Sketch of Country House.

THE accompanying sketch will be found a very desirable plan for an attractive farm-house building. No attempt has been made to pile on a lot of mannerisms, in order that the outside appearance may be showy. By a study of the plan, it will be noticed that the house can be thoroughly ventilated by through drafts in every direction. This is a luxury to be appreciated by those living in the interior of California.

The design shown will freely admit of successive additions, in case they become necessary, without marring the beauty of the original plan. In fact, these, when properly designed, add to the variety of outline, and its beauty of light and shade.

To build well, and to do so at a low price, is always desirable; and to build artistically, imposingly, and attractively, does not imply elaborate finish or profuse ornamentation. Sandpaper and decoration will never make an ill-proportioned building attractive to an educated taste, while a rough exterior of harmonious lines and forms will pass current with those who have an eye to the artistic.

WE understand that M. de Lesseps has succeeded in having a large part of his new loan of one hundred and twenty million francs taken up, mainly, it is said, by females of the peasant class. If half that is said about the real condition of affairs at the Isthmus is true, this enterprising enthusiast is likely to prove one of the greatest moral scoundrels of the age, and we do not envy him the objurgations which, when failure is at length acknowledged, will shower upon him. But there are some things which even the magnetic de Lesseps cannot accomplish, and we are not surprised that in face of the doubtful condition of his undertaking at the Isthmus of Panama, the Tunisian Government has refused to allow him to undertake the flooding of the chotts that lie between the coast of the Mediterranean and the great desert to the south of them. M. de Lesseps estimated that the cost of digging the canal that would be necessary for this immense irrigation scheme would be forty million dollars, which he probably looks on as a mere bagatelle, but which the canny Africans seem to believe could hardly be raised by a man who already finds it hard to raise money for the prosecution of an enterprise in which the whole world is interested, and of which the bonds and securities can be bought in any market, if any one thinks them worth the purchase.—*American Architect.*

A LITTLE paragraph has been going the rounds of the technical journals about the painting of tin roofs, which seems to contain a valuable suggestion. Most persons suppose that a tin roof ought to be left exposed to the weather for a month or so, until the iron of the plates has corroded enough to cover the tinned surface with a tinge of rust, probably forced through the pores of the coating. The theory of this notion seems to be that paint will not stick to a fresh surface of tin, which is apt to be greasy as well as smooth, and that the slight roughness given by the rust is of value for holding the paint; but the writer of the paragraph in question believes that if painting is delayed until oxidation has begun, the action continues beneath the coating, until the plates are destroyed, while a layer of paint put on over fresh plates would defend them for an indefinite period from the commencement of oxidation. There is certainly a possibility that this view of the matter is the correct one, and architects, who have many opportunities for observing the weathering of roofs, might do their fellow-citizens a service by investigating the facts with care.

MANY a man who has failed to make a home, or, strictly speaking, a homestead that his children can love, has been doomed to see them leave it, and seek in other places, and amid new surroundings, these satisfactions that have been denied them in what should have been the dearest spot on earth. The charm of a beautiful home would go far to kindle and keep alive that enthusiasm which sustains the soul, enabling it to triumphantly contend against discouragements and obstacles.

THE most afflicted part of the house is the window. It is always full of pains, and who has not seen more than one window blind?

Built-up Timbers.

THE statement that a 12x12-inch beam, built up of 2x12 planks spiked together, is stronger than a 12x12-inch solid timber, will strike the novice as exceedingly absurd. Every millwright and carpenter knows that it is so; at least he has been taught to believe that it is so, whether he ever tested it by actual experience or not. The inexperienced will fail to see why a timber will be stronger simply because the adjacent vertical longitudinal portions of the wood have been separated by a saw; and if this were the only thing about it, it would not be stronger; but the old principle that a chain is no stronger than its weakest link comes into consideration. Most timbers have knots in them, or are sawed at an angle to the grain, so that they will split diagonally under a comparatively light load. In a built-up timber no large knots can weaken the beam except so much of it as is composed of one plank, and planks whose grain runs diagonally to the outside cut will be braced and strengthened by the other pieces spiked to it and having the grain running in a different direction.

MEANING OF "INSOLVENT"—MINNESOTA LAW.—The term "insolvent," as used in the Minnesota insolvent law, applies in the case of a merchant or trader to inability to pay his debts in the ordinary course of business, and not merely to an inability to pay his debts when his affairs shall be ultimately wound up. So held by the Supreme Court of Minnesota in the case of Daniels *vs.* Palmer *et al.*

A CORRESPONDENT of the *Metalworker* complains, and we think with a good deal of justice, about the lack of attention, on the part of architects, to the proper grouping of plumbing fixtures in dwellings. A little more judgment displayed would, according to him, be certain to insure better working and entail less expense in doing repairs than under the prevailing apparently haphazard plan of putting fixtures in the first place that offers. The same correspondent attributes much of the discomfort to the inmates, and the blame which is so often visited on the plumber, to the lack and care bestowed upon the proper grouping of fixtures by the average architect. While in drawing the plans an architect never loses sight of the prominent features of the house—the doors, windows, flues, etc.—the plumbing apparently comes in as an after-thought. He sets down a water-closet, a bath, or a sink just where he thinks most convenient, the last thing entering his mind, if it does concern him, being how the plumber is to get his pipes in proper place. The architect evidently considers that this is the plumber's business, and, as a consequence, the latter is frequently taxed to the utmost to procure proper fall for his waste-pipes, or to so arrange his hot and cold water pipes as will insure them against freezing or bursting in most inaccessible places. The correspondent concludes by saying that if architects would devote some of their ability to the proper arrangement and location of the plumbing work in a house with a view to future contingencies, much of the unnecessary expense and of the odium now resting on the plumber would be avoided.

Market Reports.

CORRECTED FOR SEPTEMBER, 1886.

Pine, Rough	per M feet,	$15 00
" " No. 2	" "	12 00
" " 2 in lengths	" "	13 00
" " 40 to 50 feet lengths	" "	17 00
" " 50 " 60 " "	" "	18 00
" " Selected	" "	20 00
" " Clear	" "	25 00
" " Fire Wood	" "	8 00
T. & G. Flooring, 1 x 6	" "	27 00
" " 1¼ x 6, 1 x 4, 1¼ x 4, 1¼ x 3, 1 x 3, and narrower	" "	30 00
" " No. 2	" "	22 00
Stepping	" "	35 00
" No. 2	" "	27 50
Furring, 1 x 2	per lineal foot,	00¾
Redwood, Rough	per M feet,	18 00
" " No. 2	" "	14 00
" Surfaced	" "	30 00
" T. & G. 6 in. 12 ft. and over	" "	28 00
" " " 7 to 11 feet	" "	25 00
" " " under 7 feet	" "	20 00
" Rustic	" "	30 00
" " No. 2	" "	26 00
Redwood, T. & G. Beaded, 12 ft. and over	per M feet,	$30 00
" " " 7 to 11 ft	" "	25 00
" " " under 7 ft	" "	20 00
" Siding, ½ inch	" "	22 50
Pickets, Fancy	per M,	25 00
" Rough Pointed	"	16 00
" " Square	"	14 00
Battens, ½x3	per lineal foot,	00¾
Shingles	per M,	2 00
Laths, 1½	"	3 25
" 1½	"	3 75

NAILS—Rates were recently reduced to:—

200 keg lots	2 50
100 keg lots	2 60
Smaller quantities	2 70

PAINTS AND OILS:—

Pioneer and Nevada White Lead, 1,000-lb. lots	6¾
" " " " " less quantities	7
Pioneer White Lead (local factory), 5-ton lots	6½
Cal. Linseed Oil, raw (single bbl. lots)	45
" " boiled " "	47½
Turpentine, per gallon	47
BRICK—California Building Description, soft, per 1,000	6 00
" " " red, " "	7 00
" " " hard, " "	7 75

Building Intelligences.

Where owners' names are left blank, it is so done in most instances by special request.

A

Army, bet. Guerrero and San Jose Avenue. One-story frame.
O. and B.—J. M. Comerford.
Day work.
$1,800.

B

Bush, bet. Pierce and Scott. Three one-story frames.
O.—J. H. Donnelly.
A.—M. J. Welsh.
C.—W. Burke.
$5,600.

Baker, bet. Sutter and Bush. Two-story frame.
O.—P. Connelly.
C.—F. Roettger.
$2,700.

Baker, bet. California and Sacramento. Two-story frame.
O. and B.—Geo. Hinkle.
Day work.
$4,000.

Buchanan, cor. Oak. Two-story frame.
O.—Mrs. S. Ludwizson.
A.—David Salfield.
C.—A. Klahn.
$3,500.

Bush, northeast cor. Jones. Three-story frame.
O.—L. A. Berteling.
A.—Geo. E. Voelkel.

Carpenter work—F. Knopf,	$10,250
Brick work—J. Wagner,	827
Plumbing—J. Shafer,	1,290
Painting—F. Shafer,	1,060
Total,	$13,427

Bush, bet. Taylor and Jones. Alterations.
O.—L. A. Berteling.
A.—Geo. E. Voelkel.
C.—G. F. Knopf.
$775.

Bryant, bet. Third and Fourth. Two-story frame.
O.—Thos. Boyne.
A.—F. Hillert.
Day work.
$1,000.

C

California, bet. Scott and Devisadero. Two-story frame.
O.—John F. Lindow.
A.—H. Geilfuss.
C.—F. W. Kern.
$6,500.

Columbia, bet. Folsom and Harrison. Two two-story frames.
O.—T. H. Hittell.
C.—A. Nelson.
$7,000.

Caroline, bet. Folsom and Harrison. Two-story frame.
O.—T. H. Hittell.
C.—A. Nelson.
$1,600.

Castro, cor. Seventeenth. Two-story frame.
O.—P. H. Dearon.
C.—Geo. W. Graham.
$2,000.

California, cor. Scott. Two-story and basement frame.
O.—Mrs. E. E. Chase.
A.—Curlett & Cuthbertson.
C.—C. M. Cornell & Co.
$9,000.

D

Devisadero, bet. Eddy and Ellis. Two-story frame.
O.—Mrs. E. Tully.
A.—P. R. Schmidt.
C.—A. Norton.
$2,800.

Devisadero, west side, bet. Post and Sutter. Two two-story frames.
O.—J. H. Jellett & Geo. Leviston.
A.—C. I. Havens.
C.—C. E. Dunshee.
$7,000.

E

East, nr. Market. Two-story frame.
O.—State of California.
Day work.
$1,500.

Eleventh, nr. Howard. Two-story frame.
O.—Wm. Deeney.
C.—J. J. Sweeney.
$1,800.

Eddy, cor. Buchanan. Two two-story frames.
O.—A. Hayes.
C.—D. E. Hayes.
$9,000.

Eddy, nr. Buchanan. Two-story and basement frame.
O.—T. Costigan.
A.—T. J. Welsh.
C.—S. T. Green.
$5,000.

Ellis, cor. Octavia. Eight two-story frames.
O. and B.—B. F. Norris.
Day work.
$17,500.

Eleventh Avenue, nr. Point Lobos Avenue. Two-story frame.
O.—Miss Bella Ryan.
A.—F. Hillert.
C.—Eadie & Rodgers.
$2,090.

F

Fourth, nr. Clementina. Three-story frame.
O.—Thos. Emery & Son.
A.—S. & J. C. Newsom.
C.—J. H. McKay.
$10,000.

Folsom, bet. Sixth and Seventh. Three-story frame.
O.—D. Harrington.
C.—W. E. B. Stiles.
$5,000.

Ford, bet. Sanchez and Noe. One-story cottage.
O.—P. Sheea.
A.—M. J. Welsh.
C.—Doyle & Son.
$2,000.

Fremont, cor. Harrison. Additions.
O.—Father Nugent.
A.—T. J. Welsh.
C.—M. Lynch.
$3,500.

Francisco, bet. Powell and Mason. One-story frame.
O.—Chas. Willmott.
A.—Copland & Banks.
C.—O. E. White.
$2,000.

G

Guerrero, bet. Twenty-fifth and Twenty-sixth. Two-story frame.
O. and B.—F. Vacker.
A.—Wright & Sanders.
Day work.
$4,000.

Greenwich, cor. Bush. Two-story frame.
O.—F. G. Eickhorst.
C.—G. H. Walker.
$3,000.

Golden Gate Avenue, cor. Buchanan. Four three-story frames.
O.—M. W. Smiles.
A.—Wm. Mooser.
C.—John Campbell.
$14,000.

H

Haight, bet. Broderick and Baker. Two-story frame.
O.—J. C. Merryfield.
A.—M. J. Welsh.
C.—Gray & Storer.
$3,600.

Hayes, cor. Ivy Avenue, bet. Franklin and Gough. Three-story brick.
O.—Henrietta Loewa.
A.—C. Geddes.
C.—W. Fletcher
Brick work—G. Richardson.
$14,000.

Hayes, bet. Franklin and Gough. Additions.
O.—H. Winters.
C.—M. McDonald.
$1,600.

Haight, cor. Buchanan. Three two-story frames.
O.—Mrs. Mabel Treadwell.
A.—J. Gash.
C.—T. F. Merrill.
$15,000.

Howard, nr. Fifteenth. Two-story frame.
O.—H. Hilderbrand.
A.—John & Zimmermann.
C.—A. Miller.
$3,800.

L

Lapidge, bet. Nineteenth and Twentieth. Two-story frame.
O. and B.—F. C. Kleebauer.
Day work.
$2,700.

Lyon, nr. McAllister. Two-story frame.
O.—John Tobin.
A.—David Salfield.
C.—H. Inwood.
$1,800.

Larkin, bet. Vallejo and Green. Two two-story frames.
O.—A. Bremer.
C.—Martin & Maguire.
$4,000.

Larkin, bet. Vallejo and Green. Two two-story frames.
O.—Father Nugent.
A.—T. J. Welsh.
C.—M. Lynch.
$3,500.

M

Mission, nr. Second. Additions.
O.—Geo. A. Low.
A.—James E. Wolfe.
C.—Moore Bros.
Brick work—J. Smith.
$6,000.

Market, cor. Ninth. Two-story frame.
O.—J. S. & C. F. Doe.
A.—J. J. & T. D. Newsom.
C.—Thos. H. Day.
$21,495.
The amount $21,495 also includes the three-story frame on Ninth Street near Market.

Mason, bet. Sacramento and Clay. Alterations.
O.—M. L. Kaufmann.
A.—Miller & Armitage.
C.—A. Gilbert.
$1,500.

Mission, bet. Twenty-fifth and Twenty-sixth. Four two-story frames.
O.—John S. Morgan.
A.—Chas. V. Pierce.
C.—J. Bruce.
$12,000.

McAllister, bet. Buchanan and Webster. One-story frame.
O.—F. Younger.
Day work.
$1,500.

Market, bet. Jones and City Hall Avenue. Three one-story frames.
O.—Hyman Bros.
A.—R. B. Schmidt
C.—Mahoney Bros.
$11,000.

Mission, bet. Twentieth and Twenty-first. Two-story frame.
O.—B. Phillips.
C.—F. E. Dunbar.
$3,000.

McAllister, bet. Webster and Buchanan. Three-story frame.
O.—L. Leiser.
A.—H. Geilfuss.
C.—A. H. Plummer.
$7,500.

N

Ninth, nr. Market. Three-story frame.
O.—J. S. & C. F. Doe.
A.—J. J. and T. D. Newsom.
C.—T. H. Day.
Cost included in the job cor. Market and Ninth, same owners.

Natoma, cor. Russ. Alteration.
O.—John Devenny.
A.—McDougall & Son.
C.—J. H. McKay.
$3,000.

O

Oak, nr. Steiner. Two-story frame.
O.—Chas. Sawyer.
A.—J. H. Humphreys.
C.—C. L. B. F. Jones & Co.
$2,500.

Oak, bet. Webster and Fillmore. Two-story frame.
O.—W. F. Laughlin.
A.—P. R. Schmidt.
C.—Hugh Keenan.
$3,900.

Octavia, cor. Ivy Avenue. Two-story frame.
O.—Jane McLaughlin.
A.—Miller & Armitage.
C.—R. Parker.
$4,650.

P

Page, bet. Devisadero and Broderick. One-story cottage.
O.—E. Mutelstadt.
A.—H. Geilfuss.
C.—O. R. Chandler.
$3,000.

Pine, cor. Pierce. Two and one-half story frame.
O.—M. Sabin.
A.—W. F. Smith.
C.—F. W. Kern.
$7,500.

Post, bet Pierce and Scott. Two-story frame.
O. and B.—J. C. Wier.
Day work.
$4,000.

Post, bet. Kearny and Grant Avenue. Alterations.
O.—Kohlberg, Strauss & Frohman.
A.—Chas. I. Havens.
C.—P. Griffin.
$1,500.

Pine, nr. Lyon. One-story frame.
O.—A. Houschildt.
A.—H. Geilfuss.
C.—J. McKay.
$2,700.

Polk, cor. Bush. Additional contracts.
O.—Captain Taylor.
A.—W. Mooser.
C.—C. B. Gonyeau.
$5 000.

Pacific, cor. Leavenworth. Two-story frame.
O.—J. B. Hobson.
A.—J. J. & T. D. Newsom.
Carpenter work—Wessinger & Ponge, $8,825
Brick work—Geo. D Nagel. 1,725
Patent pavements—California Stone Co 500
Cost, $11,050

Post, cor. Hyde. Three-story frame.
O.—C. Weller.
A.—J. Marquis.
C.—V. Bergman.
$12,000.

S

Sutter, cor. Baker. Two-story frame.
O.—Mrs. Eugene Young.
C.—G. G. Gillespie.
$4,000.

Stuart, nr. Market. Two-story frame.
O.—Renton, Holmes & Co.
Day work.
$2,000.

Sutter, bt. Broderick. Additions.
O.—F. McCormack.
C.—R. Discher.
$1,600.

Sixteenth, north side, bet. Guerrero and Dolores. Two two-story frame stores and dwellings.
O.—Wm. McDowell.
A.—Charles I. Havens.
C.—A. Klahn.
$4,500.

T

Twelfth, cor. Glenn Park Avenue. Additions.
O.—C. J. Dempster.
A.—Huerne & Everett.
Day work.
$1,500.

Taylor, bet. Turk and Eddy. Four-story brick.
O.—P. Dupray.
C.—John W. Wessinger.
$17,000.

Twentieth, bet. Guerrero and Dolores. One-story frame.
O.—P. Gadina.
A.—M. J. Welsh.
C.—Joseph Dutton.
$2,500.

Twenty second, cor. Fair Oak. Two two-story frames.
O.—Mrs. A. H. Flagg.
A.—M. J. Welsh.
C.—Cormack & Elan.
$1,600.

Turk, bet. Taylor and Jones. Three-story frame.
A.—H. W. Burckes.
C.—Geo. W. Hansbrough.
$7,000.

Twelfth, bet. Mission and Howard. Frame church.
O.—Trustees Church of Christ.
A.—McDougall & Son.
C.—Ingerson & Gora.
$8,500.

U

Union, nr. Larkin. Two-story frame.
O.—Mrs. Brooks.
C.—Martin & Maguire.
$3,500.

V

Vallejo, nr. Van Ness. Two-story frame.
O.—Captain Barber.
A.—W. G. Hoagland.
C.—J. A. Benham.
$3,500.

Valencia, bet. Twenty-second and Twenty-third. Additions.
O.—F. Haake.
C.—C. H. Muresky.
$4,000.

Valencia, nr. Ridley. Two-story frame barn.
O.—R. Tobin.
A.—T. J. Welsh.
C.—P. J. Smith.
$1,500.

Vallejo, cor. Hodges Alley. Two story frame.
O.—J. J. Boyle.
A.—T. J. Welsh.
C.—G. T. Knupf.
$3,700.

Valencia, cor. Ridley. Three-story frame.
O.—John Fisher.
C.—John L. Binet.
$8,000.

Van Ness, cor. Ellis. Alterations.
O.—D. Hunter.
A.—H. T. Bestor.
Day work.
$10,000.

W

Webster, cor. Pacific. Two two-story frames.
O.—
C.—J. P. Sheppard.
$7,000.

Washington, nr. Stockton. Additions.
O.—Mrs. Pauline Mitchler.
C.—W. T. Veitch.
$4,500.

Washington, cor. Octavia. Two and one-half story and basement frame.
O.—Alex. Boyed.
A.—Curlett & Cuthbertson.
C.—Peter Crichton, $18,790
Brick work, 2,000
Total, $20,790

Welch, bet. Fourth and Fifth. Two-story frame.
O.—Mrs. M. Sand.
A.—T. J. Welsh.
C.—Doyle & Son.
$3,000.

MISCELLANEOUS.

Sacramento—J, bet. Seventh and Eighth. Alterations and improvements. O., R. P. Burr; A., N. D. Goodell; C., Sprague & Elliott; $1,800. K, bet. Front and Second. Elite Theater. Alterations and additions. O., F. W. Fratt; A., N. D. Goodell; C., Heninger & Polland; $1,000. Second, bet. J and K. Improvements. O., H. W Harkness; A., N. D. Goodell; C., Wolf & Norris; $600. Sixth, cor J. Improvements. O., L. C. Chandler agent; A., N. D. Goodell; C., T. J. Heninger; $350. J, bet. Second and Third. Additions and alterations. O., M. A. Burke; A., N. D. Goodell; C., B. F. Bell; $12,000. I, bet. Sixth and Seventh. Improvement Library Building. O., City of Sacramento; A., N. D. Goodell; C., Munford & Churchill; $450. G, bet. Eighteenth and Nineteenth. One and one-half story frame. O., C. H. Gilman; A., N. D Goodell; C., Siller Bros.; $400. Near Sugar Beet Factory. Two-story and basement frame. O., D. McCarty; A., N. D. Goodell; C., Wolf & Norris; $5,200.

Hicksville—One and one-half story frame. O., Wm. Fry; A., N. D. Goodell; C., Heninger & Polland; $1,200.

San Jose—Third, nr. Santa Clara. Two-story frame. O., Dr. E. S. Mead; A., Theodore Lenzen; C., H. C. Skow; $3,500. Five. Two-story frame. O., Mr. Leunardi; A., Theodore Lenzen; C., Thos. Livingston; $3,000.

Santa Clara—Franklin. One-story frame. O., Mr. Nugent; A., Theodore Lenzen; C., Mr. Clifton; $2,500.

Alameda—Two-story frame. O., W. T. Ryer; A., Geo. A. Bordwell; C., Ingerson & Gore; $4,500.

THE CALIFORNIA ARCHITECT AND BUILDING NEWS.

VOLUME VII. ENTERED AT POST-OFFICE, SAN FRANCISCO, AS SECOND-CLASS MAIL MATTER. ESTABLISHED JANUARY, 1879. NUMBER 10.

THE

California Architect & Building News.

A MONTHLY JOURNAL,

Devoted to Architecture, Decorating, and Furnishing.

PRICE, $2.00 PER ANNUM.

The official organ of the Pacific Coast Association of Architects. Published by the SAN FRANCISCO ARCHITECTURAL PUBLISHING CO. No. 240 MONTGOMERY STREET, Rooms 11, 12, 13.

Subscribers will please notify us promptly of any failure to receive this journal, and also of any change in their address.

Advertisements inserted at reasonable rates.

SAN FRANCISCO, CAL., OCTOBER 15, 1886.

THE OFFERED SALE OF THIS JOURNAL.

SINCE the first announcement in its pages that the entire interests of this journal would be disposed of to competent parties, a great many personal inquiries have been made, and propositions submitted and declined.

A sale contingent upon certain stipulations might have been made three months ago, but as we propose an unconditional surrender of the situation, we shall hold the fort until a competent commander-in-chief shall arrive, with satisfactory financial credentials.

Negotiations now pending with parties and firms east of the Rocky Mountains, may result in a full change of management by the first of January next, if not sooner. In the meantime the journal will be continued as heretofore to the best of our over-burdened abilities.

A GENERAL EXPLANATION.

Those who have made inquiry by letter, and personally, have asked for all the facts of the case, and what will be included in the sale.

As a general answer, we state: A sale will include every interest of the publication—its good-will, subscription list and advertising patronage, office appointments, desk, bound volumes and back numbers since 1879, outstanding accounts due from all sources, five hundred copies, more or less, architectural, mechanical, and other publications (optional), and all else pertaining to the publication and circulation of the journal.

We state, in answer to the question repeatedly asked by correspondents, in reference to

COMPOSING ROOM AND PRESSES,

That there are none. The journal has been conducted incidentally in connection with our architectural pursuits, and printed and bound ready for distribution by contract.

But with these limited facilities and restricted advantages, and personal attention divided between two great interests—editor and manager, and practicing architect—each demanding our whole time and energies, we have continued our publication work for eight years (less two months) with a profit to ourselves, making a most enviable reputation for the journal, as evidenced by the hundreds of complimentary notes from time to time published by technical, class, and other journals, and preparing the way for some one to continue its publication with great success and profit.

We Want YOU, Who Have Not, To PAY UP.

ANTICIPATING retirement from the management of this journal, those who have *not paid up* their subscription dues will confer a favor by *doing so at once*. Let there be no delay in this matter. We propose to clean up as neatly and nicely as the good pleasure of *honestly disposed* patrons may make possible, and as thoroughly—☞ *as the law provides* ☜—with those who refuse or neglect to settle their accounts.

Every unpaid dollar due us has been faithfully earned by unceasing desires and earnest efforts to found and perpetuate a California class journal in the interests represented in these columns; and measured by the mental and physical cares and labors, and the financial requirements to this end, every dollar yet due us has been honestly earned and should be paid promptly.

We hope not to be required in any case to invoke legal redress, but as protection of publication interests, which have been and are so often abused by that portion of the reading public who seek to obtain their reading matter without cost, the law in such cases made and provided is, that every man who *receives* a subscription journal of any sort, can be held and made to pay the full amount of subscription, up to the time of *payment* and stoppage.

Summary of Building Activities.

THE number of engagements and the cost of same for month of October, as compared with same month of 1885, may be seen below:—

157	engagements for 1885	Cost,	$579,114
54	" " 1886	"	230,720
103	" in favor of 1885	"	$348,394

Antiquity of the Hot-Air Furnace.

THE younger Pliny, writing to one of his friends about one of his country seats, mentions among other things that next to the smaller drawing-room there is a semi-circular room with windows arranged so as to get the light of the sun all day. He says: "Out of this is a bedroom which can be warmed with hot air." He also refers to the "bath with its cooling room and its hot room." As Pliny, Jr., lived A. D. 62–116, we may assume that hot-air furnaces are no new thing.

Pointers for Advertisers.

DON'T expect an advertisement to bear fruit in one night. You can't eat enough in a week to last you a year, and you can't advertise on that plan either.

People who advertise only once in three months, forget that most folks cannot remember anything longer than seven days.

If you can arouse curiosity by an advertisement, it is a great point gained. The fair sex doesn't hold all the curiosity in the world.

Quitting advertising in dull times is like tearing out a dam because the water is low.

IT would require 50,000,000 pounds of wire to erect a telegraph around the earth at the equator, and but a half pound of the thread made by a certain species of spider.

How to Pay a Compliment.

TO pay a high compliment is to tell the truth, and to tell it as though you mean it. And the only way to do that is to mean it. If a girl is pretty or accomplished, if she plays well, or sings well, or dances well, or talks well; in a word, if she pleases, why in the name of common sense shouldn't she be told of it? Don't blurt it out before everybody. That will only make her feel uncomfortable, and make you appear ridiculous. Say it quietly when opportunity offers, but say it strongly. Convey the idea distinctly and fully, so that there may be no mistake about it. But don't do it "officially." Formality is about the coldest thing known. More than one maiden has been made happy—say for half an hour—by a man's taking the trouble to say a pleasant thing about a toilet that he liked, and many of fashion's follies have been given up by girls when they noticed a discreet silence concerning them on the part of their gentlemen friends. A bewitching little black-eyed beauty once said to a gentleman: "I like to have you say sweet things to me, it seems to come so easy and natural." In general terms, it may be said that it is always better to say an agreeable thing than a disagreeable one; better for all parties. The gallant who, when a young lady stepped on his foot while dancing, and asked pardon, said, "Don't mention it; a dainty little foot like that wouldn't hurt a daisy," not only told the truth, but doubtless felt more comfortable than the boor who, when his foot was stepped on, roared out, "That's right; climb all over me with your great clumsy hoofs."

Quarrying Large Stones.

THE Greeks had a predilection for large blocks of marble or stone, and their method of quarrying is interesting even to-day. They were extracted in the following manner:—

In order to procure the square stones—after the top and front faces of a given mass of the rock in the quarry have been brought to a plain surface—incisions, usually from 4 to 5 inches wide, were made on the top surface, marking out the boundaries of the intended size of the block. These incisions being continued down to the desired depth of the block, there remained nothing more to be done than to separate it from its lower bed, which operation was performed, as there is every reason to think, by the expansion of wooden wedges saturated with water. The cylindrical courses for the shafts of the columns were extracted (as may be observed at the quarries of Selinus, in Sicily) by means of a circular passage-way, 2 feet 8 inches in width, being hewn out of the rock and taking the entasis of the intended column, thus leaving an isolated mass of stone in the center the exact shape and size of the required shaft. I should here add that the stone columns of every temple occupy almost invariably the same relative position in the building which they occupied in the quarry.

This circular mass of stone has now, like the square blocks, only to be lifted from its lower bed; and the method employed, which, from the examinations of the quarries at Selinus, can be no longer doubted, bears me out in a conjecture I had previously made on the square blocks. A hole, or deep incision, wedge-shaped, was made in the lowest part of the insulated cylinder, in the direction of its center, but considerably to one side, reasons for which will be obvious. Into this hole, I presume, a wooden wedge was inserted, which was saturated with water, and which, being suffered to expand while in this position, would, at no great distance of time, heave up the mass, on the same principle applied to the splitting of slate and mill-stones in France, and so separate it in the direction of its bed. Nothing, I think, appears more likely, from the consideration of the facts observed at Selinus, than that such was the method employed; and since I see from my memoranda that I observed the branch of a shrub not one inch in diameter, which by its growth in a crevice of a rock had split a mass of stone weighing about 50 tons, I can readily conceive that the small orifice with its wooden wedge would have been sufficient to loosen the required mass.

In our December issue we will publish complete a list of those who are in arrears for subscriptions to this journal. Avoid publicity by sending us the amount of your indebtedness immediately.

Fire Hose and Garden Hose, W. T. Y. Schenck, 256 Market Street.

In our December issue we will publish complete a list of those who are in arrears for subscriptions to this Journal. Avoid publicity by sending us the amount of your indebtedness immediately.

Loafing.

WHILE there are many complaints made, from time to time, says the *Mechanical News*, about the dullness of business and the hardness of the workingman's lot, we hazard the statement that about one-half of the hard times and business depression is the direct or indirect result of loafing—either good, or solid, square, old-fashioned, primitive loafing, or the modern revised version, which is called, for some occult reason or other, "soldiering."

There are very few honest, safe, and profitable occupations in which success can be attained by sitting down and waiting for it, or is got by luck. There is more gold got out by patient labor than was ever brought to light by stubbing the toe against nuggets. The diamond fields are the scene of patient, plodding labor, neglecting no shovelful of dirt.

There is a marked difference between workmen who are doing for themselves, or who are piece-working, as well as among those who are "by time." One man will loaf away an hour a day. It may be listening to, or watching his neighbor; or hunting a match or helping hunt one; or wondering what to do next; or it may be distributed all through the day by deliberate and careful attention to the science of slow moving as applied to the prevention of heat or rupture; but it is there, all the same; there is an unproductive hour, or a day with a tenth or an eighth less work in it than it should have.

A day's workman cannot afford to loaf. He may lose his place, for a selfish reason. He is not giving an honest equivalent for what he receives, for a moral one. He is getting into the habit of working slowly, which will interfere with his profits if he gets on piecework—selfish reason No. 2. He is setting a bad example to others to render a poor equivalent for their pay—moral reason No. 2.

We could keep on piling up reasons of each kind against loafing, but they will suggest themselves; and then the case is somewhat analogous to the one where the lawyer announced twenty-nine reasons why his client did not appear at the trial. In the first place, he was dead. The second reason was that "the first reason was reason enough."

There are many foundries and factories, mills and shops, where no smoke issues from the stack and no rumble of work is in the air, and in which more energy and less loafing, on the part of proprietors and employés, would have enabled work to continue right along, at least at a rate which would pay hands and keep the business in public mind until times were better. Ten per cent more work out of every man would not have strained any one, and would have made just the difference between a slight loss in the business, and "expenses cleared." And that ten per cent more work would have improved every man on the place.

We just heard an anecdote of a noted stenographer who drops into profanity if a day goes by without his having anything to do; not because he loses the earnings of that day, but because he loses speed. He gets some one to read fast to him, in order to keep up his speed.

Go into an engine room and see the engineer doing nothing all day, and you will see a man who will not earn any more ten years from now than he is now getting. Instead of loafing, he might be reading, or drawing his engine out to scale, or learning something about the machinery his engine drives.

The time for loafing is after work. Then it should be free and unreserved, and will be beneficial and rightly earned.

Third Quarterly Report

ENDING with September, for town of Woodland and Yolo County

Woodland—16 frames		Cost,	$25,900
"	3 brick	"	14,500
"	9 improvements	"	3,900
Total—28		"	$44,300
County—3 frames		Cost,	$7,800
"	1 brick	"	7,000
"	3 improvements	"	2,100
Total—7		"	$16,900
City and County for 1886—35 engagements		Cost,	$ 61,200
" " " 1885—58		"	160,875
Excess in favor of 1885—23		"	$99,675

Method of Obtaining Length of Rafters.

FOR some months past there has been quite a discussion of various plans for obtaining the length of rafters. Many of the methods presented are not desirable, for the want of accuracy. Some years ago the subject came up for discussion where I was at work, and I then prepared the following table, which is very simple and mathematically correct. Any mechanic can copy it on the back of a business card and tack it to the lid of his tool-chest, where it will always be handy for reference. The word "pitch" means such a fractional part of the width of the building. The further north you go the steeper the pitch, on account of the snow; also certain localities have pitches peculiar to that section of the country.

Pitch.	Square.	Rafter.	Brace.
1-6	4 and 12	0.527046	1.054092
5-24	5 and 12	0.541666⅔	1.083333
1-4	6 and 12	0.559017	1.118034
7-24	7 and 12	0.578852	1.157704
1-3	8 and 12	0.600925	1.201850
3-8	9 and 12	0.625	1.25
5-12	10 and 12	0.6508541	1.3017082
11-24	11 and 12	0.6782843	1.3565686
1-2	12 and 12	0.7071068	1.4142136

The first column indicates the pitch of the roof; the second gives the figures on the square that will cut the various pitches; the third gives the length of a rafter for a building one foot wide, and the fourth gives the length of braces for runs of the same proportion as the figures in the second column.

The manner of using the table is as follows: For any given pitch multiply the tabular number by the whole width of the building, and the product will be the length of the rafter in feet and decimals of a foot.

Example.—What is the length of a rafter of a building 18 feet wide at ⅓ pitch?

Solution.—0.600925 × 18 = 10.81665 feet, or 10 feet 9 13-16 inches.

Example.—What is the length of a brace having 40x48 inch run?

Solution.—40x48 inches is the same proportion as 10x12; hence, 1.3017082 × 48 = 62.482 inches, or 62½ inches, always using the longest run for multiplier.

Example.—What is the length of a brace having 35x35 inch run?

Solution.—1.4142136 × 35 = 47.4974 inches, or 49½ inches.

"EDITOR ARCHITECT:—Please settle a difference of opinion by stating the proportion between the load a given floor will bear when the joists are not bridged, and the same floor thoroughly bridged, with two rows of herring-bone bridging."

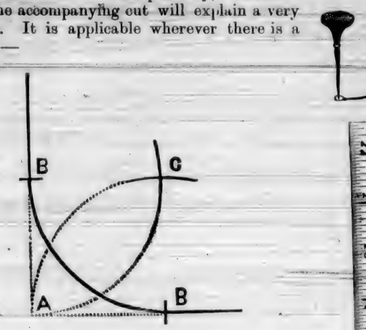
A floor will not bear any more weight by being bridged. The advantage to be gained by bridging lies in the fact that an individual joist is strengthened thereby, thus increasing its power to resist a concentrated load upon it, such as a heavy book-case, safe, etc.

A "YOUNG mechanic" wants us to inform him how to tell whether butts are for left or right-hand doors.

Lay the butts on the bench or table with the knuckle-joint towards the right hand. If they are open at the top they are right hand; if open at the bottom, they are left hand. A door that opens away from you to the right, is called a right-hand door. If it opens away from you to the left, it is called a left-hand door.

"EDITOR CALIFORNIA ARCHITECT: I often have occasion to *round off the corners* in various branches of my work, and what I require is a rule by which I can do so, and have the curvature perfect. Will you kindly furnish me the information, as others besides myself would no doubt be benefited. Respectfully, AJAX."

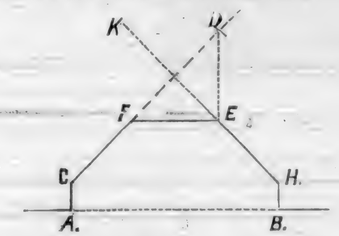
ANS.—The accompanying cut will explain a very simple way. It is applicable wherever there is a right angle:—



Let B A, A B represent the square corner of a shelf, or any object. Suppose the radius of the curved corner to be 1 inch. From A, as a center, mark off 1 inch each way, as at B B. With B B as centers, and radius A B, describe the circle A C. The point of intersection, C, will be the center of the arc B B.

"BUSINESS MAN. OF ARCHITECT: Is there a quicker method of finding the length of the sides of a bay-window, drawn on paper, than the old way of spanning around with a pair of compasses, till you get the three sides equal? READER."

ANS.—The cut will explain a very *neat way*.



Extend C F or E H; lay off on the line C D a distance equal to the width of your window, as A B. At D drop a perpendicular, and at the point where it intersects E H, as at E, draw E F, parallel with A B.

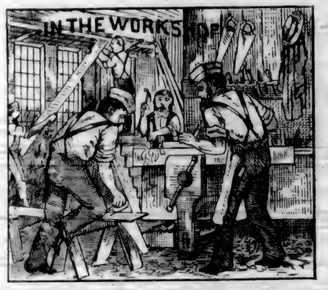
A CARPENTER wants to know how to remove the stains in his apron, caused by wet nails. For his information we will state: Soak the stains in a weak solution of chloride of zinc, and rinse immediately in water.

DO NOTHING in building by guess-work, and in its conduct trust not too much to memory, for a jotting or, too at the proper time are worth a hundred jogs on the brain, for the purpose of safe recollection.

IF you would set out good work, do it by practical geometry; if indifferent or bad, by the "rule of thumb."

A FAIR day's work for a fair day's wages should be estimated by its quality as well as its quantity.

THOUGH a strong man, the carpenter cannot raise his frame without assistance.



We will be pleased to receive for publication in this column items of information in regard to practical ideas connected with the mechanical part of the building trade. We especially invite suggestions from apprentices and young mechanics.

Business Manager of Architect: In putting on a moulding around a circular head of a window, it is necessary, of course, to kerf the moulding in order that it may bend without breaking. Is there any rule by which we may know just how much solid wood to leave between each kerf?

Ans.—There are many solutions to this problem, but for simplicity and exactness, the following rule is better than any other which we can at present call to memory:—

Let A B C be a curve to which a moulding or other work is to be bent. Supposing the stuff to be one inch thick, take a strip equal to this, and run a gauge line on to the thickness of a veneer; then make a cut down to veneer. This done, lay a strip on the drawing, keeping the cut opposite S, the center of the given curve. Fasten the lower part of strip; its face is now on line S P. Move it to the left until cut at S closes, which causes its face to be on line S T, and gives for solid wood between each kerf 2 3. Here it must be kept in mind that the same saw with which the cut was made in strip must be used for kerfing the work.

Some materialistic scientists are very fond of quoting the remark of Kant: "Give me matter, and I will explain the formation of a world;" but they omit the other words, "Give me matter only, and I cannot explain the formation of a caterpillar."

Wall supports for clothing: When you drive a nail into a wall, clothes press, or closet, to hang things on, drive it through a spool up to the head. Select a spool with a hole large enough so that the nail will not split it.

California Architect: I have a post, the lower half of which is to be square. The upper half is to be octagon shape, so that the angles of the octagon shall be in the middle of each side of the square. Will you please illustrate a simple method by which I can draw the octagon?

Ans.—Let A B C D be the square. Draw the diagonals A D and C B and the center lines *e f* and *g h*. From the center *i*, with a distance equal to half the width of the square, as *i h*, mark on the diagonals the points *k l m n*. Join *e k*, *k g*, *g l*, etc., and you have the figure required.

The following tables will be found of much benefit to parties residing in the country, who desire to know the weight of doors, sashes, blinds, etc., so as to form a basis for railroad expenses:—

WEIGHTS OF DOORS.

	1 Inch.	1¼ Inch.	1½ Inch.
2 ft. 0 in. x 6 ft. 0 in.	20 lbs.	25 lbs.	32 lbs.
2 " 6 " x 6 " 6 "	27 "	33 "	38 "
2 " 8 " x 6 " 8 "		35 "	40 "
2 " 10 " x 6 " 10 "			48 "
3 " 0 " x 7 " 0 "			50 "

WEIGHTS OF WINDOWS.

	1¾ Inch.	Glazed.	Unglazed.
7 x 9		13 lbs.	6 lbs.
8 x 10		15 "	6½ "
9 x 12		20 "	7½ "
9 x 13		21 "	8 "
10 x 12		22 "	8 "
10 x 14		23 "	8½ "
10 x 16		26 "	9 "

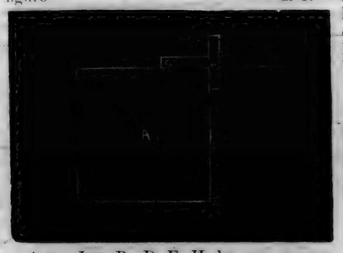
WEIGHTS OF BLINDS.

7 x 9	11 lbs.	2 ft. 6 in. x 6 ft.	6 in	5 lbs.
8 x 10	13 "	2 " 8 " x 6 "	8 "	24 "
9 x 12	14 "	2 " 10 " x 6 "	10 "	25 "
9 x 13	17 "	3 " 0 " x 6 "	6 "	24 "
10 x 12	17 "	3 " 0 " x 7 "	0 "	25 "
10 x 14	19 "	3 " 0 " x 7 "	6 "	28 "
10 x 16	21 "	3 " 0 " x 8 "	0 "	31 "
10 x 18	22 "			
10 x 20	25 "			

WEIGHTS OF LUMBER—DRY.

Sugar Pine, rough, per M ft	2,500
Yellow Pine, " "	2,760
Rustic, " "	2,000
Flooring, " "	1,900
Ceiling, ⅜ in. thick, "	800
" ½ " " "	1,200
" ¾ " " "	1,400
" ⅞ " " "	1,600
Common Boards, surfaced one side, per M ft	2,000
Dimensions, rough, per M ft	2,700
Shingles per bunch	40
Pickets, per 100 ft. of lumber contained	200

Business Manager of Architect: Will you please illustrate a method for setting a gauge for an octagon without drawing the figure B. Y.



Ans.—Let B D E H be any square. From B with the radius A B, draw A C. Set the gauge to equal C H.

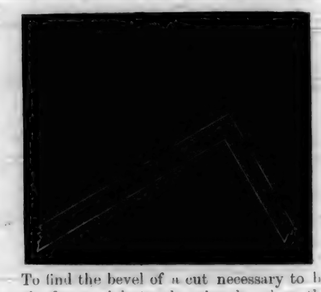
Mechanical Editor of Architect: I send you a method I have used for some time, to get the bevel cuts for *splayed* work, or work having sides equally inclined or *flared*, the base of the work being a right angle.

Draw two parallel lines, any distance apart, as A B, C D. Let 2 A be the given *flare;* from A, square down a line cutting in C; take 2 as a center, and A radius, strike the arc cutting the perpendicular from 2 in F; join C F. This gives bevel P for direction of cut on face of stuff.

To find a bevel for miter on the edge:—

Take 2 as center; strike an arc, touching line A B and cutting at D; join D F. This gives bevel R for miter on edge of stuff, which should be square for application of bevel.

I do not claim the above at all as original. It is simply the way I learned in the East, and put in practice on my work in California.



To find the bevel of a cut necessary to be made for a right angle triangle, place the blade of the square on 7, and the tongue on 4. The bevel to use is the one formed by the blade or long arm of the square.

Any multiple of the above-mentioned figures may be used, as 3½ to 2, 14 to 8, etc. Take three pieces of scantling or other lumber, apply the square as per rule, cutting all three pieces of equal length and with the same miter; by putting the pieces together a perfect equilateral triangle will be formed.

In planning stairs, think of your headroom from the lowest starting-point to the highest landing, or somewhere in ascending or descending stunning falls and broken limbs may accompany bruised foreheads and battered hats.

Perspective is necessary in drawings, but do not carry its principles into practice in putting together workmanship.

Houses may not be built from the roof downwards, though they are often burned in that direction by plumbers' fires.

In making out building quantities do not overrate them too much, for you may calculate too liberally for your own good, as well as estimate by guess-work too lowly to your own and others' loss.

ASKED, ANSWERED, AND COMMUNICATED.

☞ Architects, Contractors, Carpenters, and Mechanics generally are respectfully requested to furnish us items of interest for this column. We will gladly answer any and all questions pertaining to the architectural and building interests. If illustrations are necessary to explain your ideas, send us a sketch of them and we will make the cuts.

Free to All.

The columns of this journal are open to all who differ with us upon any subject presented. We are too old in years and experience to assume that we have passed the reef of human liability to err, or for one moment to suppose that we have reached the realms of thought where perfection reigns supreme. But this we do assure—that whatever of error there may be contained in our columns will be speedily corrected as soon as attention is directed thereto, and we are convinced of the error. We will give place to a reply in any case, when a mistake or wrong statement has occurred. It is our desire and purpose to be fair, just, and correct in all things, and do no person or subject any violence. We therefore invite free discussion and criticism, and again state that the columns of this journal are at the service of all who desire to differ with us upon any theory or subject, or who take exception to anything at any time appearing in our columns.

San Francisco, Sept 30, 1886.

Editor Architect: Will you please answer the following questions in your columns: From which part of the redwood tree do the bird's-eye and curled burls which are used for veneering work, etc., come? Are there only a limited number of trees containing such burls? Is there any difference in the quality of redwood lumber growing in the different parts of the State? and does the redwood grow in the Sierra Nevada Mountains? Th. Weinert.

Answer.—Bird's-eye and curled burls are obtained from the lower part of the tree. In fact, many stumps have been dug out and sawn up for the sole purpose of obtaining the above varieties, the upper or lumber portion having, in many cases, been used long ago. Only a limited number of trees contain bird's-eye specimens. The different kinds of redwood are generally known as hard and soft, according to the part of the tree from which it is obtained. Redwood does not grow in the Sierra Nevada Mountains, except in very isolated instances. Its growth is confined to the vicinity of the ocean; in fact, a foggy condition of the atmosphere seems essential to its mature growth.

To construct a scale by which the side of any octagon is known at once.

Take any right angle, as A B F. From B, with any radius, draw the quadrant A D; divide it at C; with C as a center and with any radius, make an arc at O; with same radius and center D intersect the arc; through the point of intersection draw B K, and the scale is complete.

To prove the scale, make the distance B F equal A D, figure 5; square up from E, cutting at H; then F K equals 2 L, the side of the octagon.

The above is an exceedingly neat and easy way to get the side of an octagon without drawing the whole figure.

Editor Architect: As you have extended invitations several times to mechanics, asking them for communications in regard to improved methods of finding the length of rafters, I beg leave to submit to your approval the following method used by me in the Western States. Many of the mechanics in that section practice the rules given in all their roof work. While not giving the length with that same degree of exactness that would be found by the rule for finding the hypotenuse, two sides being given, still it is so near exact that the difference cannot be noticed, and I am sure it is a far quicker method than that old way.

I do not think that any simpler method can be given for finding the bevels at the heel and point of rafters than that explained in the issue of your journal referred to, so in this article I will deal with the length alone.

The most common width of buildings in California is 24 feet. And I propose to take that width for the practical test of my proposition. As you have given several ways by which the same result can be obtained, I will take up each of them and compare with mine.

Finding the length of the hypotenuse by the old rule, we obtain for a one-quarter pitch 13 : 4.99, or, as near as it can be used on the square 13 feet 5 inches.

Allowing one inch to the foot and trying your second method, we find, as the result, 13 inches and 7-16 scant, or 13 feet 5 inches. This is a very simple method, and when the rule is kept perfectly straight, the results are very satisfactory.

By my way I simply multiply the width of the building by the decimal .56, 24 × .56 = 13.44, or, as near as can be worked by the square, 13 feet 5 inches.

Let us try the same rule for a greater width—say 60 feet. By finding the hypotenuse we find as near as can be used by the square, 33 feet 6½ inches. By my method it would be 60 × .56, or 33.60, equal to 33 feet 7 inches full. By this method the rafters in wide buildings are a little long. Thus, if the building is 52 feet wide, by the hypotenuse it would be 29 feet 1 inch; my way it would be 29 feet 1½ inches. I consider this an advantage, as it leaves the point of the rafter very slightly open.

For a one-third I follow the same plan, only using the decimal .6. Unlike the decimal used for a quarter-pitch, the lengths obtained are a very small fraction short; as, for instance: a rafter for a building 60 feet wide, by finding the hypotenuse, would be 36 feet 1-16 of an inch. By my way, 60 × .6 = 36 feet. A slight difference, truly. If building is 48 feet wide, then by the first method we find 28 feet 10 inches full; by my way, 28 feet 9 3-8 inches. A little practice will enable the mechanic to allow just enough to make up for the slight difference, so that when rafters are put together the fit will be perfect.

The one-half pitch can be found in the same manner by using the decimal .71. Taking the 24-foot building, length of rafters by the hypotenuse we find 16 feet 11⅜ inches; my way they would be 17 feet full. Again, building 60 feet wide, rafters by the first method would be 42 feet 6⅛ inches; by my way 60 × .71 = 42 feet 6 inches. By using this decimal, the length is so near practically correct that it may be used in all cases.

For a full pitch use the decimal 1.12, and as in the preceding mentioned pitch, and it will be found so near correct that it can be practically used in all cases.

It will be noticed that I have not made any allowance for projection of rafters over the plate. In this case gauge from the crowning side of your rafter the thickness of your projection; allow enough for the latter, and find the lower bevel according to the way you described in your last; measure the length of your rafter from where this bevel crosses the gauge line.

A little practice will enable the mechanic to lay off a rafter in a very short time. I have used the above myself, and have no trouble whatever. If any of your readers will work out the lengths of rafters according to their own methods, and can show that the one I use has any defects, I will be pleased to hear from them through the columns of your journal. Trusting that the above will so meet with your appreciation that you will deem it worthy of your notice, I am, respectfully, your well-wisher.

W. Helianus.

E. M. H. writes: "I have been working on buildings where the head carpenter, with a ten-foot pole, a pencil, and a square, will lay out the pattern for the rafters in less time than it takes me to write this. Upon asking for information how to do the same thing, I was told to study up the matter as he had done. Please give me a more practical answer."

Although not a very polite answer to receive from a fellow-workman, it is directly to the point. If E. M. H. will invest a few dollars in practical works on the "Steel Square and Its Uses," etc., he will, with a little study, lay out rafters as easily as the "head carpenter." Of course, in laying out a rafter, the first thing to find out is the pitch, or rise, of the roof. A quarter-pitch is one where the peak of the roof is one-quarter the width of the building higher than the plate; one-third pitch, peak one-third higher, etc. Or, in other words, a one-quarter pitch has a six-inch rise in each foot of width; a third pitch has an eight-inch rise in each foot, etc.

Pick out a straight piece of timber for a pattern. For a quarter-pitch, place the square against the straightest edge, with the tongue on 6 and the blade on 12. The bevel of the blade will be the bevel of the heel of the rafter, or the part resting on the plate. The bevel of the tongue will be the bevel of the point of the rafter.

Proceed in the same way with any given rise to the foot. For 5-inch rise to the foot, use 5 and 12 on the square; for 7-inch rise to the foot, use 7 and 12; and so on. The length of the rafter may be obtained in several different ways. Suppose the building is 36 feet in width, roof one-quarter pitch. On the square lay your rule so that the point will be at 18 on the blade, or one-half the width of the building, allowing one inch to the foot, and let the rule cross the tongue at the figure 9, which represents the rise of the roof, or one-quarter pitch. We find by looking at the rule the distance is 20⅛ inches, or 1 inch to the foot—20 feet 1½ inches. For a third pitch, let the rule cross at 12 instead of 9, and we have the length 21 feet 7½ inches.

Use a smaller scale for buildings that have a greater width than 48 feet. For those who understand the extracting of the square root, that plan enables them in a very short time to get the precise length of the rafter.

In the way just described, no allowance has been made for projections of rafters over the plate. It is obvious that a little different application of the principle will have to be applied if the rafter has a projection of one, two, or three feet.

Octavius Morgan.

THE subject of our sketch is a gentleman well-known in the Southern part of this State. A stranger upon his arrival in Los Angeles, he has, by his own individual energy, raised himself to a standard to be envied. He began his career as an architect in the beautiful "City of the Angels" in connection with Mr. Kysor. Since the formation of the partnership, the firm has had charge of a great many of the more principal buildings, both in Los Angeles and the surrounding country, some of their artistic plans ranking with those of any architect in the State. Mr. Morgan is a member of the San Francisco Chapter, American Institute of Architects.

Octavius Morgan.

"By Day's Labor."

THERE is perhaps a less comparative proportion of work done "by the day" in San Francisco than in any other city. The "day's-work jobs" are limited in number, and only in exceptional cases are they of any considerable extent or cost. The reasons why this state of things exists are numerous, and their recital in elucidation of the many facts involved would fill hundreds of pages of this journal. There are two sides to the main question, each prolific in argument, tending to illustrate that selfishness, avarice, cupidity, covetousness, and their kindred inspirations, control the acts of men in innumerable instances.

The more fatally forcible argument is against the operating classes, who apparently fail to comprehend or realize the error so often committed on their part, in seeking to protract and make the most of work intrusted to them under the day's-work system, either by excessive charges for material furnished, or tardiness, amounting to what is understood by the term "loafing," *i. e.*, killing time, and idling away the time, so as to prolong the work in hand and extend its duration.

The *mischievous* fact of the matter, as far as the working classes are concerned, is in the creation of a general sentiment and belief that workingmen cannot be trusted—that work done by the day costs very much more than a right and proper price, and excessively more than if done by contract. Consequently, this conclusion has become general, if not universal, that safety from excessive charges and wasteful cost in the execution of all classes of work can only be secured under contract arrangements.

This state of things induces a feeling of distrust, and creates antagonism between employers and employes, often amounting to "real ugliness." Tricks and deceptions are imagined on the one hand, even where not in practice; and, on the other hand, resorted to in fact in many cases, because the underlying principles are defective. The attempt to use advantages wrongfully often works to the disadvantage of those making the attempt, and operatives generally have lessened their opportunities and reputations by "piling on" too much; and, instead of being content with legitimate and fair profits, and working as steadily and faithfully on day's-work jobs as when restricted by contracts, have created prejudices against "day's work," and enforced the contract rule.

If the contract system was preferred for reasons alike honorable to all concerned, there could be no objection to its adoption; but, from the fact that it is more the outcome of irregularities practiced and suffered, than from necessity or preference, it amounts to a partial, if not conclusive, presumption, that under contract forms of operation certain protections are afforded to the paying party, which are not assured by the "day's-work" rule; and the fact that protection is sought, argues the existence of a wrong or evil, either real or imaginary, as *protection* is wholly unnecessary in the absence of danger; and this feeling or sentiment of distrust and fear of overcharges and excessive cost, influences many to adopt the contract system, who, if confident that they would be honestly and squarely dealt by, would prefer to have their work done under the "day's-work" regulation. This adverse sentiment to day's labor bears severely upon many good and honest men, who would exercise as great diligence and integrity in the execution of work by "the day" as though bound by contract obligations. There are many such, but the more general experience creates the rule by which such matters are judged; and, by this rule of judgment, the conclusion is almost universal that proper economies and fair dealing cannot be secured where work is permitted to be done without contract restraints and limits.

It is to be regretted that this conclusion is too well sustained by the practice of a considerable number, if not a majority, of those who have been intrusted in good faith with the execution of works of various kinds, upon the presumed integrity of the operating parties. Many—influenced by one, or either, or all the evil inspirations mentioned in the preceding portion of this article—overstep all bounds of consistency and fairness, and, frequently, for no other reason than manifest excess in charges, are compelled to modify their demands.

All this is greatly to be regretted, as it works to the disadvantage of the working classes, and justly so—only so far as right and honest principles and rules of trade are violated, and questionable methods adopted to draw from paying parties more than a true and right value for the work performed and materials used.

By the "stringing it out" and "piling on" process, men may sometimes secure large pay and profit for the time being, but every such occurrence works to the after disadvantage of the party who enjoys (!) such *temporary* profitable results; and, however much or little justified, as far as other men are concerned, those who suffer by wrong acts—it matters not by whom committed — naturally withhold confidence in others, and pre-judge the virtue of the masses, by the experiences encountered in one or more individual cases.

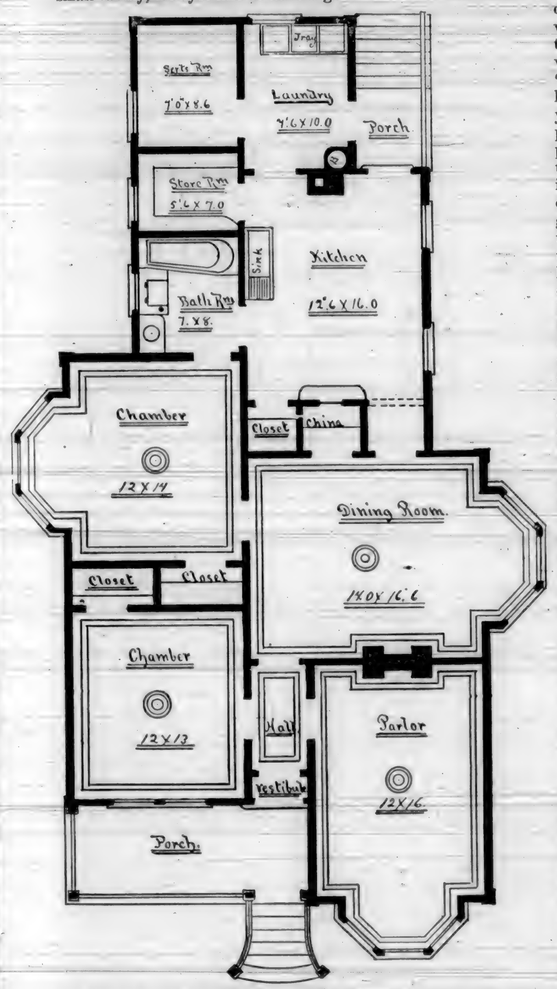
"Alas for the alum in the bread, and the chalk in the milk, and the powdered glass in the sugar, and the Venetian red in the cocoa, and the no-one-knows-what in the syrup. If a man not at all bigoted, but very liberal on the subject of temperance, and of the high-license persuasion, wants to imbibe some inspiration to help him fight down the fanaticism of prohibition, and he goes up to the counter and pays for an honest drink, he swallows and smacks his lips over coccolus indicus, and potash, and cochineal, and blue vitriol, and other delectables; some of these things put in to make the beverage hot, and some to make it red, and some to make it mix, and some to counteract the fatality of the others. Our officers of health have done a good work, but their chief work is yet to be accomplished. The ghastliness of diet to which millions of the American people are subjected may account for much of the sudden death and otherwise unaccountable and increasing suicide. It is amazing that there is any good sound health left for this systematized and almost universal poisoning process. Let us agitate the subject."

When you have the woodwork in a room painted, it is a good plan to have about two inches of the floor painted also; have the paint the same color as that of the base board; then if, when changing carpets, the carpet will not come close to the wall, the little space left will not be so unsightly.

A Convenient Plan for a Country or Suburban Home.

THE provision of a convenient dwelling for a family in the country, or the suburb of a city, is a matter of great importance, and, perhaps, no portion of an architect's practice has been so usefully bestowed as that which has been devoted to the study of a plan for the occupancy of those who have to calculate every item of housekeeping cost, and who, living by mechanical labor, have need of frugal employment of their means to bring up a family in comfort.

The plan presented is peculiarly adapted to those having a small family, and yet like to have a guest chamber when needed.



In case of friends who call to stop overnight, what more convenient than the front chamber shown? The whole front of the house is at the disposal of the guests for their quiet enjoyment, and no noise from the kitchen will mar their slumbers should they sleep till late from being overtired from a long ride.

The parlor is large and well lighted, and so is the dining-room. Bath-room is supplied with modern conveniences. Ample closet room is found wherever needed.

Should more room be desired, the laundry could be placed under the house and the existing space transformed, with but little alteration, into a bedroom. If *cost* is an item to be considered, the cornices designated in the four principal rooms, could be omitted.

As shown, the plan could be carried out at a cost ranging from $1,800 to $2,500, depending entirely on the finishes and the depth of the owner's pocket.

Does Good Plumbing Render a House Safe?

MANY vague ideas still prevail with laymen about what constitutes a safe system of "sanitary plumbing." It is, however, not too much to expect that architects, who are constantly arranging in their plans for the so-called "modern conveniences," should have at least a fair knowledge of the rudiments of modern plumbing. What, then, shall we say of an architect who can be guilty of such gross misrepresentations and misstatements as those which appeared recently under the heading, "The Danger of Sanitary Plumbing," in the correspondence columns of the New York *Evening Post*? Starting with the incorrect assertion that "experts disagree both in system and workmanship as to good or sanitary plumbing," this "architect" tries his best to alarm the public by stating that water (in traps) will not at any time prevent the steady flow of sewer gas, and that "sewer gas rises, expands, presses, constantly generates, and must have space," and broadly maintains that "so far as all appliances yet known to the plumbing trade under the head of sanitary plumbing, as back air or direct ventilation go, no absolutely safe plan has yet been devised by which water and waste can be introduced into any bedroom or adjoining closet and the health of its inmates be unimpaired." It seems almost superfluous at this day to say that the above contains gross exaggerations and only goes to prove that "Architect" is not sufficiently well posted on the subject, a fact which becomes more apparent by his description of a fine house, said by him to have been "the best plumbed house in New York," done by experts, and which he takes as an example to illustrate the danger of modern sanitary plumbing. In this house, he tells us, five basins and one bath were trapped by a single unventilated trap in the cellar, at a distance of about 60 feet from the fixtures. How "Architect" can make the untruthful assertion that the above house was plumbed by experts it is hard to understand. He has probably never heard of Board of Health Regulations, which, since 1881, require in this and other cities each wash-basin and other fixture in a house to have a separate ventilated trap placed immediately underneath the fixture.

"Architect" winds up by advising the householder to "strip his bedrooms of all plumbing whatever; to let no sewer connection of any kind come into a sleeping-room; to go back to the clean, old-fashioned bowl and pitcher, and to put all plumbing in an annex or separate building"—advice which, by the way, is not at all new, for years ago the late Dr. Frank H. Hamilton recommended the same thing. Thanks to the better understanding of the subject, such views are now considered to be old-fogyish and exaggerated.

Only last week we had occasion to make some remarks upon the uselessness of assertions, by well-meaning but ill-informed physicians, in regard to the unreliability, from a health point of view, of so-called "safe sanitary plumbing." Such ideas, spread by means of the daily press, are apt to do a great deal of harm. We are glad to note that "Architect's" ideas have been controverted by an architect of the highest standing, Mr. Carl Pfeiffer, who wrote to the *Evening Post* as follows:—

"Permit me to send you a few remarks referring to the letter of your correspondent 'Architect' in the *Evening Post* of to-day. I do not hesitate to take issue with him. His suggestion that all plumbing should be confined to one wing of a house may be pleasing to old fogies and to timid, nervous old women, but the advice to have no plumbing at all would, no doubt, be still more acceptable to them. If 'Architect' will call upon me I will show him in more than one house that there is not only no escape of any air or gases whatsoever from the plumbing pipes, but that the air of the room is sucked into the pipes. One of our well-known citizens and a resident of Murray Hill is so pleased with the plumbing of his house and feels so secure against the escape of sewer gas, after several years of trial, that he has assured me he would not hesitate to have an open end of his sewer-pipe close to his pillow at night. It seems odd that the same people who are so nervous about plumbing will sit for hours in the poisonous atmosphere of an unventilated parlor, theater, public hall, or church, contracting headaches and more serious diseases, without ever thinking of the necessity of pure air for their lungs. Much has been written against plumbing less reasonable than would be the suggestion to prohibit by law the manufacture of confectionery and the baking of pies and puddings."

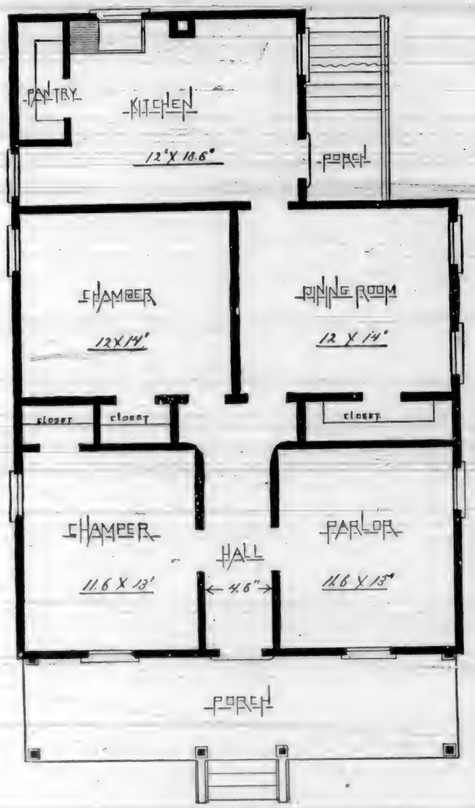
How to Make a Rust Joint.

FOR making a rust joint that will bear heat, cold, and rough usage, the following formula has been highly recommended: Ten parts iron filings, three parts chloride of lime, and enough water to make into paste. Put the mixture in between the pieces to be joined, and bolt them together, leaving until dry. After twelve hours the cement has been known to break off the solid iron.

Japan is said to have less than 10,000 paupers among her 37,000,000 inhabitants. In that country a man whose income is $1,000 a year is regarded as very wealthy.

A Cheap Five-Room Cottage.

THE tender care of an architect is essentially required when preparing a plan for those in humble circumstances, and yet whose pride must not be cast down by too plain an exterior, or too cramp interior. The plan presented is admirably adapted to meet the wants of the class referred to. The rooms are all of good size, with ample closets; plenty of light and means of ventilation are secured to each room. The house is so arranged that "modern conveniences" can be added at any time. According to the plan shown, the house can be built for a sum ranging from $1,500 to $1,800.



Hiders in the Bushes.

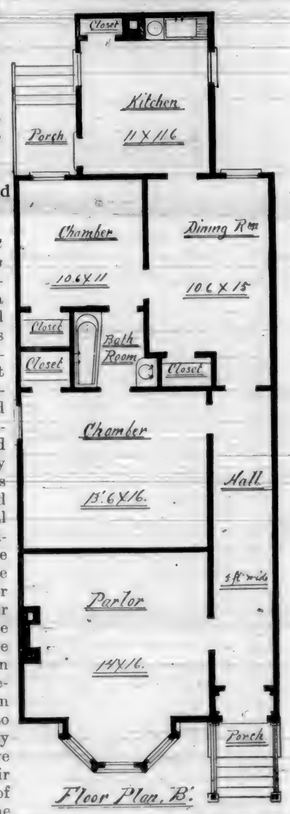
MANY subscribers outside the cities and counties in which papers and journals are published, withhold payment of subscription amounts under the fancied and dishonest protection of distance and difficult means of dunning and collection. Not being influenced or controlled by honest motives or purposes, nor shamed by the contempt expressed by publishers and authors universally, and smiling complacently under the lash of strongly worded denunciations from time to time found in print, they deem it smart to beat those who furnish them with valuable information or reading matter of interest, and think it *fine* to peruse journals and papers without paying for them, none of which is highway robbery nor burglary in the first degree, but is akin thereto in spirit, requiring simply the *occasion* and *courage* to perpetrate the higher crimes. Small thefts, cheating, peculations, and all of their kind are but the lesser offshoots and outgrowths of that more sturdy and defiant human growth, which, at times, is found under masks on the highways, with the deadly rifle, revolver, and the keen-edged dagger as means of defense. The nature that is so far tainted with dishonesty as to cheat, if it can, the publisher of any book or journal out of the rightful payment of the subscription cost, is one of the kind fitted to perform the role of brigand, provided the other requisites necessary to make up a bold and daring character could be contained within the skin of the man who seeks to *make* a dollar or two by *cheating the editor*.

Have we any of this kind on our subscription list? We hope not, and as proof that we have not, we further hope that every subscriber to this journal who has not, will at once forward their subscription balance up to December, 1886, at which time, or earlier, a new management will assume direction of its future.

A full list of delinquents will in due time be published in these columns.

Plan for a Narrow Lot.

FOR a narrow lot, the accompanying plan presents many inducements. Ample light is furnished each room, which are all of good size. Although not shown, a skylight over rear end of hall would be found to be a very useful addition; with a large transom over the door leading to principal chamber, the latter room would be much more cheerful. This house can be built anywhere from $1,300 to $1,500.



The Demand for a Good Pavement.

THE *American Architect and Building News* says: "One of the greatest needs of our cities is a wholly satisfactory material for paving. Many cities have grown weary in experimenting with this and that material, and are still casting about for new ideas and methods. Real estate owners on the busy streets find that the matter of noisy pavements seriously affects the rental of their stores and offices, and men with capital invested in team horses direct their drivers to sacrifice quick transit, and take roundabout streets rather than risk injury to their horses by traversing the greasy asphalt, or the equally insecure wooden blocks. The wooden pavements, that had their origin in the West, and sprang into favor a few years ago, largely because of their comparative cheapness, soon proved their unfitness for the uses of heavy travel. Besides the necessity for their frequent relaying, there was the difficulty experienced in keeping them down. Like the ghost of Banquo they cannot be depended on to remain "laid," as was strikingly shown not long ago in Devonshire Street, Boston, where a slight flooding of the street caused the pavement blocks to rise and float gaily with the tide.

Of the various kinds of asphalt or concrete that are used, opinions differ greatly. Of course much depends upon the particular kind used. Washington, Philadelphia, Cleveland, and other smaller cities, testify to good results from some forms of asphalt, but in Boston there is a pretty general concurrence of opinion against the material. Teamsters, especially, condemn it largely. In Detroit there has been an experiment on a small scale with a hard brick pavement, which is said to have stood the test of heavy travel with considerable success. The smoothness of this surface, however, it seems, must be a serious drawback, if generally adopted. A material that is coming in favor in Western cities is crushed Michigan granite, which has the quality of readily cementing itself and proving very durable, while making roadways sufficiently smooth to obviate undue noise. Its expensiveness is one argument against its more general adoption; but cheap and experimental pavements have certainly had as much attention as they deserve.

Cooking Water.

CHARLES DELMONICO used to say of the hot-water cure: "The Delmonicos were the first to recommend it to guests who complained of having no appetite. 'Take a cup of hot water and lemon, and you will feel better,' was the formula adopted." For this anti-anorexic remedy the caterers charged the price of a drink of their best liquors, twenty-five cents or more, and it certainly was a wiser way to spend small change than in alcohol. "Few people know how to cook water," Charles used to affirm. "The secret is in putting good, fresh water into a neat kettle, already quite warm, and setting the water to boiling quickly, and then taking it right off to use in tea, coffee, or other drinks, before it is spoiled. To let it steam, and simmer, and evaporate until the good water is all in the atmosphere, and the lime and iron and dregs left in the kettle—bah! that is what makes a good many people sick, and is worse than no water at all."

I am very glad to find such excellent authority on a question which has vexed me sorely, not only because of my own epicurean tastes, but because it was nearly impossible to obtain properly cooked water for invalids and convalescents. A critical taste will detect at the first mouthful, if the nose has not already demurred and given warning, the faintest trace of dead-water in tea, coffee, porridge, and many other items designed for the stomach.

More frequently than otherwise, the breakfast kettle is set boiling with a remnant of yesterday's supply in it; the coffee-urn has been neither washed, dried, sunned, nor aired; possibly, in the interest of a rigid and mistaken economy, some of yesterday's coffee is also "boiled over," and the partakers wonder at their lassitude and dyspeptic conditions. Whatever else be neglected, the tea-kettle and its associate pots should be thoroughly cleansed, dried, and aired every day; and in no case should water that has stood even an hour in pitcher, pail, or kettle be used for cooking.

If people will drink tea and coffee, let them at least have it as nearly free from poisonous conditions as possible. That much benefit may be derived by many people from drinking hot water is not disputed, but the water should be freshly drawn, quickly boiled in a clean and perfect vessel, and immediately used. The times of using, the adding of milk, mint, lemon, or other fruit juices, is a matter of preference or special prescription. This article has in view the perfect preparation of boiled or "cooked" water.

Fire Protection.

THE Eureka Fire Hose Company of New York, is manufacturing a light, strong, cotton, rubber-lined fire-hose, called the "Eureka Mill," which has proven to be the most durable and reliable, and the easiest hose to handle ever made. It is lined with the finest Para rubber, and has now been in a large number of hotels, factories, public buildings, etc., for fire protection for the past ten years, and although in many cases hung over hooks or pegs with short kinks, which would ruin rubber hose in six months, it is still as strong and perfect and reliable for fire duty as when first put in. It is undoubtedly the only hose to use for fire protection, for there is practically no deterioration with age, and it stands an immense pressure, while the rubber hose of to-day is unreliable after six months, good-for-nothing after twelve, stands very little pressure even when new, and is stiff and hard to handle. No hotel, mill, factory, public building, or large building of any kind should be without some inside fire protection. Manufacturers and others of experience always look to it that they are well supplied in this direction, and only those who come directly in contact with this trade begin to realize how often inside fire protection of the right kind really prevents great conflagrations, or at least renders unnecessary the dragging in of the large, dirty heavy hose of the fire department, and the use and misuse of a large amount of water. A fire should be taken at the start, and this cannot be done unless the hose is handy, and is light, so that the gentler sex may handle it if necessary, and must be strong to insure efficiency and as a protection against the damage caused by bursted hose. In some of the large buildings going up in this city to-day, there has been no provision whatever made for fire protection, and it behooves the architects of these buildings to bestir themselves and make some provision of pipes, etc., before it is too late, or they may at some future day be severely censured for neglecting to attend to so important matter. There are a large number of buildings and manufactories in this city now supplied with this hose, and we shall give a list of them at some future day. But we desire particularly to call the attention of those interested, to hose as seen in the fire-closets of the Baldwin Hotel, where it has been since the hotel was completed, over ten years ago, and is to-day as perfect as when first put in.

The agency for the Pacific Coast is in the hands of W. T. Y. Schenck, 256 Market Street, who makes a specialty of fire hose and fire department apparatus and supplies.

Rules Regarding Cement.

EMINENT engineers are authority for the following important conclusions:—

Cold water is probably not injurious, only as it retards setting.

All cements when mixed with sand to a proper consistence for mortar will fall to pieces if placed in water before setting has commenced. Portlands do so even without sand.

Pressure while setting, with the degree of the thoroughness of the mixing or the gauging, the proportion of water used, and other considerations, may easily affect the results one hundred per cent, or even much more.

If too much water is present in mortar, the consolidation by ramming is proportionally imperfect.

Any American cement of good quality will with one and one-half to two measures of sand give a mortar strong enough for most engineering purposes.

American cement requires less water than Portland.

Sand retards setting, so that cement which, by itself, would set in half an hour, may not do so for some days if mixed with sand.

When one part sand is added to one part of cement, the strength is lessened one-half. Two parts of sand to one of cement, averages about one-third the strength of pure cement. These for tensils and transverse strains. The crushing strength does not diminish so rapidly.

Brick or stone should be moist and entirely free from dust, or mortar will not adhere.

Slacked lime retards the setting of cement.

The temperature of air and water has far more influence in the testing of cements than has before been suspected.

After using in air, cement, or cement with sand, should be kept moist or watered until completely hard.

Walls of buildings are often built of cement concrete deposited between smooth-faced planks as a mould, the planks being moved upwards as the work goes on. Cement should be nearly dry and tamped hard.

Post holes running down below frost and tamped full with concrete are safe and economical supports for warehouses and similar buildings.

Concrete may be used in large masses under water, and when properly put down, is found good for piers and shore protection.

One-quarter to one-half cement is a common rule of mixture for cement and lime for plaster work in air.

Neither concrete nor cement can be emptied in water loose with good results, but must be conveyed to place in boxes or bags.

The white efflorescence, most common to Portland cement, is supposed to be injurious to the strength of brick and other materials.

Any disturbance of cement after setting commences is prejudicial to strength.

The best sand for concrete is that with angular, coarse grains of uneven size. The more uneven the sizes, the less the voids, and the coarser the grains, the less quantity of cement required to cover the surface.

THE new city hall of Philadelphia is the largest building in the United States. It has already cost $12,000,000 and covers 3,000 square feet of ground more than the Washington Capitol. Its north side tower will rise 535 feet, making its height only 20 feet less than that of the Washington Monument.

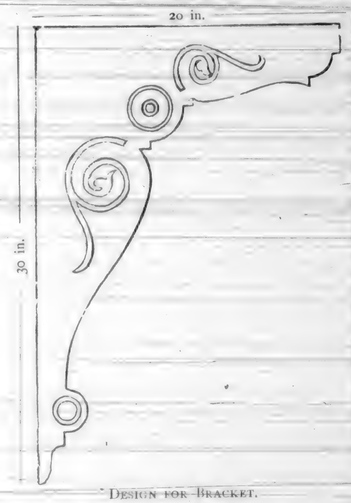
In our December issue we will publish complete a list of those who are in arrears for subscriptions to this journal. Avoid publicity by sending us the amount of your indebtedness immediately.

ART AND ARCHITECTURE.

[Special for this Journal. By F. Hillert, Architect and Mechanical Engineer.]

XXXI. PERIODICAL ART OF THE MIDDLE AGE.

THE spreading of Christianity changed the whole state of things, and the Middle Age does not any more know national differences in art. Of the nations which did not come within the historical development, not considering themselves the art of the Middle Age, are the Christian and the Mohammedan. The latter carried with it so many restrictions, coming from religious commandments, that it was struck with a destiny like so many of the old arts, the same remained typical, and its progressive development is only very small. But it has, with the Christian art, the same property in common that it ruled a number of nations, that it forced the same on every new conquest made, together with the Koran, the holy book of the prophet, from the shores of the Ganges to that of the Ebro. So far as the victorious arms of the sons of Mohammed penetrated, monuments and traces of them are found, but all of them show the same typical form, the same style.



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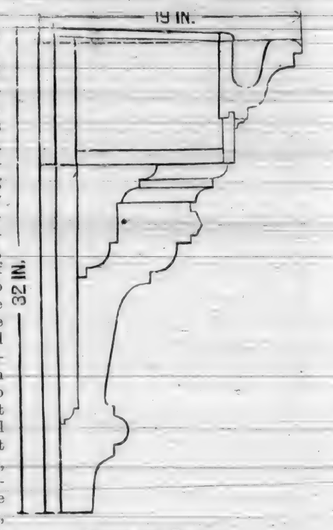

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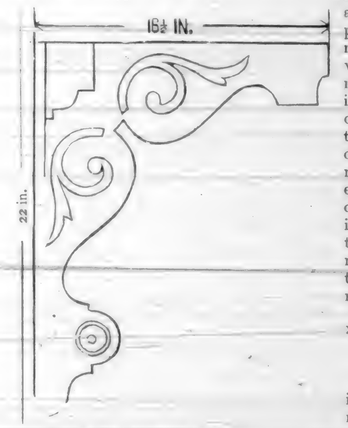
It is different with the Christian art. The Christian doctrine was by the different Christian nations differently taken up, conceived and retained, and in the course of time was developed and became church religion, changed and alternately transformed. The main cause of such transformations was the bodily and spiritual conflicts which were conducted for the defense and propagation, and always obtained a living stream, through which every involuntary or designed stoppage by priests became impossible for any length of time. Art followed all phases of religious development, and always took new forms and modes of expression. There are four main groups to distinguish, to which we must unite the similar monuments, and in course of time they followed each other. It originated periods, which mark a characteristic division of the art of the Middle Ages, which were largely and as a whole in common to all Christian nations, naturally without detriment to the above-mentioned special perceptions and singularities. In the first centuries of the independent Christianity, the relations to the antiquity were numerous and of considerable influence, that the same leaning to the antique traditions, formed an art, in which the Christian elements, as it were, slumbered in the bud; this is the so-called period of the ancient Christians. In the Byzantinian is already marked an important step to an independent originality. It alone satisfied itself to arrive at a certain height, then rested, and remained standing in a lifeless rigidity without developing itself to perfection. It reigned over a large portion of Western Europe, besides its native land, the Greek Empire, and soon the same became displaced by an art, the principle of which originated and grew in Germany, by transforming and uniting the forms of previous centuries to a new art. In this way originated the Romanic style, which expanded over all Christian countries at the time, except Byzanz; and the same again became displaced by the Gothic, taking and completing the same route through the Christian nations. As far as the origin of the four periods and the development of the different styles were concerned, and of any influence with and on the religious perceptions, and the churchship, is a problem not here to be discussed; but in general we will find in the ancient church and the immediate intonation of the latter, antiquity; in the Byzantine, the turning away from the occidental development and perception; in the Roman, the first independent innovation of the original force of the spirit of the German people; and, lastly, in the Gothic we find expressed the highest development of the church idea of the Middle Age. But that in common to all these periods, and uniting the same to a whole, is the Christian element, and thus a direct and clear view of the Christian religion is everywhere recognized in the works of art.



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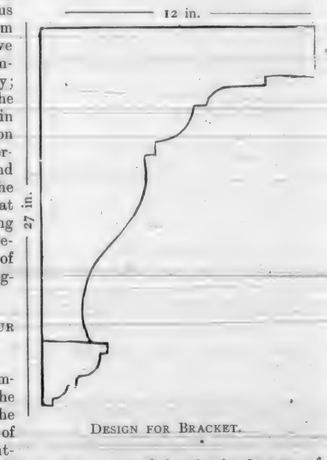

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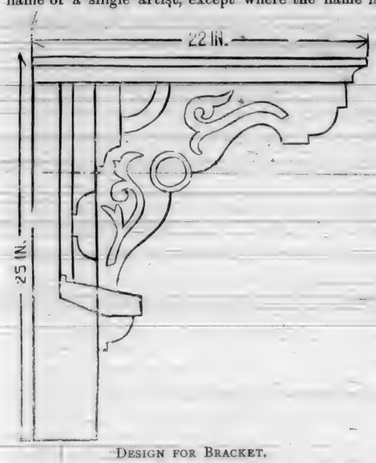
XXXII. UNIVERSAL INDIVIDUAL ART OF OUR TIME.

With our time the state of affairs is seemingly changed, but only seemingly, that the new religion, which is now forming, and the art, acting developingly, are the spirit of humanity. The coarse, the sensual, has outlived itself, and a nobler and finer spirit conditioned a refined perception. New gods were not proclaimed, but in the breasts of men spoke a sentiment, an inner, invisible voice of a new love. Before the Reformation, this spirit already lived and existed in the nobler natures, and it was the same which brought and called forth, suddenly, the hidden to expression, and to collect together every interest in the combat about the sacred endowments and goods, beside which disappeared the contemplative rest of artistic activity. This led to the highest flourish in art. The noble mind comprehended all which was worthy to be offered, not only breaking the narrow boundaries of ecclesiastic conception, and placing, in place of the supernatural, the human perfection, but also by enlivening the spirit of past times, knowing no boundary than the one it made itself, it became universal,

embracing the whole humanity, and what the same offered to it, as also individual, since that which it received it regenerated out of itself, adorned with the seal of its own spirit. Art in modern times is also universal in reference to the sphere of its objects and forms; individually in reference to the producing artist. Neither in the ancient times, nor in the Middle Ages impressed itself as such in an eminent manner in the works of art. The individuality of its originator, then the feeling, sentiment, and perception of all was the same, and the differences in the works of the artists, originated by their personalities, properties, and perceptions, were proportionately subordinate, so that the person of the master had to recede and stand back. Scopas and Praxiteles created works which in their artistical spirit were alike, and the same is the case with all the preserved Greek sculptures, that we can weigh on the same the measure of beauty, the grace of the technical execution, but we are incapable to give the name of a single artist, except where the name is preserved by traditions.



Design for Bracket.

Similar is the Middle Ages, where the plastic had a smaller practice, and the significant preference extended to the art of painting, on account of the favorable spirit, should have called forth a noted expression on the individuality of the artist who should have been called upon for the remembering and expression of the Christian mode of perception. Style and perception are, on the large and the whole, everywhere the same, and only in our time is it the case that artists and their art schools, in their works, manifest and reveal a peculiar style, and a singular artistic character of their own. In our time the person of the artist is in art, and in its full appreciation, and in regard to objects made, no sphere of life, of history, or of nature is excluded. On the admission of the artistic treatment only the poetic value is decisive, and no other laws conduct and lead to art than those established by itself. The right of the individuality is so extensive, that where a pressure from the outside is tried, let it be by political power, or ecclesiastic influence or despotism, such power always, beginning with the lowering of the artist, degrades art, not worthy to be called so, or, what is better, the same causes a general retreat from within its reach.

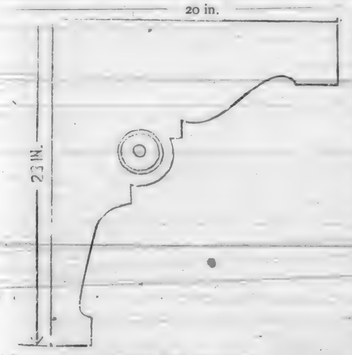
Design for Bracket.

Art demands and requires unconditional liberty. It is looked upon with suspicion; and when compelled to execute commands of caprice, it is lost; and the one who tries to guide and manage the same to his will, will be punished with the total loss of the art. History does not lack examples of this kind.

XXXIII. FUTURE.

With this course, seemingly, the development of art in the main possibilities of its beginning, has passed through, and only through and from, the persons of eminent artists and cultured people, who exert an important influence. The pure national and the pure Christian art is buried for all time to come; then only the breaking in of a raw but gifted people of nature could destroy the old culture and art, and, beginning new, could create a natural religious art. But who could believe in the possibility of such incredible events; but what might occur after the wreck of the European people, shall not concern us. Largely gifted men of genius will, as long as our historical culture lasts, produce large, flourishing times of art, and out of the decline and ruin only the conscientious deeds and actions of the manly spirit will be saved from sinking. That the declining of flourishing art is not the work of accident or caprice, but that all goes to conform to unchangeable laws, based on nature, will next be spoken of.

Redwood.



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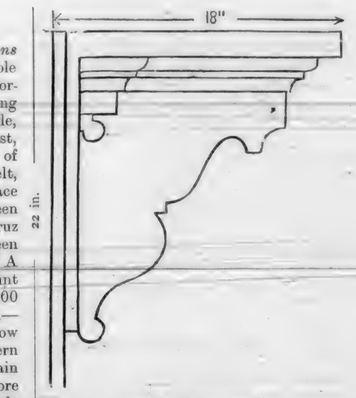
THE redwood—*sequoia sempervirens*—is found in any considerable quantity nowhere but in California, in a belt about 400 miles long from north to south, and 30 miles wide, on the average, from east to west, which lies upon the western slope of the Coast Range. North of this belt, pine, fir, and spruce gradually displace the redwood. The region lying between the northern boundary of Santa Cruz County and Russian River has been stripped of this precious timber. A recent careful estimate puts the amount of standing redwood at 26,000,000,000 feet, and the yearly consumption—which is constantly increasing—now reaches 200,000,000. In the southern part of the belt, where there is less rain and fog, the tree does not average more than two or three feet in diameter, and the wood is hard and flinty. Further north, in Humboldt County, the size increases, so that specimens twelve to eighteen feet in diameter and from 150 to 250 feet high are not uncommon; on large tracts experts estimate a quarter million feet per acre. The average size of saw-logs is six and eight feet in diameter. The wood is soft, coarse-grained, and very brittle, and so straight in grain that often it is not a hard matter to split out inch boards eight or ten inches wide, and from ten to fifteen feet long. When dry it is lighter than pine, spruce, or fir. Yet the butt log will often sink in water, when the top logs float like cork. The growth is slow, the annual rings often indicating an age of thousands of years. As the bark, which is very thick, soft, and fibrous, contains no resin, fires which run through the woods do not kill the standing timber, but, of course, must injure young sprouts. The great durability of the wood makes it desirable for shingles, railroad ties, and fence posts. It is highly valued for tannery tanks, which often last ten years, as the tanning solution does not act upon it as upon other woods. Wine merchants

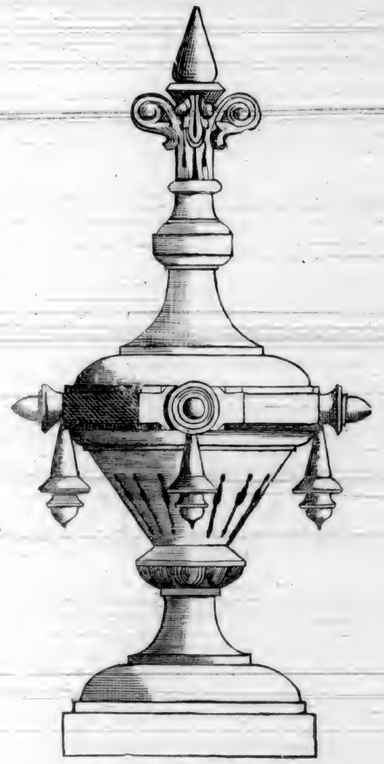


Design for Bracket.

also seek it for vats, because a certain insect found in new grape juice, which bores pine readily, appears to dislike redwood. As its color is similar to that of Spanish cedar, and imparts no flavor to tobacco, it is prized for cigar boxes, and is largely used in New York for that purpose. Its extensive use in buildings, it is claimed, largely accounts for the immunity of San Francisco and other coast cities from large fires, there being little or no resin in it, and therefore less difficulty in putting out fire when once started. Some of the grain curls so that when polished and varnished, it rivals rosewood for cabinet uses.

Knots in Lumber.

"YOU would probably be surprised," remarked an observing lumberman the other day, "to see how some of my country orders run. I have customers who won't have a knot imperfection in their lumber, if they can help it, but who will take lumber so shaky it will hardly hold together, without a kick.



Ornament For Fence Post.

Indeed, if it looks well, they are very likely to send in another order to be filled out of the same lot. Now, every practical lumberman knows that for ordinary use, such as lumber is applied to by most country buyers, a good sound knot does not hurt it a particle, while shake is more or less of defect for any purpose. It used to puzzle me to account for this peculiarity on the part of some of my country friends, until I happened, while out on the road one day, to drop into the office of a man whose purchases run to this sort of lumber. I had some particularly good stock, in which the imperfection was chiefly confined to knots. It was sound, and I thought it an especially desirable lot of lumber of the grade. I wanted to send him a car load, but, though I argued diligently with him, he would not buy. Finally he asked me to go out into the yard and see how his sales ran. I did so, and an hour's observation convinced me that he knew what he wanted better than I did. The grangers who came in to buy would invariably kick about the knots, but show them nice, clean-looking boards that were shaky, and they would take them every time, in preference to lumber that was really better in every respect, but the imperfection of which was apparent on the face of it. I marveled no longer at the seeming peculiarity of my friend's taste in lumber, and whenever he sends in his orders now, endeavor to give him what will best satisfy his customers." And, no doubt, there are many among the retail dealers, even, who do not appreciate the comparative worthlessness of shaky stock as compared with that which is only defective because it is knotty, though the knots may be red and sound. Buyers have been known to object vigorously to a really excellent article of dimension which showed a good many knots, and take in lieu of it, at the same price, cleaner looking, but not nearly so good, stock in which the imperfection was chiefly shake. Unless the difference is carefully pointed out to a user, he is not apt to discover it. A shaky piece of lumber, where the defect is not so great as to entirely destroy its usefulness, makes a very presentable appearance, and this is what users largely depend upon in judging of it. They buy it, and use it, and when it afterwards shows a disposition to crack and split, they, as likely as not, lay the blame upon the paint, or the weather, or some other cause which has nothing in the world to do with it. And when they buy again, they make the same mistake. It would not in many instances be possible to convince such people that they are wrong in their judgment, and perhaps it is not the best policy to try.

Unnoticed Dangers.

FAR too many houses, both in the city and country, stand on made land or at least that which was formerly swampy. The foundation walls, when there are any, for houses often stand on posts alone, are built of solid masonry, but with no cement either outside or in. Such walls are porous and soak up water nearly as rapidly as a sponge. Then it slowly trickles down the inside, emitting malaria and forming a fine soil in which all matter of fungoid growths flourishes. The rooms over such places are first-class disease breeders, and every home should be frequently examined to see that these dangers do not exist.

The drain pipes often leak in cellar and basement. This adds to the danger of the rooms above; the two fiends, stagnant water from the sewer and water filtering in through the walls, work in concert to sap the life of the little ones, and to fit them to yield to the first disease.

The walls of the rooms themselves, in far too many houses, are disease breeders. A neat and tasty paper upon the wall makes a room inviting and adds to the home comfort. But, unfortunately, even when the paper is made free from poison, and good paper can be so made, the paste with which it is attached is just the home for minute organisms which produce certain diseases. This is bad enough when there is only a single layer of paper, but when, as is often the case, several layers of paper and paste are laid on the same wall, outside of one another, the danger is multiplied many times; such walls are really masses of festering filth; the best wall is undoubtedly the plain plastered wall.

All cases like these demand caution. Those who are responsible for the home comfort, cannot be too careful; the health, often the life, of the loved ones, particularly children, depends upon rigid exclusion of all these lurking-places of disease and breeders of death. Beauty should be and is consistent with perfect safety in the home.

Sharpen your tools properly and you will husband your strength.

Please Make Immediate Settlement.

As an entire change in the management of this journal is likely to occur at an early day, those who are indebted to us will greatly oblige

BY MAKING PROMPT PAYMENT.

Do not hold off because you may for a time, but pay up at once and remove the obligation. It is our due and your duty.

Master Plumbers' Association.

How rd Building, S. W. Cor. Stockton & O'Farrell Sts., S. F., Cal.

MEMBERS.

Bush & Mallett	34 Geary Street
Bush, D.	316 Sutter Street
Butterworth, J. B.	1809 Polk Street
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Doherty, John	349 Kearny Street
Downes, Chas.	41 Second Street
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Enright, Wm. & Co.	39 Sutter Street
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Fritz & Kean	130 Geary Street
Gray, Jno. T	230 Sutter Street
Huffschmidt Bros.	637 Clay Street
Hobro, W. D.	728 Washington Street
Reilley, C. J.	214 Montgomery Avenue
Shepard Bros.	526 California Street
Sweeney & Kearns	623 California Street
Vance, R. A.	623 Geary Street
Welch, J. D.	Cor. Tyler and Fillmore Streets
Wilson, Wm. F.	25 Stockton Street
Williamson, H.	329 Sutter Street

Selections from Goethe.

WE like to look into the future because we desire the incidental, which we know lies therein, to point our way.

We cannot well be in any company without thinking: the accident that brings us together in a crowd we expect to contain friends of ours.

We may live as retired as we please, still we will be either a debtor or a creditor.

If we meet a body indebted to us we are sure to remember the fact; but when we meet a person to whom we are indebted, ten to one we will forget the fact.

Nobody would talk much in a crowd if they knew how many misunderstood them.

To be communicative, comes by nature; to adopt what others tell us, is culture.

It is presumable that the speeches of others are so much misquoted because they are really not understood.

Whoever talks long before others without flattering them, becomes obnoxious.

Every word expressed causes counter thought.

Both flattery and opposition make conversation disagreeable.

Nothing indicates men's character better than their ideas of what is ridiculous.

Sensual men laugh where there is nothing to laugh about.

To the intelligent most everything is ridiculous; to the reasonable, almost nothing.

Passions are vices or virtues; they are, however, always intensified.

The golden mean is in nothing more desirable than in our confidence in or mistrust of those we love.

A passion is tempered by confession.

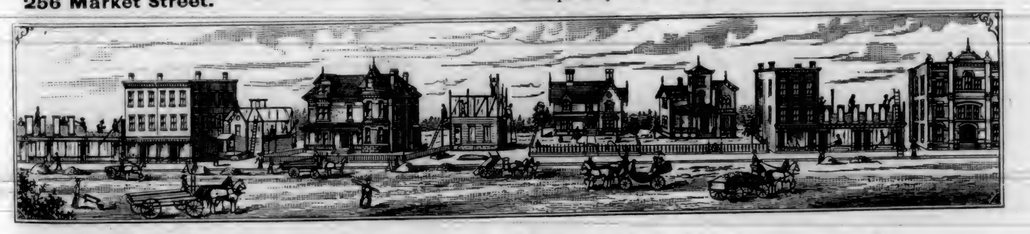
Market Reports.

CORRECTED FOR OCTOBER, 1886.

Pine, Rough	per M feet,	$15 00
" " No. 2	" "	12 00
" " " 2 in lengths	" "	13 00
" " 40 to 50 feet lengths	" "	17 00
" " 50 " 60 " "	" "	18 00
" " Selected	" "	20 00
" " Clear	" "	25 00
" " Fire Wood	" "	8 00
T. & G. Flooring, 1 x 6	" "	27 00
" " 1¼ x 6, 1 x 4, 1¼ x 4, 1¼ x 3, 1 x 3, and narrower	" "	30 00
" " No. 2	" "	22 00
Stepping	" "	35 00
" No. 2	" "	27 50
Furring, 1 x 2	per lineal foot,	00½
Redwood, Rough	per M feet,	18 00
" " No. 2	" "	14 00
" Surfaced	" "	30 00
" T. & G. 6 in. 12 ft. and over	" "	28 00
" " 6 in. 7 to 11 feet	" "	25 00
" " 6 in. under 7 feet	" "	20 00
" Rustic	" "	30 00
" " No. 2	" "	26 00
Redwood, T. & G. Beaded, 12 ft. and over	" "	30 00
" " " 7 to 11 ft	" "	25 00
" " " under 7 ft	" "	20 00
" Siding, ½ inch	" "	22 50
Pickets, Fancy	per M,	25 00
" Rough Pointed	"	16 00
" Square	"	14 00
Battens, ½x3	per lineal foot,	00½
Shingles	per M,	2 00
Laths, 1½	"	3 25
" 1½	"	3 75
NAILS—Rates were recently reduced to:—		
200 keg lots		2 50
100 "		2 60
Smaller quantities		2 70
PAINTS AND OILS:—		
Pioneer and Nevada White Lead, 1,000-lb. lots		6½
" " " " less quantities		7
Pioneer White Lead (local factory), 5-ton lots		6½
Cal. Linseed Oil, raw (single bbl. lots)		45
" " " boiled " "		47½
Turpentine, per gallon		47
BRICK—California Building Description, soft, per 1,000		6 00
" " " red, " "		7 00
" " " hard " "		7 75

In our December issue we will publish complete a list of those who are in arrears for subscriptions to this journal. Avoid publicity by sending us the amount of your indebtedness immediately.

A simple and convenient way of obtaining the weight of cast iron when the number of cubic inches is known, is to divide the number of cubic inches by 4 and then add one per cent of the cubic inches. The result is exactly the same as if it had been multiplied by .26, the weight of one cubic inch.



Bush, bet Powell and Mason. Three-story frame.
O.—S. Manin.
A.—H. Geilfuss.
C.—J. H. McKay.
$6,800.

Brosnan, nr. Valencia. Two-story frame.
O. and B.—J. Perry.
Day work.
$2,200.

Broderick, nr. Hayes. Two-story frame.
O.—J. S. Antonelle.
A.—J. J. & T. D. Newsom.
C.—J. G. Adams.
$8,000.

Bluxome, bet. Fifth and Sixth. One-story brick warehouse.
O.—J. L. Moody.
A.—C. I. Havens.
C.—W. M. Fletcher
$8,500.

Baker, nr. California. Two-story frame.
O. and B.—Geo. Hinkle.
Day work.
$4,000.

C

Castro, nr Fifteenth. Two-story frame.
O.—M. Burns.
A.—J. J. & T. D. Newsom.
C.—Spangler & Bawkins.
$2,800.

Clay, north side, bet. Scott and Devisadero. Two-story frame flats.
O.—G. I. Becvk.
A.—Jas. E. Wolfe.
C.—Jas. Geary.
$5,000.

Clay, south side, bet. Scott and Devisadero. Two-story frame.
O. and B.—J. Hilbert.
Day work.
$2,000.

California, nr. Polk. Two-story frame flats.
O.—Allen & White.
A.—H. C. Macy.
C.—F. Klatt.
$3,800.

Capp, bet. Twentieth and Twenty-first. Two-story frame.
O.—M. J. Colby.
A.—T. J. Welsh.
C.—Doyle & Son.
$4,000.

D

Dolores, nr. Twenty-fourth. Two-story frame.
O.—J. B. Davis.
A.—C. Geddes.
C.—C. H. Murasky.
$2,500.

E

Elgin Park, bet. Herriman and Ridley. Three two-story frames.
O. and B.—G. Edwards.
Day work.
$10,000.

F

Fifth, cor. Brannan. Three-story frame hotel.
O.—F. Stoetzer.
A.—H. Geilfuss.
C.—F. Klatt.
$7,000.

Fulton, cor. Webster. Brick chimney and boiler house, and other improvements.
O.—National Brewery Co.
A.—H. Geilfuss.
C.—John McCarthy.
$12,000.

Fifteenth, nr. Castro. One-story cottage.
O and B.—T. Dorsey.
Day work.
$2,000.

G

Geary, bet. Mason and Taylor. Three-story frame and brick basement.
O.—Wm. John.
A.—John & Zimmermann.
C.—B. Dryer.
$7,000.

Geary, bet. Webster and Fillmore. Additions.
O.—Mrs. Emma G. Beggs.
C.—J. B. Gonyeau.
$5,000.

Grove, bet. Gough and Octavia. Additions and alterations.
O.—J. D. H. Hoffman.
A.—W. Winterhalter.
C.—J. hn McMann.
$2,000.

Grove, bet. Webster and Fillmore. Two-story and basement frame.
O.—H. Brune.
A.—H. Geilhuss.
C.—H. Weiss.
$7,500.

Guerrero, nr. Twenty-fifth. Additions.
O.—H. Bryant.
Day work.
$800.

H

Haight, southeast cor. Webster. Three-story frame and stable.
O.—John W. Tamm.
A.—John & Zimmermann.
C.—A. Miller.
$8,000.

Haight, cor. Fillmore. Two-story frame.
O.—Chas. Hagmaier.
C.—G. G. Gelispee.
$2,300.

Howard, bet. Twenty-fifth and Twenty-sixth. Two-story frame flats.
O.—F. Gulbraidsen.
A.—P. R. Schmidt.
C.—Wickersham & Farrell.
$2,600.

Howard, bet. Twenty-fifth and Twenty-sixth. One-story and basement frame.
O.—Samuel Moote.
A.—Chas. I. Havens.
C.—W. B. Kruger.
$3,000.

L

Laguna, cor. California. Additions.
O.—W. Sumpkins.
C.—Farrell & Bell.
$3,000.

M

McLee Court, bet. Harrison and Bryant and Eighth and Ninth. Two-story frame.
O.—August Vetter.
A.—John & Zimmermann.
C.—Jacob Klein.
$2,600.

Market, nr. Eighth. One-story frame.
O. and B.—H. Bruns.
Day work.
$1,000.

Minna, bet. Ninth and Tenth. Three-story frame flats.
O.—D. McDonald.
A.—P. R. Schmidt.
C.—C. W. Beardslee.
$4,800.

Market, junction of Valencia. Brick additions to Cable House.
O. and B.—Market Street Cable Railway Co.
Day work.
$20,000.

Mississippi, cor. Santa Clara. One-story frame.
O.—Miss C. O. Neill.
A.—A. J. Barnett.
C.—T. B. Moore.
$1,700.

N

Ninth, cor. Mission. Additions.
O.—H. Dimond.
A.—C. J. Devlin.
$2,500.

O

Octavia, southeast cor. Geary. Two-story frame.
O.—J. Schroeder.
A.—John & Zimmermann.
C.—Wm. Pluns.
$6,500.

P

Page, cor. Devisadero. Two-story frame.
O.—E. Daniels.
C.—A. H. Bailey.
$4,000.

Pine, northeast cor. Gough. Two-story frame.
O.—Estate of Jas. Irvine.
A.—P. R. Schmidt.
C.—For Grading, W. T. Commary.
$200.

S

Seventeenth, bet. Valencia and Guerrero. Two two-story frames.
O.—John O. Neill.
A.—John & Zimmermann.
C.—J. Klein.
$5,000.

Steiner, nr. Bush. Two-story frame.
O.—G. L. Henzel.
Day work.
$2,500.

Seventeenth, cor. Folsom. Two-story frame factory.
O.—Sterling Furniture Mfg. Co.
C.—C. H. Munster.
$3,000.

Seventeenth, cor. Folsom. One-story cottage.
O.—Wm. Foley.
A.—C. J. I. Devlin.
C.—J. W. Smith.
$805.

San Jose Ave, cor. Dolores. One-story cottage.
O.—Miss M. Ryan.
C.—H. J. McLaughlin.
$1,200.

Sutter, bet. Franklin & Gough. Two-story and basement frame.
O.—D. Cohn.
A.—Pissis & Moore.
C.—W. Langstaff.
$22,000.

Sutter, bet. Franklin and Gough. Alterations.
O.—J. Labraton.
A.—Pissis & Moore.
C.—A. Jackson.
$2,000.

T

Twenty-ninth, nr. Sanchez. One-story frame.
O.—J. H. Johnson.
C.—J. E. Leomer.
$1,500.

Townsend, between Third and Fourth. Brick warehouse.
O. and B.—L. Walker.
A.—C. J. I. Devlin.
$4,000.

Twenty-second, cor. Howard. Two-story stable.
O.—H. Zwieg.
A.—H. Geilhuss.
C.—F. Klatt.
$2,500.

Tehama, bet. Third and Fourth. Two-story and basement brick.
O.—Lenoronand Bros.
A.—Huerne & Everett.
C.—Geo. Richardson.
$5,870.

Twelfth Ave, cor. Clement. Two-story frame
O.—Lucy E. Marsh.
A.—S. & J. C. Newsom.
C.—Moor Bros.
$5,300.

V

Valencia, junction Twenty-fifth. One-story frame.
O.—S. P. R. R. Co.
Day work.
$1,200.

Van Ness, cor. Fell. Three-story frame.
O.—Mrs. Ryland.
A.—Jacob Lenzen.
C.—Anderson Bros.
$9,000.

Valencia, nr. cable car house. One-story frame.
O.—J. J. Haley.
C.—Stevens & Gray.
$6,000.

W

Washington, cor. Octavia. Additional contracts.
O.—Alex. Boyd.
A.—Curlett & Cuthbertson.
Plumbing—R. Rice.
$2,500.

Washington, nr Steiner (in rear). Two-story frame.
O.—Fannie M. Farrell.
C.—J. H. McKay.
$2,200.

MISCELLANEOUS.

San Jose—One-story frame, nr. County Hospital. O., C. F. Boss; A., Theodore Lenzen; C., R. Summers; $1,800. Park Ave., south side. One-story frame; O., P. Glein; A., Theodore Lenzen C., H. C. Skow; $600. Two-story frame on University Tract. A., Theodore Lenzen; C., A. J. McIlvain; $2,500. A frame pump house. O., San Jose Water Co.; A., Theodore Lenzen; C., G. E. McDougall; $700.

Fresno City—Two-story brick. O., J. M. Brady; A., Theodore Lenzen; $10,000.

Tulare City—Two-story and and basement brick. O., J. Goldman & Co.; A., H. C. Macy $10,000.

THE CALIFORNIA ARCHITECT AND BUILDING NEWS.

VOLUME VII. ENTERED AT POST-OFFICE, SAN FRANCISCO, AS SECOND-CLASS MAIL MATTER. ESTABLISHED JANUARY, 1879. NUMBER 11.

THE

California Architect & Building News.

A MONTHLY JOURNAL,

Devoted to Architecture, Decorating, and Furnishing.

PRICE, $2.00 PER ANNUM.

The official organ of the Pacific Coast Association of Architects. Published by the SAN FRANCISCO ARCHITECTURAL PUBLISHING CO. No. 240 MONTGOMERY STREET, Rooms 11, 12, 13.

Subscribers will please notify us promptly of any failure to receive this journal, and also of any change in their address.

Advertisements inserted at reasonable rates.

SAN FRANCISCO, CAL., NOVEMBER 15, 1886.

EIGHTY-FOURTH MONTHLY ISSUE.

Completion of Its Seventh Volume as a Monthly.

ITS publication being commenced in January, 1880, but one more number—that of December—remains to complete its *seventh* volume as a monthly—EIGHT, including Quarterly of 1879.

For the purpose of establishing this Journal, and securing for it the reputation it at present enjoys, of being *excelled by but few of like character published in the United States*, neither expense, effort, attention, nor personal, mental, or physical energies or application, have been spared. Upon the issue of reputation we submit the testimony of those who have read the contents of its columns, and given unsolicited testimony.

During the period named there have been issued and circulated of monthly issues, including two supplemental editions,

MORE THAN 350,000 COPIES.

No *monthly* journal, certainly none of class character published within the Pacific States, and but few class monthlies within the United States, can make an equal showing. And when all the material facts, conditions, and surroundings are considered, the conclusion that a great work has been performed, must be reached and admitted; for at the beginning there was scarce a single auxiliary available, in good and practically perfected shape. Crudeness and inexperience,

FROM EDITOR TO "PRINTER'S DEVIL,"

was the order of things, and in addition to *doing* that which was to be done, the secret of *how best to do it*, had to be learned.

WITH THE SAME DEGREE OF ENERGY AND ENTERPRISE IN EXERCISE DURING THE NEXT AND SUCCEEDING YEARS,

it is reasonable to anticipate greatly enlarged results, and to see this Journal excelled only by the very few old and long-established journals, published at the great centers of population and enterprises, where scores of millions of dollars are expended annually within a single city or county in the erection of buildings alone, and hundreds of thousands of mechanics and artisans are employed daily upon constructive works.

But to accomplish this, subscription patronage must be extensive and promptly paid, and advertising support liberal. The cost and expense of each issue must be paid monthly, whether or no the management receives its pay from patrons. Every patron who fails to pay up at the proper time, should bear in mind the fact, when he first opens each monthly number, that he is enjoying the instructions and benefits of a publication which has cost some one else a certain amount of money, and a sense of honesty and fair dealing should not only prompt, but compel immediate payment of subscription amount.

We hope that the patrons of this Journal will consider this important matter in its equitable and just light, and by or before or during the month of January,

SEND IN THEIR SUBSCRIPTIONS FOR 1887.

Be sure to obtain the December number.

Retrospect.

IN looking back over the past seven years, as founder and editor of this Journal, very many pleasing recollections present themselves, which will not be forgotten while life lasts.

The numerous expressions of personal good-will, friendly feelings, hearty wishes for our success, approval of efforts made, and many expressions of kindly import, have been sources of great pleasure.

While some men conduct and manage newspapers and journals for personal objects and purposes, and shrink from no act, however vile and depraved, to further their designs, nor any means, however corrupt, that will yield gold, even at the expense of truth, honor, or fairness, the chief object of every intelligent and honorable man editing, managing, or to any extent controlling a publication of any character, is to inform, instruct, and edify those who read, in printed form, the thoughts that flow from a pure mind. With truth and right as a bulwark, every good man who wields the pen as an editor, finds an eminent reward in the approbation of those who read his mind productions; not in a feeling of vanity that he has pleased, but in a sense of solid satisfaction at having so expressed himself as to receive approval from others, alike with himself, intelligent and well disposed.

While acknowledging personal defects and short-comings, and a lack of those marked scholarly and intellectual abilities, such as thousands in journalistic pursuits enjoy, we lay honest claim to purity of purpose in the conduct of this Journal. In no instance has there been any purpose to deceive, mislead, or misrepresent. An earnest desire to do justice to all, wrong to none, and to inform, instruct, and benefit our patrons, has been the controlling motive influencing every line from our pen or pencil.

Summary for November.

58 Frames	$282,335
16 Alterations and Additions	36,500
4 Brick	112,950
78 engagements. Total cost	$431,785

Delinquent Subscribers.

IT is astonishing with what cool unconcern some people permit their subscription indebtedness to journals to remain unpaid.

There seems to be no sense of shame or principle of right and fair dealings with such people; true, sometimes good and honest men *forget* to pay small indebtednesses, and the object of this notice is to refresh the memory of such good and honest men who have not paid up, that we will very thankfully receive the amount due us, if they will kindly forward the same during the present month.

How Axes Are Made.

IN the manufacture of axes, the material passes through twelve different operations before it is ready for labeling and boxing.

At first it is a rectangular piece of iron, about three-fourths of an inch thick, three and one-half inches wide, and about six inches long. The bit is of steel, and in some instances is inserted in a slit made in the iron, and in others it is drawn over the edge of the iron. There is a growing demand for axes made entirely of steel. The most important part of the process of manufacturing is tempering. "This is really where the axe is made," said a manufacturer. The grinding and polishing is the most laborious part of the process. It is here that the rough, irregular-shaped semblance of an axe is ground and polished until it is as bright as a mirror. It is said that the work will prove fatal within five years to any man who pursues it steadily. The air is filled with imperceptible dust from the stones, and many of the workmen tie small sponges saturated with water over their nostrils.

Paper Read Before the S. F. Chapter American Institute Architects, by Fellow G. H. Sanders, Nov. 5, 1886.

Mr. President and Gentlemen: The resisting power of our building stones to vertical pressure having been at various times brought to our notice, we decided to settle the question by actual test. Finding that there was a hydraulic press at the miners' foundry, we decided to take advantage of the courtesy of the proprietors, who kindly placed the apparatus at our disposal. Through the good offices of P. H. Jackson all preparations were made, and early in the month all was ready, and the tests were made.

Having at sundry times collected a number of blocks of stone and granite and bricks of various kinds, we were enabled to test the following materials, viz.: Penryn granite, Miles freestone, Sutro Heights stone, San Jose sandstone, Stock brick, San Jose pressed brick, Chicago pressed brick, Lincoln Hollow brick, and some ordinary concrete blocks. Unfortunately, it soon transpired that the adjustment of the press was not such as to insure anything like a crucial test, the faces of the piston and abutment block not being parallel with each other and the faces of both. But especially the abutment block, which was loosely held between two jaws of an upright stanchion piece (see diagram), was quite rough and rusty from exposure to the air, so that though hoop iron was used to pack and adjust the abutment block, it was impossible with such means to bring their faces into anything like parallelism. The hurry, too, with which the experiments were conducted prevented the possibility of those careful observations and abundant notes which render such experiments really valuable.

Perhaps after all the chief benefit derived from the tests was finding out, in view of a future occasion, how *not* to do it. Nevertheless, the experiments were of a great interest. In the first place, the question of bedding occurs. Some of the blocks were crushed between pine boards, others between sheets of thick lead. The result seemed to be indifferent, in some cases the lead, and in others the pine, seeming to gain the higher result. In one case a brick (the Stock brick) was bedded in cement, but the cement was not allowed sufficient time to set, so that the result was nearly *nil*. We believe that every specimen should be bedded between plates of planed iron in pure, sifted cement, and thoroughly set, prepared, perhaps, a month or more beforehand, and then placed between truly planed, mathematically adjusted surfaces of the ram. Under such circumstances alone can uniform and reliable results be looked for with any confidence. Secondly, it also appears, from the results which will be laid before you, that, as probably might be expected, the largest specimens give the lowest results as to the relative resistance per square inch of area. Thus a block of sandstone 3x3x3 gives a resistance of 75 tons ultimate crushing strength, or a resistance per square inch of area of 9,312½ pounds; whereas, a block of Penryn granite 6x6x6 gives an ultimate crushing strength of 128 tons, but a resistance per square inch of surface of only 7,727⅜ pounds. Possibly this is due, to some extent, to the greater difficulty of adjusting the pressure over the whole of a large surface equally, than in the case of a surface ¼ the area. Otherwise one would suppose that the greater bulk should offer as proportionately greater a resistance.

One other point it may be well to notice, namely, the almost uniform occurrence of cracks, spalting, or other partial failure of the material, early in the process of crushing. This is no doubt due to the gradual adjustment of the blocks to the conditions of pressure brought to bear upon them, after which, every part having been brought to an equal bearing, the block is in a position to sustain the pressure until the ultimate limit of resistance is reached. On this account, granting that the surfaces of the ram and the surfaces of the best blocks can be brought to perfect adjustment, there is no doubt that, as some experimenters have found, the highest result would be reached without any intervening bedding substance whatever.

STONE TESTS.

No. 1. San Jose Sandstone.
Block 6x6x6 = area 36 inches. (Note—between sheets of lead.)
20 tons spalted on edge.
50 " " "
70 " badly crushed—3,944½ lbs., 1 inch area.

No. 2. San Jose Sandstone.
Block 6x6x6 = area 36. (Between sheets of lead.)
10 tons slightly cracked.
55 " bulged on top.
75 " split and crushed—4,166⅔ lbs., 1 inch area.

No. 3. Miles Freestone.
6x5½x6 = area 33.
60 tons spalted on top.
70 " cracked in middle.
75 " " "
85 " " in opening.
100 " crushed—6,060⅔ lbs., 1 inch area.

No. 4. Penryn Granite.
6x5½x6 = area 33.
95 tons cracks on top.
105 " more cracks.
110 " badly cracked.
115 " " "
128 " " crushed—7,727 3-11 lbs., 1 inch area.

No. 5. Sutro Heights Metamorphic Sandstone.
4x4x3⅜ = area 16.
15 tons corner came off.
30 " cracked on top.
55 " " in middle.
60 " crushed—7,500 lbs., 1 inch area.

No. 6. Block of Concrete (made about Jan. 1, 1886).
Composed of 2 vols. fine gravel.
" " 1 " coarse gravel.
" " 2 " broken rock.
" " 1 " Portland cement.
Or 5 of rock to 1 of " "
4 in. x 5 in. x 4 in. thick (6 months old).
20 tons cracked.
30 " crushed—2,500 lbs., 1 inch area.

No. 7. Block of Concrete (same age and size).
20 tons cracked.
32 " crushed—2,666 lbs., 1 inch area.

No. 8. San Jose Sandstone Brick.
8x4½x2⅝ = 31½ in. area.
Ram, 8 inches diameter.
15 tons cracked on top.
30 " badly cracked at ends.
55 " cracked in middle.
80 " crushed on top.
85 " thoroughly crushed—5,312½ lbs., 1 inch area.
(The above placed between lead plates.)

No. 9. San Jose Sandstone Brick. (Placed between pine boards ⅜ inches thick.)
60 tons cracked.
80 " crushed—5,000 lbs., 1 inch area.

No. 10. San Jose Sandstone Block. (Placed between lead plates.)
3x3x3.
15 tons spalted.
25 " crushed—5,555 lbs., 1 inch area.

No. 11. San Jose Sandstone Block. (Placed between pine boards.)
4x4x3⅜.
70 tons cracked.
75 " crushed suddenly and completely—9,312½ lbs., 1 inch area.

No. 12. 4½x3⅜x4½ block (between pine boards.)
30 tons cracked.
40 " crushed—5,333⅓ lbs., 1 inch area.

No. 13. Sacramento Stock Brick (rough).
4x8x2½ (between wood) = 32 inches area.
20 tons cracked.
40 " crushed—2,500 lbs., 1 inch area.

No. 14. Petersen's San Jose Pressed Brick.
4x7¼x2⅜ = 29 inches area.
15 tons cracked.
30 " badly cracked.
40 " crushed—2,758⅝ lbs., 1 inch area.

No. 15. Chicago Pressed Brick. 20 inches area.
20 tons cracked.
40 " crushing.
60 " crushed—6,000 lbs., 1 inch area.

No. 16. Salmon Brick (pressed).
4x8½x2½ = say 31 inches area.
10 tons cracked.
35 " crushed—2,258 lbs., 1 inch area.

No. 17. Gladding, McBean & Co.'s Hollow Brick.
4½x8x4 = 32 inches area.
Crushed at 2½ tons—156 lbs., 1 inch area.
Cracked at about 1 ton's pressure.
Splitting lengthwise. (Surfaces very much in wind.)

In all cases the splitting commenced at the top of the blocks, and worse to the left side of the blocks, indicating a bad adjustment of the apparatus. The surfaces of the ram and the contra block were not smooth, especially the latter, being rusty and very rough, and making a very irregular impression in the lead plates and pine boards. This fact would have to be taken into account in judgment of the respective values of the above experiments. In the stone blocks, too, it was not possible to have the surfaces crushed parallel with natural bed in all cases, the bed being in nearly all cases perpendicular to the line of pressure, the blocks and bricks in nearly all cases splitting lengthwise, and bulging up on top (rarely on bottom) and spalting. One small San Jose block crushed on natural bed at the high figure of 9,312½ pounds per square inch of area, being a block 4 inches square and 3⅛ inches thick.

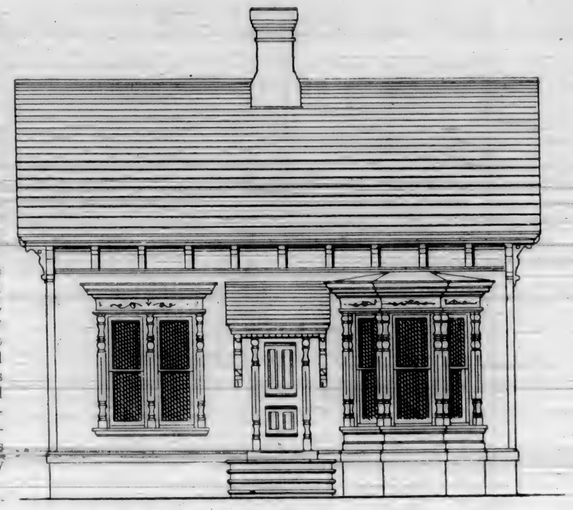
A Closet Shelf.

If there is anything that adds to one's comfort in an emergency, it is a closet shelf prepared for emergencies. That is clear. Accidents, nervousness, sudden pain, midnight calls for help, parcels that want doing up, broken crockery or ornaments, all find a ready answer to their calls on this carefully prepared shelf. It is so easy to prepare and keep in order, can be small or large, as one decides to confine its contents to a few things or enlarge to many. I intend to give a list for the smallest one that I think it advisable for any one to keep, be she keeping house or boarding. First of all come the things that are to be ready for illness, sudden or otherwise,—camphor, for faintness, headache, or a sudden attack of diarrhœa, although, for the latter, there is nothing equal to a tablespoonful of raw flour in a glass of cold water, to be taken in two doses half an hour apart. A closely covered little box of raw flour is easily kept on the shelf, to be often renewed, lest it get musty. A small tin can of flour and mustard, mixed in equal parts, ready to make into a paste for a mustard plaster, is to me a pleasanter arrangement for a hastily required mustard plaster than the "mustard leaves" ready at the drug stores. In a little box beside this can should be old linen and cotton rags, for the other half of the plaster, as well as for cuts or bruises; also a strip of flannel a "finger" broad and three-quarters of a yard long, to put upon the outside of a cotton cloth, several times folded and wet in cold water, for a compress for a sore throat. Keep your case of court plaster in this box of rags, and a spool of white linen thread, both conveniently near the necessary pair of small scissors.

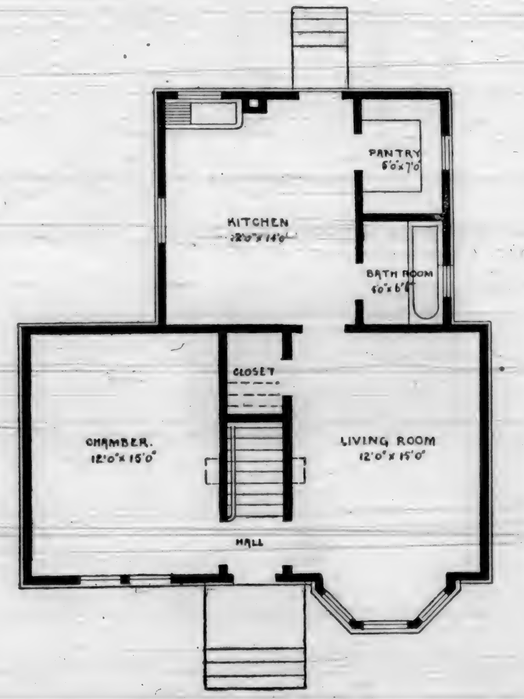
Camphorated oil, which is best when made at home by dissolving camphor gum in warm olive oil until no more will dissolve, is invaluable for sore throats and chests, or a cold on the lungs. Rub in well, and there will be no cold taken afterwards, as there is after the old-fashioned "goose grease." Vaseline is good for this purpose also, as well as for many others that every one knows about. There is nothing, for chapped hands, equal to glycerine and tincture of hydrastis, fifteen drops of the latter to an ounce of glycerine. Wash the hands in warm water thoroughly, and, before wiping, rub in a little or good deal of the mixture, according to the need.

Tannin, a dry, greenish powder, is a great comfort where a sudden severe nose-bleed occurs in the family. Once snuffing it up well into the nostrils generally ends the trouble. Tannin forms, with water, a good gargle for a sore throat, as it is a healthy astringent. It is the best thing I know of for severe chafing, especially for infants. The effect is almost magical. Pond's extract of hamamelis is another indispensable for this emergency shelf. It is really good for nearly all the ills mentioned on the wrapper of the bottle. An excellent way to get hamamelis is by the quart, and it is the cheaper way. On principle, my emergency shelf always holds olive oil, alcohol, and ammonia. Hot summer days, and headaches, find me grateful for my bay rum bottle. I quite forgot to put arnica in my remedy list, although it is decidedly second to tincture of calendula for cuts or wounds. Both are to be diluted with water when used.

It is very pleasant to turn from the above list and point you to my "Perfect" mucilage bottle; that is its commercial name, and well deserved. How many times you will use it if convenient on its shelf. Next it should stand a bottle of stratena, or one of its relations in the cement family. If Clytie's head comes off, or the butter dish cover breaks in two, or your favorite china cup gets into so many bits that it will only do for an ornament after a vigorous use of the cement, you will be glad of the remedy. A bottle of shoe polish, or box of shoe paste, is a handy thing when one dresses in a hurry. Last, but not least, comes a ball of twine. If you are fortunate enough to possess a silk bag, with pretty ribbons and pair of scissors, to hold your string ball, it is delightful. Otherwise, a ball on the end of the emergency shelf will save much hunting for string, and much vexation of spirit.



Front Elevation of a One or One-and-a-Half-Story Cottage.



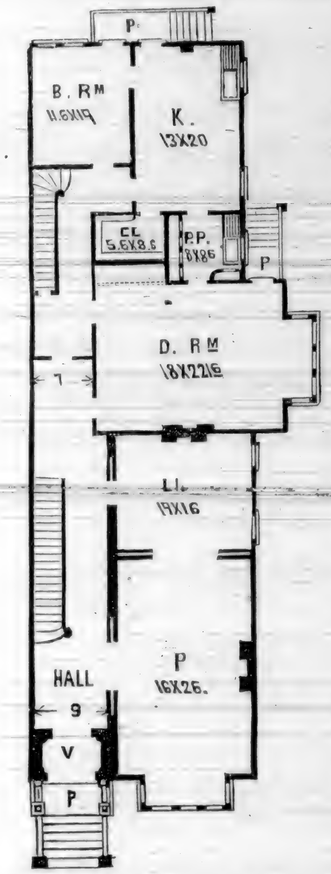
Plan for above Elevation.

It Didn't Work.

When the employes in an Indiana furniture factory, operated by a German, struck for eight hours a day, he granted it; but when they wanted ten hours' pay for eight hours' work, he called them up and said:—

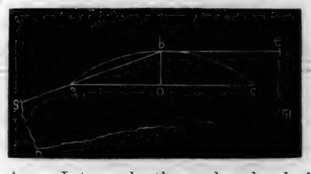
"My frens, maype I do ash you like. I haf an order from Shegago for ten dozen shairs. I vill sheep him eight dozen, und bill him for ten. If he doan't kick on me, it shows me dot der rule vorks both ways und we vhas all right."

It is needless to add that the idea didn't work; and that his men are receiving eight hours' pay.



First Floor Plan City Dwelling.

A Practical Way to Describe the Arc of a Circle too Large for a Pair of Dividers.



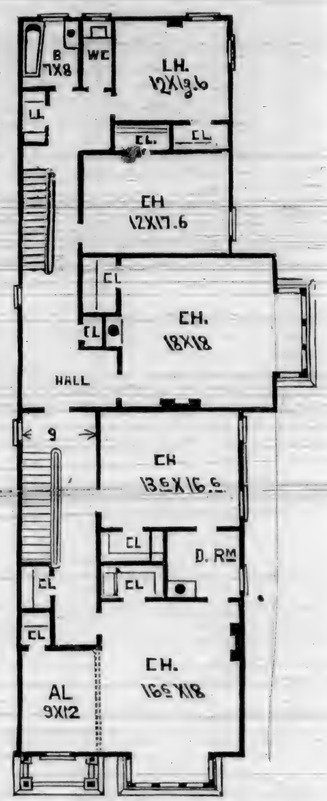
Ans.—Let *a c* be the cord, and *o b* the height of the required arc, as laid down *on the drawing*. On a separate piece of paper, *s e m n*, draw *a c*, *o b*, and *a b*, also *b e* parallel to the cord *a c*. It is well to make *b s* and *b e* a little longer than *a b*. Then cut off the paper carefully along the lines *s b* and *b e*, so as to leave remaining only the strip *s a b e m n*. Now if the straight sides *s b* and *b e* be applied to the drawing so that any parts of them shall touch at the same time the points *a* and *b*, or *b* and *c*, the point *b* on the strip will be in the circumference of the arc, and may be pricked off. Thus any number of points in the arc may be found, and afterwards united to form the curve.

Plans for a City Residence.

The accompanying plans were adopted by a gentleman in this city whose principal design seemed to be the comfort of his family, with due regard to modern conveniences. He evidently found favor with the rule, "We must begin by observing what has already pleased, if we wish to judge rightly as to what will please in any future production."

The first floor contains a large parlor, connected with a library by sliding doors. In close proximity is a spacious dining-room, with place for sideboard, and an ample butler's pantry, with sink, lockers, cupboard, shelves, etc. The pantry is in direct communication with the kitchen, a large, well-lighted, and ventilated room. From the kitchen access is easily gained to the basement by means of the rear stairs shown, and also to the yard, and to a comfortable servant's bedroom.

The second floor contains five good-sized bedrooms, all amply supplied with closets. Special pains has been taken in the plans shown to have a place for each and every article of furniture necessary to a bedroom. It will be noticed that in each of the upper and lower halls there is shown a door, placed so that all draughts can be shut off between the front and rear stairs. No cornices are shown, these being left to the consideration of those who desire to use, as a model, the plans shown in our engravings.

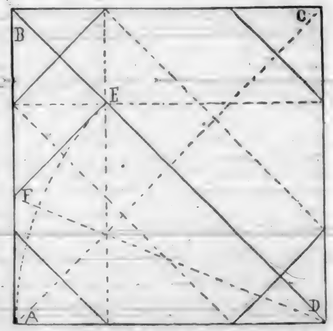


Second-Floor Plan City Dwelling.

Earthquakes.

In view of the wholesale destruction of property, coupled with loss of life, wrought by the recent earthquake at Charleston, South Carolina, the movement of which was felt from the Atlantic to the Mississippi, it seems proper to raise the question, whether we are to assume that a recurrence of the calamity is improbable, or are to adopt a method of construction in our larger buildings which will withstand similar strain. The Mexican and South American States are frequent sufferers from this cause; the Pacific Coast is subject to shocks of greater or less severity; and, though Charleston has not experienced a severe shock since 1811, it is not at all improbable that a like disaster may occur within the next twenty years. It would certainly be the part of wisdom for the city of Charleston, while reconstructing her shattered buildings, to seek a measurable security from future demolition, at the expense of an increased expenditure in construction. The havoc that would be worked in any of our Northern cities by a similar shock, may well be imagined by one familiar with the method frequently employed in the erection of structures for commercial and manufacturing purposes. To place a roof on four walls of brick or stone, built to a height of from three to eight stories, without cross walls and lateral bracing in exterior walls, is an invitation to ruin by earthquake or by fire. If Americans are building for the pleasure of seeing their work tumble in before fire or earthquake, too many have hit on the proper construction to insure this result. If we are building that our work may outlast this generation and the ones hereafter, we need to inaugurate a new era, in which the skin-builder shall starve for the lack of a job.—*Inland Architect.*

Dr. E. Parmley Brown says that the excessive use of common salt is one of the main factors in the destruction of human teeth.



To find the sides of an eight-sided polygon, draw the square A B O and D, and join D B. From D as a center, with D A as a radius, describe an arc, cutting D B in E. Then E B equals the side of polygon, and E F D equals the angle to mitre the sides.

By the use of the square to mitre the sides, place the square with E D on the blade, and E B on the tongue; mark from the latter for the angle required.

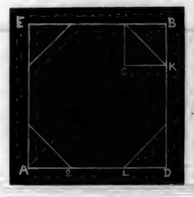
By calculation—let E D equal 18x18 inches, equal 324 plus 324 inches, equal 648 inches, square root of which is 25.4558 inches, minus 18 inches, equals 7.4558 inches, or 7 and 7-16ths inches equal E B.

By proportion—7.4558 inches : : 18 inches : 7.5 inches; 7.5x18 inches equal 135 inches; divided by 7.4558 inches equal 18.1067 inches, or 18 and 3-32d inches equal E D.

A COUNTRY VILLA.

LATH do not make a very good showing, it is said, on the average dealer's books. There is no profit in them. The handling costs too much in proportion to the quantity and value of the stock turned over. Practically there is as much labor expended in moving a bundle of lath as there is a bunch of shingles, which is worth several times as much. No one ever saw a lumber-shover wrestling with more than one bundle of lath at a time, and though it is a small load, he makes out that it shall be a full one. The margin of twenty-five to thirty-five cents which there is in this item for the dealer, does not cover the expense of handling them through the yard, and in consequence the lath account usually shows a balance on the wrong side. But yards must keep them, whether they pay or not. They are like a good many of the small notions that many kinds of retail merchants are obliged to handle; there is no money in them, but they must be kept and sold just the same, because the buyer demands that he shall be accommodated to that extent.—*Ed.*

How to Lay off an Octagon.



IF the timber is not square, mark off the largest square that can be formed. Draw a line from corner to corner, as A B. Mark the distance of one side of the square, as A D, on the diagonal A B, at C. Draw C K parallel to E B. Set a gauge to B K, and run this distance on all four sides of the square. Work off the corners, and a perfect octagon will be formed.

New Motion to a Grindstone.

AN improvement in the driving of grinding stones and emery wheels is that by which the wheel is given a reciprocating lateral motion in addition to its rotation. Every one has noticed the advantage of moving a tool from side to side on a hand grindstone so as to equalize the attrition on the different parts of the edge. It is found that by making the grindstone move and keeping the tool still a more perfect result is attained, while the detached particles of steel have an opportunity to drop off the grindstone instead of being crushed into it, and the wear of the stone and the heating of the tool are both greatly diminished.

A Country Villa.

THE elevation and plans here presented will convey to those intending to build an idea of how a comfortable, picturesque building should be erected. We are prepared to furnish the plans for this or any other kind of a dwelling in any part of California.

A CONSIDERATION in the use of stone for important buildings is that of having it quarried, stored, and seasoned for some time before being hewn and placed in the walls. By these means the natural sap is allowed to evaporate, and the stone tested as to its quality. This would add to the cost, but the money would be well spent if this precaution prevented the wasting of stones from the rains, frosts, or atmospheric influences, which, especially in our cities, soon act on the surface of a newly quarried stone. Stone that is quarried one day and built the next is in a green state, and unfit for use. It is not in condition—it is at its weakest—its pores are open and ready to absorb not only moisture, but the gaseous and disfiguring influences which tend to its destruction. Every hewer knows that to get a polish on a stone that has lain for some time is very different from what he gets on one fresh from the quarry, and this of itself should be sufficient to warrant the precaution recommended, which is to thoroughly season the stone before using it.

An Octagon by the Use of the Square.

ALONG the face of the "tongue" will be noticed two parallel lines, with a row of dots interspersed with figures, between them. The figures simply show that the dots are numbered by tens. This is known as the "eight square," or octagonal scale. This scale is based upon the fact that each face of a regular octagonal scale is almost exactly five-twelfths of its shortest diameter.

In using the scale, the timber is first squared to the diameter desired for the octagon, and a line drawn from the center of each face to the center of the opposite face; then, with the dividers, as many spaces of the scale are taken as there are inches in the diameter of the timber, and the distance thus obtained is set off each way from the center line upon each face, which gives the position of the angles of the octagon.

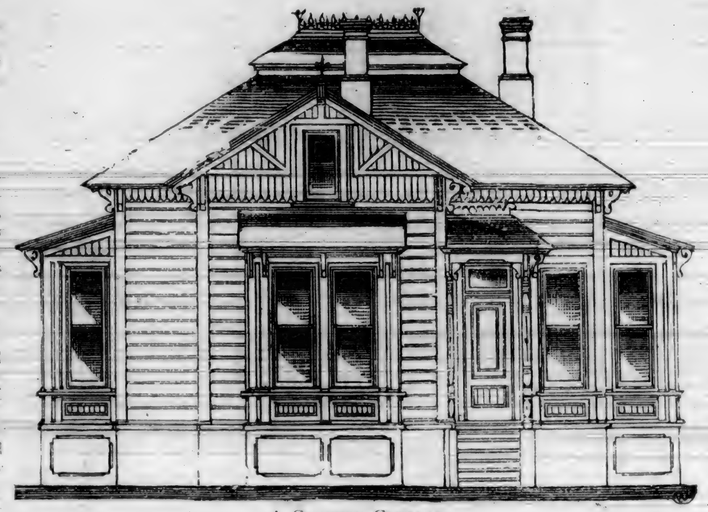
For instance: let A B C D be the square end of a stick of timber six inches on a side. Draw the center lines A B and C D from the center of the faces A and C. Now with the dividers take from the scale 6 spaces, and lay off this space on each side from the center of each; as A 1, A 8, D 2, D 3, B 4, B 5, C 6, C 7; join by a line the points 1 2, also 3 4, 5 6, and 7 8; and you have the outline of the largest octagon stick that can be cut from this piece of timber.

THE United States is the only country in the world which spends more for schools than for military and naval armament. It spends about $93,000,000 for education and $47,000,000 for war. It spends for education nearly three times as much as Great Britain, three times as much as Germany, and six times as much as France.

A PIECE of iron rolled in the new Falcon Mills at Niles the other day is as thin as a sheet of ordinary paper. It would take 150 sheets to constitute one inch in thickness. The mill made this piece just to see how thin they could roll.

A Country Cottage.

THE accompanying plan will suggest a few ideas to those seeking for the elevation of a country cottage, who desire beauty combined with distinctive features, at a low cost.

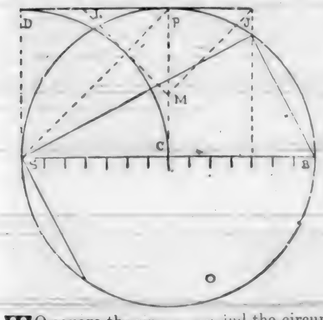


A COUNTRY COTTAGE.

Priming for Wood, Paper, Lime, or Hard Plaster Walls.

A SUPERIOR priming for these purposes, which, it is claimed by the inventor, Herr Kall, of Heidelburg, is cheaper than linseed oil, and closes the pores so perfectly that less paint is required than with oil and red lead. Priming coat is thus described: The substitute used for boiled oil consists of ten parts of boiled blood, as furnished by the slaughter-houses, with one part of air-slacked lime sifted into it through a fine sieve. The two having been well mixed are left standing for twenty-four hours. The scum that collects on top is cleared off, and the solid portion is broken off from the lime at the bottom; the latter is stirred up with water, left to settle, and the water poured off after the lime has settled. The clear liquid is well mixed up with the solid substance before mentioned. The mass is left standing for ten or twelve days, after which a solution of potash permanganate is added, which decolorizes it and prevents putrefaction. The mixture is then stirred up, diluted with more water to give it the consistence of very thin size, filtered, and then a few drops of oil of lavender added. The preparation, if preserved in closed vessels, keeps a long time without change. A single coat will suffice for priming.

How to Square a Circle.



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 C S equal the radius; from the points C and S as centers, describe the circle and arc C D; tangent to the arc and circle draw D P. Join S P; at right angles to S P draw L M tangent to the arc D C, and M J equal M L parallel to S P. Then D J equals one-fourth ($\frac{1}{4}$) of the circumference of the circle, and S J 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 S B, the diameter, into fourteen equal parts, eleven of the parts equal D J 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.

The Law as to Party Walls.

A PARTY wall is the wall dividing lands of different proprietors, used in common for the support of structures on both sides. At common law an owner who erects a wall for his own buildings which is capable of being used by an adjoining proprietor, cannot compel such proprietor, when he shall build next to it, to pay for any portion of the cost of such wall. On the other hand, the adjoining proprietor has no right to make any use of such wall without consent of the owner, and the consequences may be the erection of two walls side by side, when one would answer all purposes. This convenience is often secured by an agreement to erect a wall for common use, one-half on each other's land, the parties to divide the expense; if only one is to build at the time, he gets a return from the other party of half of what it costs him. Under such an agreement, each has an easement in the land of the other while the wall stands, and this accompanies the title in sales and descent. But if the wall is destroyed by decay or accident, the easement is gone, unless by a deed such contingency is provided for. Repairs to party walls are to be borne equally, but if one has occasion to strengthen or improve them for a more extensive building than was at first contemplated, he cannot compel the other to divide the expense with him. In some States there are statutes regulating the rights in party walls, and one may undoubtedly acquire rights by prescription on a wall built by another, which he has long been allowed to use for the support of his own structure.

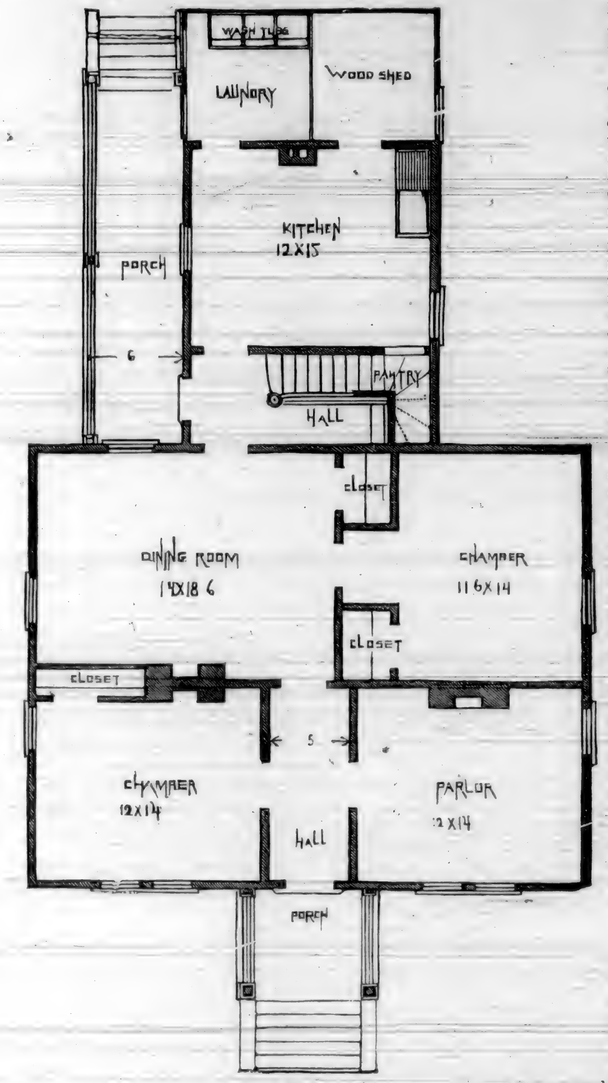
A PLUMBER was sent to the house of a wealthy stock-broker to execute some repairs. He was taken by the butler into the dining-room, and was beginning his work, when the lady of the house entered. "John," said she, with a conspicuous glance toward the plumber, "remove the silver from the sideboard and lock it up at once." But the man of lead was in nowise disconcerted. "Tom," said he to his apprentice, who accompanied him, "take my watch and my chain, and these coppers, home to my wife at once. There seems to be dishonest people about this house."

BUSINESS MANAGER OF ARCHITECT: What is the rule for finding the length of braces between two posts, when they incline one foot in six feet rise?

The cut represents a frame, the posts of which incline one foot in six feet rise. Let the distance B B represent seven feet. The braces are run at an angle of 45°. The post inclining one foot in six, leaves the distance at A A six feet. We have given the rule in a previous number. In this case the brace would be 8 ft. 5 13-16 inches.

Permanent and Unwashable Colors on Walls.

A METHOD of applying paint to a wall so as to secure the greatest possible permanency, is to have the wall coated with mortar composed of lime and sand, and to throw over it a very weak wash of water with which potash silicate is mixed; then proceed to paint, and syringe the surface with a strong solution of the potash silicate. There are, however, a number of colors to be avoided in this process, among which are cadmium yellow, Naples yellow, baryta chromate, chrome-red, ultramarine, cobalt blue and green, chrome green, ivory black; also lime carbonate, baryta white, and zinc white, as the alkali would injure some of these and destroy others. The pigments should be mixed with potash silicate. The latter should be applied warm on the painted surface.



A CHEAP COUNTRY HOME.

A Cheap Country Home.

THE above plans are self-explanatory, every room and its dimensions being plainly and accurately marked.

IN acquiring Burmah, England has got possession of vast forests of teak, which, never plentiful in India, was becoming commercially very rare. Of all the woods grown in the East this is the most valuable. It is neither too heavy nor too hard; it does not warp or split under exposure to heat and dampness; it contains an essential oil which prevents its rotting under wet conditions, and, at the same time, acts as a preservative to iron and repels the destructive white ants; it is, withal, a handsome wood, of several varieties of color and grain, and takes a good polish.

THE beautiful embroidery upon linen and muslin which is sold in this country as "French" embroidery is made by the poor peasants of Ireland, who are able to earn at it about sixty-two and one-half to seventy-five cents a week—working twelve to fourteen hours a day.

Does Charring Timber Promote Durability?

THE general belief has long been that it does, and in accordance with this conviction the practice has been widely followed. But a contrary view of the subject is taken by *Wood and Iron*. That journal says in a recent issue: "As charcoal would endure for ages in places where timber would decay speedily, the practice of charring the surface of fence posts and other timber has been repeatedly recommended in books and ephemeral publications, as eminently worthy of universal adoption.

"The theory upon which such a recommendation is based would seem to warrant a confident expectation of satisfactory results in practice; but repeated experiments with charred timber have furnished conclusive assurance that the process will not promote its durability. Indeed, numerous experiments have shown that charring promotes premature decay. Two posts split from the same log may be set side by side in the ground, the surface of one being charred and the other not; and it will be seen that the charred post will perish before the other.

"The same is true of railroad ties, and all such timber as may be exposed to the altering influences of wet and heat. Could the entire timber be changed from its perishable condition to one solid piece of charcoal, the durability would be promoted to a surprising length of time; but the strength of the material would be destroyed. When fence posts or other sticks of timber are exposed to the rapid action of wet and heat, the surface will decay first. One might suppose, therefore, that when timber is enveloped by a layer of charcoal, the durability of the entire piece would be greatly promoted. And such would be the case were it not for the fact that the charcoal is not impervious to water; and as water reaches the timber below the charred surface, decay will commence soon after the grain of the wood has been exposed to the influences of the weather. When the change has once begun beneath the charred surface, the durable covering of coal will be of no service whatever in preserving any portion of the wood. Taking this practical view of the subject, it will be perceived that if only half an inch of the outside of a post be charred, the post will not endure so long as if the same thickness of wood has been left uncharred, to waste away by slow decay."

TWO OF the largest castings in the world are to be seen at Nara and Kamakura, Japan, the one at the latter place being 47 feet high, and the other, at Nara, being 53½ feet from the base to the crown of its head. The statue at Nara is supposed to have been erected in the eighth century, but it was destroyed and recast about 700 years since. In endeavoring to recast it several mishaps occurred, and when at last success came, some few thousand tons of charcoal had been used. The casting, which is an alloy of iron, gold, tin, and copper, is estimated to weigh 450 tons.

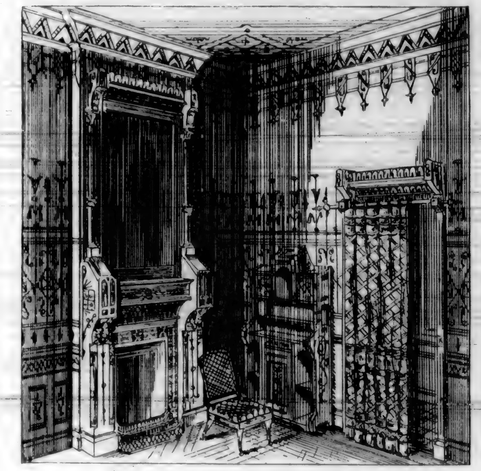
A SOUTHERN writer furnishes this bit of history. The first doors of St. Peter's Church at Rome were made of cypress. They gave way to the bronze doors after being in use 100 years, and are as sound as when placed in the building. The boxes in which mummies are found are made of this imperishable wood.

ALL the cannon foundries of Europe are overrun with orders and working day and night. While they make guns abroad, we make plows and work to raise the food that must support the luxury of war.

Notice Our Holiday Offer on Page 161.

ART AND ARCHITECTURE.

[Special for this Journal. By F. HILLER, Architect and Mechanical Engineer.]



XXXIV. GRADES OF DEVELOPMENT IN ART.

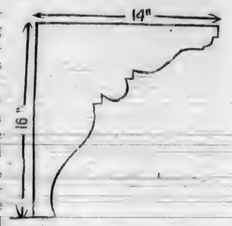
THE figure three has evidently a privileged signification in all relation of men and of nature. Was to be and to pass away. Beginning, middle, and end designate simple forms of those relations whose changes, expansions, and exaggerations are easy, as if self-evident seen, so that here only may be remembered, that in the religions of nations being more capable of civilization, or of people more advanced, Trinity appears on the main in Lens, Poseidon, and Hades in the India; Trinity in Brahma, Siva, and Vishnu, up to the undivided Trinity of the Christian church. This third partition is also, in the development of the arts, of the largest signification, and her close observation makes amazingly more easy the comprehension of the works of art. Germinate, green, and fade are here also the three kinds of appearances, which show themselves and are recognized as the front step, the flourishing and the declining decaying.

XXXV. FRONT STEP.

By the observation of the spirit of a work of art was the sense, purport, and the form of the same drawn in closer perception, and regard, and set up, the perfect harmony of both leading to the highest beauty. But before man arrived to the same with his work, generations must toil and trouble hundreds and thousands of years to prepare the means for him, that he can find a truly worthy sense and purport, to possess a full comprehension of form, and to overcome all hindrances and obstacles successfully in forming the same.

In the petty insignificant beginnings of art the crude predominated first, and the struggle with the resisting material and with his own unskillfulness. And even then the human heart just then desired at this grade of culture a visible representation of the most difficult, "divinity." Already many times it has been stated before, that such a desire leads to symbolizing; that is, to a kind of representation, by which something not lying directly in the form should be indicated by the same or certain other signs. She is called the symbolic grade, or, also, since she always desired to bring up a divine holy spirit, the hieratic symbolic grade. She embraces the art of all barbarous people, those of the Greek to Peadias and his time, and of the Christian nations up to Raphael and his time. She also embraces a great and powerful time and an unmeasurable treasure of works of art and monuments.

The only particular characteristic of all works of this fore grade is, that the spirit overreached the form; that is, that the technical means for its representations were insufficient, and, therefore, partly, as if it were, had to be guessed at. The master of such works thought deeper and felt keener, as he was able to express, finding the only fitting form insufficient there remained some of that, which he intended to put in his work, back, which could not be brought direct to view and appearance, but anyway so that it was not altogether without an indication.



If in the fore grade of art of a people sets in a standstill of a long duration in the general development, then the imperfect forms gradually lose their original symbolic expression, and they transmit themselves from generation to generation as unchangeable types, so that its duration and stability by custom, agreement, and conventionalism become unimpeachable. She herself became external, conventional, rigid, and deadening. Large periods of barbaric people, as the Egyptians, Assyrians, Indians, the last hundreds of years of the Byzantines, have such conventionality, which originally was symbolic art. But if there is no standstill, but a lively progressive development, as in the art of the middle ages of the Western Christianity, then the symbolic works gain a special esthetic force. Then the one who is capable of penetrating and comprehending the defective and less perfect forms, will learn to listen and watch for that which the master could not express. Such works impart the attractions, charm, and the honest industry, the true love, the originality of thought, and the intensity of feeling richly reward the trouble which must be expended to solve the difficulty of her form. The first manly efforts which they attest are exceedingly interesting, even if the first crude beginnings are darkly veiled and hid, as the helpful ways of a child with its thousand slumbering germs for development, which gradually plainer and clearly come out. But not only the conscious effort alone recompenses for the fault in the perfection of the form. It is the impartiality and naturality, the amiable modesty, and the fresh boldness, which draw and lead us again with love to the works of a young and rejuvenated humanity. Even the works of barbaric nations, which fall and show the grotesque and distorted, are tokens of remembrance estimable and venerable, of the strife and struggle of young original generations, when even if the work itself does not give us pleasure and satisfaction.

XXXVI. FLOURISHING PERIOD.

When man at last has succeeded to obtain the full cleverness and security in the making of forms, and has learned to comprehend that he only can make objects which he understands, but not supernaturally divine, but naturally human things, then is the time not far off for the real flo rishing period. Then such cleverness and understanding are for once the closing end of a long time of preparation, and secondly, are they the signs of the

height of a general historical culture, a striving after knowledge, a craving after liberty, and those conditions are the times of birth of great artistic genius. In full equilibrium and noble harmony set itself in the works of the same, the spiritual and the bodily. Meaning and form correspond perfectly to each

other, and a pure beauty displays itself before the amazed eyes of our own time and the admiring posterity. Here is nothing symbolic, nothing which lived in the soul of the artist was perceived, and did not obtain expression, and was made visible. In no line, in no motion, is something which has not directly a spiritual signification and expression. Nowhere is a too much or a too little; everywhere is complete conformity with which the spiritual lives in the appearance, and the form finds its signification and meaning.

As in the highest sense only one beauty exists, we would probably conclude that the highest works of art could only be of one kind. This is not so, since we have not to deal with absolute beauty, but only with beauty, made and produced by men, by defective men with infirmities and passions, which is frequently conditioned, not only by the material used for the work of art, but also by the influence of the time of creating, as has already been mentioned, but also by other conditions, to which the perception and the manner of the technical execution chiefly belongs. The conditions of the beautiful are, however, by no means to be taken as one-sided, or to be so comprehended, that a Madonna by Durr could be reproduced in a Raphaelic manner of drawing. They act rather uniformly and jointly and together on the spiritual and the formal, so that the master could not take the idea otherwise than with the full consideration of the former. In a work of art is the intimate belonging together, the unconditioned inseparability, so that nothing in the form can be changed without altering the idea and to the same nothing added or taken therefrom without altering and transforming of the form.

The duration of such an art period will depend, if the same is solely founded on single individuality, or if the same is directly upheld and carried by the whole people. In the former instance, and if the single individualities are, in the fullest measure, children of their time, she will die with the individuals, as it happened in Italy; but, in the latter case, she can last hundreds of years, even if for once she shines brighter; at other times in the shadow of troubled events is dangerously threatened, as the Greek art shows us a bright example.

IN a late number of the *Gazette des Architectes* is an interesting account of a controversy between the Paris Omnibus Company and a M. Ezebeck, whose premises at Auteuil adjoin a stable belonging to the omnibus company. In order to economize in the cost of the ground, which is very high in this locality, the company has arranged its stable in two stories, and has stalled a portion of its 580 horses on what we would call the second floor, on a level with the sleeping-rooms in M. Ezebeck's tenements adjacent. On this reverberating floor, and the inclined plane by which the horses ascend and descend at all hours of the day and night, their heavy tramping creates an intolerable and never-ceasing jar and turmoil which so greatly disturb M. Ezebeck's tenants, that some of them have entered suit against him for pecuniary damages, and others threaten various methods of obtaining redress, while those who are not constrained by leaseholds have moved out. All this damage, he claims, is owing to the proximity of the stable, and for several years past he has been endeavoring to compel the omnibus company to modify its stable in such a way as to abate the nuisance. To this the company has already consented, and on the advice of an expert, it constructed an additional wall between its stable and M. Ezebeck's premises at an expense of 50,000 francs, which it was hoped would abate the annoyance. Unfortunately, this wall entirely failed of its purpose, and M. Ezebeck has applied to another expert, Architect M. Gelis Didot, whose report is printed in full by the *Gazette*.

M. Didot's explanation of the failure of the wall already built to interrupt the transmission of noise and jar from the stable to the tenements, and his advice as to the proper remedy, are interesting and suggestive, while his communication is such a model of clearness and conciseness that we regret our inability to print it entire. Briefly resuming, he ascribes the failure of this intercepting wall chiefly to the fact that it stands upon the same footing as the original stable wall, and that through this footing all jar and vibration produced in the stable wall are transmitted practically undiminished to the new wall and thence to M. Ezebeck's premises. The new wall is thus practically one with the old one as to the noise and shock complained of. He also finds the distance of this new wall from the old one, namely, ten centimeters, altogether too slight. M. Didot recommends that a new wall be constructed at a distance of two to five meters from the stable wall; that the new wall have a footing entirely separate from the stable footings; that it be sunk to a greater depth, and that the space between the walls be left open or filled with some non-conducting substance. He also suggests that the inclined ascend to the second floor might be removed to some part of the stable more remote from the tenements, and also that the horses be stalled in some other portion. Incidentally he mentions the precautions imposed on other noisy occupations, as that of gold-beating, printing, and numerous manufactures. Sometimes their machinery rests upon special foundations, built up from the ground wholly independent of the building itself, or upon columns rising from special foundations, or on rubber cushions. We may add that sand boxes are sometimes used for a like purpose. M. Didot's comparison between the stable and a gold-beater's shop is vivid and impressive. He says the former establishments, at the most, seldom have more than twenty hammers in operation, while in the stable, even if there are but eighty horses present at a time, the noise from their iron-shod hoofs on the reverberating floor would be equivalent to that of 320 gold-beaters' mallets, or sixteen times the noise from one gold-beating shop.

The Strongest Brick Walling.

A BRICK of average quality requires a pressure of from 600 to 2,000 pounds and upwards per square inch to crush it, the figures varying in different descriptions of bricks, and being as high as 4,395 pounds in hard-burnt facing bricks. Brick walls and brick piers, if properly built, will bear very heavy weights, as will be seen from these figures. The strength of a wall is not dependent, however, upon the strength of its brick alone, but upon three distinct conditions:- (1) the manner in which the bricks are arranged; (2) the strength of the mortar, and (3) the strength of the bricks. Each condition is of considerable moment, and, considering that brick-work is rarely weighed with a load even approaching one tithe of the crushing weight, it is obvious that the first and second conditions are of the greatest importance.

The object of mortar in a wall is simply to form an adhesive material between the bricks of which the wall is composed. It has no function beyond that. Good mortar is certainly not so strong as good brick, and the mortar joints should, therefore, be kept as thin as is consistent with the perfect adhesion of the bricks. The current custom of making thick mortar joints has the effect of considerably weakening the brick-work, and should be discouraged.

One of the strongest forms of bonding in brick walls, is that known as "English bond," in which the bricks are arranged in alternate courses of headers and stretchers. The small amount of cutting required, the avoidance of two vertical joints over one another, and the large number of headers in the wall render it very strong and suitable for heavy work; in fact, English bond, if properly carried out, conforms very nearly indeed, to all the requirements of good bonding.

In thick walls of heavy buildings, such as warehouses and structures of the same class, the strength of the bond may be improved, to some extent, by arranging every fourth course of bricks diagonally, forming what is sometimes termed "diagonal bond." The advantage is that a lap of four, instead of two inches, is obtained. The elevation of this bond is the same as that of ordinary English bond. The header courses are the ordinary header courses of English bond, arranged alternately with stretcher and diagonal courses. The diagonal courses are arranged alternately in opposite directions. One disadvantage of this arrangement of the bricks at an angle, is the fact of its leaving small triangular spaces on each side, which tend, to some extent, to weaken the wall. These spaces should, however, be carefully filled in with pieces of brick, and not be allowed to be left simply filled in with mortar.

THE output of a Swiss watchmaker is 40 watches a year; of a United States mechanic, 150; and the American earns in his skilled line of labor three times as much as his Swiss competitor.

TAKE any saw running constantly in one direction, and after having made 10,000,000 revolutions, examine its particles at a newly broken surface with a microscope, and it will be found that every molecule of iron composing that saw has been displaced.

THE total cost of the Riel Rebellion in the Northwest Territory was $4,700,000 and the casualties 26 killed and 206 wounded.

The Carpet Beetle.

THE rapid increase of these insects, and the great destruction of carpets and woolen clothes which they occasion, make it of importance that every housewife be informed as to their history, appearance, and the remedies for preventing and getting rid of the pests. The Zoological Department of the Agricultural College of Michigan has recently issued a very complete bulletin concerning these insects, from which we quote the following paragraphs:—

"The carpet beetle belongs to the family *Dermestidæ*, and is closely related to *Dermestes lardarius*, the bacon beetle, which thrives upon dried insects and other museum specimens, as well as most kinds of animal tissue. It is a minute but handsome beetle only one-eighth of an inch long, and about two-thirds as broad as long. The main color is black, while a dorsal red line extends longitudinally, bordering each wing-cover internally, and is marked by three projections on each wing-cover. Opposite these red projections on the outside of each wing-cover are three white spots. This handsome little pest will be found in concealed places from October till the following spring. As the beetle does not eat, no harm will be done by the insect while in this stage, except as in egg laying it prepares for future mischief.

"The larva—the real mischief maker—is about one-half longer than the beetle. It is ringed with light and darker brown bands, and the body is margined with tufts of brown hairs. These are very long at the ends of the body, and at the front obscure the head. Similar shorter hair clothes the whole body. The ringed and hairy character makes it easy to identify this larva.

"When the larva is fully developed, usually late in July and August, it seeks some concealed place, as the crevice between the boards of the floor, where it changes to a pupa. Sometime before the full change to the pupa is made, the larva skin breaks open. These pupæ, which will be seen from July to October, and even later, are quiet, and so of course do no damage while in this state.

"We see, then, that the injury from the carpet beetle comes through the larvæ, and is most marked in June, July, and August, when the larvæ are most numerous and abundant. The fact, however, that beetles are emerging from the pupa state from October till the following spring, together with the artificial conditions of heated rooms, will undoubtedly, as has been the case with the clothes and carpet moths, vary their habits in this respect, so that very likely in our rooms that are always kept warm, development may be hastened and the insect may become even double brooded, so that quite possibly we may find the larvæ feeding at all seasons.

"The fact of the rapid increase of these insects, and the terrible destructiveness which attends an onslaught by them, make it imperative that we find a remedy for this evil, or else abandon the luxury of carpets, not to speak of woolen garments. Cases are known where the insects have taken entire possession of houses from basement to garret, in a year or two's absence of the owner, and have destroyed or seriously injured all woolen belongings, even to the picture cords. Its small size, fearful destructiveness, and its power to resist insecticides make it a terrible pest; and wisdom urges that all learn to detect it so as to stamp it out upon its first arrival.

"Experience shows that it first attacks carpets, and there is where we may look for an assault. Like the well-known carpet moth, *Tinea tapetzella*, it works first and most at the borders of the carpet.

"I should recommend the ironing of wet cloths placed over the affected part of the carpet, using flat-irons that are very hot. The cloths may be two or three thicknesses of common toweling, wrung out of water just so they will not drip, then iron till dry. To secure the best results, one ought to have a dozen or more of irons. I have found that this, thoroughly done, is most deadly to the carpet moth larvæ, and surely the intensely heated steam penetrating every fiber of the carpet, and to every crevice of the floor, must sound the knell of every larval carpet beetle that feels its deadly presence. I have tried this on delicately tinted carpets, and while it was delightfully efficient in destroying insects, it did no injury whatever to the carpet. The only caution here, then, is to make thorough work; *be sure of a full head of steam!*"

THE privy vault, which for the most part cannot be dispensed with in localities which are not sewered, and have no regular water supply, is commanding considerable attention just now when sanitary surroundings are so much sought after. Various theories as to the best mode of construction are being advanced, proper regard being had for the safety of wells contiguous thereto, so as to guard against their pollution, and while each plan suggested from time to time may have its merits, it is worth while to consider one which was offered at the late Master Plumbers' National Convention, and which, from its simplicity and cleanliness, must commend itself to general approval. It was in treating the subject of "The Danger of the Privy Vault," in an essay prepared by a member of the Baltimore Master Plumbers' Association, that the best substitute for the common privy came up for consideration, when the following was offered: Instead of making under the privy seat, in country places, for instance, the usual excavation, the essayist recommends that there should be a strong, galvanized iron box made to fit under the seat into which everything could fall. The back or sides of the privy house should be so constructed that when full the box could be drawn out and emptied. Before being put in position, dry earth or ashes to the depth of about four inches should be placed in the bottom, and in the privy there should be a box, with either ashes or earth, a little to be sprinkled over the box, under the seat, whenever used. One effect of such an arrangement would be that the contents of the box would serve as a fertilizer, while the main object, that of keeping the air and the soil free from pollution, would be fully secured.

IN Ireland the total number of land-holders is 68,716, and of these 36,141 own less than one acre of ground.

Market Reports.

CORRECTED FOR NOVEMBER, 1886.

Pine, Rough	per M feet,	$15 00
" " No. 2	" "	12 00
" " " 2 in lengths	" "	13 00
" " 40 to 50 feet lengths	" "	17 00
" " 50 " 60 " "	" "	18 00
" " Selected	" "	20 00
" " Clear	" "	25 00
" " Firewood	" "	8 00
T. & G. Flooring, 1 x 6	" "	27 00
" " 1¼ x 6, 1 x 4, 1¼ x 4, 1¼ x 3, } 1 x 3, and narrower }	" "	30 00
" " No. 2	" "	22 00
Stepping	" "	35 00
" No. 2	" "	27 50
Furring, 1 x 2	per lineal foot,	00½
Redwood, Rough	M feet,	18 00
" " No. 2	" "	14 00
" Surfaced	" "	30 00
" T. & G. 6 in 12 ft. and over	" "	28 00
" " 6 in. 7 to 11 feet	" "	25 00
" " 6 in. under 7 feet	" "	20 00
" Rustic	" "	30 00
" " No. 2	" "	26 00
Redwood, T. & G. Beaded, 12 ft. and over	" "	30 00
" " " 7 to 11 ft	" "	25 00
" " " under 7 ft	" "	20 00
" Siding, ½ inch	" "	22 50
Pickets, Fancy	per M,	25 00
" Rough Pointed	"	16 00
" " Square	"	14 00
Battens, ½x3	per lineal foot,	00½
Shingles	per M,	2 00
Laths, 1½	"	3 25
" 1½	"	3 75
NAILS—Rates were recently reduced to:—		
200 keg lots		2 50
100 "		2 60
Smaller quantities		2 70
PAINTS AND OILS:—		
Pioneer and Nevada White Lead, 1,000-lb. lots		6½
" " " " " less quantities		7
" White Lead (local factory), 5-ton lots		6½
Cal. Linseed Oil, raw (single bbl. lots)		45
" " " boiled " " "		47½
Turpentine, per gallon		47
BRICK—California Building Description, soft, per 1,000		6 00
" " " red, " "		7 00
" " " hard " "		7 75

In our December issue we will publish complete a list of those who are in arrears for subscriptions to this Journal. Avoid publicity by sending us the amount of your indebtedness immediately.

A BRIEF but forcible sermon is preached by the *Builder and Woodworker*, of New York, on the morality of home decoration. It argues that every improvement in the house is an improvement in morality. The efforts to acquire, to maintain, and to improve it are a daily, life-long schooling in morality. And in the train of these virtues, and akin to them, comes the sense of the beautiful. The house, the home, is one's own, is as potent as it is simple and unfailing in working these humanizing effects. We see evidences of this in what remains to us of the domestic architecture of the Middle Ages. Men then bestowed much thought on the designing and decoration of their houses, because they were their own.

A

Ash Ave., bet. Laguna and Buchanan. Additions and alterations.
O.—Mrs. Caroline Klein.
A.—Townsend & Wyneken.
C.—N. B. Ritchie.
$1,800.

B

Bush, bet. Laguna and Buchanan. Additions.
O.—H. Maginnis.
Day work.
$800.

Bryant, bet. Second and Third. Two two-story frames.
O.—Chas. H. Castle.
A.—Chas. I. Havens.
C.—R. Doyle & Son.
$7,500.

Boardman Place, bet. Bryant and Brannan. Two one-story frames.
O.—J. J. Mahoney.
A.—J. J. Clark.
C.—J. Wilcox.
$2,000.

Berry, bet. Fifth and Sixth. Ice House.
O.—Boca Rowing Co.
A.—John & Zimmermann.
Day work.
$1,000.

C

Clementina, bet. Eighth and Ninth. Repairs.
O.—Thos. McGorey.
A.—M. J. Welsh.
C.—R. Sennott.
$700.

E

Eighteenth, cor. Church. Two-story frame.
O.—A. Simon.
A.—Darwin.
C.—Dutton & Kennedy.
$2,600.

Eighteenth, near Church. Two-story frame.
O.—
C.—A. B. Tarr.
$2,500.

Eddy, bet. Devisadero and Broderick. One-story frame.
O.—W. McLaughlin.
C.—R. O. Chandler.
$2,000.

F

Filbert, near Montgomery Ave. Two-story frame.
O.—J. Trueworthy.
C.—A. H. Taylor.
$3,500.

Fell, bet. Laguna and Buchanan. Two-story frame.
O.—Patrick Parrell.
A.—A. Warren.
C.—M. Murry.
Brick work, J. McCann.
$4,500.

Fifteenth, cor. Guerrero. Two-story frame.
O.—Jos. Buettgenbach.
A.—John & Zimmermann.
C.—Theo. Van Borstell.
$6,500.

G

Guerrero, bet. Twenty-second and Twenty-third. One story cottage.
O.—John Bell.
C.—Geo. Houston.
$2,000.

H

Howard, bet. Twenty-first and Twenty-second. Repairs.
O.—Jordan.
A.—M. J. Welsh.
C.—M. Walsh.
$600.

Hayes, near Buchanan. Three two-story frames.
O.—R. H. Swain.
Day work.
$10,500.

Hayes, cor. Webster. Additions.
O.—Capt. O'Christenson.
A.—David Salfield.
C.—A. Klahn.
$500.

Harrison, bet. Thirteenth and Fourteenth. Alterations.
O.—P. Leddy.
A.—J. J. Clark.
C.—J. Madden.
$1,300.

J

Jackson, near Larkin. Two-story frame.
O.—Mrs. E. Lore.
A.—Townsend & Wyneken.
C.—Arnold & Dyer.
$4,500.

K

Kentucky, near Sierra. Two-story frame.
O.—John Gurtz & H. Voss.
A.—David Salfield.
C.—B. Dryer.
$2,500.

L

Larkin, cor. Filbert. Six two-story frames.
O. and B.—J. A. Whalen.
Day work.
$21,000.

Lombard, bet. Jones and Leavenworth. Three two-story frames.
O.—Mr. and Mrs. Jacques.
A. and B.—A. W. Pattiani & Co.
$12,000.

Leavenworth, near Clay. Alterations and additions.
O.—R. Magee.
A.—H. D. Mitchell.
Day work.
$3,000.

Linden Avenue, bet. Octavia and Laguna. Additions
O.—S. Borker.
C.—Jos. Dutton.
$2,500.

Lyon, cor. Post. Two-story frame.
O.—E. Cassiday.
A.—M. J. Welsh.
C.—A. J. Smith.
$2,500.

M

McAllister, cor. Lyon. Two-story frame.
O.—John Grace.
A.—T. J. Welsh.
C.—Jas. Irwin.
$6,000.

McAllister, bet. Buchanan and Webster. Three three-story frames.
O.—J. H. Backus.
A.—John M. Curtiss.
C.—J. W. Wessinger.
$13,000.

Market, cor. Annie. Alterations.
O.—Mrs. M. C. Bishop.
A.—Percy & Hamilton.
C.—J. G. Day.
$7,500.

Market, bet. Third and Fourth. Five-story brick.
O.—H. H. Bancroft.
A.—Clinton Day.
Brick work—John McCarthy, $27,000
Total cost, about $90,000

McAllister, near Franklin. Three-story frame.
O.—John R. Morton.
A.—Hiserne & Everett.
C.—F. Buckley.
$5,000.

Market, cor Tenth. Three-story frame.
O.—Inventors' Institute of California.
A.—John Gash.
Total cost, about $85,000

Mission, near Hermann. Two one-story frames.
O. and B.—J. Duncal.
Day work.
$1,800.

Mission, cor Potter. Additions.
O.—Mrs. M. Green.
Day work.
$1,200.

Mission, bet. Sixth and Seventh. Additions.
O. Central M. E. Church.
A.—J. Marquis.
C.—Moore Bros.
$8,000.

Mt. St. Joseph, South San Francisco. Orphan Asylum.
O. Sisters of Charity.
A.—J. J. Clark.
C.—Mahoney Bros.
$10,000.

Minna, bet. Eighth and Ninth. Brick party wall.
O.—J. Andrews.
A.—John & Zimmermann.
C.—Jacob Beck.
$950.

N

Nebraska, cor. Alameda. Two-and-one-half-story frame.
O.—Lucy Bros.
A.—Townsend & Wyncken.
C.—N. C. Post.
$2,800.

O

Oak, bet. Pierce and Scott. One-story frame.
O.—B. Crocker.
C.—P. Laherty.
$1,500.

P

Page, cor. Fillmore. Three two-story frames.
O.—N. F. Fitzgerald.
A.—S. & J. C. Newsom.
C.—A. Semott.
$10,000.

Page, bet. Pierce and Scott. One-and-one-half-story frame.
O.—L. E. Sawyer.
Day work.
$2,600.

Post, bet. Dupont and Stockton. Four-story brick.
O.—Z. V. Dodge.
A.—Miller & Armitage.
Brick, etc.—J. Wagner, $5,400
Carp'ter work etc.—J. G. Adams, 4,800
Plumbing—J. D. Welsh, 850
Painting—J. F. Lynch & Co., 500
Total cost, $12,000

Page, bet Pierce and Scott. One-story frame.
O.—G. P. O'Connell.
A.—Townsend & Wyncken.
C.—J. H. Lennon.
$1,400.

Pacific Avenue, near Buchanan. Two-story frame.
O.—Samuel Carson.
A.—Percy & Hamilton.
C.—Gray & Stover.
$6,500.

Pierce, bet Haight and Page. Two-story frame.
O.—Mrs. Luckey.
A.—J. Marquis.
C.—Martin & Maguire.
$4,000.

Pine, nr. Gough. Two and one-half-story frame.
O.—Mrs. M. Irwine.
A.—P. R. Schmidt.
C.—W. T. Commary.
$15,500.

Point Lobos, bet. Wood and Collins. One-story frame.
O.—J. Schrader.
A.—John & Zimmermann.
C.—A. Miller.
$1,750.

Pacific Ave., nr. Fillmore. Two-story frame.
O.—J. H. Langhorn.
A.—J. J. Clark.
C.—J. Adams.
$4,900.

S

Sanchez, bet. Twenty-ninth and Valley. Two-story frame.
O.—G. Boysen.
C.—J. G. Lowner.
$1,800.

Scott, bet. Eddy and O'Farrell. One-story frame.
O.—D. Collins.
C.—P. Jones.
$2,000.

Steiner, cor. Hermann. Additions.
O.—H. Iburg.
Day work.
$1,500.

Sutter, bet. Van Ness and Franklin. Alterations.
O.—Mrs. M. Zimmerman.
A.—P. R. Schmidt.
C.—H. Keenan.
Brick work—R. Mitchell.
$5,200.

Sanchez, nr. Market. One-story frame.
O.—
C.—P. Laherty.
$2,200.

Scott, bet. Jackson and Washington. One-story frame.
O.—F. D. Marsh.
A.—J. T. Kidd.
C.—O. White, $1,725
Plumbing—Williams, 260
Cost, about $2,000

T

Twenty-first, cor. Treat Avenue. One-story frame.
O.—
C.—Chris. Raetz.
$2,500.

Thirteenth, cor. Belcher. One-story frame.
O.—W. Turney.
A.—J. T. Kidd.
C.—M. Loftus.
$1,500.

Thirteenth, nr. Belcher. Two-story frame.
O.—A. Giovannini.
A.—Miller & Armitage.
C.—A. Krohn.
$2,500.

Townsend, cor. Rich. Three-story brick.
O.—Mrs. Mark Hopkins.
A.—A. G. Moore.
C.—T. H. Day.
Brick work—E. R. Shain.
Cost, about $10,000

Tennessee, nr. Solano. Alterations.
O.—F. Lester.
C.—C. E. Dunshee.
$2,200.

Turk, nr. Scott. Additions
O.—A. Schropfer.
Day work.
$900.

Turk, nr. Scott. One-story frame. (In rear.)
O.—A. Schropfer.
Day work.
$1,000.

V

Vallejo, bet. Powell and Mason. Two story and basement frame.
O.—T. S. O'Connell.
A.—Miller & Armitage.
C.—S. T. Green.
$5,000.

W

Washington, cor. Octavia. Additional contract.
O.—Alex Boyd.
A.—Curlett & Cuthbertson.
Painting—J. H. Keefe.
$1,500.

MISCELLANEOUS.

San Jose—Sixth. One-story cottage. O., A. Bergen; A., Jacob Lenzen & Son; C., F. Davis; $1,545. Eighth. Two-story frame. O., Wm. Fruehling; A., Jacob Lenzen & Son; C., W. Boyles; $4,650. Santa Clara. Two-story frame. O., Jos. Feist; A., Jacob Lenzen & Son; C., G. N. Hensley; $3,150. Santa Clara. Two-story frame. O., Mrs. Bradley; A., Jacob Lenzen & Son; C., Chas. Curats; $2,650. First. Additions. O., O. A. Hale & Co.; A., Jacob Lenzen & Son; C., A. J. McIlvain; $3,500. Terrain, cor. Bassett. One-story brick. O., —Schnider; A., T. Lenzen; C., G. E. McDougall; cost, $5,000. East side Narrow Gauge Depot. One-story brick. O., C. McKirnan; A., T. Lenzen; day work; cost, $6,000.

Hollister—Two-story brick. (Masonic Hall.) O., D. K. Sanford; A., Jacob Lenzen & Son; C., Jacob Dorn; cost, $8,500.

Seattle, W. T.—One-and-one-half-story frame. O., N. Toklas; A., P. R. Schmidt; $5,000.

Sausalito—Two-story frame. O., T. M. Curtan; A., Chas. I. Havens; C., A. Beyer; $4,750.

THE CALIFORNIA ARCHITECT AND BUILDING NEWS.

VOLUME VII. ENTERED AT POST-OFFICE, SAN FRANCISCO, AS SECOND-CLASS MAIL MATTER. ESTABLISHED JANUARY, 1879. NUMBER 12.

THE

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Subscribers will please notify us promptly of any failure to receive this journal, and also of any change in their address.

Advertisements inserted at reasonable rates.

SAN FRANCISCO, CAL., DECEMBER 15, 1886.

THE CONTINUANCE OF THIS JOURNAL.

WE hoped to have been able in this number to announce the new management of this Journal as completed, and to have introduced our successors by name to its numerous patrons. But as this pleasure is delayed for the present, we shall continue its regular issue with renewed energies, into 1887, with the determination that it shall not lack any of the qualities and recommendations which have gained for it

THE HIGH AND HONORABLE REPUTATION

it now has, through hard, earnest effort and personal sacrifice.

It is highly probable that at an early day it may be our pleasure to pass its interests into worthy hands, who will prosecute the work until it shall be excelled by no other journal in the United States, as far as all needed purposes of the Pacific Coast and a practical, instructive, and indispensable publication is concerned.

California and the Pacific Coast require just such a journal, and we propose to continue to supply this great want, and

SHALL CONTINUE ITS PUBLICATION

until satisfactory arrangements can be made with parties capable and qualified to assume its management, and prosecute its future to the full extent of

ITS GREAT POSSIBILITIES.

THE EIGHTH VOLUME OF THIS JOURNAL WILL BE COMMENCED WITH THE

JANUARY NUMBER, 1887.

IT was reasonable to anticipate that some one of the many very earnest negotiations that have been opened touching the sale of this journal would, ere this, have resulted in an arrangement by which we should have been enabled to announce in the present number a change of management and proprietorship. Such, however, not being the case, it will appear in January, 1887, with more than the usual

HANDSOME ILLUSTRATIONS.

It has been decidedly interesting to note the numerous and varied earnestly expressed views of friends and patrons in reference to the course marked out by us of seeking relief from the *excessive* labors of editing and managing the interests of this journal, and the responsible duties of a practicing architect, to the latter of which we propose to devote our entire energies and attention after disposal of this journal.

Some seem to think, and tacitly to say, that, having "worked up so excellent a journal, we should continue to manage it." We accept the compliment, but claim the right to follow our own judgment as to personal interests and comforts. If the number of summer suns passing over our head had been twenty less than they now number, no reasonable offer would be an inducement to us to part with our interest and relationship with this journal, as there is a future for it sufficiently assured, and pleasures in manipulating and directing its matter and interests, to make it an object to retain our position. As it is, we shall continue our work into the coming year, and seek to hold its columns firm in the favor and patronage hitherto so liberally extended by appreciating subscription and advertising patrons, so that, when others do assume control, the foundation of future success will be in good and sound condition.

Our Black List.

SINCE the publication of our intention to print a list of all delinquent subscribers in our December number, we have been pleased to see the unanimity with which those owing money have either forwarded the same to us, or written letters asking further time, or otherwise explaining the cause of the arrearage. We want it distinctly understood that no threat was intended in our notice to publish names. We have been to a great expense to build this journal to its present standing, and, having trusted many of our patrons for one or two years, we claim that it is our right to have monies owing us paid at once. If not paid, we will publish the list as contemplated, and then take such means as the law allows to collect all claims justly due.

For the benefit of those who do not understand the law in regard to the payment of subscriptions to any journal, we publish the following digest of decisions that have been rendered by our Superior Courts:—

1. *Any person who takes a paper regularly from the office—whether directed to his name or another's, or whether he has subscribed for it or not, is responsible for the payment.*

2. *If a person orders his paper discontinued, he must pay all arrearages, or the publisher may continue to send it until payment is made, and collect the whole amount, whether the paper is taken from the office or not.*

3. *The Courts have decided that refusing to take newspapers and periodicals from the post-office or removing and leaving them uncalled for is prima facie evidence of fraud.*

OUR JANUARY NUMBER 1887 WILL BE HANDSOMELY ILLUSTRATED.

Annual Building Summary for 1886.

WITH this issue the building record for 1886 is closed, and those whose interests it is to watch the development of our building resources and engagements can calmly consider the whys and the wherefores why the summary is not as large as the previous year. The year opened auspiciously for an active season, and hopes were entertained that a regular building boom would take place later on in the season; but, as time rolled on, the engagements became fewer, until, at the present time, building is almost at a standstill, with no immediate prospect of a recovery. The late unhealthful excitement in regard to stocks has completely demoralized the minds of those who, but a short time ago, were content to receive a fair percentage on their money; and the slow process of saving money by the sure methods adopted by our working classes for the past few years, have been scattered to the winds by their fierce efforts to make a fortune by gambling in stocks.

The low prices of our cereal productions have also been the means of retarding building growth. We know of three captains who intended to build either in this City or Oakland, but the low price of wheat, creating low charter prices, really prevented their wishes being carried out, and so, for "a last voyage, my dear, you shall go with me," their families made the trip to Havre and Liverpool merely to reduce expenses.

The exciting election also had a tendency to draw people's attention away from building. This had no sooner been settled than the first cause above mentioned completely demoralized building activities. Other causes might be noticed, but those enumerated are sufficient. But few large buildings have been commenced during the year. In this respect the succeeding year promises more than that just closing.

LABOR AND MATERIALS.

The labor market has been strong, and is to-day in a very satisfactory condition. A less number of skilled mechanics are unemployed than at the same time last year. The demand for the country is, and has been, very good, with no present signs of abatement. Lumber is much higher than one year ago; in fact, it has been raised to such a figure that it materially affects the cost of a building. Hardware is also held at firm prices. Bricks are much lower than quoted at our last yearly report. Contractors are growing wilder in their calculations, and it is getting about time that owners should consider the *man* who presents the lowest bid, as well as the amount of the *bid* itself.

SUMMARY.

During the first six months of 1886 there were quoted in this journal

670 building engagements, valued at $3,665,964

and for the last six months

478 building engagements, valued at 2,735,705

thus making a grand total for 1886 of

1,148 building engagements, valued at 6,401,669

COMPARISON.

The number of building engagements, and their value, since 1880 are as follows:—

1880—	397	engagements, value	$1,754,435
1881—	533	" "	3,700,732
1882—	785	" "	3,896,212
1883—	803	" "	5,261,689
1884—	1,127	" "	6,202,807
1885—	1,457	" "	7,043,999
1886—	1,148	" "	6,401,669

Although not equal to the bonanza year of 1885, still it must be admitted that the showing is a very good one. In the above estimate we have allowed for the Flood mansion on California Street, no account of which has heretofore appeared in these columns.

GREETINGS.

We cordially return our thanks to those who have so successfully endeavored to maintain this department of this Journal to that excellence which has compelled all to admit that, for the fullest information in regard to building news, the California Architect stands without a rival on the Pacific Coast. To our country informants we extend our sincere thanks for favors rendered, and trust to deserve their support in the future. Let all who can give a helping hand towards sustaining a class Journal strictly devoted to those designated by its title.

Architects, Attention!

We want every architect on the Pacific Coast to contribute a short article for the January number of this journal. It should be your aim to make your home journal interesting to all who may read it, and there is no surer way to obtain this end than by each one writing a short article. Illustrate it, if need be; we will make the cuts. Be sure that the articles reach this office by the 5th of January.

To Contractors.

What contractor in the city but knows of some little idea that would be beneficial to the readers of this journal. Help to build up this journal by a free interchange of thoughts. It will pay you tenfold to be in communication through our columns with all the master mechanics of the Pacific slope. Do not let the thought enter your mind that you cannot write well enough. Do the best you can, and we will see that your ideas are presented in proper shape. What say friends Terrill, Day, Smilie, Mahoney, Gray, Owens, Moore, Worden, and a host of other mechanics tried and true, of the building contractors of California?

Apprentices.

When you have found out any ideas that should be known by every one, forward them to us, and we will publish them under your own names, that others, hearing of your good deeds, may go and do likewise.

Mean People.

THOSE WHO READ PAPERS, BUT NEVER SUBSCRIBE TO THEIR SUPPORT.

THERE is a class of people who are absolutely mean. Honest they claim to be, and may be in a general sense, but it is little less than dishonesty on the part of those who are able to pay for journals to borrow them from others to obtain their contents, or in other ways to gain possession of them, for the purpose of extracting the information and instruction contained in their columns. Every line of a printed journal costs its author money, and no one enjoys the right to appropriate to his own use and benefit that for which he pays nothing. We daily meet persons who have something to say in praise of this journal and its contents, and tell how eagerly they peruse its pages, but whose names are not upon our subscription list. This is a shame, and we suggest to such the absolutely unfair and dishonorable course they are pursuing. If it contains instructive and interesting matter—a fact which we have never heard questioned—then every man who reads it should subscribe to its support. And if all *free readers* will send in their subscriptions, we will soon be able to increase its interest in all departments.

Let all subscribe at once.

Setting Out Stairs.

AFTER determining the height of the riser from the "story rod," the right proportion of tread must be found. Sometimes steps are arranged so that it is easier for a man to go up "two at a time" than to walk up in the proper manner. The reason is, both tread and riser are made small. When a riser is reduced, the tread must be increased; and the contrary when the riser is increased, the tread must be reduced in width. Joiners do not often break this rule, but masons very often do, notably in steps leading to and from railway stations. A simple rule may be given for finding a suitable proportion.

Take any suitable step as a standard step, that is to say, if you know of a staircase which is comfortable and easy to walk up, take it as a standard to gauge others by. Suppose you have a riser given, and require the width of a suitable tread, make use of the following proportion:—

As the given riser : standard riser : : standard tread : required tread.

If the tread is given and the riser required, then:—

As the given tread : standard tread : : standard riser : required riser.

To work out an example: Suppose 10-inch tread and 7-inch riser be taken as a suitable step, let 6-inch be the given riser; then by substituting the value of treads and risers for the names, we have—as 6′ : 7′ : : 10′ : the required tread; this gives $\frac{7.0}{6}$ or $11\frac{2}{3}$ for the size of a tread. Nicholson gives as a standard a tread of 12′ to a riser of $5\frac{1}{2}$′. Working out the example given by this proportion, we get 11′ instead of $11\frac{2}{3}$′; either of these sizes will be an agreeable step.

A rough and ready rule for the *usual* sizes of treads and risers is to make 2 risers and 1 tread equal to 24 inches.

NOW IS THE TIME TO SUBSCRIBE FOR 1887, $2.00 PER ANNUM IN ADVANCE.

[Written expressly for this journal.]

The Origin of the Mechanics' Lien Law.

THE law of mechanics' liens, as we have it in existence to-day throughout the United States, is particularly an institution of this country, and was unknown in the earlier nations in the same manner and to the same extent as it now prevails with us.

There were, however, many of the fundamental and underlying principles of our law in vogue in England before our time; these were the creation of the civil law of that country. Domat, in his treatise on the civil law, says: "Architects and other undertakers, workmen and artificers, who bestow their labor on buildings or other works, and who furnish materials, and in general all those who employ their time, their labor, their care, or furnish any materials, whether it be to make a thing or to repair it, or to preserve it, have the same privilege for their salaries and for what they furnish as those have who have advanced money for these kinds of works, and which the seller has for the price of the thing sold." The privilege of the seller here referred to is thus defined by the same learned authority: "He who has sold an immovable thing, *for which he has not received the price*, is preferred before the creditors of the purchaser, and before all others *as to the thing that is sold*. Thus the seller who has not received the price may follow it (the thing sold), into what hands soever it may have passed, if he has delivered it before payment." Again: "The creditor, whose money has been laid out in preserving or repairing the thing, has a privilege, for he has preserved the thing; it being for the common interest, both of the proprietor and creditors; and it is, as it were, his own to the value of what he has laid out upon it." And again: "If a third person lends to an architect or other undertaker money which is laid out on a house, or any other work, and said money has been advanced by order of the master for whom the said work is to be done, this third person shall have the same privilege as if he had lent the money to the master himself for that use. But if the money was lent without the master's knowledge, or without his order, and if the master has paid the undertaker, he who has lent the money will have his action *only* against the *person to whom he lent it*. But, if the master has not paid the undertaker, this person may use the privilege, whether he has lent the money with the master's order or without it." Sir Thomas Tomlin defines undertakers as "such as the king's purveyors, employed as their deputies. The name is given in several statutes to persons who undertake any great work, as draining of fens," etc. Clearly, the contractor under our law, and the undertaker under the English law, are the same. It will thus be seen that in England a *privilege* attaches only to the thing itself over other creditors; while in this country a *lien* attaches not alone to the thing, but to the land. The American system is purely statutory, and derives nothing of its origin from the civil law of England.

Speaking of the legislative foundation for a lien law, Mr. Phillip says: "None were ever adopted, and none to this day are to be found on the statute books of Great Britain, securing in any manner to the mechanic or material man a lien on the buildings which their industry or capital have contributed to erect." The necessity for a lien law arose undoubtedly from two causes: First, all absence of even the remnant of the hampering and cumbersome feudal land system, and the fact that here the land was coming into the possession of the masses; while in England the landed estates were held only by the few; and second, the necessity to aid in the rapid improvement of the land, by giving to the mechanic and material man, whose work and materials were the necessary means to such improvement, full security for the value of his labor and the materials which he might furnish. On September 8, 1791, the Commission appointed to improve as speedily as possible the city of Washington, as the permanent seat of the National Government, adopted a memorial, from which we quote: "Your memorialists conceive it would encourage master-builders to contract for the erecting and finishing of houses for certain prices agreed on, if a lien was created by law for their first claim *on the house erected, and the lot of ground on which it stood.*" On December 19, the General Assembly of Maryland passed the first distinct and definitive law in this country. The first law was, however, very meager and crude, and by no means as useful as that which to-day forms part of the statute law of every State in the Union.

This law was at first greatly disliked, and met with opposition in the courts and in the legislative bodies; yet it has steadily grown in favor, until its importance and benefits are acknowledged alike by both. There is yet much room for advancement before that point is reached, and a law is upon our statute books which, giving an undue advantage to some, recognizes and protects the rights of all.

It may not be out of place, then, to say that this important law, which was created in 1791, had for its mother the principles of the civil law of England, as we have stated; and for its father the minds of Jefferson and Madison, both of whom were at that time members of the Commission which recommended the passage of such a law.

And so it is that to-day we have in this State a lien law, a creation of the Constitution, and an enactment of the Legislature.

To Dispose of Kitchen Garbage.

MEN of intelligence, housholders, and housekeepers ask us how it can be done without the fumes or gases getting into the house. I answer, Very easily. First, as to the manner or *modus operandi*: The burning of coal fires in ranges and in cooking stoves constantly gives off gases more volatile, more penetrating, and more poisonous and deleterious than the gases from the burning of the refuse kitchen matter, such as potato peelings, turnip tops, and other trimmings, when thrown into the fire, when these substances are fresh; and so also of the scraps of meat, bones, etc., after dinner, if thrown into the fire. Now, if the gases that are generated constantly by the burning of coal fires in ranges and stoves are all carried off harmless and unperceived, as they are by the chimney, the less penetrating and less powerful gases from the kitchen refuse will be carried off harmless and unperceived.

This is about all the philosophy there is about it, and it is a perfectly simple process; any man or family can try it and *do it*. As to this material being of any value or any use to anybody, as some say it is, and ought to be saved, it is quite a mistake; it is of no sort of value or use to anybody who has not a pig-pen near his house, to throw it into whilst it is fresh; to attempt to save it in large cities is penny-wise and pound-foolish. It costs more than it comes to, for it cannot be kept any time without undergoing decomposition and becoming putrid and filthy; and it is this *vile leaven* that poisons the streets and fills the air with pestilence, supplying the pabulum of diphtheria and fevers the most malignant and deadly, not only in the streets, but in the houses; and whole hetacombs of children are slain by the unseen foe that enters our dwellings in the filthy garbage box. The boxes or receptacles of this vile stuff cannot be kept clean; they are a nuisance in or about the house or on the premises. In a few cases, in cities where large hotels have a farm near by, the material can be carted off before it becomes putrid, and used in the hog-pens. Very few know the importance of keeping our dwellings free from all decaying matter. Cleanliness is next to godliness; pure air and pure water, the first essentials for life, are the gifts of our Creator, and when they come from his hand they are pure and undefiled.

The Helping Hand.

WE ask ONE and ALL of our kind friends and patrons to assist us in the matter of subscriptions and advertisements. In doing so, they will each receive full recompense in the ENLARGEMENT and IMPROVEMENT OF THIS JOURNAL. The past does not fully illustrate the future, and we hope erelong to be in a position to inaugurate and perfect all the contemplated better things which will come to pass—a part of the programme laid out by the founder of the CALIFORNIA ARCHITECT AND BUILDING NEWS. We have received congratulations from a thousand sources, and flattering notices from scores of journals published on this coast, and east of the "great divide," but that which we require most is, MANY THOUSAND MORE SUBSCRIBERS. We have done the best we could under the circumstances, but with the enlarged circulation secured, for which we ask and aim, we shall produce a California Journal which in all the departments of architecture, mechanical and other sciences, and matters sanitary, hygienic, etc., will be a source of pride and instruction to the people of this coast.

A RECENT issue of the *Fireman's Journal* has the following: "The hand grenade craze is dying out and several companies have practically abandoned business. The *Journal* was the first paper in the country to expose the worthlessness of these so-called fire extinguishers. We did so at the sacrifice of considerable advertising patronage, but we were satisfied that they could not be conscientiously recommended. Persons putting their trust in the efficiency of hand grenades to extinguish fires, we were convinced, would find themselves deceived. Gradually the press and public came to our way of thinking, and hand grenades lost their popularity. A barrel of them was never worth a bucket or two of water, and one chemical extinguisher would do more real service in putting out fires than a car load of them. Hand grenades have had their day, and the gullible public is now waiting for some other cheap device to waste its money on."

EVERY ARCHITECT SHOULD TAKE A PRIDE IN BEAUTIFYING THIS JOURNAL.

A Gothic Cottage.

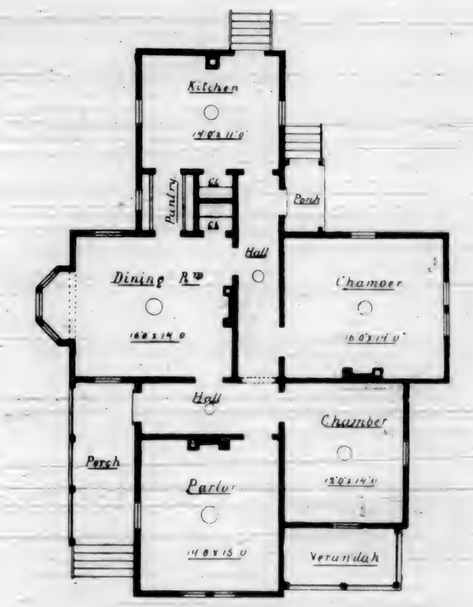
I GIVE in this design the floor plan and elevation of a small, one-story, five-room Gothic cottage, compactly and economically arranged, and suitable for any family desiring a cottage of this style or design.

The building is entered at the side, from a large porch, into a hall, with the parlor on the right and the dining-room on the left, and an arch, with ornamental brackets, connecting the two halls. The rear hall is four feet wide and twenty feet long, and has an outside entrance door protected by a small porch, thus affording an exit to the rear yard without the annoyance of passing through the kitchen. The kitchen is isolated from the remainder of the house, thus preventing all disagreeable odors from penetrating the other apartments. The dining-room and kitchen are connected by a large pass pantry, provided with shelves, drawers, etc., and well lighted by a window, and each room has a large closet which can be used for china, linen, towels, cooking utensils, etc. The separate entrance to the kitchen makes it convenient to reach the wood-shed and slop-hopper placed near the foot of the steps.

The dining-room is of sufficient size to accommodate a large family, and is provided with a fire-place and bay-window, making it a very pleasant sitting-room to sew or read in. The bay-window has transom lights, glazed with colored glass, giving the room a very pretty effect as the sun shines through them. The parlor and chambers are finished in natural shade of black-walnut, and each fire-place is furnished with marble mantels, plated bar fenders and fronts. The dining-room and kitchen are wainscoted, and all wood-work grained imitation of oak. In the center of all rooms are placed ornamental plaster of Paris center pieces of suitable size. The exterior of the building is plain and inexpensive, yet very attractive. The tracery gables are finished with large rosettes and fancy shingling, and the bay-window with neat brackets and panels, surmounted by a small fancy balcony. The porch, veranda, and double windows, although plain, give the building a pleasant and striking appearance. Any person desiring to build a cottage of this style will save money by addressing, for further information,

DAVID SALFIELD, *Architect*,
216 Kearny Street,
San Francisco, Cal.

A GOTHIC COTTAGE.



FLOOR DESIGN OF A GOTHIC COTTAGE.

A New Work on Designs for Dwellings.

A NEW book of designs is now being printed by Mr. D. Salfield, embracing plans and elevations for every description of a country and city dwelling. The accompanying cut is selected as representing a cottage of Gothic design. One of the main objects seems to have been the production of a neat but unique exterior, and yet one which can be built at moderate cost. The description given is very comprehensive. Each design is presented in a clear manner, with dimensions plainly marked. The price of the work has been placed at the low cost of fifty cents each, upon receipt of which a copy will be forwarded to any address. Agents desiring to secure territory for sale of this work can do so by directing a letter to Mr. D. Salfield, 216 Kearny Street.

The above work is now in press. We will speak more extendedly of it in our January issue.

TREES UNFELLED ARE REAL ESTATE.—There was an amusing case tried here the other day. Some smart fellows from up North were perusing around for timber and happened upon an old, unsophisticated farmer and bought from him forty walnut trees for $5.00 apiece as they stood. They paid the money and took a bill of sale, and the old man felt rich. When the old woman came home he told her what a bonanza he had struck. She was surprised, but was not satisfied, and said it was a Yankee trick. In a few days another feller came along and offered $10 a tree, and she made the old man sign, and she signed, too. The money was tendered back to the first purchaser but he refused to take it and sued for the timber. The court held that trees not cut down were part of the realty, and realty could not be sold without the wife's signature; so the sharpers lost their timber and their money, too.—*The Atlanta Constitution.*

IT is the thinking man who makes improvements upon existing methods. A planer, a moulder, or some other machine may be defective in some slight way, and the thinking man soon finds it out, tells the manufacturers of it, and the fault is remedied. But the man who only "puts in time" is not apt to find out these things.

Going Security.

I AFFIRM that the system of indorsing is all wrong and should be utterly abolished. I believe that it has been the financial ruin of more than, perhaps, all other causes. I think that our young men, especially, should study the matter carefully in all its bearings, and adopt some settled policy to govern their conduct, so as to be ready to answer the man who asks them to sign his note. What responsibility does one assume when he indorses a note? Simply this: He is held for payment of the amount in full, principal and interest, if the maker of the note, through misfortune, mismanagement, or rascality, fails to pay it. Notice, the indorser assumes all this responsibility, with no voice in the management of the business, and no share in the profits of the transaction, if it prove profitable; but with a certainty of loss if for any of the reasons stated the principal fails to pay the note.—*Judge Waldo Brown.*

INCREASED PATRONAGE WILL ENABLE US TO MAKE STILL FURTHER IMPROVEMENTS.