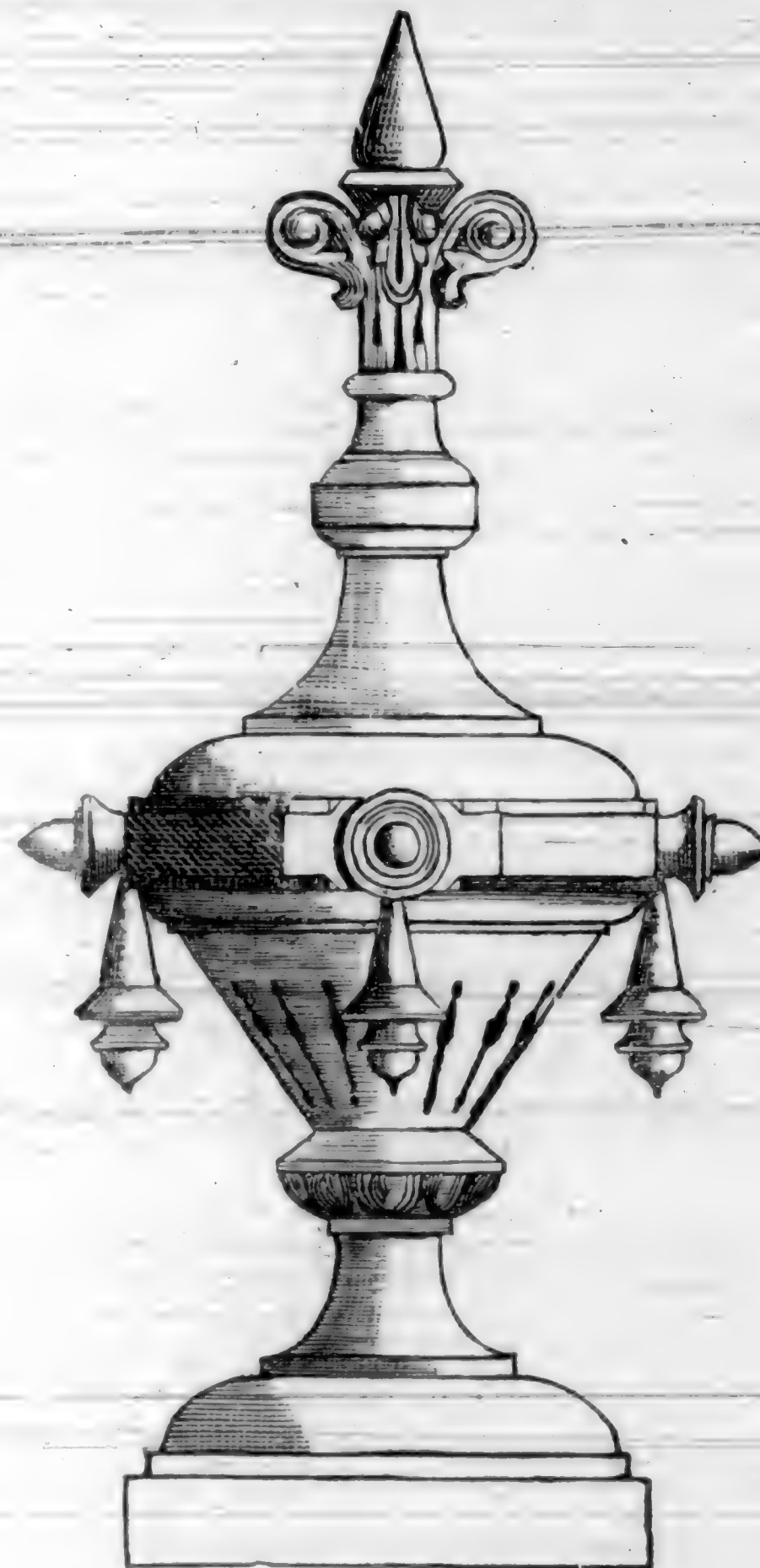


also seek it for vats, because a certain insect found in new grape juice, which bores pine readily, appears to dislike redwood. As its color is similar to that of Spanish cedar, and imparts no flavor to tobacco, it is prized for cigar boxes, and is largely used in New York for that purpose. Its extensive 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 ap-

parent 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 fluids, 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.

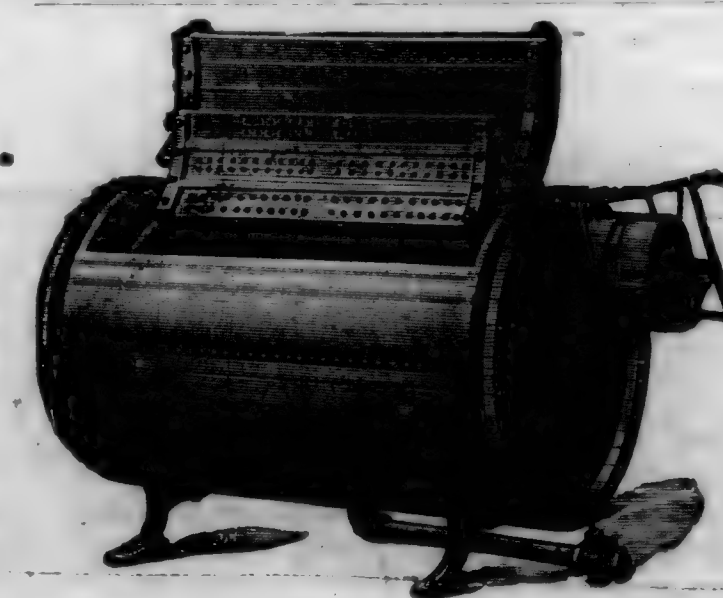
SHARPEN your tools properly and you will husband your strength.

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.



NOTICE.

The Office of the
TROY
Laundry Machinery Co.
And Manufacturers of
LAUNDRY MACHINERY
Has been Moved to
209 Fell Street, S. F.
J. E. CHAPPELL, Agt.

Master Plumbers' Association.

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

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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 oppositi n make conversation disagreeable.

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

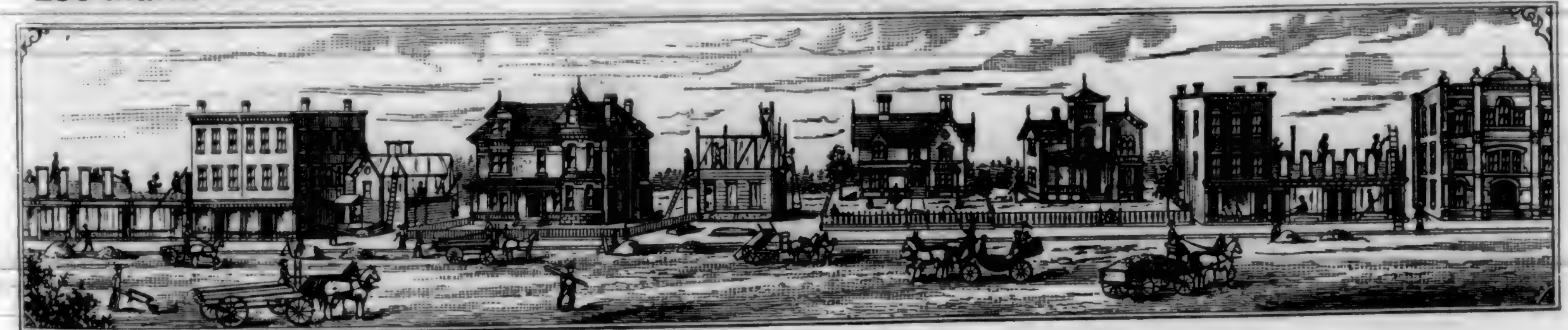
Sensual men laugh where there is nothing to laugh about. To the intelligent most everything is ridiculous; to the reasonable, almost nothing.

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.

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



Bush , bet. Powell and Mason. Three-story frame. O. S. Ma nlin. A. H. Geiffuss. C. J. H. McKay. \$6,900.	Brosnan , nr. Valencia. Two-story frame. O. and B. J. Perry. Day work. \$2,300.	Broderick , nr. Hayes. Two-story frame. O. J. S. Antonello. 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.	Castro , nr. Fifteenth. Two-story frame. O. M. Burns. A. J. J. & T. D. Newsom. C. Spangler & Hawkins. \$2,500.	Clay , north side, bet. Scott and Divisadero. Two-story frame flats. O. G. I. Becht. A. Jas. E. Wolfe. C. Jas. Geary. \$5,000.	Clay , south side, bet. Scott and Divisadero. 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. Walsh. C. Doyle & Son. \$4,000.	Dolores , nr. Twenty-fourth. Two-story frame. O. J. B. Davis. A. C. Goddes. C. C. H. Mursaky. \$2,500.	Elgin Park , bet. Herriman and Ridley. Three two-story frames. O. and B. G. Edwards. Day work. \$10,000.	Fifth , cor. Brannan. Three-story frame hotel. O. F. Stoetzer. A. H. O. Geiffuss. C. F. Klatt. \$7,000.	Fulton , cor. Webster. Brick chimney and boiler house, and other improvements. O. National Brewery Co. A. H. Geiffuss. C. John McCarthy. \$15,000.
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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
" " 1 x 6, 1 x 4, 1 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, 00 1/2
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, 1/2 inch.	" " 22 50
Pickets, Fancy.	per M, 25 00
" " Rough Pointed.	" " 16 00
" " Square.	" " 14 00
Battens, 1/2 x 3.	per lineal foot, 00 1/2
Shingles.	per M, 2 00
Laths, 1 1/2.	" " 3 25
" " 1 1/2.	" " 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.	6 1/2
" " less quantities.	7
Pioneer White Lead (local factory), 5-ton lots.	6 1/2
Cal. Linseed Oil, raw (single-bbl. lots).	45
" " boiled "	47 1/2
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.

Fifteenth , nr. Castro. One-story cottage. O and B. T. Dorsey. Day work. \$2,000.	L Laguna , cor. California. Additions. O. W. Bumpkins. C. Farrell & Bell. \$3,000.	Seventeenth , bet. Valencia and Guerrero. Two-story frame. O. John O. Neill. A. John & Zimmermann. C. J. Klein. \$3,000.	Twenty-second , cor. Howard. Two-story stable. O. H. Zwieg. A. H. Geiffuss. C. F. Klatt. \$2,500.
G Geary , bet. Mason and Taylor. Three-story frame and brick basement. O. Wm. John. A. John & Zimmermann. C. B. Dryer. \$7,000.	M McLee Court , bet. Harrison and Bryant and Eighth and Ninth. Two-story frame. O. August Vetter. A. John & Zimmermann. C. Jacob Klein. \$2,500.	Steiner , nr. Bush. Two-story frame. O. G. L. Henzel. Day work. \$2,500.	Tchama , bet. Third and Fourth. Two-story and basement brick. O. Lenora and Bros. A. Huerno & Everett. C. Geo. Richardson. \$5,870.
Geary , bet. Webster and Fillmore. Additions. O. Mrs. Emma G. Beggs. C. J. B. Gonyea. \$5,000.	Market , nr. Eighth. One-story frame. O. and B. H. Bruns. Day work. \$1,800.	Seventeenth , cor. Folsom. Two-story frame factory. O. Sterling Furniture Mfg. Co. C. H. Munster. \$2,000.	Twelfth Ave. , cor. Chestnut. Two-story frame. O. Lucy E. Marab. A. S. & J. O. Newsom. C. Moor Bros. \$5,300.
Grove , bet. Gough and Octavia. Additions and alterations. O. J. D. H. Hoffman. A. W. Winterhalter. C. J. H. McLean. \$2,000.	Minna , bet. Ninth and Tenth. Three-story frame flats. O. D. McDonald. A. P. R. Schmitt. C. C. W. Beardslee. \$4,800.	Seventeenth , cor. Folsom. One-story cottage. O. Wm. Foley. A. C. J. I. Devlin. C. J. W. Smith. \$205.	V Valencia , junction Twenty-fifth. One-story frame. O. S. P. R. R. Co. Day work. \$1,200.
Grove , bet. Webster and Fillmore. Two-story and basement frame. O. H. Brune. A. H. Geiffuss. C. H. Weiss. \$7,500.	Market , junction of Valencia. Brick additions to Cable House. O. and B. Market Street Cable Railway Co. Day work. \$20,000.	San Jose Ave. , cor. Dolores. One-story cottage. O. Miss M. Ryan. C. H. J. McLaughlin. \$1,200.	Van Ness , cor. Fell. Three-story frame. O. Mrs. Ryland. A. Jacob Lenzen. C. Anderson Bros. \$9,000.
Guerrero , nr. Twenty-fifth. Additions. O. H. Bryant. Day work. \$300.	Mississippi , cor. Santa Clara. One-story frame. O. Miss C. O. Neill. A. A. J. Barnett. C. T. B. Moore. \$1,700.	Sutter , bet. Franklin and Gough. Alterations. O. J. Labraton. A. Pissis & Moore. C. A. Jackson. \$2,000.	Valencia , nr. cable car house. One-story frame. O. J. J. Haley. C. Stevens & Gray. \$5,000.
H Haight , southeast cor. Webster. Three-story frame and stable. O. John W. Tamm. A. John & Zimmermann. C. A. Miller. \$5,000.	N Ninth , cor. Mission. Additions. O. H. Dimond. A. C. J. Devlin. \$2,500.	T Twenty-ninth , nr. Sanchez. One-story frame. O. J. H. Johnson. C. J. R. Leomer. \$1,500.	Washington , cor. Octavia. Additional contracts. O. Alex. Boyd. A. Curlett & Cuthbertson. Plumbing—R. Rice. \$2,500.
Haight , cor. Fillmore. Two-story frame. O. Chas. Hagmuer. C. G. G. Gelispie. \$2,300.	O Octavia , southeast cor. Geary. Two-story frame. O. J. Schroeder. A. John & Zimmermann. C. Wm. Pluns. \$5,500.	Townsend , between Third and Fourth. Brick warehouse. O. and B. L. Walker. A. C. J. I. Devlin. \$4,000.	Washington , nr. Steiner (in rear). Two-story frame. O. Fannie M. Farrell. C. J. H. McKay. \$2,200.
Howard , bet. Twenty-fifth and Twenty-sixth. Two-story frame flats. O. F. Gulbraudsen. A. P. R. Schmitt. C. Wickensham & Farrell. \$2,000.	P Page , cor. Devisadero. Two-story frame. O. E. Daniels. C. A. H. Bailey. \$4,000.	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; \$200. 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.	
Howard , bet. Twenty-fifth and Twenty-sixth. One-story and basement frame. O. Samuel Moute. A. Chas. I. Havens. C. W. B. Kreger. \$3,000.	Pine , northeast cor. Gough. Two-story frame. O. Estate of Jas. Irvine. A. P. R. Schmitt. C. For Grading, W. T. Commary. \$300.	Fresno City —Two-story brick. O. J. M. Brady; A. Theodore Lenzen; \$10,000. Tulare City —Two-story and basement brick. O. J. Goldman & Co.; A. H. C. Macy; \$10,000.	

HILL'S PATENT INSIDE SLIDING WINDOW BLINDS

Are Adapted to Any Style of Window

And Suitable for all Buildings, Dwellings, Stores, Office Buildings, and for Houses Built to Rent, Hotels, Boarding or Lodging-Houses are Unexcelled.

THEY are entirely inside of the window casing, and while requiring no furring out or boxing, make it an impossibility to tear curtains, interfere with plants or window ornaments, or become broken by contact with chairs or other movable articles.

The light can be admitted and sunlight excluded from any part of the window, can be instantly removed and taken to any part of the house to clean, and as easily replaced.

They can be opened or closed with the window raised, and without removing articles from the window-sill, and cannot blow open or rattle. The Blind is very light (one-half inch in thickness) and strong, possessing more durable qualities than a hinged blind one inch in thickness.



There is NO SAGGING, BANGING, OR GETTING OUT OF ORDER!

They are made in three sections in height (each section sliding past the others), and any number of divisions in width corresponding to the folds in the old-fashioned folding blinds. They require NO HINGES—all trimmings furnished with blinds—are MADE OF ALL WOODS, finished or unfinished, and cost less than old-style folding blinds. They have been extensively used by the best architects and builders throughout the East and West, and have given perfect and entire satisfaction wherever introduced.

ENGLISH AND AMERICAN VENETIAN BLINDS (IMPROVED).

The only perfect Venetian Blind in the market. The Blinds can be seen at the Mechanics' Fair. Or for samples, prices, and further information, address as below.

The following are a few of the owners who have adopted the HILL BLIND in preference to any other:—

L. M. Fabry, c. r. H. yes and Laguna; architects, Miller & Armitage. John MacKenzie, c. r. Grove and Broderick; architect, H. D. Mitchell. H. F. Bruns, cor. Geary and Taylor; architect, John M. Curtis. R. B. Gray, cor. Pacific and Van Ness; architect, John M. Curtis. Albert Meyer, Twentieth nr. Valencia; architect, J. T. Kidd. J. C. Weir, Post nr. Scott; architect, J. C. Weir. Dr. J. Rosenstirn, cor. Sutter and Hyde; architects, Pissis & Moore. A. M. Starr, Washington nr. Fillmore; architects, S. & J. C. Newsom. J. H. McKay, cor. Washington and Steiner; architect, J. H. McKay. U. S. Government, Presidio Reservation; architect, J. H. Humphreys. Baron Von Schroeder, 553 Harrison; architect, J. H. McKay. Larkin nr. Turk; architect, James E. Wolfe. A. F. Le Jeal, Clay bet. Franklin and Gough; architect, H. C. Macy. J. C. Weir, Post nr. Scott (second order); architect, J. C. Weir. P. Dupuy, Taylor nr. Turk; architect, W. H. Bayless. J. S. Morgan, Mission bet. Twenty-fifth and Twenty-sixth; architect, C. V. Pierce. N. W. Cole, Mission nr. Twenty-fifth; architects, S. & J. C. Newsom. John Ritchie, Woodland; architect, W. H. Carson. Court House, Petaluma; architects, S. & J. C. Newsom. L. H. Sweeney, San Rafael; architects, Pissis & Moore. Court House, Santa Rosa; architects, S. & J. C. Newsom. Raymond Hotel, Pasadena; architect, J. H. Littlefield.

EDWARD B. HINDES, Office 330 Pine St., Room 55, S. F., Cal., Manufacturer for California, except Counties of Los Angeles, San Diego, Kern, San Bernardino, and San Luis Obispo.

Or, W. S. HOLLAND, Pasadena, Cal., Manufacturer and owner of P. C. Territory. Rights to manufacture, and territory for sale.

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 shortcomings, 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.

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

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 7,727½ 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 ½ 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, spalling, 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 spalled 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—4,166½ lbs., 1 inch area.

No. 3. MILES FREESTONE.
6x5½x6 = area 33.
60 tons spalled on top.
70 " " " " cracked in middle.
75 " " " " " " " "
85 " " " " in opening.
100 " " " " crushed—6,000½ lbs., 1 inch area.

No. 4. PENYRN 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.
4x4x3½ = 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.
" " " " coarse gravel.
" " " " broken rock.
" " " " 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—2,500 lbs., 1 inch area.

No. 8. SAN JOSE SANDSTONE BRICK.
8x4½x2½ = 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 ½ 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 spalled.
25 " " " " crushed—5,555 lbs., 1 inch area.

No. 11. SAN JOSE SANDSTONE BLOCK. (Placed between pine boards.)
4x4x3½.
70 tons cracked.
75 " " " " crushed suddenly and completely—9,312½ lbs., 1 inch area.

No. 12. 4x3x3½ block (between pine boards).
30 tons cracked.
40 " " " " crushed—5,333½ 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.
4x7x2½ = 29 inches area.
15 tons cracked.
30 " " " " badly cracked.
40 " " " " crushed—2,758½ 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.
4x8x4 = 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 spalling. 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 3½ 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 diarrhea, 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 hydrastris, 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 strainer, 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.

It Didn't Work.

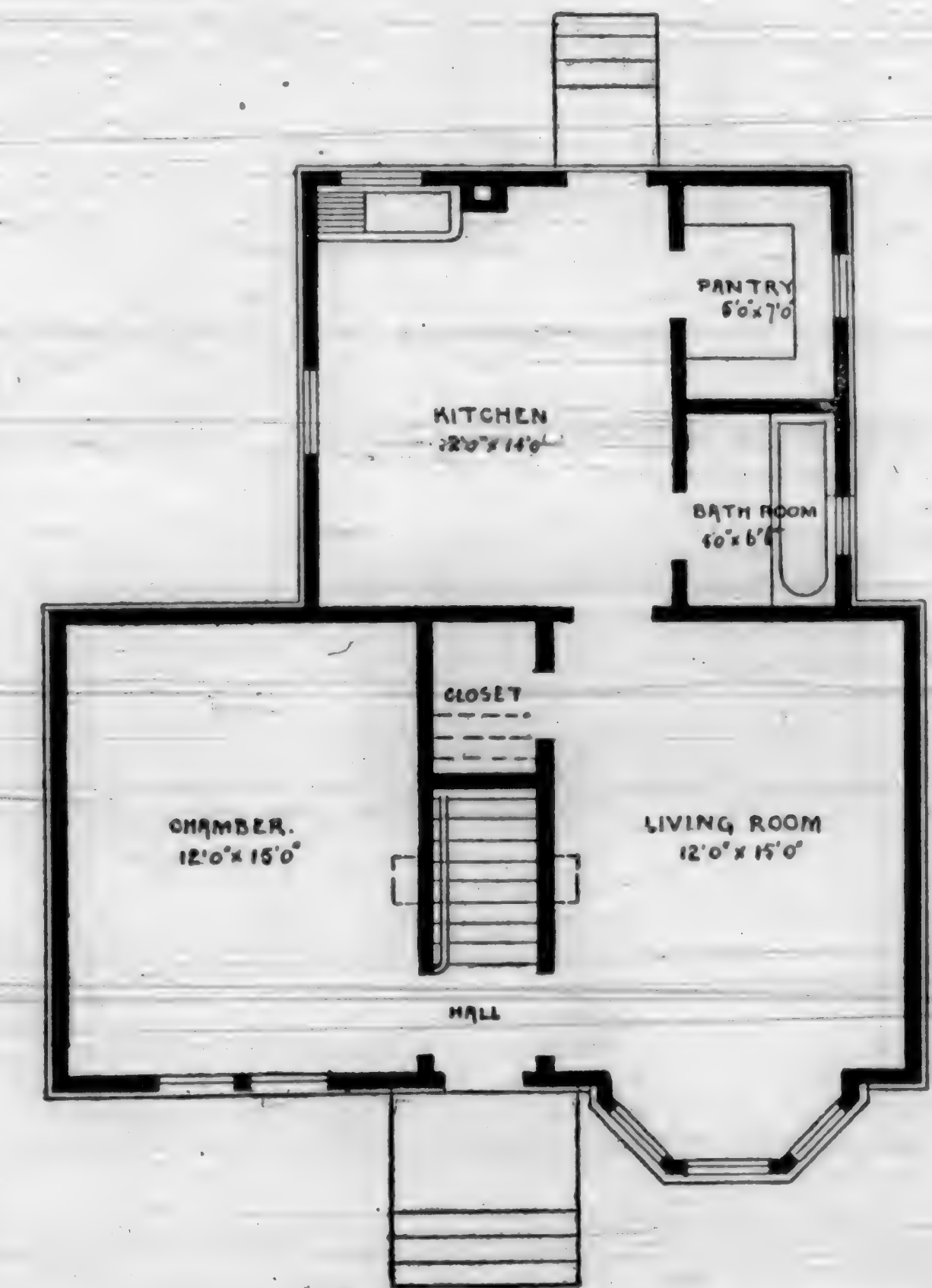
WHEN the employes in an Indiana furniture factory, operated by a German, struck for eight hours a day, he granted it; but when they wanted ten hours' pay for eight hours' work, he called them up and said:—

"My frens, maybe I do ash you like. I haf an order from Shegago for ten dozen shairs. I vill sheep him eight dozen, and 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.



FRONT ELEVATION OF A ONE OR ONE-AND-A-HALF-STORY COTTAGE.



PLAN FOR ABOVE ELEVATION.

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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."

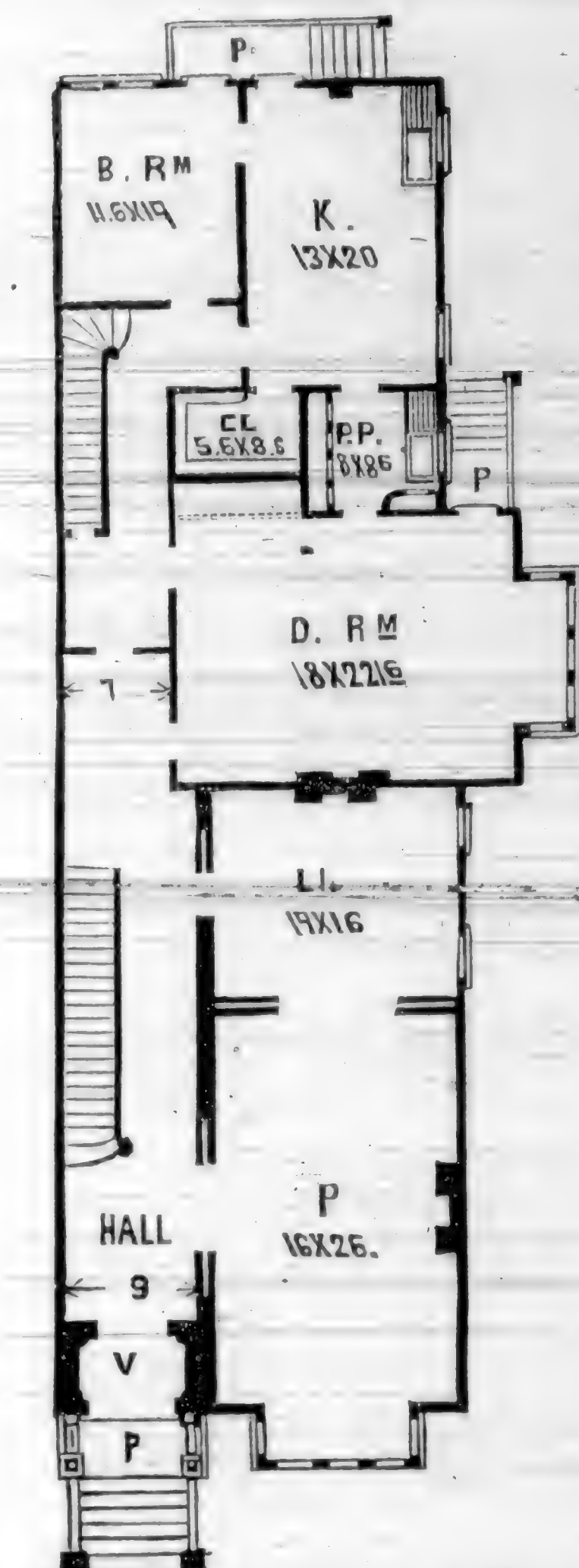
The first floor contains a large parlor, connected with a library by sliding doors. In close proximity is a spacious dining-room, with place for sideboard, and an ample butler's pantry, with sink, lockers, cupboard, shelves, etc. The pantry is in direct communication with the kitchen, a large, well-lighted, 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.

Earthquakes.

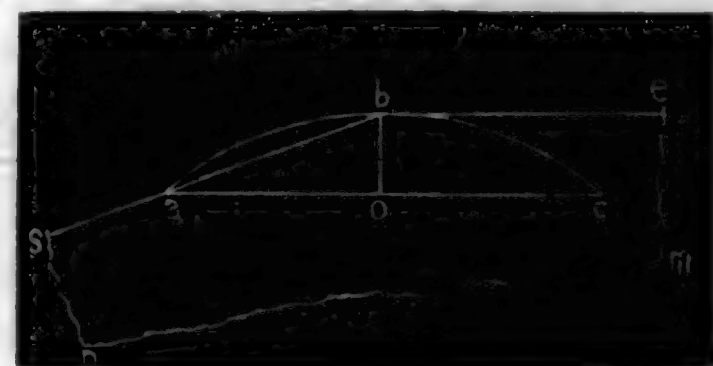
IN view of the wholesale destruction of property, coupled with loss of life, wrought by the recent earthquake at Charleston, South Carolina, the movement of which was felt from the Atlantic to the Mississippi, it seems proper to raise the question, whether we are to assume that a recurrence of the calamity 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.



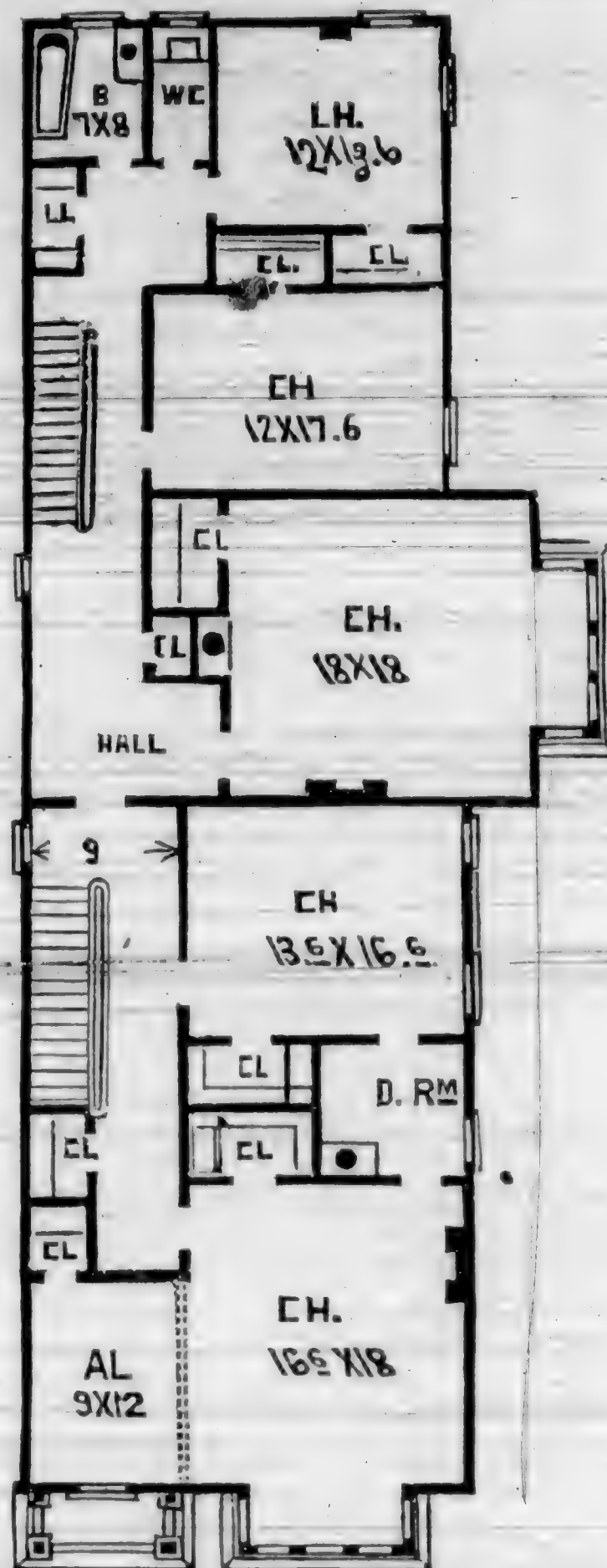
FIRST FLOOR PLAN CITY DWELLING.

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

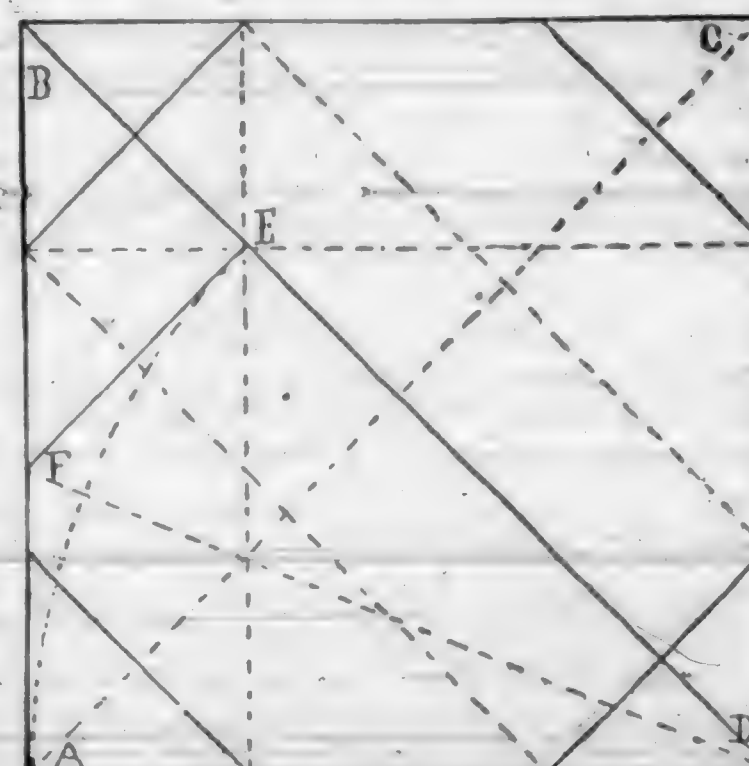


Ans.—Let ac be the cord, and ob the height of the required arc, as laid down on the drawing. On a separate piece of paper, sem , draw ac , ob , and ab , also bc parallel to the cord ac . It is well to make bs and bc a little longer than ab . Then cut off the paper carefully along the lines sb and bc , so as to leave remaining only the strip $sabem$. Now if the straight sides sb and bc 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 e 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.

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SECOND-FLOOR PLAN CITY DWELLING.



To find the sides of an eight-sided polygon, draw the square $ABCD$ and D , and join DB . From D as a center, with DA as a radius, describe an arc, cutting DB in E . Then EB equals the side of polygon, and EFD equals the angle to mitre the sides.

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

By calculation—let ED equal 18×18 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 $7\frac{1}{2}$ inches equal EB .

By proportion— 7.4558 inches :: 18 inches : 7.5 inches; 7.5×18 inches equal 135 inches; divided by 7.4558 inches equal 18.1067 inches, or 18 and $3\frac{1}{2}$ inches equal ED .

Christmas Presents to Mechanics.

We have on hand the largest assortment of mechanical and scientific works to be found in California. These we are determined to close out, as by the beginning of the year, a new management will assume control of this Journal. We publish below a list of works now on hand, with the publisher's price. TO ALL PURCHASERS WE WILL ALLOW A DISCOUNT OF FIFTEEN PER CENT. Select any work from the list. DEDUCT ONE-SEVENTH OF THE PRICE. Forward the money to this office, and by return mail you will receive the book.

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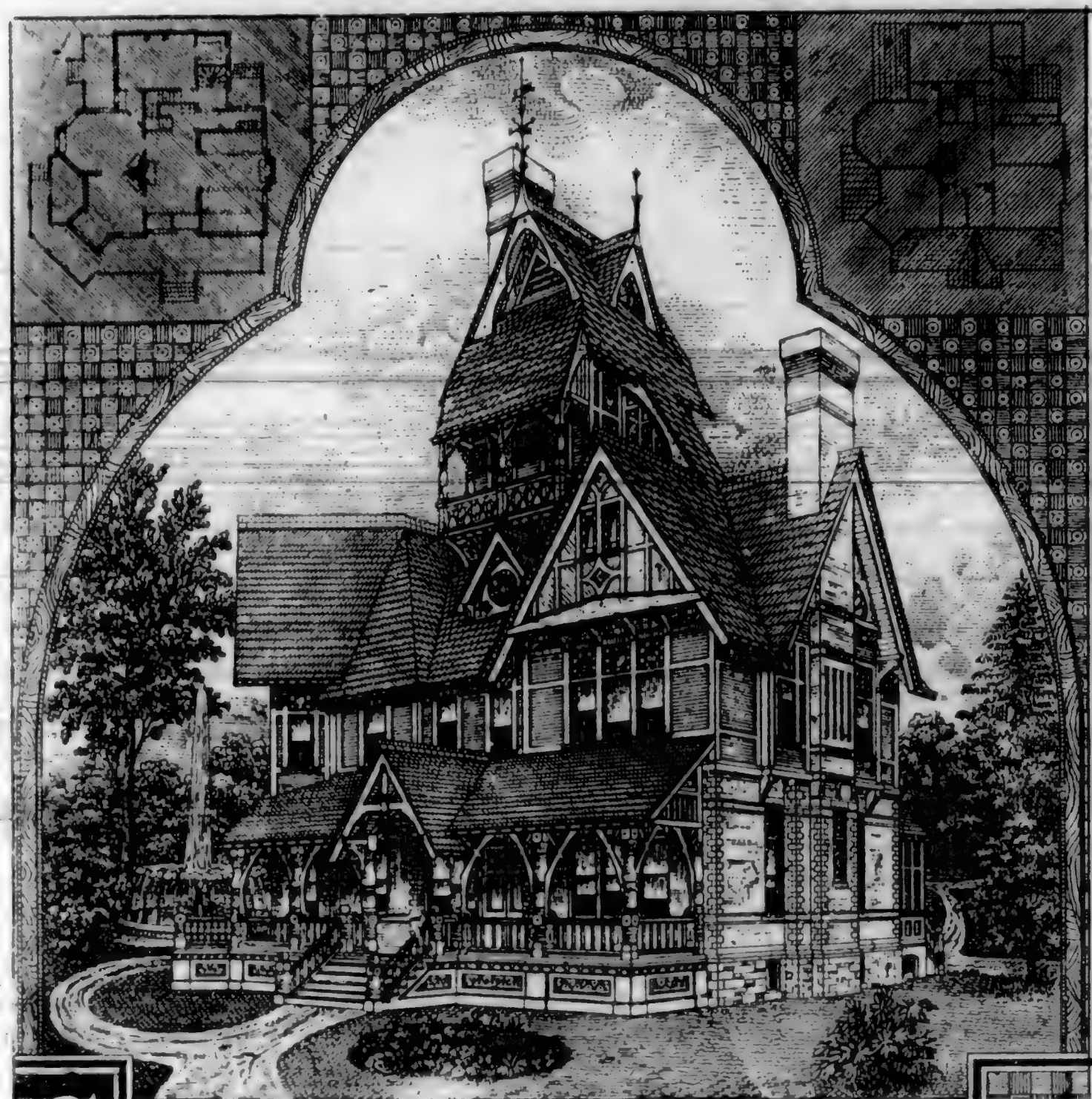
WIVES OF MECHANICS SHOULD ORDER SOME OF THE ABOVE FOR PRESENTS TO THEIR HUSBANDS.

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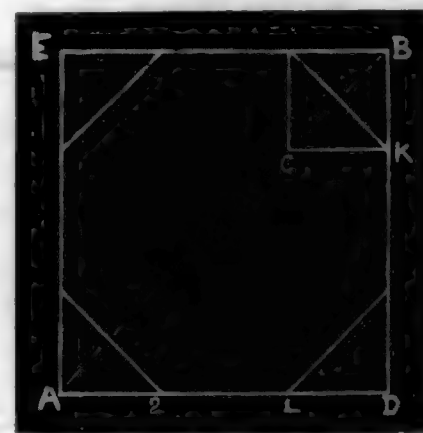
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A COUNTRY VILLA.

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-shower 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.—*Er.*

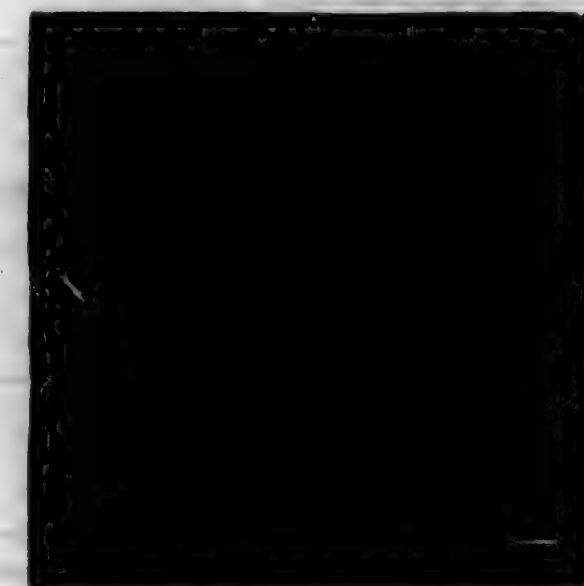
How to Lay off an Octagon.



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.



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 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.

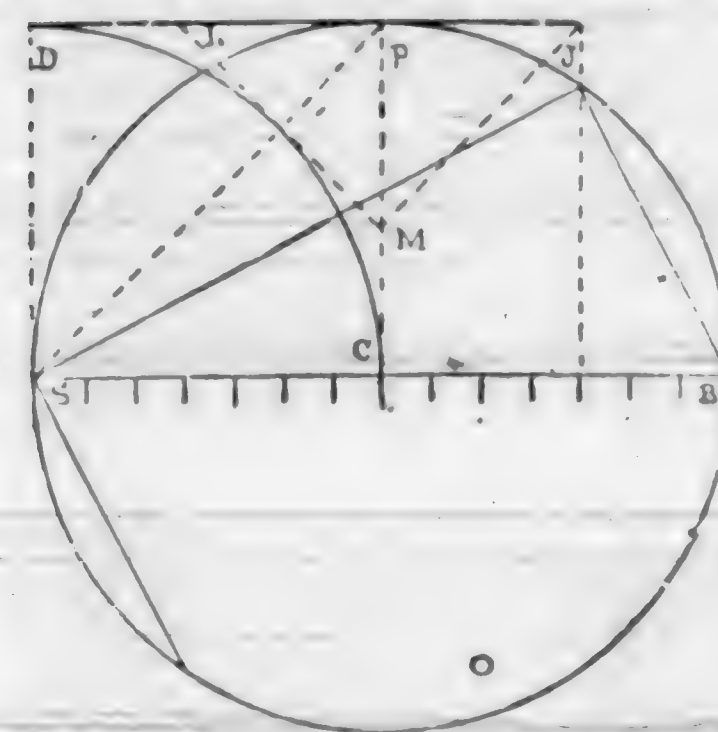
A Country Cottage.

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.

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 Heidelberg, 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 lim 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 (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.



A COUNTRY COTTAGE.

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."

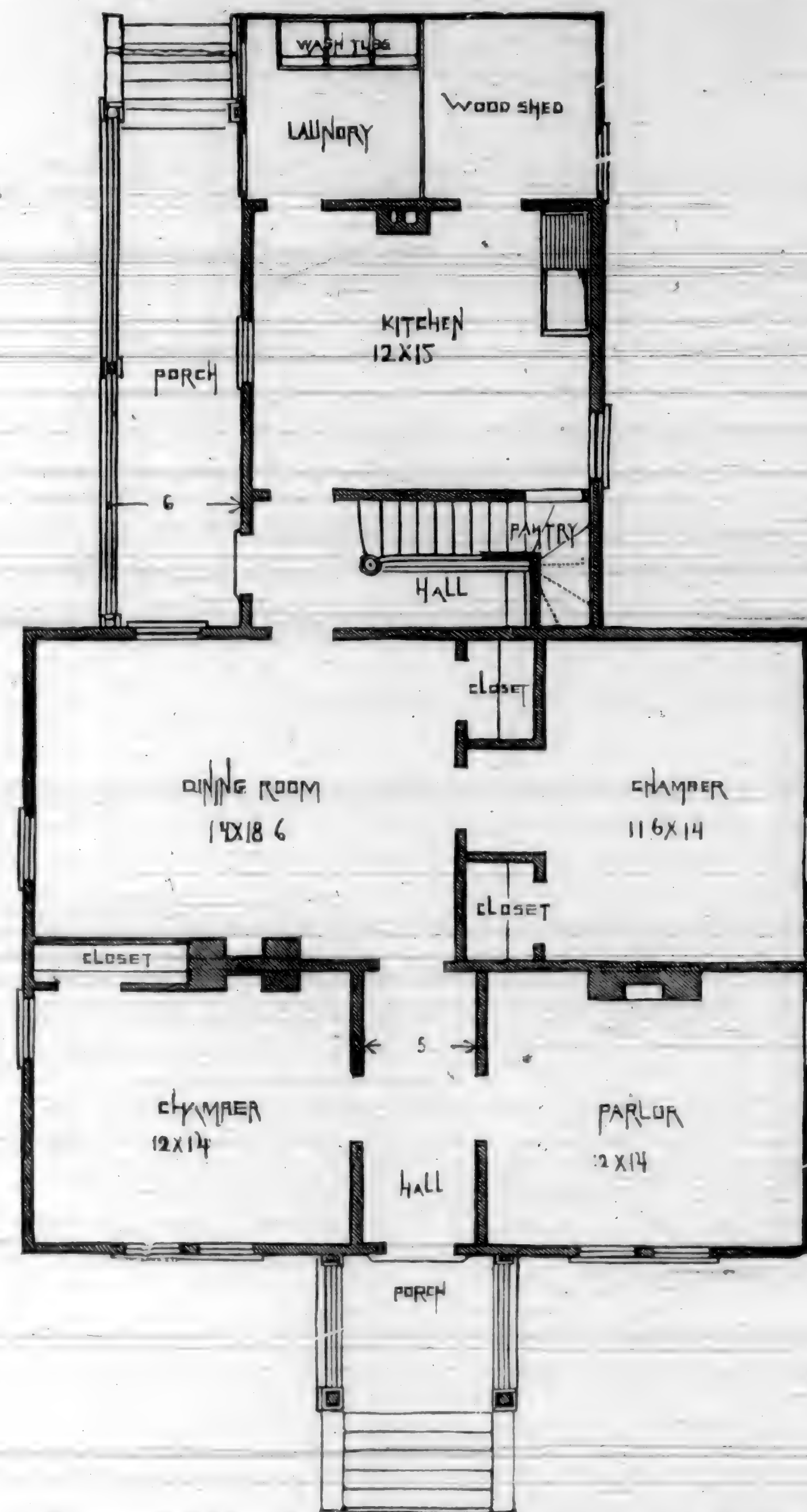
BUSINESS MANAGER OF ARCHITECT: What is the rule for finding the length of braces between two posts, when they incline one foot in six feet rise?



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."

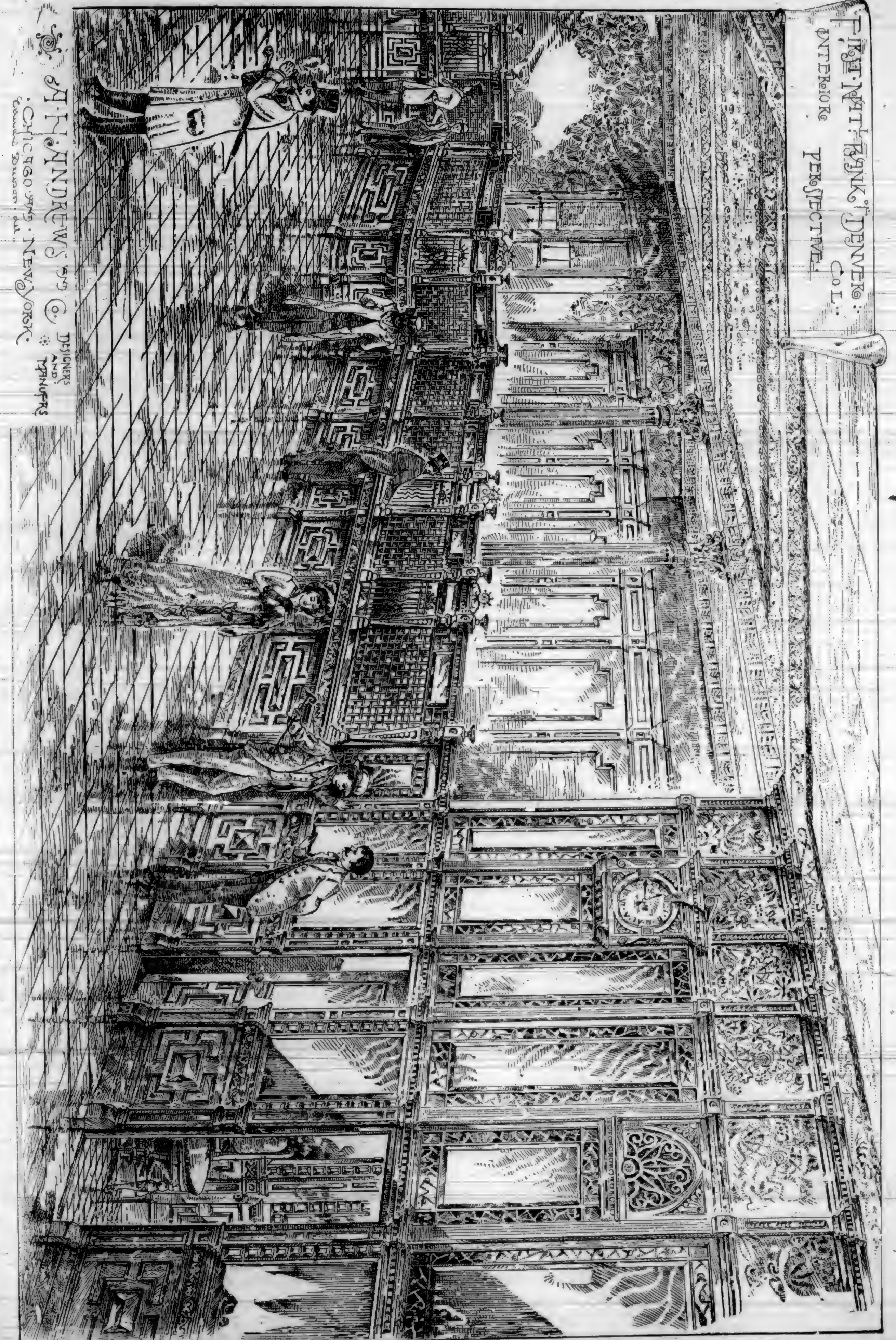
"The same is true of railroad ties, and all such timber as may be exposed to the altering influences of wet and heat. Could the entire timber be changed from its perishable condition to one solid piece of charcoal, the durability would be promoted to a surprising length of time; but the strength of the 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.

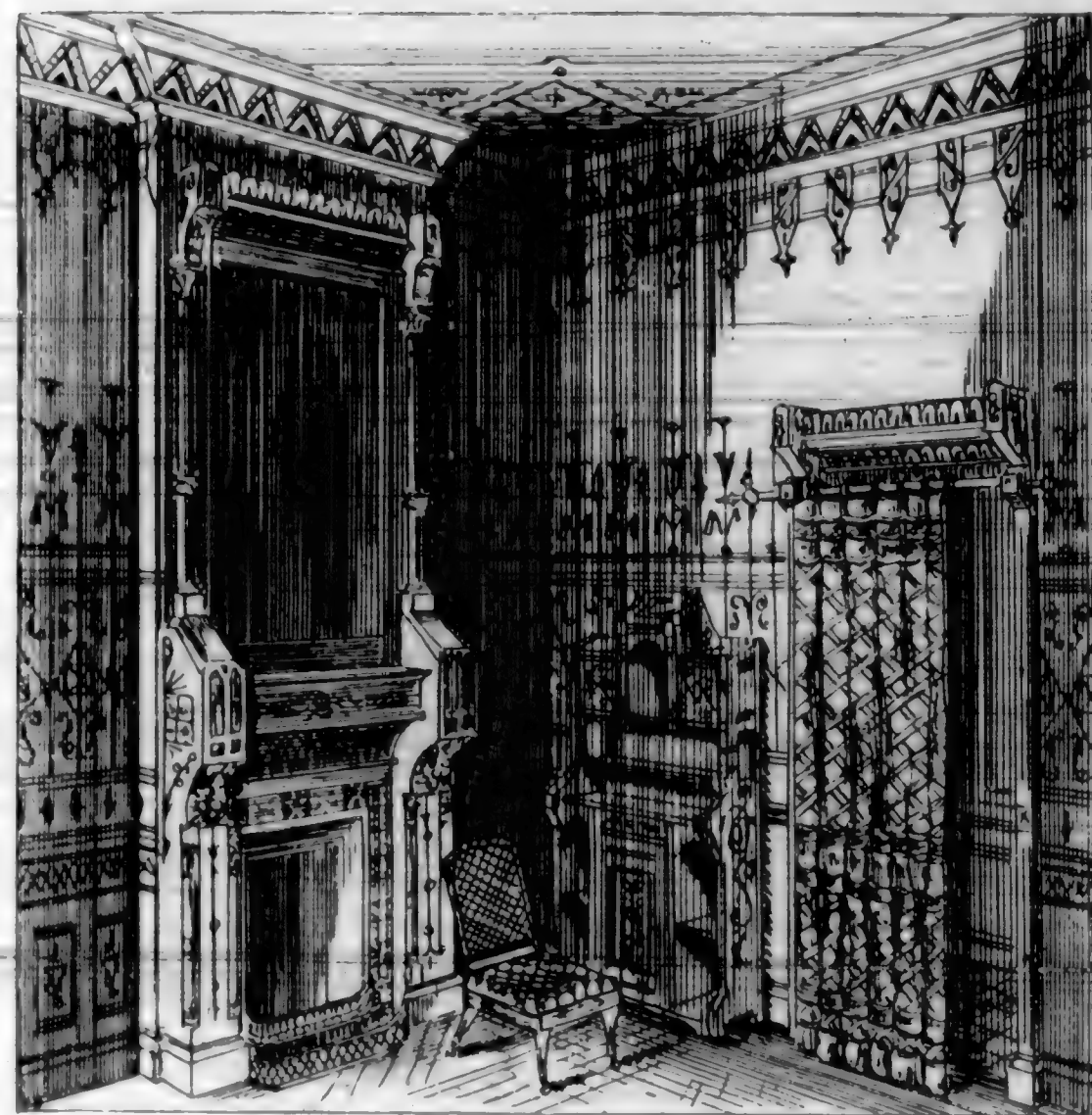
ALL the cannon foundries of Europe are overrun with orders and working day and night. While they make guns abroad, we make plows and work to raise the food that must support the luxury of war.

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 for its 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 naturalness, 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 flourishing 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 stabled 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 disturbs 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.

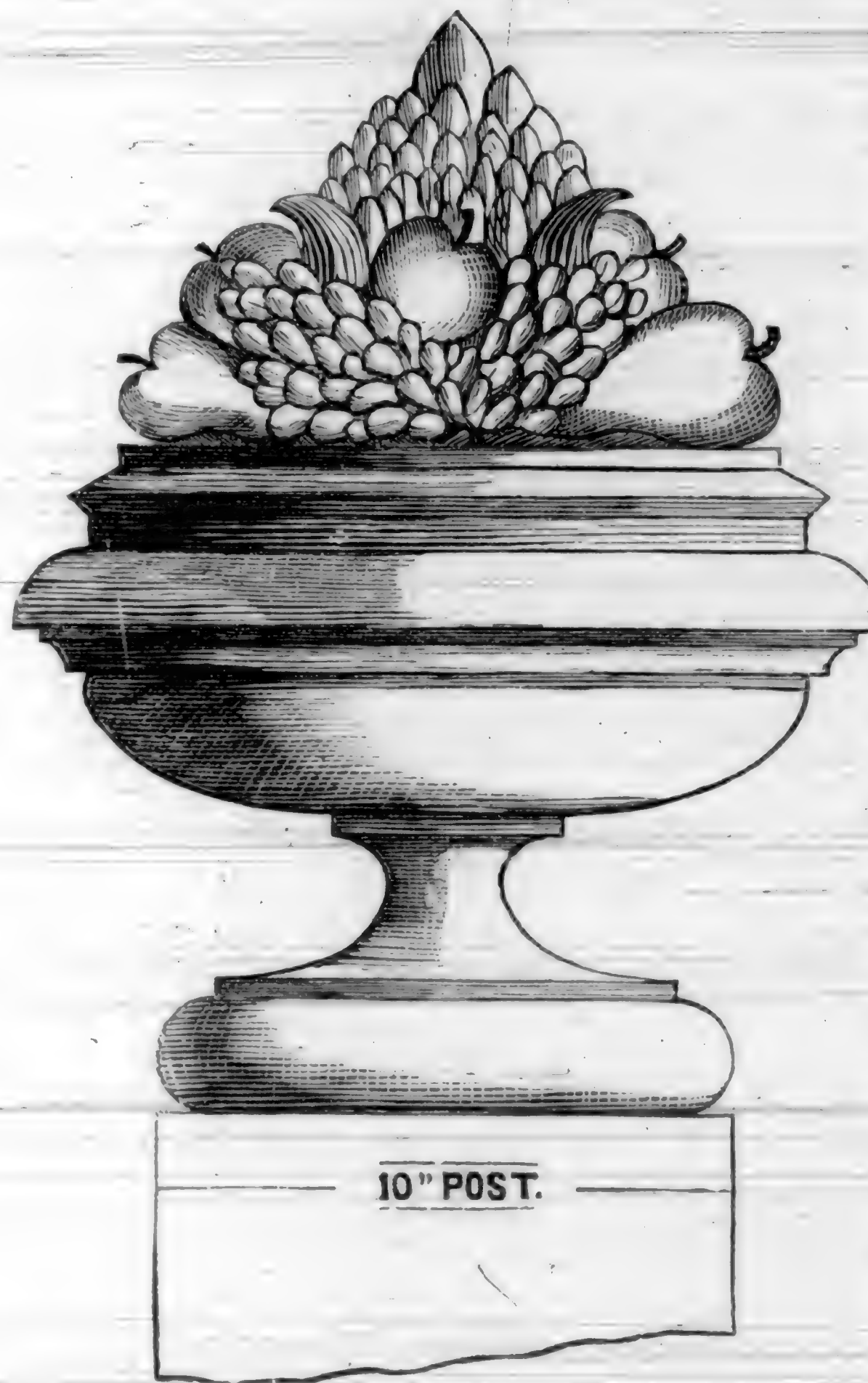
TAKE any saw running constantly in one direction, and after having made 10,000,000 revolutions, examine its particles at a newly broken surface with a microscope, and it will be found that every molecule of iron composing that saw has been displaced.

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 *Dermestidae*, 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 pupae, 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 larva, 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 heat 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.

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.

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
" " 1 x 6, 1 x 4, 1 x 3, 1 x 3, }	" "	30 00
" " 1 x 3, and narrower.....	" "	22 00
" " No. 2.....	" "	35 00
Stepping.....	" "	27 50
Furring, 1 x 2.....	per lineal foot,	00 1/2
Redwood, Rough.....	" M feet,	18 00
" " No. 2.....	" "	14 00
" " Surfaced.....	" "	30 00
" " T. & G. 6 in 12 ft. and over.....	" "	25 00
" " 6 in. 7 to 11 ft.....	" "	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, 3/4 inch.....	" "	22 50
Pickets, Fancy.....	per M, 25 00	
" " Rough Pointed.....	" "	16 00
" " Squares.....	" "	14 00
Battens, 1/2 x 3.....	per lineal foot,	00 1/2
Shingles, 1/2.....	per M, 2 00	
Laths, 1/2.....	" "	3 25
" " 1.....	" "	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.....		6 1/2
" " " less quantities.....		7
" " White Lead (local factory), 5-ton lots.....		6 1/2
Cal. Linseed Oil, raw (single bbl. lots).....		45
" " " boiled ".....		47 1/2
Turpentine, per gallon.....		47
BRICK—California Building Description, soft, per 1,000.....		6 00
" " " red, ".....		7 00
" " " hard ".....		7 75

Master Plumbers' Association.

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

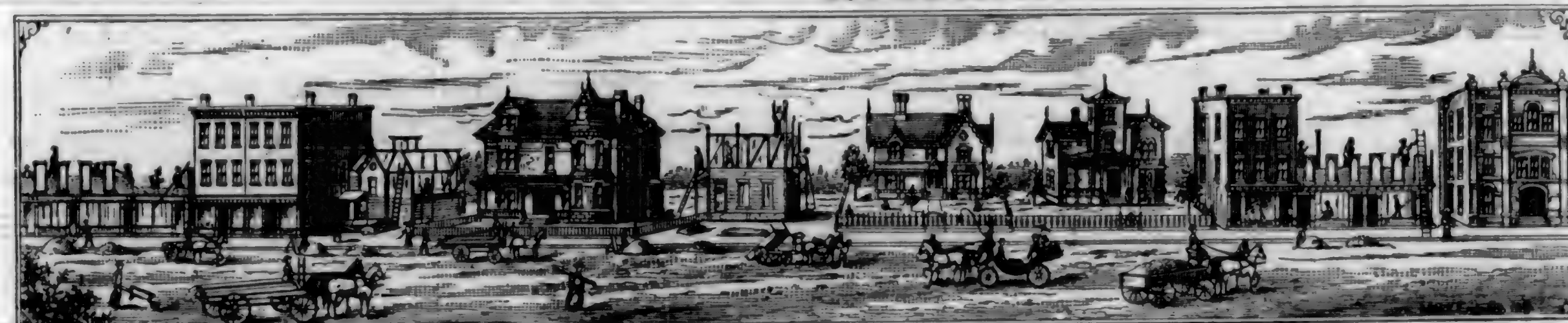
MEMBERS.

BUSH & MALLETT.....	34 Geary Street
BUSH, D.....	316 Sutter Street
BUTTERWORTH, J. B.....	1809 Polk Street
CONNOR, J. H.....	528 Third Street
DANIEL, Wm. L.....	234 Post Street
DOHERTY, JOHN.....	349 Kearny Street
DOWNEY, CHAS.....	41 Second Street
DUFFY BROS.....	17 Trinity Street
ENRIGHT, Wm. & Co.....	39 Sutter Street
FIRMIN, Jno. L. E.....	Cor. Thirtieth and Bartlett Streets
FRITZ & KEAN.....	130 Geary Street
GRAY, Jno. T.....	230 Sutter Street
HUFFSCHMIDT BROS.....	637 Clay Street
HOBBS, W. D.....	728 Washington Street
KEILLEY, C. J.....	214 Montgomery Avenue
SHEPARD BROS.....	526 California Street
SWENEY & 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

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 unfeeling 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.

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



A Ash Ave., bet. Laguna and Buchanan. Additions and alterations. O.—Mrs. Caroline Klein. A.—Townsend & Wycken. C.—N. B. Ritchie. \$1,800.	B Bush, bet. Laguna and Buchanan. Additions. O.—H. Magnus. Day work. \$800.	C Bryant, bet. Second and Third. Two-story frame. O.—Chas. H. Castle. A.—Chas. I. Havens. C.—R. Doyle & Son. \$7,500.	D Boardman Place, bet. Bryant and Brannan. Two one-story frames. O.—J. J. Mahoney. A.—J. J. Clark. C.—J. Wilcox. \$2,000.	E Berry, bet. Fifth and Sixth. Ice House. O.—Boca & Sewing Co. A.—John & Zimmermann. Day work. \$1,000.	F Clementina, bet. Eighth and Ninth. Repairs. O.—Thos. McGorey. A.—M. J. Welsh. C.—R. Sennott. \$700.	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. \$800.	I Hayes, near Buchanan. Three two-story frames. O.—R. H. Swain. Day work. \$10,500.	J Hayes, cor. Webster. Additions. O.—Capt. O'Christenson. A.—David Salfeld. C.—A. Klahn. \$500.	K Harrison, bet. Thirteenth and Fourteenth. Alterations. O.—P. Ledy. A.—J. J. Clark. C.—J. Madden. \$1,300.	L Jackson, near Larkin. Two-story frame. O.—Mrs. E. Lora. A.—Townsend & Wycken. C.—Arnold & Dyer. \$4,500.	M Kentucky, near Sierra. Two-story frame. O.—John Gurtz & H. Yoss. A.—David Salfeld. C.—B. Dryer. \$2,500.	N Larkin, cor. Filbert. Six two-story frames. O.—and B.—J. A. Whalen. Day work. \$21,000.	O Lombard, bet. Jones and Leavenworth. Three two-story frames. O.—Mr. and Mrs. Jacques. A.—and B.—A. W. Pattani & Co. \$12,000.	P Leavenworth, near Clay. Alterations and additions. O.—R. Magee. A.—H. D. Mitchell. Day work. \$3,000.	Q Linden Avenue, bet. Octavia and Laguna. Additions. O.—S. Borker. C.—Jos. Dutton. \$2,500.	R Lyon, cor. Post. Two-story frame. O.—E. Cassidy. A.—M. J. Welsh. C.—A. J. Smith. \$2,500.	S McAllister, cor. Lyon. Two-story frame. O.—John Grace. A.—T. J. Welsh. C.—Jas. Irwin. \$8,000.	T McAllister, bet. Buchanan and Webster. Three three-story frames. O.—J. H. Backus. A.—John M. Curtiss. C.—J. W. Wessinger. \$13,000.	U Market, cor. Annie. Alterations. O.—Mrs. M. C. Bishop. A.—Percy & Hamilton. C.—J. G. Day. \$7,500.	V 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
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McAllister , near Franklin. Three-story frame. O.—John R. Morton. A.—Huene & Everett. C.—F. Buckley. \$5,000.	Page , bet. Pierce and Scott. One-and-one-half-story frame. O.—L. E. Sawyer. Day work. \$2,500.	Scott , bet. Eddy and O'Farrell. One-story frame. O.—D. Collins. C.—P. Jones. \$2,000.	Thirteenth , nr. Belcher. Two-story frame. O.—A. Giovannini. A.—Miller & Armitage. C.—A. Krohn. \$2,500.
Market , cor. Tenth. Three-story frame. O.—Inventors' Institute of California. A.—John Gash. Total cost, about \$85,000.	Post , bet. Dupont and Stockton. Four-story brick. O.—Z. V. Dodge. A.—Miller & Armitage. Brick, etc.—J. Wagner. Carpenter work etc.—J. G. Adams, 4,800 Plumbing—J. D. Welsh, 850 Painting—J. F. Lynch & Co., 500 Total cost, \$12,000.	Steiner , cor. Hermann. Additions. O.—H. Burg. Day work. \$1,500.	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.
Mission , near Hermann. Two one-story frames. O. and B.—J. Dunceal. Day work. \$1,500.	Page , bet. Pierce and Scott. One-story frame. O.—G. P. O'Connell. A.—Townsend & Wyncken. C.—J. H. Lennon. \$1,400.	Sutter , bet. Van Ness and Franklin. Alterations. O.—Mrs. M. Zimmerman. A.—P. R. Schmitt. C.—H. Keenan. Brick work—R. Mitchell. \$5,200.	Tennessee , nr. Solano. Alterations. O.—F. Lester. C.—C. E. Dunshes. \$2,200.
Mission , cor. Potter. Additions. O.—Mrs. M. Green. Day work. \$1,200.	Pacific Avenue , near Buchanan. One-story frame. O.—Samuel Carson. A.—Percy & Hamilton. C.—Gray & Stover. \$5,500.	Sanchez , nr. Market. One-story frame. O.—P. Laherty. \$2,200.	Turk , nr. Scott. Additions. O.—A. Schropfer. Day work. \$900.
Mission , bet. Sixth and Seventh. Additions. O.—Central M. E. Church. A.—J. Marquis. C.—Moore Bros. \$8,000.	Pierce , bet. Haigh and Page. Two-story frame. O.—Mrs. Luckey. A.—J. Marquis. C.—Martin & Maguire. \$4,000.	Scott , bet. Jackson and Washington. One-story frame. O.—F. D. Marsh. A.—J. T. Kidd. C.—O. White. Plumbing—Williams, 1,750 Cost, about \$2,000.	Turk , nr. Scott. One-story frame. (In rear). O.—A. Schropfer. Day work. \$1,000.
Mt. St. Joseph , South San Francisco. Orphan Asylum. O.—Sisters of Charity. A.—J. J. Clark. C.—Mahoney Bros. \$10,000.	Pine , nr. Gough. Two and one-half-story frame. O.—Mrs. M. Irvine. A.—P. R. Schmitt. C.—W. T. Connery. \$15,000.	Twenty-first , cor. Treat Avenue. One-story frame. O.—Chris. Raetz. \$2,500.	Vallejo , bet. Powell and Mason. Two-story and basement frame. O.—T. S. O'Connell. A.—Miller & Armitage. C.—S. T. Green. \$5,000.
Mission , bet. Eighth and Ninth. Brick party wall. O.—J. Andrews. A.—John & Zimmermann. C.—Jacob Beck. \$950.	Point Lobos , bet. Wood and Collins. One-story frame. O.—J. Schrader. A.—John & Zimmermann. C.—A. Miller. \$1,750.	Thirteenth , cor. Belcher. One-story frame. O.—W. Turney. A.—J. T. Kidd. C.—M. Loftus. \$1,500.	Washington , cor. Octavia. Additional contract. O.—Alex. Boyd. A.—Curlett & Guthbertson. Painting—J. H. Keefe. \$1,500.
Nebraska , cor. Alameda. Two-and-one-half-story frame. O.—Lucy Bros. A.—Townsend & Wyncken. C.—N. C. Post. \$2,800.	Pacific Ave. , nr. Fillmore. Two-story frame. O.—J. H. Langdon. A.—J. J. Clark. C.—J. Adams. \$4,900.	San Jose —Sixth. One-story cottage. O., A. Bergen; A., Jacob Lenzen & Son; C., F. Davis; \$1,545. Eighth. Two-story frame. O., Wm. Frueling; 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. Curate; \$2,650. First. Additions. O., O. A. Hale & Co.; A., Jacob Lenzen & Son; C., A. J. McVain; \$3,500. Terrain, cor. Bassett. One-story brick. O., —Schmidt; A., T. Lenzen; C., G. E. McPhaul; cost, \$5,000. East side Narrow Gauge Depot. One-story brick. O., C. McKimran; A., T. Lenzen; day work; cost, \$5,000.	W
Oak , bet. Pierce and Scott. One-story frame. O.—B. Crocker. C.—P. Laherty. \$1,500.	Sanchez , bet. Twenty-ninth and Valley. Two-story frame. O.—G. Boyen. C.—J. G. Lowner. \$1,800.	Hollister —Two-story brick. (Masonic Hall.) O., D. K. Sanford; A., Jacob Lenzen & Son; C., Jacob Horn; cost, \$3,500.	
Page , cor. Fillmore. Three two-story frames. O.—N. F. Fitzgerald. A.—S. & J. C. Newsom. C.—A. Semott. \$10,000.		Seattle , W. T.—One-and-one-half-story frame. O., N. Toklas; A., P. R. Schmidt; \$5,000.	
		Sanuelito —Two-story frame. O., T. M. Curtan; A., Chas. I. Havens; C., A. Beyer; \$4,750.	

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. Frueling; 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. Curate; \$2,650. First. Additions. O., O. A. Hale & Co.; A., Jacob Lenzen & Son; C., A. J. McVain; \$3,500. Terrain, cor. Bassett. One-story brick. O., —Schmidt; A., T. Lenzen; C., G. E. McPhaul; cost, \$5,000. East side Narrow Gauge Depot. One-story brick. O., C. McKimran; A., T. Lenzen; day work; cost, \$5,000.

HILL'S PATENT INSIDE SLIDING WINDOW BLINDS

Are Adapted to Any Style of Window

And Suitable for all Buildings, Dwellings, Stores, Office Buildings, and for Houses Built to Rent, Hotels, Boarding or Lodging-Houses are Unexcelled.

THEY are entirely inside of the window casing, and while requiring no furring out or boxing, make it an impossibility to tear curtains, interfere with plants or window ornaments, or become broken by contact with chairs or other movable articles.

The light can be admitted and sunlight excluded from any part of the window; can be instantly removed and taken to any part of the house to clean, and as easily replaced.

They can be opened or closed with the window raised, and without removing articles from the window-sill, and cannot blow open or rattle. The Blind is very light (one-half inch in thickness) and strong, possessing more durable qualities than a hinged blind one inch in thickness.



There is NO SAGGING, BANGING, OR GETTING OUT OF ORDER!

They are made in three sections in height (each section sliding past the others), and any number of divisions in width corresponding to the folds in the old-fashioned folding blinds. They require NO HINGES—all trimmings furnished with blinds—are MADE OF ALL WOODS, finished or unfinished, and cost less than old-style folding blinds. They have been extensively used by the best architects and builders throughout the East and West, and have given perfect and entire satisfaction wherever introduced.

ENGLISH AND AMERICAN VENETIAN BLINDS (IMPROVED).

The only perfect Venetian Blind in the market. The Blinds can be seen at the Mechanics' Fair. Or for samples, prices, and further information, address as below.

The following are a few of the owners who have adopted the HILL BLIND in preference to any other:—

L. M. Fabry, c. r. Hayes and Laguna; architects, Miller & Armitage. John MacKenzie, c. r. Grove and Broderick; architect, H. D. Mitchel. H. F. Bruns, cor. Geary and Taylor; architect, John M. Curtis. R. B. Gray, cor. Pacific and Van Ness; architect, John M. Curtis. Albert Meyer, Twentieth nr. Valencia; architect, J. T. Kidd. J. C. Weir, Post nr. Scott; architect, J. C. Weir. Dr. J. Rosenstern, cor. Sutter and Hyde; architects, Pissis & Moore. A. M. Starr, Washington nr. Fillmore; architects, S. & J. C. Newsom. J. H. McKay, cor. Washington and Steiner; architect, J. H. McKay. U. S. Government, Presidio Reservation; architect, J. H. Humphreys. Baron Von Schroder, 553 Harrison; architect, T. J. Welsh. G. G. Burnett, Larkin nr. Turk; architect, James E. Wolfe. A. F. Le Jeal, Clay bet. Franklin and Gough; architect, H. C. Macy. J. C. Weir, Post nr. Scott (second order); architect, J. C. Weir. P. Dupuy, Taylor nr. Turk; architect, W. H. Bayless. J. S. Morgan, Mission bet. Twenty-fifth and Twenty-sixth; architect, C. V. Pierce. N. W. Cole, Mission nr. Twenty-fifth; architects, S. & J. C. Newsom. John Ritchie, Woodland; architect, W. H. Carson. Court House, Petaluma; architects, S. & J. C. Newsom. L. H. Sweeney, San Rafael; architects, Pissis & Moore. Court House, Santa Rosa; architects, S. & J. C. Newsom. Raymond Hotel, Pasadena; architect, J. H. Littlefield.

EDWARD B. HINDES, Office 330 Pine St., Room 55, S. F., Cal., Manufacturer for California, except Counties of Los Angeles, San Diego, Kern, San Bernardino, and San Luis Obispo.

Or, W. S. HOLLAND, Pasadena, Cal., Manufacturer and owner of P. C. Territory. Rights to manufacture, and territory for sale.

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 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., 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 unhealthy 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 " "	3,790,732
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 who 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 $7\frac{2}{3}$ or $11\frac{1}{2}$ 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 $\frac{1}{2}$ '; 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.

A List of Mechanical and Architectural Works

NOW ON HAND.

The amounts given below are the Publishers' Cash Prices. We intend to reduce our stock, at present the largest of its kind in California, and therefore make the accompanying liberal offer.

DEDUCT
ONE-SEVENTH FROM PUBLISHED PRICE.

elect any work from the list, deduct one-seventh of the price given, forward us the money, and by return mail you will receive the book or books selected, with charge prepaid.

Bound Volumes of the California Architect and Building News, 1880 to 1886, \$2.00 each.

Street, Store and Bank Fronts,.....	\$2 50
Public Buildings,.....	3 00
School House and Church Architecture,.....	3 00
Practical Carpentry,.....	1 00
Lessons on Hand Railing,.....	5 00
Stables, Fences, Out-Buildings, etc.,.....	2 50
Artistic Homes,.....	3 50
Modern House Painting,.....	5 00
Old Homes Made New,.....	1 50
Foundations, (New Edition),.....	2 00
American House Carpenter,.....	5 00
Cutting Tools,.....	2 00
Grimshaw on Saws,.....	4 00
Mechanics' Geometry,.....	4 00
Artisan,.....	5 00
Detail Cottage Architecture,.....	10 00
Builders' Guide,.....	2 00
Album of Mantels,.....	8 00
History of Architecture,.....	15 00
Building Superintendence,.....	3 00
Buck's Architectural Designs,.....	50
American Cottage Homes,.....	3 00
Village and Country Homes,.....	5 00
Science of Carpentry,.....	4 00
Universal Assistant,.....	2 50
Plaster, How to Make it,.....	1 00
Shavings and Sawdust,.....	1 50
Timberman's Hand-Book,.....	2 00
Practical Geometry,.....	1 00
Practical Perspective,.....	5 00
Woodward's Country Homes,.....	1 50
Woodward's Farm Homes,.....	1 00
Woodward's Graperies,.....	1 00
Manual for Furniture Men,.....	1 00
Landscape Gardening,.....	1 50
Common-Sense Church Architecture,.....	1 00
Painter, Gilder and Varnisher,.....	1 50
How to Paint,.....	1 00
Architects' Companion,.....	2 50
Model Homes,.....	1 00



Hand Railing and Stair Casing,.....	1 50
Drawing for Carpenters,.....	1 75
" " Bricklayers,.....	1 50
" " Cabinet Makers,.....	1 50
" " Stone Masons,.....	1 50
Building Construction,.....	1 25
Linear Drawing,.....	1 25
Cutting Tools,.....	1 50
Cumming's Details,.....	5 00
Carpenter and Joiner,.....	7 50
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BY USE OF CARD BOARD MODELS.

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OUR JANUARY NUMBER WILL BE REPLETE WITH INTERESTING INFORMATION.

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 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, householders, 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 hetacongs 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 ere long 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 New Work on Designs for Dwellings.

A NEW book of designs is now being printed by Mr. D. Salfeld, 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 sum 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. Salfeld, 216 Kearny Street.

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

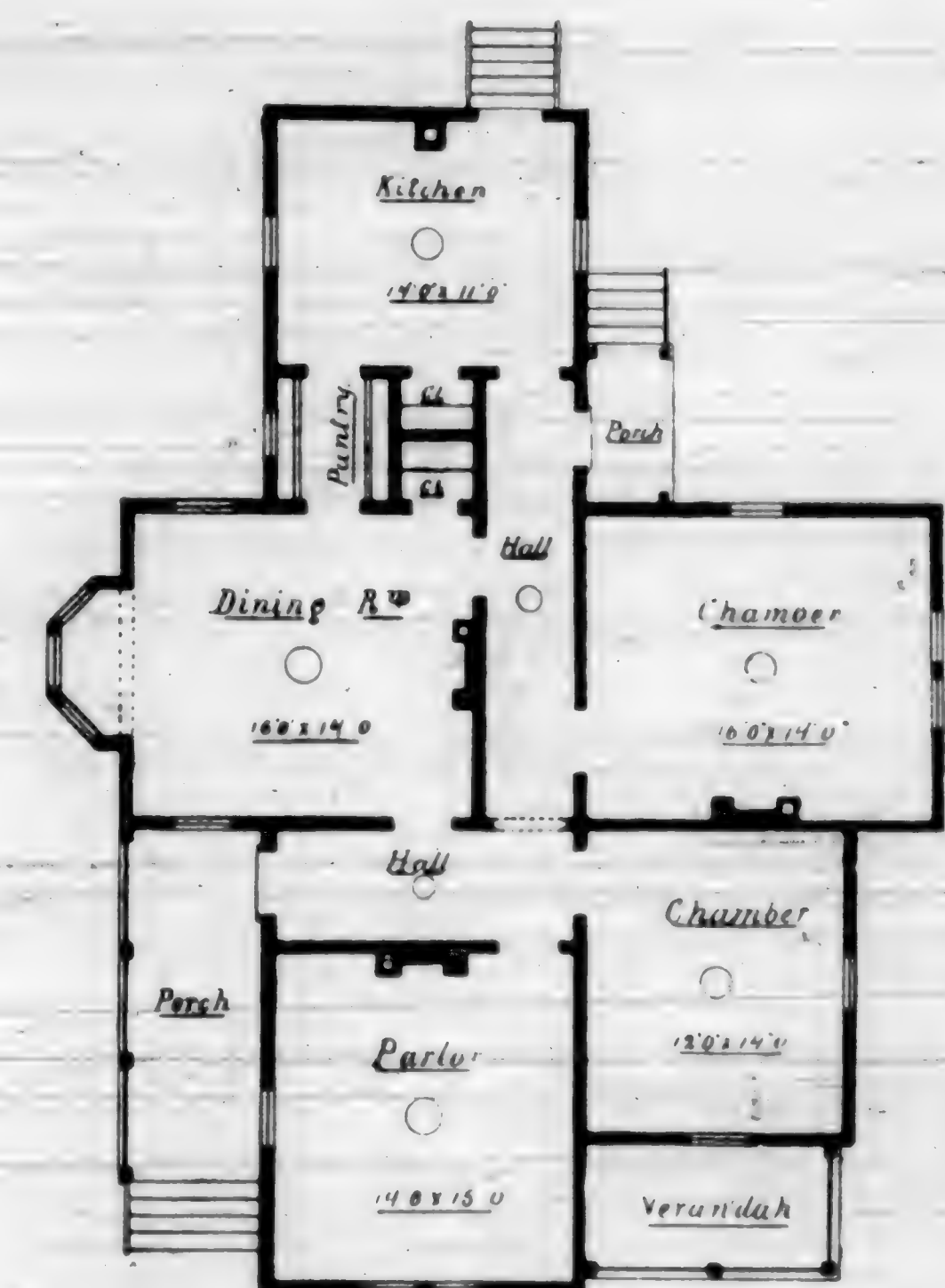
TREES UNFELLED ARE REAL ESTATE.—There was an amusing case tried here the other day. Some smart fellows from up North were perusing around for timber and happened upon an old, unsophisticated farmer and bought from him forty walnut trees for \$5.00 apiece as they stood. They paid the money and took a 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.

INCREASED PATRONAGE WILL ENABLE US TO MAKE STILL FURTHER IMPROVEMENTS.



A GOTHIC COTTAGE.



FLOOR DESIGN OF A GOTHIC COTTAGE.

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*.

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 realm 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.

Country Architects

Can greatly help us by forwarding to this office information in regard to building and other improvements in their respective localities.

SAN FRANCISCO, Dec. 3, 1886.

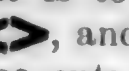
EDITOR CALIFORNIA ARCHITECT AND BUILDING NEWS: Will you please give a receipt in the Everybody's Column of your journal to dissolve silver, for instance a piece of coin, so as to make a solution of silver, and oblige a

MECHANIC,

A subscriber since 1879.

Nitric acid will dissolve silver. It will also dissolve any alloy with which it may be mixed.

SAN FRANCISCO, Cal., Nov. 19, 1886.

EDITOR CALIFORNIA ARCHITECT—Sir: Will you please to favor me with a rule to mark out the top and bottom cut of a sloping brace of square timber, which stands with one diagonal corner vertically over the opposite; that is to say, the cross section of the brace is diamond shaped , and not square, as is usual. I cannot find a method for these cuts in any of the books on carpentry which I have examined.

Very respectfully submitted,

D. BINK.

We have published rules for the above, but would be pleased to hear from any of our mechanical friends who will demonstrate the proposition. Make the drawing necessary, a rough one is sufficient, and we will make the engraving and publish the explanation.—ED. ARCHITECT.

EDITORS ARCHITECT: Don't want your paper another year; you don't got good philosophy in it, and don't tel how to get a hip raftur so the joints will be strate, nor how to Rekote old sand paper with new sand when the furst sand is rubd off. What diskount wil you allow for new names on your book?

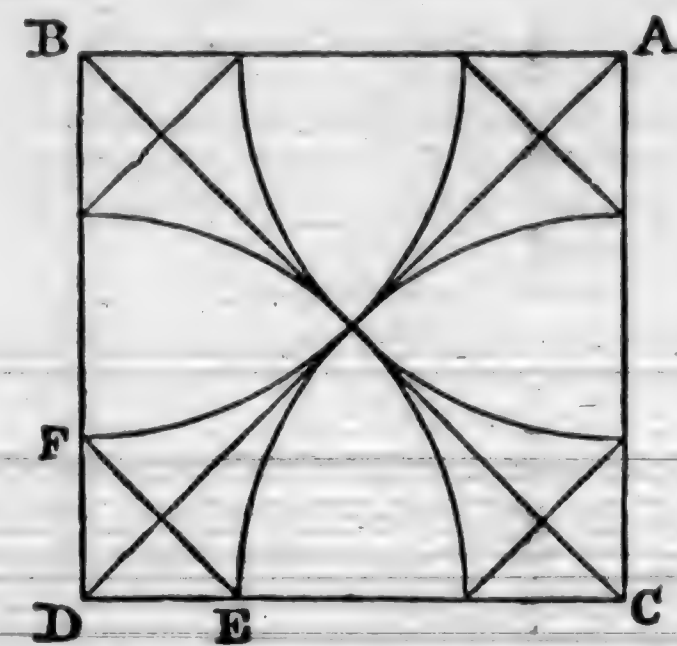
R. G. BEST,

A Karpintur.

Mr. Best is cordially thanked for above letter. Such letters do an editor's heart much good. First, he does not want our Journal, and then wishes to be appointed an agent to solicit subscriptions. Thanks, Mr. Best, we will begin the good work by adding your own name on our list for 1887, that is, upon receipt of \$2.00, our regular subscription price.

CONTINUED FAVOR.—The numerous letters and postals received from various parts of the United States, seeking advertising space in our columns, soliciting sample copies, etc., all attest that the reputation of this journal is co-extensive with the limits of the great continent upon which we dwell; and all this without a single effort on the part of present management during the past eighteen months to solicit patronage by any of the usual methods adopted, other than the regular monthly issues. We long to see this journal in the hands of younger enterprising and competent parties, who will take hold and utilize the many offered and offering opportunities to make it a greater success even than it has been.

BOUND NUMBERS OF THIS JOURNAL MAKE A SPLENDID BOOK OF REFERENCE.



EDITOR ARCHITECT: Having noticed in your valuable journal, in the past few issues, different ways of describing an octagon, I send you the following, which, although old, is neat and good. Draw diagonal, as A D, in any given square. Take one-half of it for a radius, and, with A B C D as centers, describe the segments of a circle. Join the points of intersection, as E F, and you have a perfect octagon.

This is the correct way to frame the key for a splice,



Fig. 1.

And this is the wrong way.



Fig. 2.

The driving in of the key, as shown in figure 2, has a tendency to split off the triangular section, as shown by the dotted lines, there being but little wood to resist the pressure.

AFRAID OF THEMSELVES.—Many who have consulted us in reference to the purchase of this journal's interests, have hung upon the fear that they do not possess the qualifications necessary to success. Every time this is repeated it causes a smile, remembering, as we do, that without a single hour's practical experience as editor or publisher, either as principal or employé, during the gloom resultant from the sandlotism of 1879 this journal was first started, with no other backing than personal energies and determinations, not even the advice of others who had embarked in a like publication, for there had been no journal of like character published upon the Pacific Coast prior to this. And if, with all these disadvantages, and the terrible financial conditions then existing with ourselves and generally, so much has been accomplished, and so presentable and successful a journal established and sustained, what may not be done in the future, with all the avenues of success opened up, the whole field of operation made plain, and every facility acceptable, requiring only the individual efforts and energies of the right men in the right place to produce results of the most satisfactory character? There is no more reason to doubt the permanent and profitable success of this journal, under efficient management, than there is to doubt any other reasonably well-assured thing.

Practical Lessons on the Science of Carpentry.

WORK that every mechanic should have. It is designed to make the science and art of carpentry clear and comparatively easy to all who require information on the subject. This book is also of use to all who have barns, bridges, and out-houses to build, and require information how to accomplish the work. Price of this work is now but \$4.00, having been reduced from \$5.00 to above amount. Sent, post-paid, anywhere in the United States or Canada.

Delinquent Subscribers, Notice.

Remember, according to decisions in the courts, before a subscriber can discontinue any publication "HE MUST PAY ALL ARREARAGES," or the publisher may continue to send the paper or journal until payment is made, and collect the whole amount WHETHER THE PAPER IS TAKEN FROM THE POST-OFFICE OR NOT.

"IT OUGHT TO BE A GOOD INVESTMENT."—Facts and figures prove that this journal is, and, we say unhesitatingly that, in competent and qualified hands, it can be made one of the successful, paying publication interests of the Pacific Coast.



PREMIUM DESIGN OF THE SAN JOAQUIN COUNTY COURT HOUSE, DAVID SALFIELD ARCHITECT.

How to Cool a Cellar.

WE reproduce the following from the *Scientific American*: A great mistake is sometimes made in ventilating cellars and milk-houses. The object of ventilation is to keep the cellars cool and dry, but this object often fails of being accomplished by a common mistake, and instead the cellar is made both warm and damp. A cool place should never be ventilated; unless the air admitted is cooler than the air within, or is at least as cool as that, or a very little warmer. The warmer the air the more moisture it holds in suspension. Necessarily, the cooler the air, the more this moisture is condensed and precipitated.

When a cool cellar is aired on a warm day the entering air being in motion appears cool, but as it fills the cellar the cooler air with which it becomes mixed chills it, the moisture is condensed, and dew is deposited on the cold walls, and may often be seen running down them in streams. Then the cellar is damp and soon becomes moldy. To avoid this the windows should only be opened at night, and late—the last thing before retiring. There is no need to fear that the night air is unhealthy—it is as pure as the air of mid-day, and is really drier. The cool air enters the apartment during the night, and circulates through it. The windows should be closed before sunrise in the morning, and kept closed and shaded through the day. If the air of the cellar is damp it may be thoroughly dried by placing in it a peck of fresh lime in an open box. A peck of lime will absorb about seven pounds, or more than three quarts of water, and in this way a cellar or milk-room may soon be dried, even in the hottest weather.

An Omen.

A SUPERSTITIOUS subscriber, says one of our exchanges, who found a spider in his paper, wants to know if it is considered a bad omen. Nothing of the kind. The spider was merely looking over the columns of the paper to see who was not advertising, so that it could spin its web across his shop door and be free from disturbance.

Rise in Lumber.

PRICES of lumber have been raised to about correspond with the schedule of 1879. Building in consequence has received a temporary set-back.

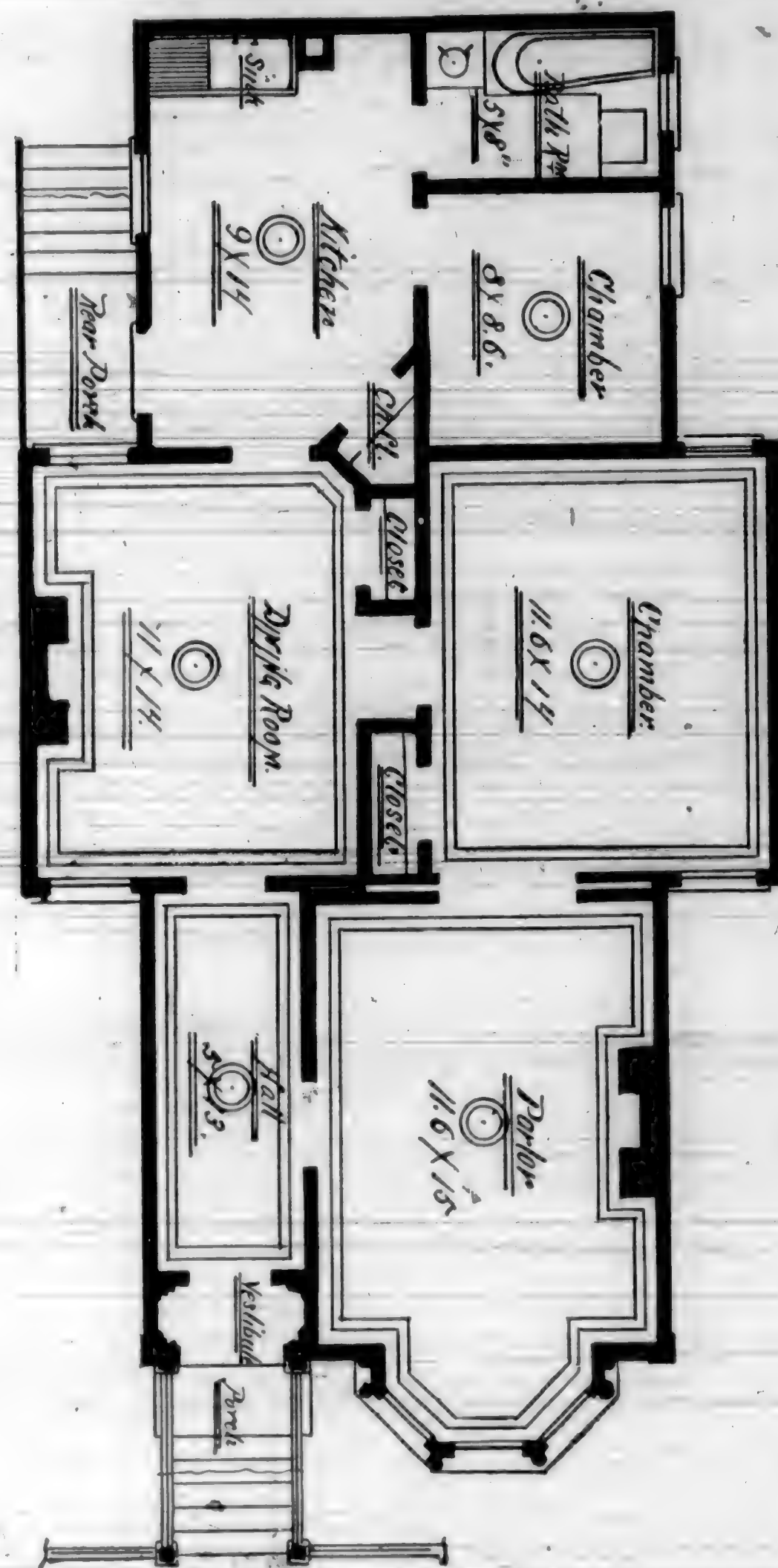
As He Begun It So Shall He Finish It.

WERE it possible to hang up mottoes in shops, as sacred and patriotic mottoes are exhibited in homes to stimulate remembrance and instruct children, the above is the advice and admonition I would impart to every mechanic on his entry into a shop, not only to inform him that he must exercise care and skill on the work which it will be his task to reform, but to teach him also perseverance and patience during the performance. All thinking mechanics are fully aware how much these two attributes are necessary to success and how difficult it is to acquire them, even though resolution aids in the effort to develop them.

Is it not a frequent sign to see one lose patience over some trivial joint or apparently unattainable miter and ultimately avoid or alter the plan laid down for its execution? It is only too often seen and is explained by stating that patience and the powers of reasoning are not brought into action, but remain dormant, and consequently useless at the very time they should be actively awake and helping. The most important aid is neglected. What a difference it would make, if, as skilled workmen, we bring the greatest gift we are endowed with (to wit, the intellect) to bear on what the tool, guided by the hand, is to shape and combine, if, when we did not comprehend, we compared line with line, placed each piece and joint in its place on the plan so clearly defined in our mind, considered even the smallest detail, and, above all, were courageous and tried. Better far to fail in our honest effort than shrink that which we are bound in conscience and the duty owed to our employer to endeavor. By these means, what one begun one would (as he ought to) complete satisfactorily to himself and those to whom he is responsible.

COMPLIMENTARY NOTICES.—We might fill several pages of this journal with the unsolicited, complimentary notices that have from time to time appeared in a hundred or more of the standard class journals of the United States, and the daily and weekly journals of the Pacific Coast, many of them ranking this unequalled except by about three of the leading Eastern journals, enjoying the great advantages of wealth, long existence, and extensive and perfect facilities. This, and all other facts in connection, serves to eliminate all reasonable doubt as to the future of this journal in right hands.

EVERY EFFORT WILL BE PUT FORTH TO MAKE THIS A SPLENDID JOURNAL.



PLAN FOR ONE-STORY BUILDING.

Bookless Homes.

WE form judgments of men from little things about their houses, of which the owner, perhaps, never thinks. Flowers about a rich man's house may signify only that he has a good gardener, or that he has refined neighbors, and does what he sees them do. But men are not accustomed to buy books unless they want them. If, on visiting the dwelling of a man of slender means, we find he contents himself with cheap carpets and very plain furniture, in order that he may buy books, he rises at once in our esteem. Books are not made for furniture, but there is nothing else that so beautifully furnishes a house. The plainest row of books that cloth or paper ever cover, is more significant of refinement than the most elaborately carved *etagere* or sideboard.

Give us a house furnished with books rather than costly furniture. Both, if you can, but books at any rate. To spend several days in a friend's house, and hunger for something to read, while you are treading on costly carpets, and sitting on luxurious chairs, and sleeping upon down, is as if one were bribing your body for the sake of cheating your mind.

Books are the windows through which the soul looks out. A house without books is like a room without windows. No man has a right to bring up his children without surrounding them with books, if he has the means to buy them. It is a wrong to his family. Children learn to read by being in the presence of books. The love of knowledge comes with reading and grows upon it. And the love of knowledge, in a young mind, is almost a warrant against the inferior excitement of passion and vices.

Let us pity those poor rich men who live barrenly in bookless houses. Let us congratulate the poor, that in our day books are so cheap that a man may every year add a hundred volumes to his library, for the low price of what his tobacco and his beer

would cost him. Among the earliest ambitions to be excited in clerks, workmen, journeymen, and, indeed, among all that are struggling up in life from nothing to something, is that of owning, and constantly adding to, a library of good books. A little library, growing larger every year, is an honorable part of a young man's history. It is a man's duty to buy books. A library is not a luxury, but one of the necessities of life.

THE color of old oak is pleasant for bed-chamber woodwork, and in north rooms terra cotta paper of an old pink shade is pleasing; and in south rooms olive green of a middling dark and golden shade. Tint ceiling, pale, soft olive green.

THERE is no absolute need of painting zinc work, for exposing it to the atmosphere has the effect of coating it with a thin film of oxide, which protects it from the future action of the air as effectually as paint.

Assignments of Wages.

SINCE the law requiring the assignments of wages to be recorded in the cities and towns of the State went into effect, the number of such assignments is believed to have been more than doubled in this city. In September, sixty-five deeds of assignment of wages were recorded at the city hall, and thus far this month the record is twenty-nine. There is firm conviction that the new law operates as an inducement to fraud. Women appear at the city hall almost every day, and, with tears in their eyes, complain that men who have been boarding with them have assigned their wages, and upon application to the employers for assistance in collecting the board bills, they have copies of the deeds of assignment thrust in their faces and are told that there is no redress; they must place the bills on the profit and loss account. One case is known of, where the employe assigned her wages to a perfect stranger, to whom she did not owe a penny, and for the purpose of defrauding a boarding mistress who had been more than ordinarily obliging. The assignee, upon learning the particulars of the case, immediately collected the entire wages due the woman and paid them to the boarding mistress. That there are parallel cases is quite probable, especially when wages are assigned to small liquor dealers, as they frequently have been.—*Providence Journal*.

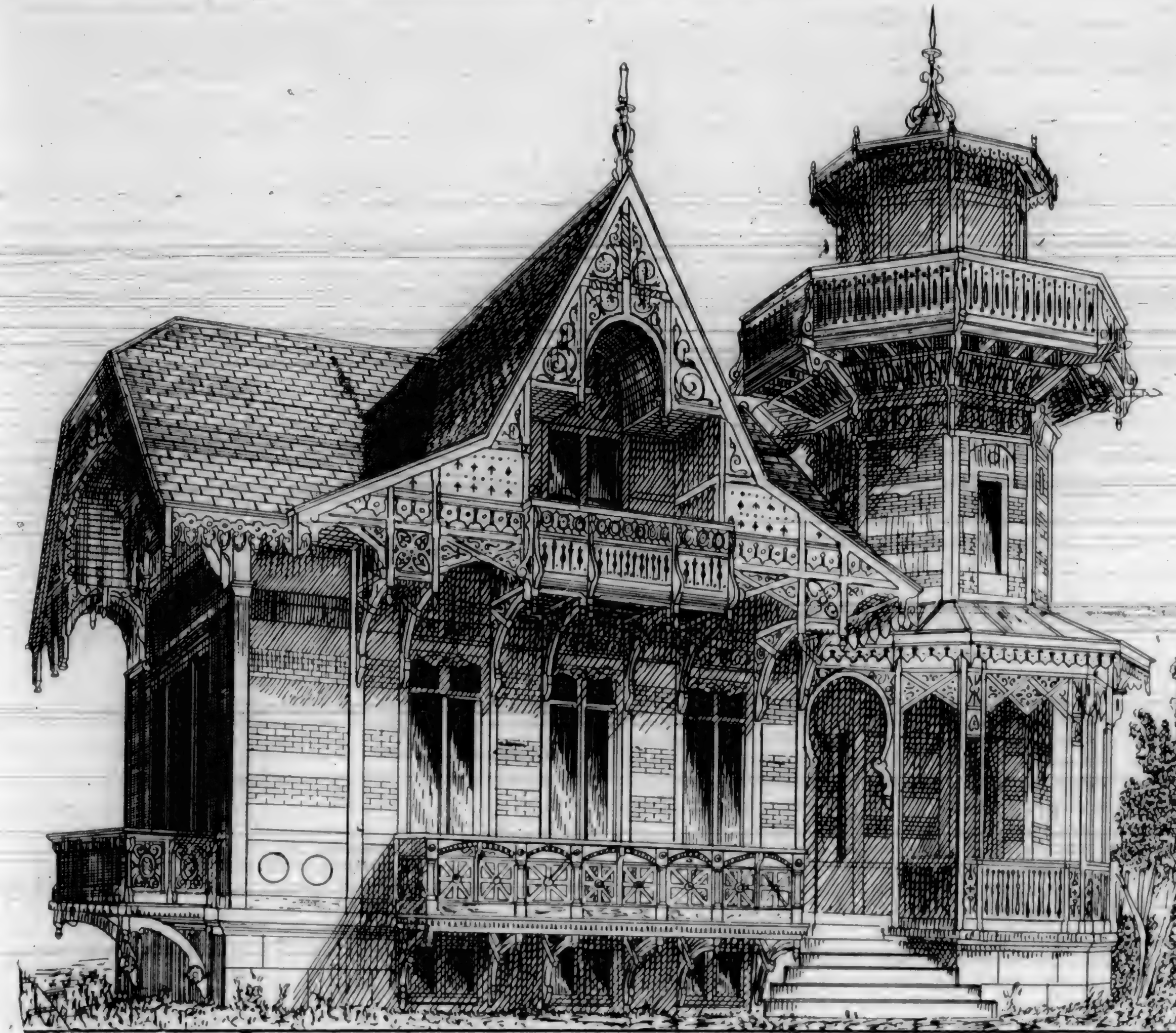
A Good Old Idea.

THAT the eight-hour movement is not a modern idea may be learned from the verse which appeared on a banner carried at a workmen's demonstration in England between 1815 and 1820:

Eight hours of work,
Eight hours of play,
Eight hours of sleep,
Eight shillings a day.

SOME time since, says the *Building News*, United States Architect Clark suspended a plummet line from the interior of the dome of the Capitol building at Washington, and it was found, by actual measurement, that the lead swung over a space of four and one-half inches, making a total dip from the perpendicular of eight and one-half inches. This movement involves the entire dome, and to some slight extent the entire structure, and is caused by the alternate contraction and expansion due to the action of the sun upon the material of which the building is composed. No doubt the principal part of the motion is due to the more ready expansion of the iron of which the dome is constructed; but similar experiments at Bunker Hill Monument show that a structure built entirely of stone and mortar is also similarly affected by the sun's action. It has been very properly said that by this motion the statue of the Goddess of Liberty, upon the summit of the dome, daily courtesies to the rising sun, and salutes him in a like manner as he sinks to rest, but without the formality of turning herself around.

SOME workmen who are dissatisfied with the social conditions and affairs generally in this country, think that no benefits accrue to them from protection. It is a mistake, and none would find it out quicker than the workmen themselves, should the import duty be taken off. For instance, does any one suppose, taking the iron trade as a sample, that there could be a difference of \$3.50 more per ton paid for puddling here than in England, unless there was a duty put on the foreign article into which much iron enters? In other words, the price per ton for puddling in England is \$1.50 (six shillings and threepence) as against \$5.00 per ton here and in the West, and the iron workers here are in a very great measure indebted to a protective tariff for it.



DESIGN FOR A COUNTRY SEAT.

The Builders' Agreement.

THE organization of labor and the attempt of labor organizations to prescribe the terms and conditions of employment, leads necessarily to the organization of employers, and counter agreements as to terms and conditions. The most specific and important agreement so far made by employers is that entered into by members of the Master Builders' Association of Boston, on October 4, which is obtaining the signatures of other master builders throughout New England, and will go into effect on April 1, 1887. Its five articles relate to the method of payment, the hours of labor, a protecting clause in contracts in relation to strikes, improper interferences with business by workmen, and arbitration. Most of the rules agreed upon are meritorious, showing a disposition to make reasonable concessions, while maintaining rights that some of the demands of the labor organizations would subvert; in one or two particulars ground has been taken that is of doubtful expediency. The method of payment, after April 1, is to be by the hour, except for piece-work and in contracts by the year. The experiment of working but nine hours a day is to be fairly tried for one year, unless the workmen engage in a strike. The protecting clause in contracts, which architects and real estate owners have signified their willingness to grant, will relieve the builders of obligation to complete work at a specified time if their operations are interrupted by strikes. This will deprive strikers of a great advantage that they have often had. The "improper interferences" by workmen, which the agreement condemns as "unfair and intolerable," are strikes and threats to strike because certain other workmen are employed, because certain workmen are discharged, because certain stock is used or not used, because more than a certain number of apprentices are taken on, and for other equally untenable reasons. The agreement binds the builders promptly to discharge workmen who engage in such interferences, and to

prosecute all conspiracies. The fifth article recognizes the right of employes to be heard individually or through a spokesman on any grievance, and promises arbitration as a remedy. All these are sound principles. The questionable part of the agreement, and the one that will probably make trouble, is the refusal to recognize the trade union or other labor organization, in any way. The labor organization has the same justification as the employers' organization, and it has come to stay. It is far wiser, to adopt the discriminating policy of recognizing such of its acts and demands as are just, and refusing to yield those that are wrong or mistaken, than to attempt to ignore it.—*Work and Wages*.

Economy in Fuel.

ONE of the most difficult things to teach a girl is economy in fuel. Nothing seems to satisfy but a continual piling on of coal. As soon as a little gas has been burned off, a vigorous shaking and raking out of ashes follows; then the stove filled anew, touching and lifting the covers, which soon become red hot, and the process is repeated from morning till night. Teach her, in order to obtain and secure a good draft, the coal ought never to be above the lining; and in this connection I am reminded of another practice which seems to come to kitchen girls by intuition or handed down by tradition; that is, to put sad irons, or flat-irons, as generally called, on the stove over the hottest fire hours before use, consequently they are ruined, for if once heated to redness, will ever after retain heat but a short time, and lose their smoothness, too. I would rather lend almost anything else to a neighbor than a flat-iron. In ironing, have two holders to use alternately, thereby lessening the heat of the hand, and insuring a greater degree of comfort.

THE workman that makes the most noise will be often found doing the least work, and doing it badly.

EVERY ARCHITECT and CONTRACTOR ON the PACIFIC SLOPE SHOULD CONTRIBUTE

AN ARTICLE OR FURNISH US A SKETCH FOR PUBLICATION IN OUR JANUARY NUMBER.

Art and Architecture.

(Special for this Journal. By F. HILLERT, Architect and Mechanical Engineer.)

XXXVII. DECLINE.

BUT has the time of an art period passed over and away from a people? Then to them of it remained a certain possession. Not as if the genius of large masters could be inherited to posterity, but its successors gain and retain some of the power and force over moulding and forming, and since the same by the former was raised to a high grade of perfection, they found themselves in possession of advanced technical means, which they could with ease use and handle. The high spirit, the daring flight of fantasy, and the truth of working of those whose technical means once served for the noblest formation, are passed from hence, and the successors are unable to replace its defects.

Instead of the clapping of the wings of a genius is now the miserable fluttering of a checkered creature, which nibbles to-day here, and to-morrow there. In such a way decline of art begins to set in; it is the third grade of each developing epoch, and fulfills the last possibility of the relation of the spirit and form to each other, namely, that the same brilliancy and splendor cover a poor idea, that the form, so to say, overreaches the spirit. The pretending aspect of such works of art by the emptiness and want of spirit repulses every finer sentiment, each trained and cultivated eye unresistingly, and fills with that uncomfortable which everywhere spread shallowness creates. An affected and beautiful shaped woman dazzles many, but the one who can read in her spiritless eye the hollowness of her mind, will turn with displeasure from her. A Don Quixote, with a martial beard, clad in a brightly polished armor, will always find people who take him to be a true hero and knight, when, in reality, he is only a silly coxcomb. In art such works corrupt the less trained and unexperienced the easiest; then the form is pleasant, and through her to comprehend her meager spirit, is, in fact, no small difficulty. Anyway we always will see human figures and forms, always architecture and ornaments, but they are beings without soul, life, and individuality, embellishments of exaggerated form and false application.

That the decline must progressively increase, is only the sequence of the general laws of nature; and that a conscious, energetic will can work to oppose it, is a fact hardly wanting the proof. But where the same is not powerful enough, the evil increases and spreads, as an avalanche, with increasing force, so that at last, instead of a cure, a total extermination, either by force or its own weakness, must set in; that then the soil, cleared from the weeds and freshly prepared, can take up a new and healthy seed; and the same, in a pure, sunny atmosphere, can germinate and grow to a pleasant blooming. But the will of resistance is itself powerful; it will not only endeavor to find and perceive the relation, and oppose the hollowness by intrinsic performances, but it will also give the incitation to an after-growth and under conditions, to a new direction, if, namely, it can introduce a new element, a principle different from those existing, and with the former can unite in a new whole.

The departure from the harmonious, flourishing condition of the one where the brought over and imitated form preponderates, we name, in accordance with their spirit and sense, mannerism, and understand by it the characteristic of an art practice which works more by hand trained by use, executing hand work (trades like), as that they went back to original own work of mind and brain.

This handiness in working is learned and gained by the artist from exterior practice, and not obtained from his inner own force, and therefore he is only a casual possessor of the same, whose intrinsic real value he does not realize, so that a misuse of the same he cannot evade and avoid. His mode of treatment sinks by necessity to over-refining, to the exterior, to the mechanical, and therefore becomes just only a "manner," whereby his work becomes mannerism.

XXXVIII. EXAMPLES.

No epoch in art history is without those three grades, not even in the instance where the flourishing period is only conditional, and in relation compared to the state of culture of the time being, as with the one of all barbaric people. Although with them having only taken in a low point of the symbolic foreground, nearly all were treated typically and with servility, nevertheless are those three periods of development, even if difficult to be recognized, and we will not take the trouble in vain to seek and find them in the Egyptian monuments. In the Greek art this division is publicly recognized; in the middle ages it comes clearly to view, and in modern times it is generally known. The classic age has in all times of large culture and historical developments, the longest and most lasting flowering

period. The Christian middle ages were extraordinarily energetic and fruitful in the symbolic, but the late time surpassed all former epochs by a mannerism longer than 200 years; till our time, with the beginning of a new section of the history of the world, art also began a new development.

The past is not wanting examples of the three periods of development in architecture, sculpture, painting, etc.

XXXIX. RETROSPECT.

When we have separately recognized the work of the first grade alongside of those of the following period, it was done by forcible reasons explained; but if, on the contrary, the mannerism was condemned, we can hereby neither deny the necessity of its appearance, or that the same brings with it certain advantages, but which can be easily dispensed with; and between them are those of the most importance, that works of this kind, by reason of their mastery in form and their narrow and small spiritual value, are readily comprehended and are able to inspire large masses of half civilized for a certain participation for art. Certainly mannerism makes shallow, as the poetical originality to sober intentionality, as also grace to indolence and immodesty, chaste sensitivity to immoral vileness, and in this respect is even the small advantage offered, more as doubtful. In theory, as in the practical consequence, it remains in the same way rejectable, and is just as little to be sanctioned as any other decline in other spheres of life, if he, as the same is to be comprehended, is the necessary consequence of pre-existing developments. We see why at certain times science, statesmanship, religion, and morality must degenerate, and only art should stand outside of the general law; but as the decline of the former can be opposed, so in art can the same be checked, by clear comprehension, prudence, and a fixed will to do so.

Art demands a country flourishing in prosperity and in liberty. In a country with no liberty, in poverty, art cannot be. The struggle of the masses of the people must be above the wants and necessities; the single individual must carry his head erect in the full feeling of his humanity, if out of them a few preferred ones shall step out, to reach to their people their purest flowers, —the works of art. Social, religious, and State relations are therefore in art of a far-reaching influence. After the Persian wars flourished with Greek liberty, art; in Spain perished a growing art through the tyranny of priests and kings; in Germany, in consequence of the Reformation, the flourishing art was broken off (stopped); in the Netherlands the wars and victories against Spain created a new, high life of art; and, lastly, the revolution of 1789 and the wars of 1813 have in France and Germany developed a new art. Italy and other countries begin to stir anew. It is a constant and intense reciprocal action in a good and bad sense between the large events of history and the end and culminating points of art developments; but we will not investigate that kind of relation, but will simply state the unquestionable facts as such.

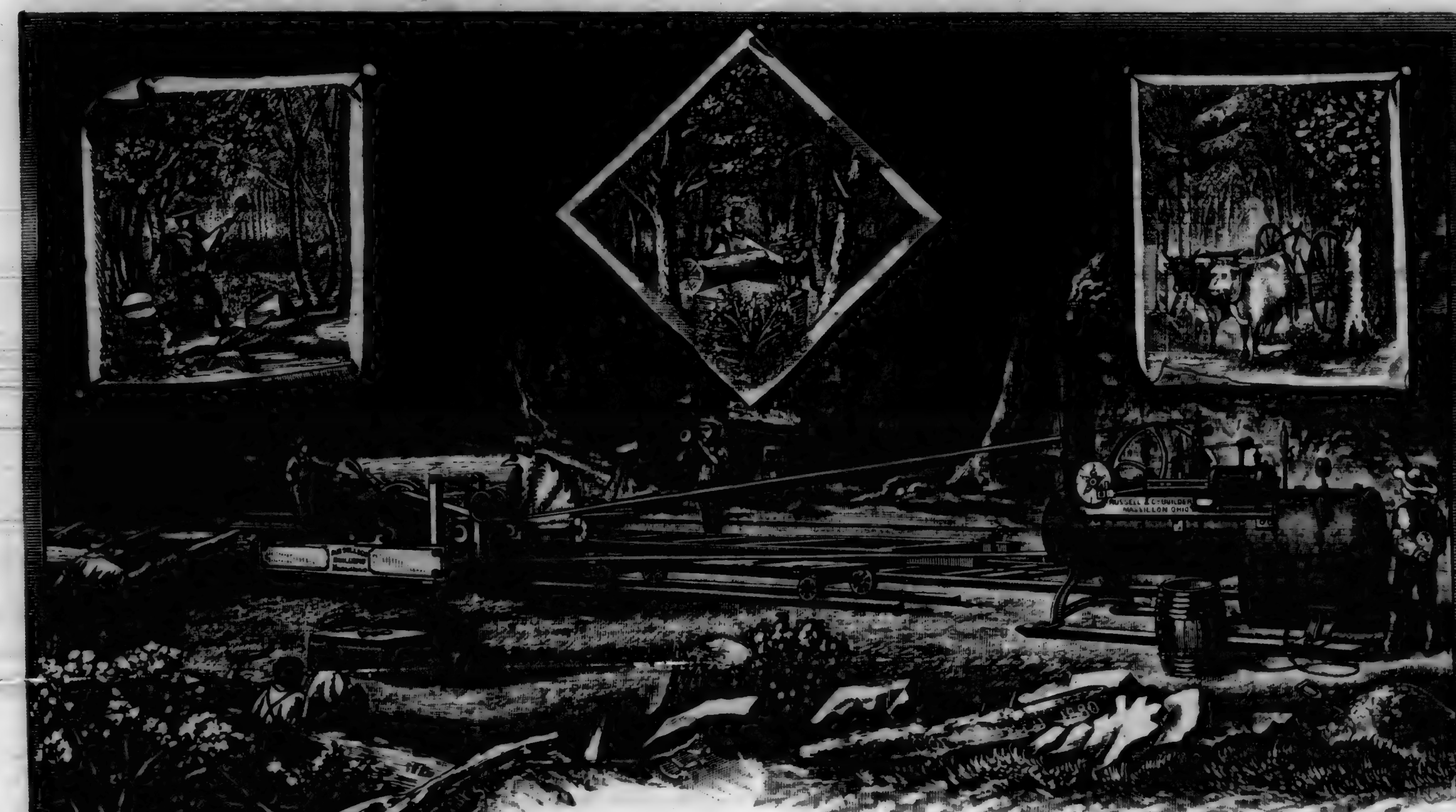
People of culture, enjoying at least some liberty, and whose means of learning were above the necessities to sustain life, such will certainly wish to have an own art practice, and try to come to its assistance and do all that is possible to retain itself in the possession of the flowering art. Of course the general condition of the people is the foundation of art, but can by this the more or less favorable bases of development be advanced or retarded, and it is therefore not without any importance to become enlightened and acquainted about the means for the practice of such influence. It may be admitted that with all efforts for the promotion of art, the intention to promote unquestionably lies before us; but, for all that, this endeavor not seldom turns out to the contrary, and is detrimental instead of being useful. The true and correct perception of the spirit of the art and of the condition of the people is the only sure and safe means to arrive lastly to the insight and comprehension of the good.

The fostering care of the art is necessarily divided into two domains: the one, where art is educated; the other, where art is practiced. The former depends on the means for education, the latter on the furtherance and promotion.

SUBSCRIBE NOW FOR 1887.

INVISIBLE NAILS.—For attaching mouldings and other light lumber a new kind of nail has been contrived, which leaves no nail holes. It is made with a point at each end and with an outwardly projecting head or shoulder midway between the points. The nail is first driven into the wood by means of a punch which straddles the protruding point and bears on the head. When enough have been driven in, the moulding is placed over the nails and driven down.

NEW ENERGY WILL BE DISPLAYED IN OUR JANUARY NUMBER. SUBSCRIBE NOW.



IN THE WOODS NEAR RUSSIAN RIVER, CALIFORNIA.

The above beautiful engraving aptly illustrates a scene in the woods so often met with by those roaming amongst our noble forests. A portable engine is shown, having power enough to run a saw through logs four feet or more in diameter, and yet which is easily movable from place to place, as the timber is cleared from any particular section. Our artist has done credit to himself in portraying the view in such a realistic manner.

THE AUGER AND BORE.—The auger was invented in 1680. That may be so, but the bore dates back to the remotest antiquity. And there has never been any improvement made on him, either.

The True Home.

THE home should be as beautiful and pleasant as it is possible to make it. Home is the place for rest and pure enjoyment. It is the refuge from care, trouble, and all the tumults and turmoils of life. It is the one spot where the heart's purest affections gather themselves, and each man chooses resting-place. It is the woman's first duty to make this dwelling-place, over which she is the mother-queen, as cheery, cozy, and lovely as she can. The first requisite for this desired consummation is that she herself be happy, hopeful, pleasant, and contentedly agreeable. To become this she must live hygienically; she must eat proper food, wear comfortable clothes, and not be oppressed by too many cares and burdens. If she is her own housekeeper, she should study to do her work on the most simple and easy plan, cook but few dishes at a time, and have each as perfect in itself as possible.

Woman has no more important duty than that of making home pleasant. Neatness and cleanliness are indispensable to a cheery, cozy-looking room. A plain room, plainly furnished and scrupulously clean, is far more bright and beautiful than a more pretentious one richly adorned with costly furniture that is soiled, mutilated, and always in disorder. A few thrifty, nicely kept flowering plants and trailing vines are one of the most enlivening adjuncts to a living room, and a sheltered sunny window is far better for them, in moderately cool weather, than the overheated and often dusty inside position, and they are just as easily seen also.

Should there be unsightly objects in the room or recesses that contain necessary adjuncts to comfort and convenience, a bright chintz curtain will screen them from view, and will of itself make a pleasant resting-place for the eye. Should a bit of plastering fall from the wall, a piece of white muslin neatly pasted over the place will hide the defect and save all further scaling off and droppings of litter. In a thousand ways one can veil the ugly and add to the beautiful, until the humblest little home may become a very bower of pleasantness and cheerfulness.

The love of the beautiful needs the fostering care of every one who would make life pleasant and happy. Whoever creates a lovely picture, whether on canvas, in a poem, or on the broad

bosom of mother earth, or in a cozy, cheerful home, adds to the world's priceless treasure, and does something toward elevating, refining, and happyfying the race.

Stick to Your Business.

THERE is nothing which should be more impressed upon the minds of young men than the importance of steadily pursuing some one business. The frequent changing from one employment to another is one of the most common errors committed, and to it can be traced more than half the failures of men in business, and much of the discontent and disappointment which render life uncomfortable. It is a common thing for a man to be disappointed with his business, and to desire to change it for some other, which, it seems to him, will prove a more lucrative employment; but, in nine cases out of ten, it is a mistake. Look around you, and you will find among your acquaintances abundant verification of our assertion. There is an honest farmer who has toiled a few years, got his farm paid for, but does not grow rich very rapidly—as much from lack of contentment mingled with industry as anything, though he is not aware of it. He hears the wonderful stories of California, and how fortunes may be had for the trouble of picking them up; mortgages his farm to raise money; goes away to the land of gold, and, after many months of hard toil, comes home again to commence at the bottom of the hill, for a more weary and less successful climbing up again. Mark the men in every community who are notorious for their ability and equally notorious for never getting ahead, and you will find them men who never stick to one business long, but are always forsaking their occupation just when it is beginning to be profitable.

We are short of the October issue of this year. Who has one to spare?

NORWAY pine, which until lately has been neglected by Michigan lumber in favor of the softer white pine, is coming into favor with railroad car builders on account of its greater strength.

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NEW ENGRAVINGS—ORIGINAL ARTICLES—OUR JANUARY NUMBER WILL EXCEL.

