first position among the many competitors, and the buildings erected from his designs are rapidly approaching completion.

Mr. Laver's skill as a designer of country residences has shown itself in the palatial man-

sion erected by J. C. Flood, at Menlo Park. The O'Brien memorial monument also claims Mr. Laver as its author. He is also now engaged in preparing the plans for the large mansion shortly to be erected on Nob Hill for Mr. Flood.

Mr. Laver resides in one of the pleasantest parts of the city. His wife is a relative of the eminent English statesman, Charles James Fox.

To the student seeking information, Mr. Laver finds a share of his always engaged time, to impart such knowledge as the applicant desires to gain. His professional standing and large connection with important pub-

lic works have caused him to be intimately acquainted with scientific and literary men, both at home and abroad, and there are but few better able to give information on all subjects connected with the architectural professions.

During the past year, Mr. Laver has unfortunately been compelled to keep to his house in the evenings, the cool weather generally experienced having a tendency to aggravate a trouble connected with the bronchial tubes. Thus the Chapter has missed the benefit of his experience; but at all times he has been ready to meet the various committees of which at times he has been appointed a member, and none are more willing to give counsel upon all subjects that have a tendency to elevate the standing of the youthful members of the Chapter, or

to give information that will lead to a more thorough organization among the older members.

Although many of Mr. Laver's buildings and mansions—since his residence in this city—have been of the more costly style and imposing appearance, it must not be inferred that these alone receive his attention. Many of the picturesque cottages that adorn our valleys and sanitarium resorts, are the result of his study; and in the quiet nooks of Marin and other counties, are found examples of suburban architecture, the designs of which were the result of the labors of the gentleman under consideration.

John Wright.

PRESIDENT OF THE S. F. CHAPTER.

No more positive proof of rapidly increasing refinement need be asked than that furnished by the increasing number of architectural constructions which are fast making this city the equal of any in the United States. For a long time men were too busy to think of these graceful adornments, but that period has gone by, and the architect's genius has full scope in designing stately mansions and edifices. The firm of which this gentleman is the senior member has done much to elevate the tastes of our people to a higher order of architecture, and many of our imposing public buildings are examples of the skill with which all the details of a structure may be handled.

Aside from his reputation as one of the master minds in the handling of architectural studies, John Wright has made himself respected by the draughtsmen all over the coast. His main idea seems to be the elevation of the student to the higher grades of the profession. To him is mainly due the formation of the classes now being so successfully conducted by the Chapter. He is nobly giving a portion of his really valuable time to laying the foundation of a plan by which the Chapter can successfully institute a TRAVELING STUDENTSHIP, for the benefit of one who shall prove himself to be the most studious, competent, and original scholar connected with the classes under the auspices of the Chapter.

Mr. Wright is a native of Scotland, and was born May 15, 1830, in the town of Killearn, Scotland. In him was born a natural love of the beautiful, and this feeling has been cultivated more and more as he has reached maturer years, until we see it exemplified in the structures over which he has exercised control.

In 1866 the present firm, of which Mr. Wright is a member was established in this city, and for many years it has remained in its present location. From the number of buildings erected by the firm in various parts of the city and State, its name is very well known by those owning property.

Mr. Wright has been intimately identified with the San Francisco Chapter of Architects. After its establishment, he was its first President, being elected to that position by a unanimous vote. Such had been his zeal for its welfare during his term of office, that, at its annual meeting, held in September, 1882, he was again elected President, which position he now holds.

The Toland Medical College, the Eagle Block, Dunham, Carrigan's fine building, the State Insane Asylum at Napa, Deaf, Dumb, and Blind Asylum at Berkeley, First Congregational, Calvary, St. John and other churches in this city, and many of our prominent dwellings lay claim to the architectural ability of which Mr. Wright is a member.

Mr. Wright is a man of powerful physique, and his resemblance to one of the nation's honored martyrs is very striking. He also possesses the largest and most complete architectural library of any one on the coast, and none are more truly happy than the subject of this sketch when placing the same at the disposal



JOHN WRIGHT.

of those seeking information in the higher branches of the beautiful study of architecture.

Mr. G. H. Sanders is associated with Mr. Wright in business matters; that they may long live to continue their successful career is the wish of all with whom they have come in contact, socially as well as professionally. Mr. Wright is a member of the American Institute, and is a careful student of the various movements made by that body. Particularly noticing the measures instituted by the various chapters belonging to the parent institution, for the benefit of students and draughtsmen, he seeks to introduce those that are the most applicable to the younger members of the profession on this coast.

Practical Notes.—A Place to Leave Orders—Learning to Keep Tools in Order.

THE other day I dropped into a carpenter's shop to have a little job done, but found only the apprentice boy present. Making inquiries as to when the "boss" would be in, the boy without looking up from his work said, "Don't know." So I started off to find some other place where I could have my wants attended to.

Owners and managers of any kind of business where they are liable to have frequent calls from the public, ought to leave word when they expect to return to their usual place of business, and if no one can be left to answer such questions, a slate and pencil don't cost much and when put in a convenient place so that orders can be left, confer a favor on the customer and bring dollars and cents to the workman.

As I stood looking at the boy, he was trying to "jack off" the rough side of a two-inch plank, and despite his earnest efforts he did not make much headway. The foreman had given him an old wornout jack plane that had been thrown aside as not fit to use.

I don't agree with a great majority of master-workmen that any tool is good enough for an apprentice. In my judgment an apprentice should be provided with a good serviceable tool. Undoubtedly, not knowing just how to use it, he may soon get it out of order, but one of the first lessons he ought to receive should be how to put his tools in order.

I beg to ask any apprentice if he was ever shown how to grind a plane-iron by the foreman, and then how to put an edge on it by rubbing it on the oil-stone. I venture to say that not one apprentice in a

thousand is so instructed. The fact is a boy is supposed to pick up how to do such things. If employers would pay a little attention to the instruction of their apprentices at the outset, it would pay them in the end because they would learn to do better work in much less time than they do now.

No workman can do a good job with dull tools, and one reason why there are so many "barn-joiners" is because no one has taken the trouble to teach them how to keep their tools in order.—*Rivet, in the Mechanical News.*

A GAS explosion took place in a hotel in Lincoln, Eng., recently, attended with great damage to the building. The explosion followed immediately upon a person going with a light into the cellar under the bar.

William Curlett.

VICE-PRESIDENT S. F. CHAPTER.

THE charm of a city depends in a great measure upon the number of mansions and edifices upon which the skilled architect has been allowed the full scope of his designing powers, thus enabling him to establish his claims as a true artist.

A sudden increase of wealth and culture among the inhabitants of any city, always creates a demand for buildings to suit their tastes, and to meet this demand many gentlemen of professional ability are attracted from older cities; and it is when these become stationary, and their names are known throughout the State, that the people recognize the fact that all such have been true lovers of art and have come to their place that they may be identified with the true and beautiful in architectural science.

Mr. Curlett, the subject of this sketch, was among the first to unite in the movement which resulted in the formation of the Pacific Coast Association of Architects, with Mr. Augustus Laver as President, which association has since been merged into, and its members now in part constituting S. F. Chapter of Architects. In all the movements of Association and Chapter, Mr. C. has manifested a becoming degree of zeal and enthusiasm, and by words fitly spoken, and generous, cordial intercourse, placed himself among the most esteemed of the Chapter members; as an evidence of which, he was elected First Vice-President in 1882, and reelected to the same position in 1883. He is one of the number who advocate the

more enlarged and far reaching purposes of the Chapter, in the establishment of a "studentship,"—a prize worthy the highest ambitions of the young men in the profession, and which from present indications is likely to be attended with permanent success; also the several other measures in contemplation by which the grand influence and benefits of the Chapter work will be made clearly manifest. Mr. Curlett was born at Warrenpoint, Ireland, on the 3d day of March 1845, and being in the full enjoyment of a vigorous physical manhood, good intelligence, pleasing manners and fine social qualities, he has before him the promise and prospect of more than ordinary success in his profession. Being an earnest student and devotee of the sublime art

—architecture—his conceptions as illustrated in buildings lately finished by him and those nearing completion, sustain his claims to a very enviable position among the architects practicing in San Francisco.

Mr. Curlett's career has been a very successful one. In 1876 he became associated with Mr. A. Laver in a professional capacity; among the most important works designed by that firm during their association was the country residence of J. C. Flood at Menlo Park. Their partnership was dissolved in 1880.

Upon the expiration of the time for which this partnership was formed, Mr. Curlett was on January 12, 1880 elected to the position of architect to the School Department of the



WILLIAM CURLETT.

City of San Francisco, which position he held for a double term. During that period, he designed many notable buildings for the department. The State Normal School at Los Angeles is indebted to the talent of Mr. Curlett, he having designed and superintended its construction.

Mr. Curlett is now located in the Phelan Building, a section of the city that will, in our judgment, soon be adorned with buildings of large dimensions and imposing appearance. It is not our purpose to make any unwarrantable statement in reference to any of the gentlemen, whose likenesses appear in the present, or may appear in subsequent issues of this journal. It would not be wise so to do, as such a course would simply compromise

and lower the status we have in view, and place us at a disadvantage. Neither would such a course be acceptable to the gentlemen interested, as flattery and statements in excess of real facts, would be simply obnoxious to practical minded, intelligent men.

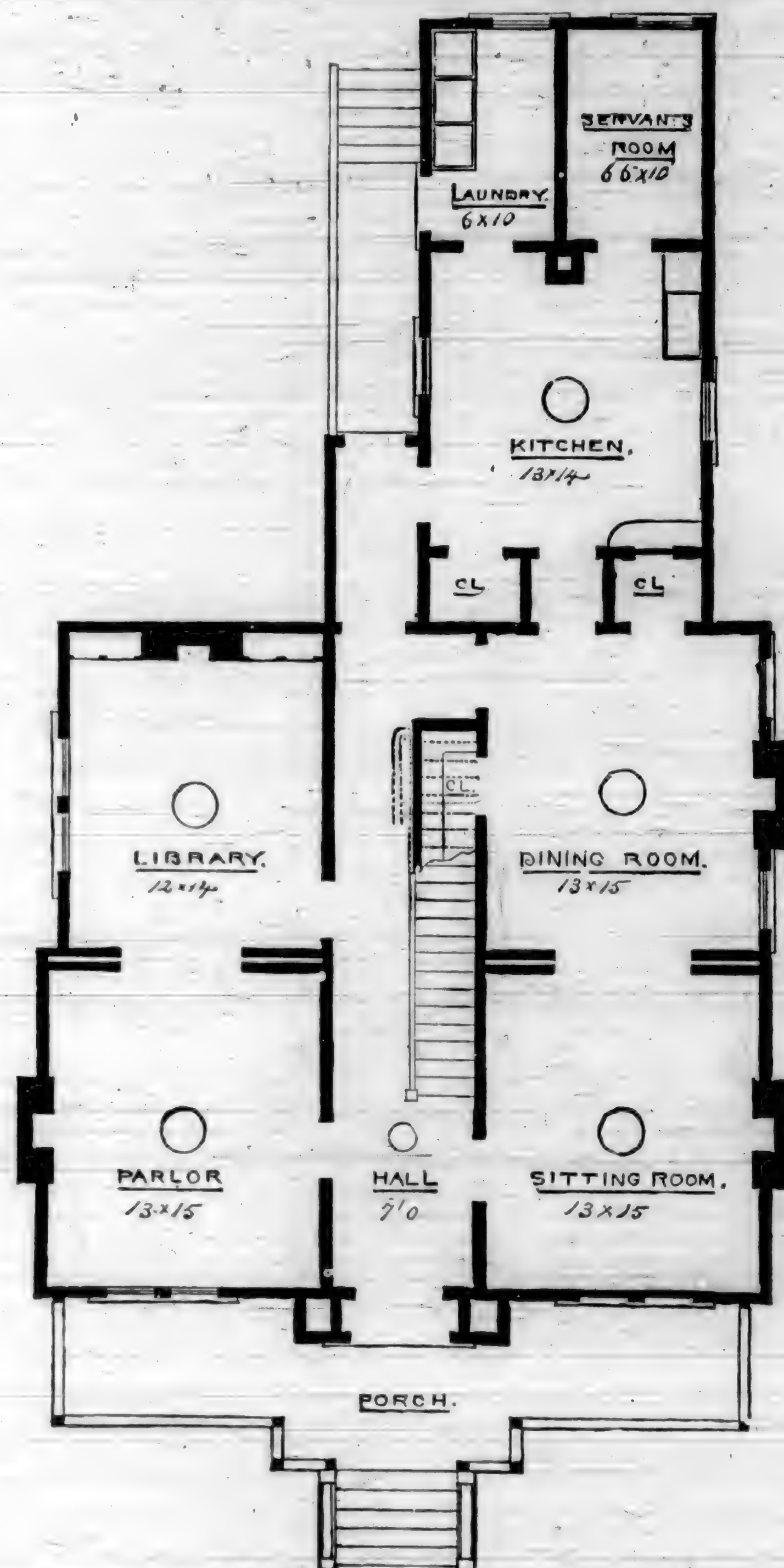
We have placed the officers of the Chapter first, as it is to their efforts, and the success attending them, that our draughtsmen and students must needs look for encouragement.

Mr. Curlett is a member of the American Institute of Architects and indorses fully all their efforts for the advancement of young members of the profession.

Letter Gilding.

LETTERS written on vellum or paper are gilded in three ways. In the first a little size is mixed with the ink, and the letters are written as usual. When they are dry, a slight degree of stickiness is produced by breathing on them, upon which the gold-leaf is immediately applied, and by a little pressure may be made to adhere with sufficient firmness. In the second method, some white lead or chalk is ground up with strong size, and the letters are made with this by means of a brush; when the mixture is almost dry, the gold-leaf may be laid on and afterward burnished. The edges of the leaves of books are gilded, while in the binder's press, by first applying a composition formed of four parts of Armenian bole and one of sugar-candy, ground together to a proper consistency, and laying it on by a brush with the white of an egg. This coating, when nearly dry, is smoothed by the burnisher; it is then

moistened, with clear water, and the gold-leaf applied and afterward burnished. In order to impress the gilt figures on the leather covers of books, the leather is first dusted over with very fine powdered resin or mastic, then the iron tool by which the figure is made is moderately heated and pressed down upon a piece of gold-leaf, which slightly adheres to it, being then immediately applied to the surface of the leather with a certain force; the tool at the same time makes an impression, and melts the mastic which lies between the heated iron and the leather. In consequence of this, the gold with which the face of the tool is covered is made to adhere to the leather, so that on removing the tool a gilded impression of it remains behind.—*Manufacturer and Builder.*



FIRST FLOOR PLAN OF \$5,500 COUNTRY DWELLING. SEE "OUR ILLUSTRATIONS."

To Prevent Vermilion Darkening.

PURE vermilion will, in the course of a few months, if exposed to the sun and atmosphere, turn into a dirty brown color. Adulterated or mock vermilion will do the same, but far more rapidly. A remedy for this has long been sought. It is said that if flour sulphur is added to the paint whilst mixing, in the proportion of one-eighth, the vermilion will retain its brilliant color for a considerably longer period than without it.

LIQUID GLUE.—The *Muster Zeitung* recommends, in preference to the treatment of glue with nitric acid, the following: So-called gelatine is dissolved in the water bath in its own weight of strong vinegar, a quarter part of alcohol, and a very little alum. This glue remains liquid when cold, and is much used for cementing mother of pearl, horn, etc., upon wood or metal.

Bound volumes now ready. Price, \$2.50 each.

**Our Illustrations.**

IN this issue we present an engraving of four of the prominent architects identified with the San Francisco Chapter. It is our intention to give a few each month, until we have secured a written history and likeness of those that labor so earnestly for the advancement of the study of architecture.

The design presented on page 13 is suitable for a country or suburban home. We present two arrangements—one with eleven rooms and bath, the other nine rooms and bath. In either case, the arrangement is very desirable for a country home. The difference in cost between the two plans will be about \$500. As shown, this design, carried out in its entirety, will cost about \$5,500.

The design on page 5 is from our regular correspondent; the explanation accompanying the same is very full, and will prove interesting reading.

On page 17 we present a sketch from our artist, John Wolf, of New York. We trust in the future to be able to give many sketches from this gentleman.

On page 18 will be found an original design for a cresting.

Drying Lumber.

SMALL quantities of timber may be quickly and thoroughly seasoned by steaming. The philosophy of this process—which, if properly performed, does not injure the strength or durability of the timber—is very simple. A very large percentage of the sap in all kinds of wood is water. This water, heated to boiling, expands sixteen hundred and fifty times. It follows that if wood be heated to 212°, the boiling point of water, the capillary cells can contain only one sixteen hundred and fiftieth as much water as at ordinary temperature, the expanded water escaping as steam. The proportion of moisture left in the wood is, after steaming, less than that demanded by its ordinary hygroscopic condition. At least it is found to be so for certain species of hickory and white ash, which increased in weight after being removed from the steamer and the surfaces had become dry.

The steaming should be done gradually—that is, time should be given for the wood to gradually rise in temperature, and so that the sap may escape gradually from the cells without rupturing them by its expansive force when converting them into steam. The steam should be generated in a suitable boiler and allowed to escape at two or three pounds pressure, which should be gradually reached in proportion to the size of the pieces which it is desired to season.—*The Lumber World*.

Every material man in the United States should at once subscribe to this journal. By so doing, you will obtain a list of parties making building improvements, and thus be enabled to send your circulars to those to whom it will be of the most benefit.

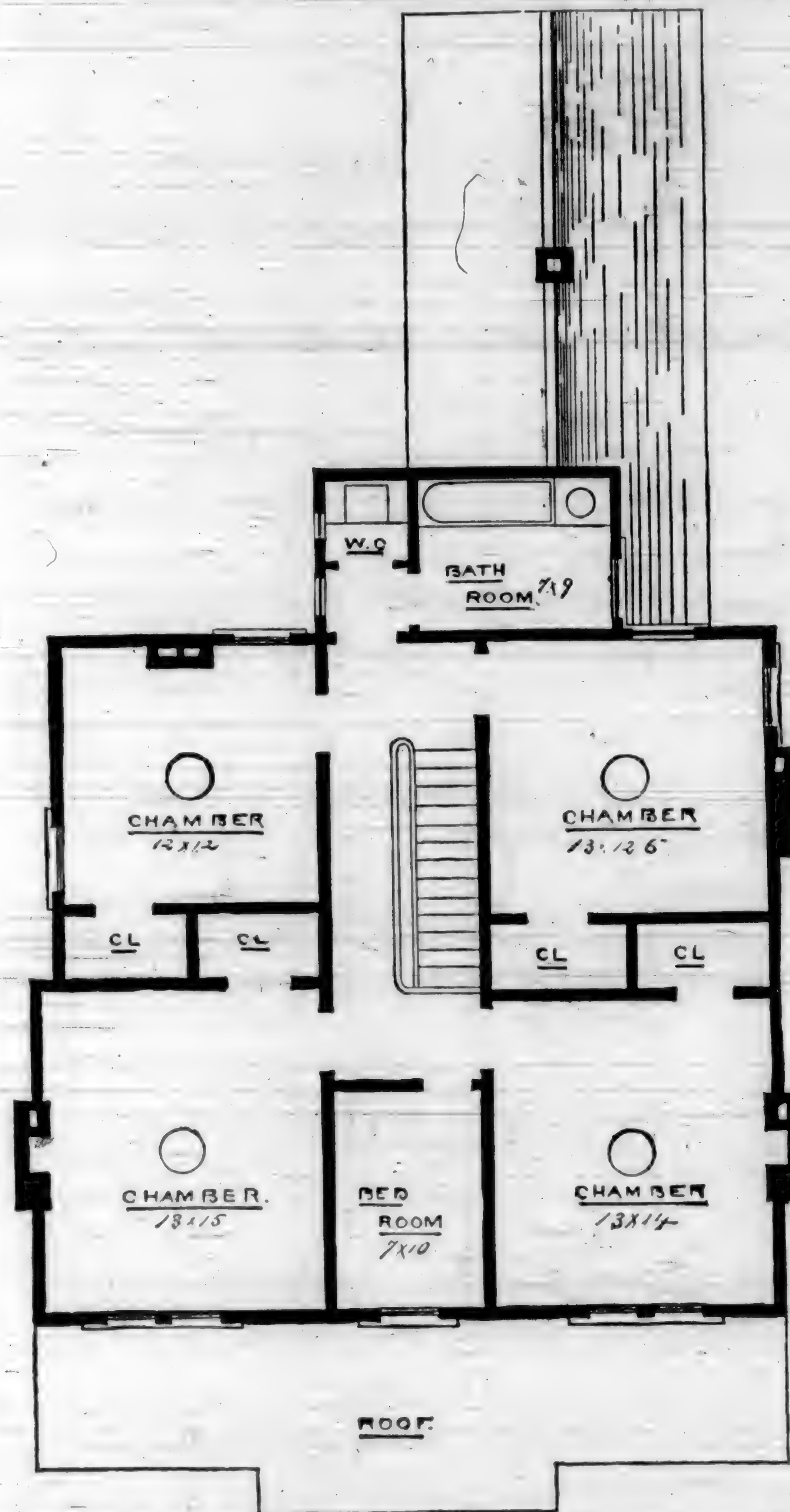


A COUNTRY RESIDENCE COSTING ABOUT \$5,500. SEE "OUR ILLUSTRATIONS," PAGE 12.

Carpentry in Olden Times.

IN early English times very little that resembles modern joinery existed, every part being rude and united in an artless manner. The first accurate and neat workmanship was in the stalls, pulpits, and screens of cathedrals and churches, and the furniture of the abbeys, but this was of the most simple kind. As time went on there was more neatness, soundness, and accuracy in work. When plain surfaces of considerable width and length were introduced, as in wainscoting, the surfaces were commonly formed of inch, or inch and a quarter boards, joined with glue, and a cross or feather tongue ploughed into each joint. When the boards were glued together and had become dry, tapering pieces of wood, called keys, were grooved in across the back

with a dovetailed groove, the keys preserving the surface straight and also allowing it to shrink and expand with the changes of the weather. In fixing landings of stairs, tops of tables, etc., sometimes a wide board, or a piece consisting of several boards, was fixed by means of buttons screwed to the back, which turned into grooves in the framing, bearers, or joists, to which it was fixed. If any shrinking took place, the buttons slid in the grooves. In forming architraves, the simple method of ploughing and tonguing work together was followed, providing effectually against the greatest defect of timber work, its shrinkage. By this method, the bold mouldings of Gothic architecture were executed with a comparatively small amount of material. In laying floors, the tongue was ploughed into each joint. Ordinarily the boards were only tacked down the first year, and nailed down for good next year, allowing of correcting any tendency to rise, or the opening of joints. In most old structures the floor is laid with remarkable evenness and accuracy, the boards being soundly fixed to the joists. In oak floors the ends were forked together. In hanging doors, centres were often used instead of hinges. Of the various kinds of hinges, some were concealed, but most projected, the door folding back over projecting mouldings. In stairs the rise or tread of the steps is found to be very moderate. Winding stairs were seldom introduced, being chiefly rectangular, with ornamental railing and newels. In some staircases, two rows of steps of different level are met with double tread.—*Building*.



SECOND FLOOR PLAN COUNTRY DWELLING. SEE "OUR ILLUSTRATIONS," PAGE 12.

OIL ON WOODWORK.—Carefully conducted experiments have demonstrated the fact that seasoned wood, well saturated with oil when put together, will not shrink in the driest weather. Wheels have been known to run many years, even to wearing out the tires. Very many dollars might be saved annually if this practice were adopted. Boiled linseed oil is the best for general use, although it is now known that crude petroleum, on even old wheels, is of great benefit.

Bound volumes now ready. Price, \$2.50 each.

MAKING WALNUT STAIN.—One quart water 1½ oz. washing soda, 2½ oz. Vandyke brown, ¼ oz. bichromate of potash. Boil for ten minutes, and apply with a brush either hot or cold. Permanganate of potash dissolved in water gives also a good brown stain.—*Exchange.*

Cockroaches will not molest the binding of a book which has been varnished with a mixture of two parts copal varnish to one of turpentine.

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Stained-Glass Manufacture.

THE art of glass-staining is not a new industry. There are two descriptions of glass made use of, one called "pot-metal," which is produced by melting the glass and the coloring matter together, the pigment thus permeating the glass entirely; the other is called "flushed-glass," to produce which two melting pots are used, one of pot-metal, the other of colorless-glass. When in a proper state of fusion, a thick layer of the latter is laid out, and is covered by a thin film of the former, so that the surface only is colored. This description of glass is used for embossing. For the purpose of painting, both colored and white glass is used, and the pigments, generally of metallic oxides, finely powdered and mixed with oil of spike or other volatile medium, are laid on with a brush.

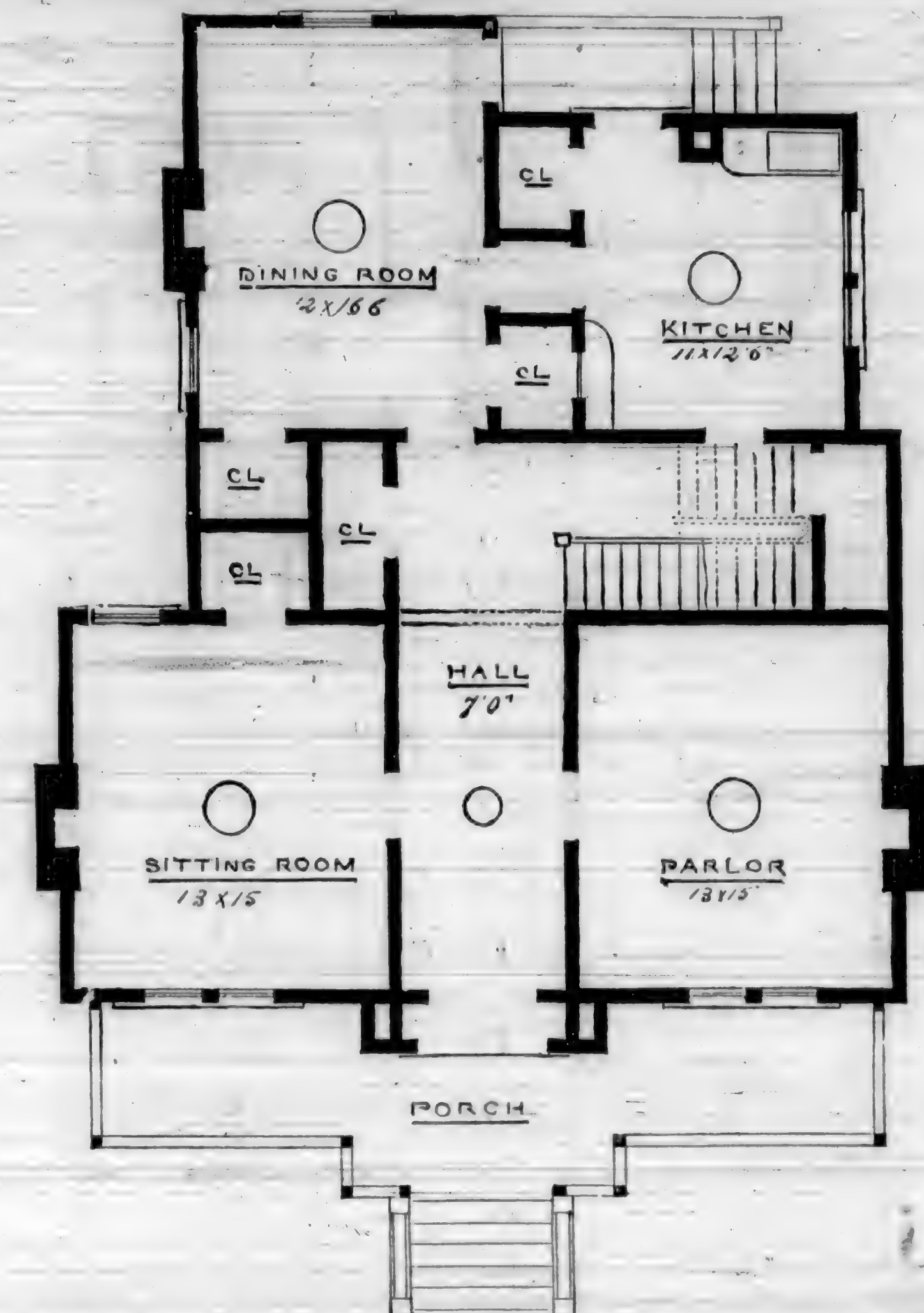
The art of glass-staining is practiced in four different ways, viz., the mosaic, the enamel, the mosaic-enamel, and the embossed. The mosaic is the ancient method, in which each color in the picture is represented by a separate piece of glass, and is fixed in its place by means of leaden frames, a mode which did not necessarily preclude any gradations of shading. The enamel is the application of pigments, as in painting a picture, by which process the nicest delicacy of shading can be produced, but what it gains in this respect it loses in transparency and brilliancy of tint, and hence is less esteemed than the pot-metal mosaic work; nevertheless pictures of a much higher artistic character can be produced; and, although less esteemed, it is more generally employed than the mosaic, indeed, it is now usual to combine the two methods in the mosaic-enamel, wherein the brilliant tints of the one, and the picturesque, although more opaque, effects of the other, produce together a more complete and beautiful result than either separate.

The colors employed in glass-staining are produced from various sources. Gold, in the state called purple cassius, or as a simple solution without tin, gives ruby, crimson, and purple. Iron, as a protoxide, a dull green; combined with alumina, flesh-tints; with chloride of silver, orange, and as a protoxide, a brownish red. Copper, as a sub-oxide, a rich ruby; and as a black oxide, a brilliant green. Uranium, a chrysoprase green and canary, slightly opalescent; cobalt, blues in every variety; carbon in the form of charcoal or soot, a common yellow; arsenia or arsenic acid, opaque white; magnesia, as an oxide, amethystine purple, and as a peroxide with cobalt, garnet red; silver, with alumina, a brilliant yellow; with others, as dictated by the experience of the workmen. The beautiful yellow of ancient glass could not, until recently, be produced by modern glass-workers.—*Building.*

This is the first month of the New Year, and is just the time to subscribe to a journal of the character of the "California Architect." Two dollars per year.

Egyptian Mechanical Methods.

PETRIE, who is the author of a treatise on ancient metrology, has lately turned his attention to ancient Egyptian processes. Though much labor has been bestowed on the literary remains of Egypt and the description of monuments, little attention has been given to finding out the tools and methods by which their results were reached. The first conclusion to which Mr. Petrie comes is that the stone cutting was performed by means of graving points far harder than the material to be cut. These points were bedded in a basis of bronze; and in boring, the cutting action was not by grinding with a powder, as in a lapidary's wheel, but by graving with a fixed point, as in a planing machine. From discovering spiral grooves in diorite and granite, at least one-hundredth of an inch in depth, the author supposes that an instrument was used of sufficient hardness to penetrate the material that far at a single turn. In this, however, he was corrected by Mr. Evans. The simplest tool used was a straight bronze saw set with jewels; but there is proof of one circular saw which must have been six and one-half inches in diameter. For hollowing the insides of stone objects, the inventive genius of the fourth dynasty exactly anticipated modern devices by adopting tubular drills varying from twenty-four-hundredths of an inch in diameter and two-hundredths of an inch in thickness to 18 inches in diameter. Other drills, not tubular, were used for small holes, one measuring one and two-tenths inches long and eight-hundredths of an inch in diameter. But this is surpassed by the Uaupes of South America, who drill holes in rock crystal by the rotation of a pointed leaf shoot of plantain, worked with sand and water. The writer of this note has seen, in Porto Rico, stone beads of the hardest material, 2 inches long, bored longitudinally with an orifice one-sixteenth of an inch in diameter. The Egyptians understood rotating both the tool and the work. For the finishing of vases, a hook tool must have been used; but the early Egyptians were familiar not only with lathes and jewel turning tools, but with mechanical tool rests, and sweeping regular arcs in cutting. In addition to the tools mentioned, are to be noticed those for dressing out drilled cores, stone hammering and smoothing, saws with curved blades, mallets, chisels, adzes, and bow drills. For marking and indicating the plane of the stone, red ochre paint was used in a variety of ways, well studied out by Mr. Petrie. Rock excavation, both for saving the stone and for the creation of vaults and chambers, was altogether an affair of drilling. Granite bowlders were utilized in the pyramids, but the best stones were taken from quarries. The method of handling these immense masses is not known. Mr. Petrie concludes with a sensible remark upon the oft alleged inhumanity of the pyramid and temple builders. To require a man every six years to serve upon the public



FIRST FLOOR PLAN COUNTRY DWELLING. SEE "OUR ILLUSTRATIONS," PAGE 12.

works, during the season when he could do nothing else, would certainly not be a great hardship.—*Science, from Journ. Anthropol. Inst.*, xiii., 88.

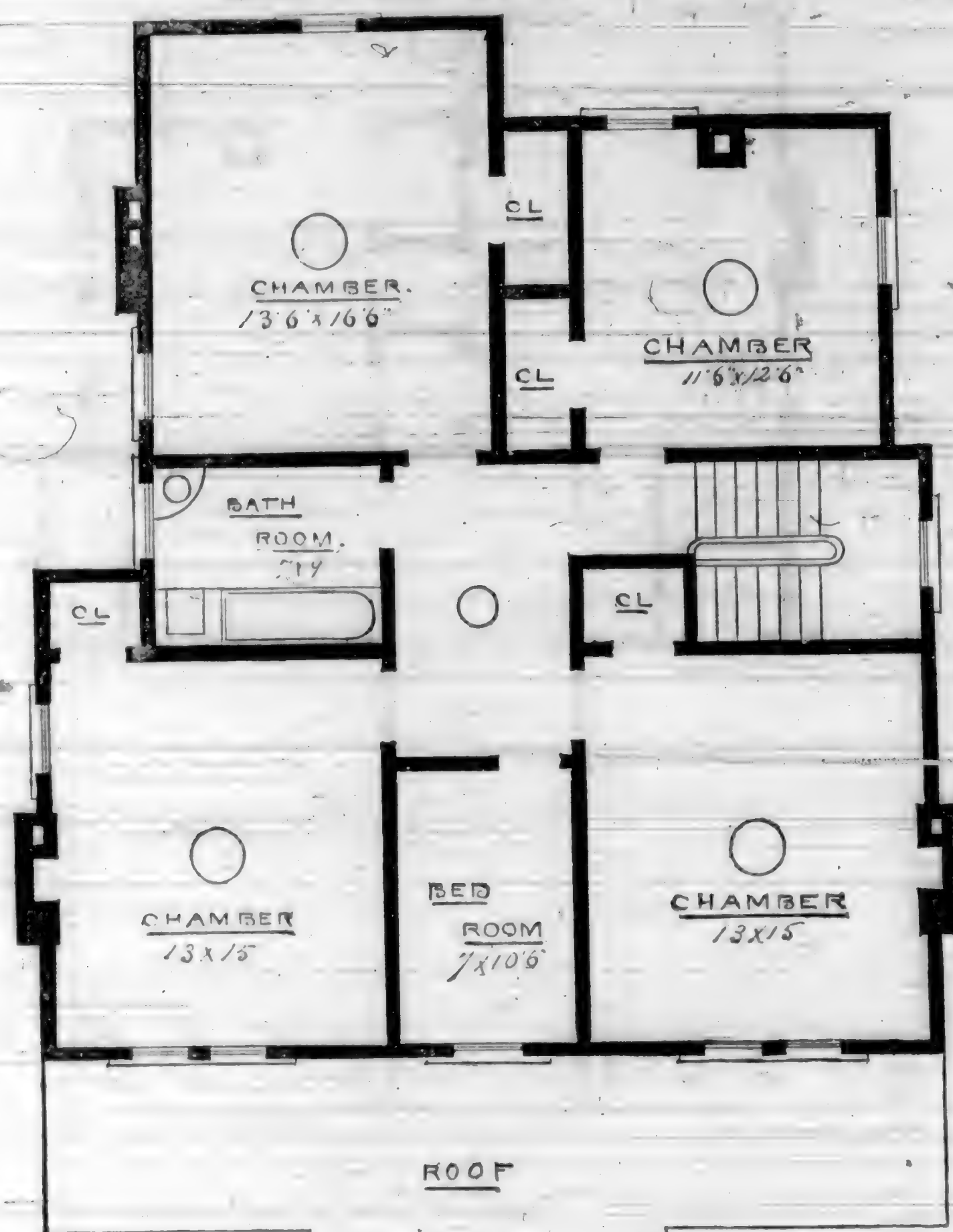
Varnishing of Wood Work.

THE number is yearly diminishing of those who believe that exterior causes exert no bad influence on varnishes, but there still remains too large a showing of those who blindly claim that, "if the varnish is all right, and the painter understands his trade thoroughly, there is no necessity of all this painstaking in the construction and heating of the finishing room." It would be as reasonable to claim that heat, cold, and moisture have no effect on the thermometer and barometer, as that oil, turpentine, and compounds, into which they largely enter, as proof against atmospheric changes. Turpentine will absorb moisture, and linseed oil is affected by both heat and cold, heat rendering it thinner, and varying degrees of cold causing it to thicken, until at length, at about zero, or a few degrees below

zero, it congeals. As components of varnish those liquids are not quite so sensitive to heat, cold, and moisture as when in the simple state, yet are sufficiently susceptible to cause trouble and serious loss to the builder who fails to provide against their insidious workings. Those railway car painters who are compelled to finish their work in indifferently heated sheds, assert that it takes about double the quantity of varnish to do over the outside of a car, solely on account of the chilling of the varnish—in other words, the thickening of the oil contained in the varnish. The surface of the car, of course, contributes its share of cold, proving conclusively that the combined effects of the atmosphere and the chill on the surface of the car, are adverse to economy in the use of stock, to say nothing of the liability to enameling, minute cracking, and pitting, with the unprofitable and vexatious labor they entail.—*Ex.*

Promptness in renewal of subscriptions will enable us to still further increase the number of improvements necessary to make this journal fully equal to those printed in the older cities.





SECOND FLOOR PLAN, COUNTRY DWELLING. SEE "OUR ILLUSTRATIONS," PAGE 12.

Painting Iron.

THE value of red lead as a preservative for iron has been generally accepted. Wrought iron requires a hard and elastic paint, which will hold itself together even if the scale beneath gives way. The following experiments, made under the auspices of the Dutch State railroads, may be instructive. Iron plates were prepared for painting as follows: Sixteen plates, pickled in acid (hydrochloric), then neutralized with lime (slaked), rinsed in hot water, and while warm rubbed with oil. The same number of plates were cleared of scale, so far as it could be removed by brushing and scraping. Four plates from each set were then painted alike—namely, four plates with coal tar and four plates with iron oxide A, another set with iron oxide B, and the remaining set with red lead. They were then exposed three years, and the results observed were as follows: The coal tar on the scrubbed plates was quite gone, that put on the pickled plates was inferior to the others. The iron oxide A on the scrubbed plates was inferior to the other two, while on the pickled plate it held well. The oxide B was found superior to that of A, but inferior to red lead, while the plates covered with red lead stood equally well

on both prepared plates, and were superior to all others. From these results it is evident that pickling the iron removes all the black oxide, while scrubbing does not. It is also shown that the red lead unites with oil to form a hard, oxy-linseed oil acid soap, a harder soap than that given by any other combination. The red lead is shown by those experiments not to give way under the scaling; it is more adherent to the surface, more elastic and cohesive. On the Cincinnati Southern Railroad, experience extending over some years has shown that red lead has proved the most durable paint in the many miles of iron trestle and bridgework. It is found that the iron oxide is washed away by the rain and perishes in spots, although a valuable paint if frequently renewed. Red lead, on the other hand, is more expensive than iron oxide and is difficult to be obtained pure. It is adulterated with brickdust, colcothar, and other substances, and has lost its high repute.

Referring to white lead as a material for painting iron, one authority observes that "white lead should not, if possible, be used in priming iron, nor in any priming coat; moreover, it is a less desirable overcoat than iron oxide. The class of iron paints compounded of ores of natural iron rust, combined with

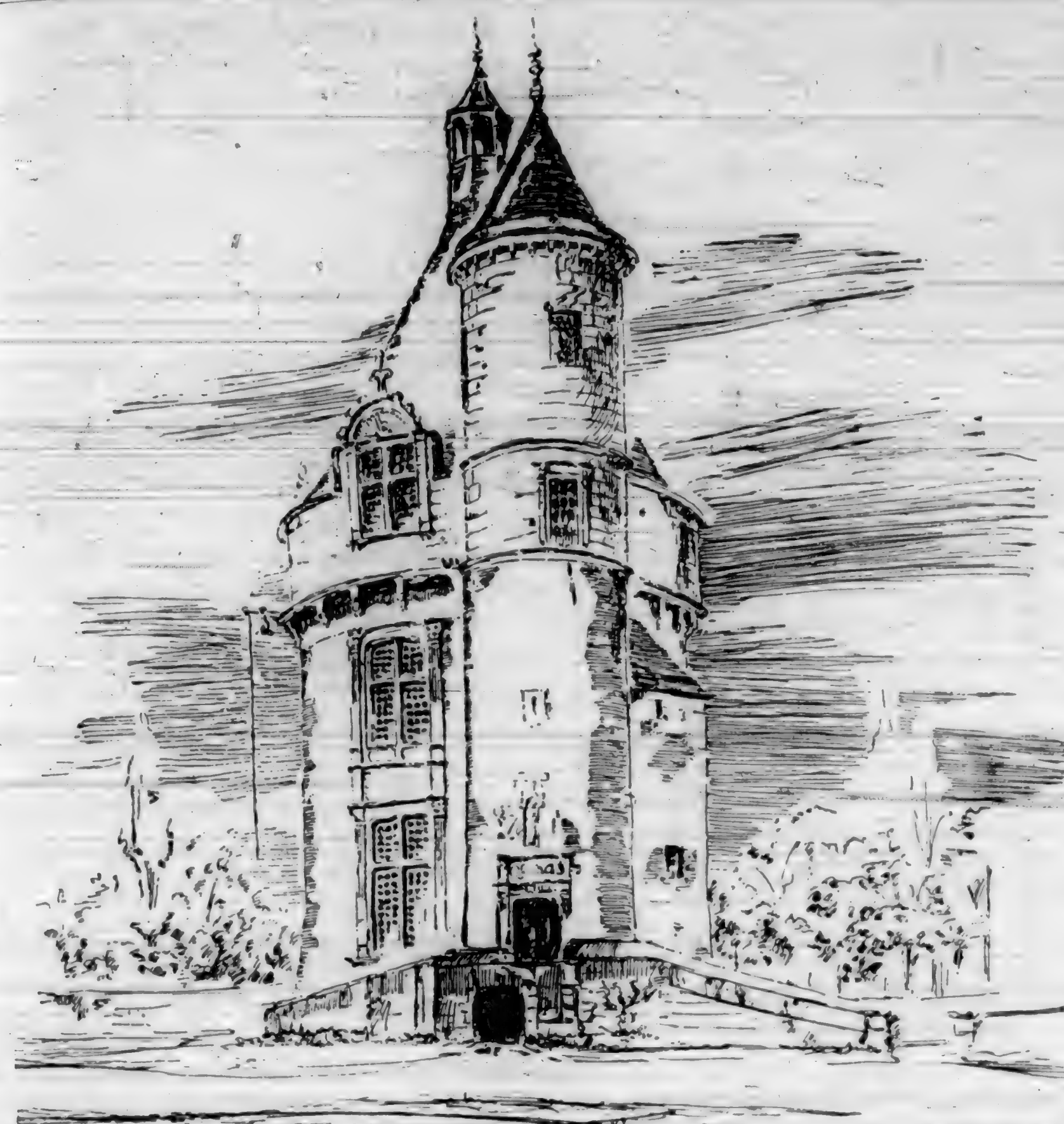
clay or some other form of silica, are very useful, as they contain no water nor sulphuric acid. Magnetic oxide, or pure iron oxide, is an excellent protection for iron, says one writer; it is impossible to scrape it off. It is also of value in woodwork, and resists the action of salt water and sulphurous gases, so destructive to most paints. There is no doubt the great protective element in paint is the oil, and the conditions required for success are stated to be to prevent the drying part of the oil from becoming hard dry; the soft-keeping, non-drying acids must be kept from flying away in such a quantity as to reduce the oil to a brittle mass. In other words, the elastic qualities of the oil must be protected from the action of the oxygen. —*Scientific American*.

The Gimlet.

A most insidious dog—
"A great bore withal, and yet of no great calibre."

The gimlet is an offspring of the awl, and is of comparatively modern origin. Traces of the dual use of the latter as both gimlet and awl are discoverable in Egypt as early as the nineteenth century before Christ, and no development of the gimlet as a separate tool was made by that people so far as is known. At the opening of the Greek era the gimlet was known to that people simply as an awl with an egg-shaped handle. With the Greeks it first took its place as a distinctive tool, and later became very common. Its first inventor is unknown, as is also the date of the invention. Pliny ascribes it to Dædalus; but whatever Pliny did not know he deemed it a point of personal and professional honor to make up, and little credit is to be given to this fable. The gimlet of the Greeks had the cross-head, or handle of the style now prevalent. It also had possibly a hollow pod, as the earliest specimens found are of that type, but it had no screw point and demanded a large expenditure of muscle, especially in boring hardwoods, where it was not very effective. Later a gimlet of square section, having sharp corners and tapering to a sharp point, was introduced and gave the hint for a form of auger now in use. In course of time the screw point was added, and the hollow-pod gimlet, with a point of this kind, was the only kind in use for many centuries. In England this was called a wimble. This form is still in use to some extent, and is effective where very shallow holes only are to be bored, but as it has to be removed whenever the pod becomes full of chips from boring, it causes a waste of time when deeper holes are desired. The twisted or spiral form of gimlet, which is self-discharging, is an American invention and only of very recent date. It has, however, superseded all other forms, and is now in common use. The field of the gimlet is becoming greatly narrowed, giving ground to the more rapid and convenient brace and bit. —*Call Smith, in Industrial World*.

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CHENONCEAUX.

THE above sketch is by our artist, Mr. John Wolf, of New York. We are making preparations by which we will shortly be enabled to present sketches from local artists, as well as those in Eastern cities.

Door Decoration.

THE door, which is so frequently a source of anxiety to the ornamentist and decorator, might be made the means of greatly enhancing the artistic completeness of a room. Much of the difficulty experienced in its treatment arises from the desire to disguise its functions. For this reason doors having their panels covered—I cannot say decorated—with wall-papers, &c., no matter how beautiful or costly, fail to please, and the palpable effort at disguise is not only bad but reprehensible, and whenever the position or purpose of a door is thus sought to be hidden, the result is a failure.

In modern-built houses the architects are devoting more care and thought to the design and proportion, and the cabinet-maker to the construction than hitherto; and it is now, fortunately, not uncommon to find doors so original, thoughtfully proportioned, and broken up into panels that they are in themselves perfect, and, as a piece of decorative work, charming. An attempt to still further decorate such doors as these would be unpardonable, and a piece of vanity on the part of the

artist; but on the other hand, there are thousands of houses—many of a superior kind, if we take the rental as a criterion—the rooms of which are positively disfigured by doors out of all proportion to their position, many being too short and wide, too high and narrow, or in an intermediate state, which is more aggravating than either, effectually preventing a successful treatment of the room as a whole. Such doors form a stumbling-block and eyesore to many otherwise comprehensive schemes of decoration. The embellishment becoming a necessity, the difficulty is—what to do? It may be only necessary to decorate it slightly to harmonize it with the rest of the room, or it may require much more substantial and heavy treatment, both in ornament and color; the surroundings will, of necessity, determine this point. A most satisfactory and effective treatment is to be obtained by outlining the design in warm browns, allowing the figure of the wood to show through, but the door must be a new one, and capable of such treatment; if, on the contrary, as is far more likely, it be an old and badly painted door, then some such treatment as I have shown in my illustration would prove effective.

The dimensions of the panels were taken from an existing door divided into four, those shown being the upper ones. This door being disproportionate, and the panels consequently so, it has been sought to make it appear wider by running the flower-spray behind the center stile into the other panel;* had the panels been too wide, a contrary treatment would have been followed. The desire to elongate panels may be realized by each having a separate design of some upward growth, and, if found necessary, marginal lines to still further help the illusion.

We might advantageously make our doors an object of interest by using them as an opportunity for displaying decorative ornaments. In such positions there is more latitude allowed, and a greater freedom to the artistic fancy; thus, representations of the figure, birds, animals, &c., are here permissible, all of which are out of place and unfit for the walls of our dwelling-rooms, owing to the necessary repetition becoming objectionable and devoid of beauty, and to the accessories hiding and mutilating their parts.

The subjects for such panels should bear the impress of having been designed to fit the place they occupy, and for no other purpose. There is plenty of scope for our selection, the panels of doors offering not only a valuable and legitimate means for the display of the wood-carver's art, but for porcelain-painting inlay, hand-painted or stencilled ornament, needlework, painted silk or tapestry, the latter being sometimes particularly pleasing and effective. —*Geo. C. Haite, in the Builder*.

* This may be accepted as a motive for the treatment referred to in special cases; but, in general, we object to running the design through from one panel to another, as contradicting the actual construction of the door, and making the panels appear as one piece overlaid by the stiles. —*Ed.*

PATENTS AND INVENTIONS.

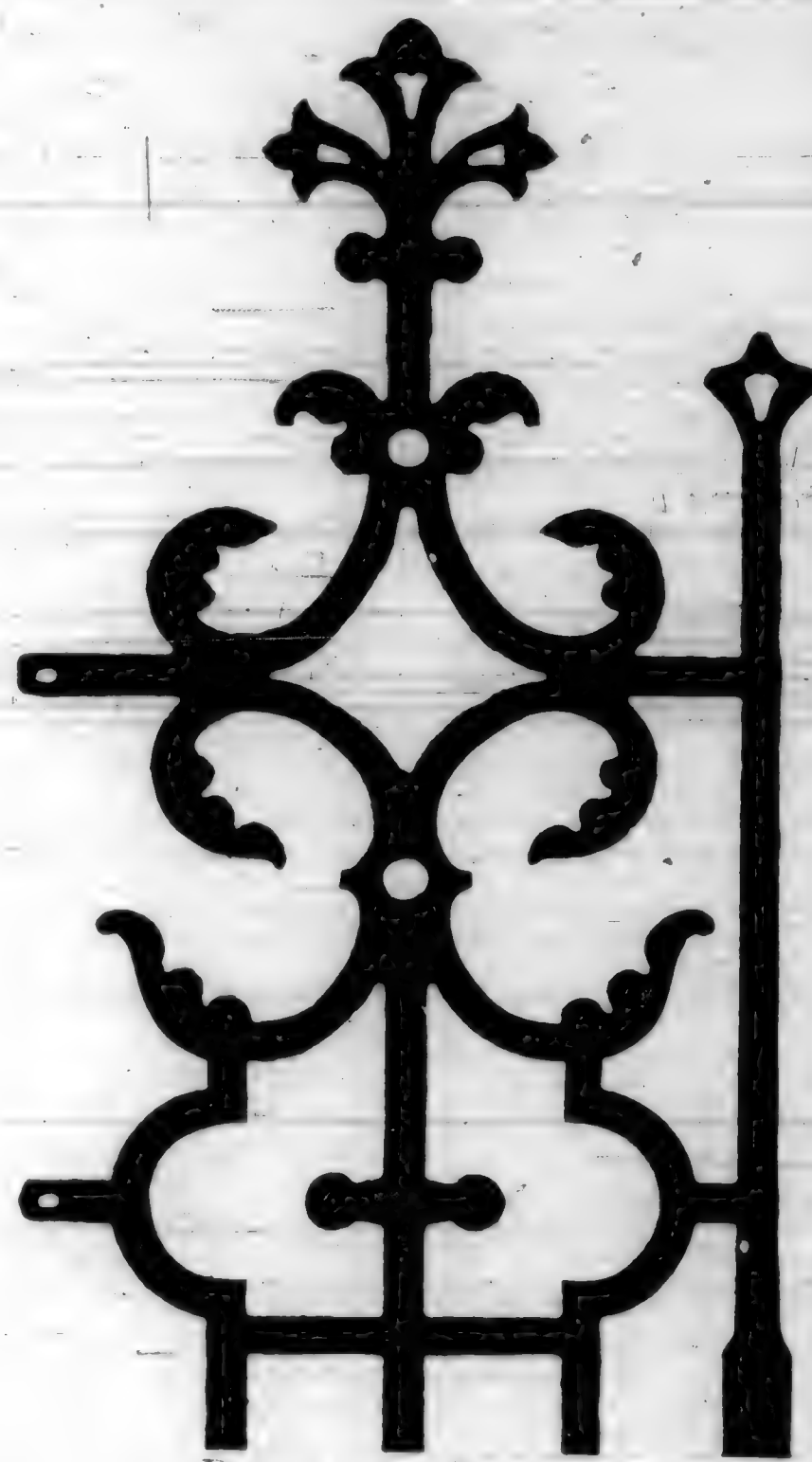
List of U. S. Patents for Pacific Coast Inventors.

(From the official list of U. S. Patents in Dewey & Co.'s SCIENTIFIC PRESS PATENT AGENCY, 252 Market St., S. F.)

FOR WEEK ENDING DECEMBER 25, 1883.

- 290,727.—AUTOMATIC GAS REGULATOR—M. J. Amick, S. F.
- 290,746.—SAFETY FENDER FOR CARS—P. H. Cooney, S. F.
- 290,755.—LOGGING ENGINE—John Dolbeer, S. F.
- 290,756.—LOGGING LOCOMOTIVE—John Dolbeer, S. F.
- 290,674.—AUTOMATIC BELT SHIFTER FOR ELEVATORS.—F. W. Fuller, S. F.
- 290,776.—PRIVY—F. B. Kendall, Turnwater, U. T.
- 290,794.—REFRIGERATING APPARATUS—C. C. Palmer, Oakland, Cal.
- 290,795.—REFRIGERATING APPARATUS—C. C. Palmer, Oakland, Cal.

NOTE.—Copies of U. S. and Foreign Patents furnished by DEWEY & CO. in the shortest time possible (by telegraph or otherwise) at the lowest rates. All patent business for Pacific Coast inventors transacted with perfect security and in the shortest possible time.



DESIGN FOR CRESTING.

Copyrighted by WOLFE & SON, architects,
January 15, 1884.

Evils of Letting Plumbing Contracts to Builders.

ONE great obstacle to securing plumbing work in accordance with modern standards in Cincinnati is the builder's influence. It is a community that still retains the pernicious custom of letting plumbing contracts to builders instead of having it done by days' work, or by a contract direct with the plumber. A good illustration of the result of this practice was recently brought to our attention. In a store on Walnut Street near Fourth, one of the most prominent locations in the city, we saw a builders' substitute for a properly constructed water-closet. In a closet inside the building was the usual privy seat, beneath which was a vault about six feet deep by four feet square. This was apparently cemented, and from this receptacle there was a drain the entrance to which was closed by a plug, which plug could be removed when occasion demanded. The closet in which this privy was placed was in a one-story extension, on the roof of which was another privy house for the accommodation of the occupants of neighboring buildings, and this communicated with the same vault, the droppings from above passing behind a partition that ran from the seat to the ceiling of the lower closet. As the door from this lower closet opened directly into the store, the fragrance of the locality may be imagined. The lessees of the store did not enjoy stinks, and demanded that the landlord should provide a different arrange-

ment. It should be stated that the builder had carried a rain-water leader through the side wall, in order that the accumulated filth might be diluted during rain-storms. The owner of the property, we learn, has since employed a plumber to provide suitable water-closet accommodations properly connected with the drain to the sewer, and there is no evidence that either the owner or the builder adopted this stench-generating device to save money, but simply because the former left the matter to the builder, who followed an ancient custom, assuming it to be good enough.

The mere fact that an owner is sufficiently indifferent to be willing to regard this important work as on a par with the other details of house construction, is conclusive evidence to the plumber that price is the main consideration, and if he satisfies the builder, who is his principal in the transaction, he has done his duty, though the builder's standard is rarely a high one. Errors or omissions in the specifications, a common occurrence, are not pointed out, since if a plumber is officious in this respect the builder is displeased, and in subsequent work avoids employing such a "particular man." "Carry out the specifications, and mind your own business," must be the motto if you work for builders.

Our experience has taught us that wherever this practice prevails, competition, cut-throat prices, and poor work are the rule.

In order to change this condition of things, a public sentiment must be created that will induce the owner to take a personal interest in the work, and make contracts only with the plumber; and to hasten this result the leading plumbers in a place should agree with each other to refuse to be sub-contractors, even if they make a temporary sacrifice. When owners learn that only second-rate men will serve as sub-contractors, they will quickly settle the question, with the result that they will be better served, the plumber's position properly appreciated, and his services more liberally paid for.—*The Sanitary Engineer*

WET BOOTS AND BAD COLDS.—Taking a chill after getting the feet wet is one of the most fruitful causes of disease. The wet months are now coming on, and how best to keep the feet dry must be of universal interest. In two ounces of unpurified castor oil, melt a quarter of an ounce of beeswax and two ounces of fresh mutton suet. When nearly cold, but before getting stiff, rub thoroughly with the hands all over the outside of the boots—soles as well—leaving a good coat on for the space of three days, after which all that can be removed may be scraped off. To be thoroughly effective the boots should be sponged the previous day with lukewarm water so as to entirely get rid of the blacking. The boots will of course not take a shine just after the operation, but they will be found to keep out the wet and to last a great deal longer than if not thus treated.

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Waste of Redwood in the Coast Range.

THE wastefulness of lumbering is one of the striking features of the scene. Only the largest trees are cut, those measuring less than two feet in diameter rarely being touched, and the ax is laid, not to the roots (though they are not thick and widely divergent, considering the height and weight they support), but some distance above, so that in very large specimens the massive stump, upon whose flat top you might build a comfortable house, stands twelve feet above the ground, and contains hundreds of feet of sound lumber which must be left to burn. Then many trees are broken by their fall so that large parts of them are useless; other parts may be knotty, or crooked, or inconvenient to drag out, and so only half of a great trunk will be utilized. Huge logs are consumed, also, in road-making and bridge-building in the hills, and dozens of small trees are crushed by the fall of their greater companions. Then, when a district is pretty well cleared of its best timber, fire is set in the brush and prostrate trunks. Feeding eagerly upon the resinous woods, half dried and broken, it gathers so much heat that the saplings are nearly killed, and the flaky, tinder-like bark of the larger trees is singed in a way which must greatly injure and often destroy them. Moreover, these fires, fanned by the gusty breezes, rushing in every afternoon from the ocean, often get beyond control, and sweeping through the oily tops and brittle trunks, spread blackened ruin over miles and miles of precious forest. Precious, however, it seems never to occur to the lumberman these forests are; yet he is probably no more wasteful and careless here than elsewhere, and finds his match for heedless extravagance in nearly every pursuit that deals in what nature furnished us at the outset in abundance, but replaces only very slowly, giving abundant leisure for our repentance. The spendthrift lumberman is bad enough, but no worse than the wasteful oysterman or buffalo-hunter, reckless of the future. It is, or ought to be, a matter of rejoicing to everybody that the forestry people, under Mr. Sargent's guidance, are paying especial attention to preserving as far as possible the magnificent forests of the Coast Range.

WHAT IS AN ACCOUNT BOOK QUIRE?—The word "quire," in account books, is a misnomer, and is used simply as a matter of convenience (probably a "trick of the trade"). As explained by manufacturers, a quire of paper is twenty-four sheets of good and bad or imperfect paper. They reject the bad, and still call the remainder a quire. It is difficult, however, to make the purchaser believe that any quire with the roughest of usage can be reduced to twelve or fifteen sheets and still be a quire of paper. The price per quire is the recognized governing quality, but many account book manufacturers appear to put more or less sheets to the quire as their conscience and the price will permit. Account books should be sold at per hundred pages, and then purchasers would know exactly what they had got for their money.

American Plumbers and Contract Work.*

IN speaking this evening on the abuses existing in the plumbing business, it will greatly help us to go back thirty-five years, when plumbing, compared with to-day, was in a crude state, and trace the history of the trade during that time down to the present day. The men engaged in the plumbing business thirty-five years ago in this city, came from the Eastern cities and Europe, and were strangers to the methods then in use here, there being no sewerage system, wooden water pipes, with which it was difficult to connect, and other obstacles which have long ago disappeared. All these difficulties were overcome by the plumbers in those days, who were masters of their trade. By hard work, energy, and perseverance, they became successful financially, and were respected and honored in the community. The fact of their being plumbers proved no bar to their mingling with the best classes of their time; no odium was attached to them—no reflections cast upon them. The business was not only considered a useful and necessary one, but a most important branch of industry. They planned the work, furnished the material, and, having the confidence of the men who employed them, good work was always the result. There was no dickering about price—no fault-finding with charges made. The mechanic and owner did business together, in a business way; each having the confidence and respect of the other, they were naturally friends. These were the Garden of Eden days of plumbing in this city.

This tranquillity was too good to last, and in time an evil spirit made its appearance in the shape of the plan-makers and skin-builders. These men undertook to build elegant buildings at greatly reduced prices, and Mr. Good-fellow and Mr. Goldlover were both enticed into the net prepared for them. A plan was made, and Mr. Plan-maker called around to the shop of Mr. Good-Mechanic, and whispered into his ear: "I have planned an elegant residence for Mr. Goldlover. He has purchased land fronting a beautiful street. I want you to get the work. I know you have means, and have heard of your mechanical skill. Give me an estimate on the work; I will give you the preference, and Mr. Goldlover will employ you in the future to do all his work. Now figure very low, as I expect to get other figures on the job." Mr. Good-Mechanic listened with attentive ear and said: "Figure on a job, or figure on a plan? Why, my dear sir, I never figured on a job in my life. I know not how to figure on your plans. Your specifications read strangely to me; they are impractical. Yet, if I can gain your friendship, and that of Mr. Goldlover, I shall try and do the best I can." The apple is plucked, the fruit is eaten, and the unsuspecting good mechanic has committed a sin that has existed ever since.

What are the results of this rash act of our parent plumber? You all know the result of

*A paper read by Mr. J. J. Wade before the Chicago Master Plumbers' Association.

the contracting system then established. The war of hatred then began—one plumber cutting the throat of the other, one running down the fair name and reputation of the other, until the public heard of the quarrel, and they took up the cry and began calling the plumbers such beautiful names as "thieves" and "extortionists," and applied other epithets which would bring disgrace upon them. The funny press, the illiterate laborer, the wealthy Goldlover and friendly Goodfellow howled at the once prosperous Good-Mechanic, and he slipped down from the position he formerly enjoyed to that akin to the common laborer, which he has held ever since. Now, why should we endure this? Are we not as good as men engaged in other pursuits? What we must do is to recover from the impositions which are heaped upon us. In order to do this we must do away with the contract system, for the reason that it is unjust to us—do away with the skin-builder, who has in construction a number of houses, and the plan-maker, who lays out the work for us to follow, no matter how impractical. We have to compete with unskilled labor, as Mr. Skin-builder's object is only to have it last until he can sell the building. And we get all the blame from parties who were inveigled to buying a house which Mr. Skin-builder and Mr. Plan-maker never intended to be fit to live in. If the owner is willing to pay a good price, under the contract system the competition is the same, making no distinction between a good or a poor mechanic. It is a libel on the plumbers of this city and of the country at large to hold them responsible for the misdeeds committed by cheap owners and cheap builders. Then, again, under our license system, any man who can furnish a bondsman can get a license to carry on this very important branch of the mechanical trades. Neither his habits, his mechanical skill, nor his ability to perform any part of the plumbing is scrutinized. In the cities in the East, which have a settled foundation of business, like New York, Philadelphia, Washington, and Baltimore, the contract system has practically disappeared. Plumbers whose reputation is co-extensive with the boundaries of this great country, do all their work by the day, and furnish all the materials for jobs which run up to \$50,000 and \$70,000. While I was East I saw a job which amounted to \$75,000, which was done by the day, and was told this was only one of many instances.

Knowing how unjust the system of taking work by contract is, is it not time, then, to do something to abolish it? Again, the question arises, Is there any money in contract jobs? Has experience shown that any one in the business has been able on contract work to hold his own? Here, gentlemen, is what experience teaches, and I believe by a close scrutiny of the figures I now give you will not find them to be very far from right. Take the case of a plumber who does \$50,000 worth of contract work a year. This work is figured on the basis of 10 per cent. profit on the material and

labor. The cost of running a business of this extent is as follows: A foreman, \$1,200; rent, \$800; book-keeper, \$600; horses, wagons, and driver, \$900; gas and water, \$25.00; loss and insurance, \$250; your own time, \$1,200; making a total of \$4,775, leaving a profit of \$225. These are facts and figures which cannot be disputed. The ruinous system of competing for contract work has crippled every wealthy man in our trade, with one exception, and he was saved from financial ruin by going into an early grave. This being the case, it seems to me high time to let that class of work alone, and if we go about this in earnest, the change is effected. Then, again, how many of us do \$50,000 worth of work per annum? Not many, I can assure you. A man who has worked faithfully and honestly at the plumbing business in this city for nearly a quarter of a century—a man you all know, a man who is strictly temperate in habits and keeps strict account of everything appertaining to his business—will make affidavit to the fact that he has lost in contract work \$15,000 in three years. The money thus lost was the accumulation of former years' prosperity. Again, we work like slaves from early morning till late at night. Look at our faces during these hours—the thoughtful expression, the languid look. No smiling face is there to see.

These thoughts of mine, gentlemen, I desire you to take home to-night, reflect on them, seriously think of them, and ask yourselves, Shall I any longer be deluded into working and slaving for the benefit of an unthankful builder? Remedy these evils, then, by forming yourselves into a strong organization, and in a short time I predict that instead of receiving no remuneration for your services, you will be blessed by an abundance for the labor then performed.

How to Measure the Contents of a Round Tank.

NEW YORK, November 21, 1883.

To the Editor of the *Hydraulic and Sanitary Plumber*:—

SIR: In the last issue of your paper you gave a simple rule for the measurement of a round tank, which, for all practical purposes, is perhaps near enough to be sufficiently correct for practice. It is not so, however, in a strictly mathematical sense, and this I will illustrate.

To find the contents of a copper boiler according to the rule given, we will suppose the height to be 5 feet and the diameter 14 inches.

$$\begin{aligned}\text{One-half diameter} &= 7 \\ \text{One-half circumference} &= 22 \\ \text{Height, 5 feet} &= 60\end{aligned}$$

Multiply all these together, and the result will give 9,240 cubic inches. Dividing this by 231, the number of cubic inches in a United States gallon, we have 40 gallons as the contents of the tank. This rule is, as you say, simple, but it may be still more simplified by stating that an easy way of getting approximately the circumference of the boiler is to multiply the diameter by three and one-seventh.

Friction of Water Pipes.

THE flowing of water through pipes of different diameters is affected to a great extent by the head or pressure—the relative smoothness—the curvatures and shortness or abruptness of the angles of the conduit. This is what is denominated friction, and is a very important consideration in the distribution of water, not alone in aqueducts but also in house supply for domestic purposes. It is with the latter we propose briefly to deal, in so far as it relates to proper sizes and the objects for which it is intended. In most cities of the Union there is a standard fitting for almost all kinds of houses, and this is determined by what is required for a reasonable demand consistently with the amount on hand for distribution. In New York the tap or fitting for this purpose is almost universally five-eighths of an inch in diameter, and is simply a brass cock driven in a hole tapped for the purpose, having a soldering coupling attached for the purpose of being united with the lead pipe. In years past it was the custom of plumbers to connect with this tap the same sized pipes, and as the head of water was greater and the amount and character of fixtures to be supplied not so numerous or exigent, no great complaint was made of insufficiency. In course of time, however, the growing demand for loftier buildings, and also the lessening pressure owing to increased consumption, produced much dissatisfaction among our citizens. Efforts then commenced to be made to get, if possible, more water from the mains, and it is certainly curious to note the various devices by which the supply could be increased, while the size of the tap still remained unaltered. It was not uncommon to see, in some cases, a piece of four-inch heavy lead pipe, five or six feet long, put in close to the tap. This was to act as a reservoir to hold a certain amount of water, but no one understanding it could think it a very efficient means. The device of boring in two mains connected with the tap by branching in the coupling at the bend or bow of the pipe, was frequently adopted—one of the mains to be used in the lower part of the house and one for the upper, while in both of those cases the pipe remained the size of the tap. In a few rare cases, when driven to desperation, some house-holder had extra taps surreptitiously put in, so as to get a supply commensurate with these demands. Finally, the expedient of enlarging the size of the pipe from the tap occurred to plumbers, and it certainly was a revelation to many of them. The quantity became magically increased, and for many years afterward no complaint could be heard. It surprised many that so much more water could be obtained than in the old way; and yet the cause was quite simple, as by lessening the friction the volume of water was proportionally increased. We have been at the pains of making some short calculations to see why this should be so, and to what extent the flow is retarded or accelerated by friction on two well-known and com-

monly used sizes of pipes, one inch and five-eighths of an inch. If we take the length of a five-eighth pipe—which will contain one gallon of water—we find it will measure sixty-two feet nine inches in length. The same quantity of water in a one-inch pipe will require but twenty-four feet six inches. The interior surface of the five-eighth-inch pipe has an area of 1.618 square inches, or nearly 11½ feet, while the surface of the one-inch has an area of 924 inches, or nearly 6½ feet. We see, therefore, that in these two sizes the friction is as 11½ to 6½, or nearly one-half, and which, taking into account the superior rigidity of the larger pipe and its likelihood of having fewer bends in it, would deliver probably more than double the quantity of water. The larger sized one and a quarter, one and a half or two-inch would still more increase the effect desired proportionally. It is found by experience that a five-eighth pipe extended 3,000 feet horizontally under a head of 24 feet or 10 pounds pressure to the square inch will cease to deliver water at its extremity, thus showing that friction uses up the capacity of the water to flow any further. This would seem to be a strong argument against using the smaller sizes of pipes at a distance from the main. We have often thought that much of the difficulty of obtaining water at points remote from the mains could be overcome by using larger pipes, or not diminishing them at all. It might certainly add to the cost of plumbing a building, but where efficiency is a *sine qua non* something must be sacrificed to the main object—a regular and undiminished supply. Moreover, to equalize the distribution through a building instead of, as in the present fashion, decreasing the pipes at the extremities, at the rears or the upper stories, every floor or every fixture should have a separate stop-cock which could be closed, or throttled, as it were, to adjust the supply as equally as possible at every point, whether high or low, all through the building, and these should be carefully regulated to produce a uniform supply. I have an idea that the piping of a house on this plan would remove much of the dissatisfaction manifested by house-holders at the inequality of distribution of water, and at this particular time, when we are suffering so much from scarcity of this great necessity, could hardly fail of commanding the most unqualified approval.—N. Y. P., in the *Hydraulic and Sanitary Plumber*.

Street Car Starters.

A GREAT deal of ingenuity has been expended on the invention of street car starters. A man of humane tendencies watches the horses tugging and straining to get a car started, and he naturally thinks it would be a relief for the horses and a fortune to the inventor who could devise an appliance which would absorb the work done in stopping a car and give it out in starting. The more this philanthropist thinks of the car starter, the more convinced he becomes that he is in the

way of preventing cruelty to horses, and of laying the foundation of his own fortune. It does not take long to plan a spring arrangement which can be wound up by the moving car which it tends to stop. Then he gets the device through the patent office, but in the meantime the discovery is made that a multitude of inventors have already been in this field. However, inventors are a hopeful race, and the man with the street car starter consoles himself with the reflection that his invention is a little better than anything previously developed in this line. If he prove very persistent and persevering, he manages, after much discouragement, to have his starter tried on a car. Somehow it does not give out all the power expected, so there must be something that needs adjustment, and the device is taken off for the purpose, but it is not put on again. Meanwhile, other men are seized of the same idea and a similar cycle is traversed.

The parties who bring out the car starters work on a mistaken notion. They know there is a good deal of power lost in stopping a car, and they think most of it can be preserved, which is a mistake. If the stopping appliance caught the car at its highest speed and destroyed the velocity within a foot or two, it might receive nearly the whole of the energy that was in the moving car. But this is not practicable. The device must stop the car by degrees, and in the space passed over a considerable percentage of the energy is dissipated by the wheels rubbing on the rough track, and the friction of the apparatus absorbs some power. When the losses are all summed up there is very little energy left in the spring to be available for starting the car. In places where cars run down steep grades where they require braking, there may be a possibility of absorbing energy enough to be useful in starting or even in helping the car up another hill; but for ordinary stops on a level no power can be preserved which will pay for the apparatus.—*American Machinist*.

Hemacite Door Knobs.

HEMACITE is the invention of Dr. W. H. Dibblee, of Trenton, New Jersey. Principal among the many uses to which it can be applied is the manufacture of door knobs. These knobs are equal, if not superior, to any made. They are moderate in cost though strong as iron. Four designs are used in the manufacture of their principal patterns—Eastlake, Saxon Shield, Japanese, and Star. Aside from their artistic appearance, they possess many other valuable features (which have made them popular with many of our architects, contractors, and builders), chief among which is the almost absolutely non-liability of getting out of order. A full line of these goods can be had in this city, and they are worthy of the attention of our architects before others are specified.

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association just, we would be the last to enter a protest against any rule that should be made; knowing as we do, however, that there are members of the association who count their money by the hundreds of thousands, lying idle in the bank, made from an exorbitant profit on an essential material of the growth of a city, we feel justified in uttering our protest against some of the methods used to maintain high rates. Fifteen per cent. off the prices now charged would leave an ample profit to the manufacturers, and would be a material benefit to those erecting buildings.

S. F. Chapter—American Institute of Architects.

The regular monthly meeting was held at the usual place, on Friday evening, February 1, 1884.

An unusually large number of members were present. President John Wright in the Chair.

Committee on a seal for the use of the Chapter, reported that they did not deem it wise to place the design for seal in the hands of the students. They had engaged the services of F. Marion Wells, who was preparing a model; when finished, the committee would have the seal prepared from the model.

Committee on plumbing reported that they had met the members, composing the Board of Health, and that the latter favorably received the ideas advanced by the architects.

Mr. Pissis reported his class as getting along finely. He called the attention of the members to the prizes offered by the President and the Chapter four months ago. Mr. Pissis said his class would be ready to offer drawings in about one month.

Mr. Curlett suggested that book prizes be offered instead of money, and four prizes instead of three.

Mr. Macy suggested diploma prizes in place of books. But, on discussion, it was decided that the classes were not far enough advanced for diplomas.

After an animated discussion, it was decided that four book prizes be given to the students showing the most marked increase during the time they have been under the tuition of the class teachers. It was left to the latter to make the recommendations and select the prizes. Mr. Wells was added to the committee. It was decided, if necessary, the committee could purchase books to the amount of \$50.

After a lengthy debate, it was definitely settled that no student or draughtsman can belong to the classes unless the architect for whom he works, is a member of the Chapter.

Committee on incorporating reported that as soon as the seal was obtained, the Chapter would be incorporated.

Warren H. Williams was unanimously elected a member of the Chapter.

Proposition of L. Stone was received as a student member. Referred to Henriksen, Moore, and Macy.

A lengthy debate then followed in regard to the premiums offered by the "Pioneers"

for their new building to be erected on Fourth Street. Mr. Macy had the honor to belong to the Pioneers, and from what he knew of the man to whom that Society would owe their new building, he did not think that if he were alive, such ridiculous offers of premiums would be made. The labor required for the production of the drawings was far in excess of value of the premiums.

Mr. Henriksen claimed life-membership in the Pioneers, but he did not propose to enter the competition. He would do so, provided that the successful competitor be awarded the superintendency of the building, with \$500, and \$450 for second and third premiums, and plans returned to the latter two.

Mr. Pissis then offered the following resolutions:—

1. *Resolved*, That the members of the S. F. Chapter of the A. I. A. refuse to compete for the proposed new building of the Pioneer Association, unless the conditions for the competition are altered to the satisfaction of this Chapter.

2. *Resolved*, That a committee be appointed to confer with the committee of the Pioneer building, in relation to the competition and whose duty shall be to obtain more acceptable conditions.

3. *Resolved*, That a copy of these resolutions be forwarded to the committee advertising for competition plans, and that every member of this Chapter be notified of these resolutions.

4. *Resolved*, That the President be requested to call a special meeting within a week, which shall be devoted to the subject of architectural competitions in general, and to the present one in particular.

Discussion then ensued upon the objectionable features in the pamphlet containing the offer for premiums for plans of the Pioneers' building. The main points were as follows:

The committee reserved the right to reject any or all plans.

This very bad feature should be changed so that the three premiums offered would be given for the three best plans.

The committee desired the architects to name their own fees.

This feature opened the way to any incompetent architect, by giving them a chance to place their fees at one, two, or three per cent. Professional services have a standard value, and by common consent the world over, five per cent. is the regular fee of all first-class architects. Nothing less than this should be given.

The committee called for contractor's estimates to verify those made by the architect.

This feature was especially condemned, as no first-class contractor would prepare estimates for such a large building much short of \$100. This the architect would have to pay; the committee from Pioneers, by rejecting any and all plans, would thus leave the architect minus all moneys paid for contractor's estimates, besides their own time and trouble.

The adoption of the first premium plan did not give the successful architect the right to superintend the building.

Thus after months of study and labor the successful competitor might have the pleas-

ure (?) of seeing some one else superintend a design, the details of which he would be in entire ignorance. This fact debarred at once first-class architects from entering the competition.

The above were the principal objections raised, although many others were noted. The following resolution was then adopted.

Resolved, That it is the sense of the S. F. Chapter American Institute of Architects, that it is opposed to enter into any such arrangements as have been offered by the Building Committee of the Pioneers' Association.

Unanimously carried. A committee was then appointed to wait upon the Building Committee of the Pioneers, and endeavor to have the conditions of the competition changed in conformity with the proceedings of this meeting.

Mr. H. G. Knapp, an architect from New York, was invited to address the meeting. He alluded to the fact that he had entered many architectural competitions, and was fully conversant with the conditions imposed in Eastern competitions, but in all his experience he had never been called upon to present plans, under such ridiculous propositions as have been offered by the Pioneers' Association. He considered it an attempt to make architects cut their own throats by naming the amount of their fees.

It could be also styled architects vs. manual labor, as all estimates would have to be verified by a contractor. He most certainly would not enter the competition under such terms as were presented in the pamphlet.

The original resolutions were then put to a vote and unanimously adopted, and the following named gentlemen appointed as the committee to wait upon the Pioneers: Messrs. Wright, Curlett, Macy and Pissis. The whole subject matter was left entirely in the hands of the committee.

"Chock Full of Days' Works."

THAT is an interesting and suggestive anecdote that is told of the young countryman who asked the hand of a young girl in marriage from her parents, and in response to the inquiry whether he had any property, replied that he had not, but that he was "chock full of days' works." These are the true source of wealth, and the surest basis of credit. The person who has health, energy, ability and honesty, who is full of "days' works," can generally be trusted. To such a person the extension of credit is a benefit which words cannot measure. The best help in the world is that which helps one to help himself—which puts in his hands the tools wherewith to carve the fortune of life; and this is oftenest done by the judicious granting of credit.—*American Artisan.*

A PROCESS FOR FROSTING GLASS.—To give glass this appearance, it is only necessary to coat it with the following composition: Sulphate of magnesia diluted in beer, with a little dextrine added.

George H. Wolfe.

SECRETARY S. F. CHAPTER OF ARCHITECTS.

WE publish in this issue the accompanying likeness of the Junior Editor and Business Manager of this Journal, not because of his being such, but as an officer—Secretary—of San Francisco Chapter of Architects, to which position he has been twice elected by the Chapter, in addition to his serving in the same capacity in the Pacific Coast Association of Architects during its existence.

Mr. Wolfe was born in the city of Baltimore, Md., December 29, 1843, and is therefore a little over forty years of age. He arrived in this city in the early part of May, 1852. Attending the public schools, he finished the scholastic course by graduating from the high school contemporaneously with several of the gentlemen engaged at the present time in the practice of architecture on this coast.

Upon leaving the high school, he applied himself to the study of architecture in the office in which he is now junior partner, remaining there for some time, until smitten with the "mining fever," of '63, which at that time raged throughout the State as a great moral and financial pestilence, exciting and overpowering the better judgment of thousands who were then following avocations and pursuits which if

adhered to, would in due time have yielded a pleasing if not bountiful harvest of profit and comfortable wealth. But the excitements and allurements of the times gaining the mastery, he wended his way "to the mountains," part of the time at Virginia City, and part in California, only to share the disastrous reverses which in 1864 carried down and crushed to poverty and want so many who were by the catastrophes of the times swamped and ruined. After this he applied himself to practical constructive pursuits, until the early part of 1880, at which time he returned to this city and became associated with, and soon after was admitted as full partner in the pub-

lication of this Journal, and as a member of the architectural firm of Wolfe & Son.

Those who know him personally will accept the fact that he is earnest, attentive and diligent in the department of the editorial and managerial work specially under his care, and in assisting in placing this Journal upon the pedestal of pre-eminent success, and achieving for this, the pioneer architectural publication upon the Pacific Coast, a reputation world wide for its correctness and fairness in the presentation of all matters connected



GEORGE H. WOLFE.

with building interests and other relative matters and sciences.

The object of our series of likenesses is in no way intended to mitigate adversely to any member of the profession nor in Chapter fellowship, but to provide a practical means whereby the features of the Chapter members of the present period may be preserved and handed down to coming generations. This will be the case, as thousands of the yearly issues of this Journal have been bound and placed in private and public libraries, to remain as books of interest and reference; so that when we who are now occupying our time and energies in architectural pursuits shall

have passed beyond present conditions, those who shall fill our places will have it in their power to look upon the picture countenances of those who were before them.

In addition to the Chapter members, we shall be pleased to re-produce the likenesses of other prominent and worthy gentlemen in the profession, feeling that "not to the Chapter and Chapter members alone belongs all the glory" of architectural worth and abilities, but that among those who have not indented themselves in the Chapter work, there are worthy and excellent gentlemen whose like-

nesses are entitled upon professional considerations to rank with those who have assisted in founding and sustaining an organization which we believe is destined to accomplish a vast amount of good in a general sense—as far as the profession is concerned; and especially toward the student of the present time, in the promulgation of advanced thought, and the elevation of the profession to that high and honorable standing which its greatness and magnitude demand; and in perfecting and fulfilling the several excellent purposes contemplated by, and under the fostering care of the Chapter.

A Good Retort—Picture Architects.

ONE of our young architects, somewhat noted for his lack of harmony with members of the profession who have worked at the mechanical as well as the professional part of their

calling, while conversing with a prominent citizen in regard to a building shortly to be erected, took particular pains to run down another architect who had worked his way upward, after first becoming conversant with the use of the saw and jack plane. "Why, sir," said our young man, "Mr. — is nothing but a carpenter architect."

The answer came, short and decisive, "Better that, sir, than a picture architect."

The young man subsided and was not engaged, the "mechanical" architect receiving the preference.

Engravings made from Photographs. Address California Electric Engraving Co., 240 Montgomery St., Room 11.