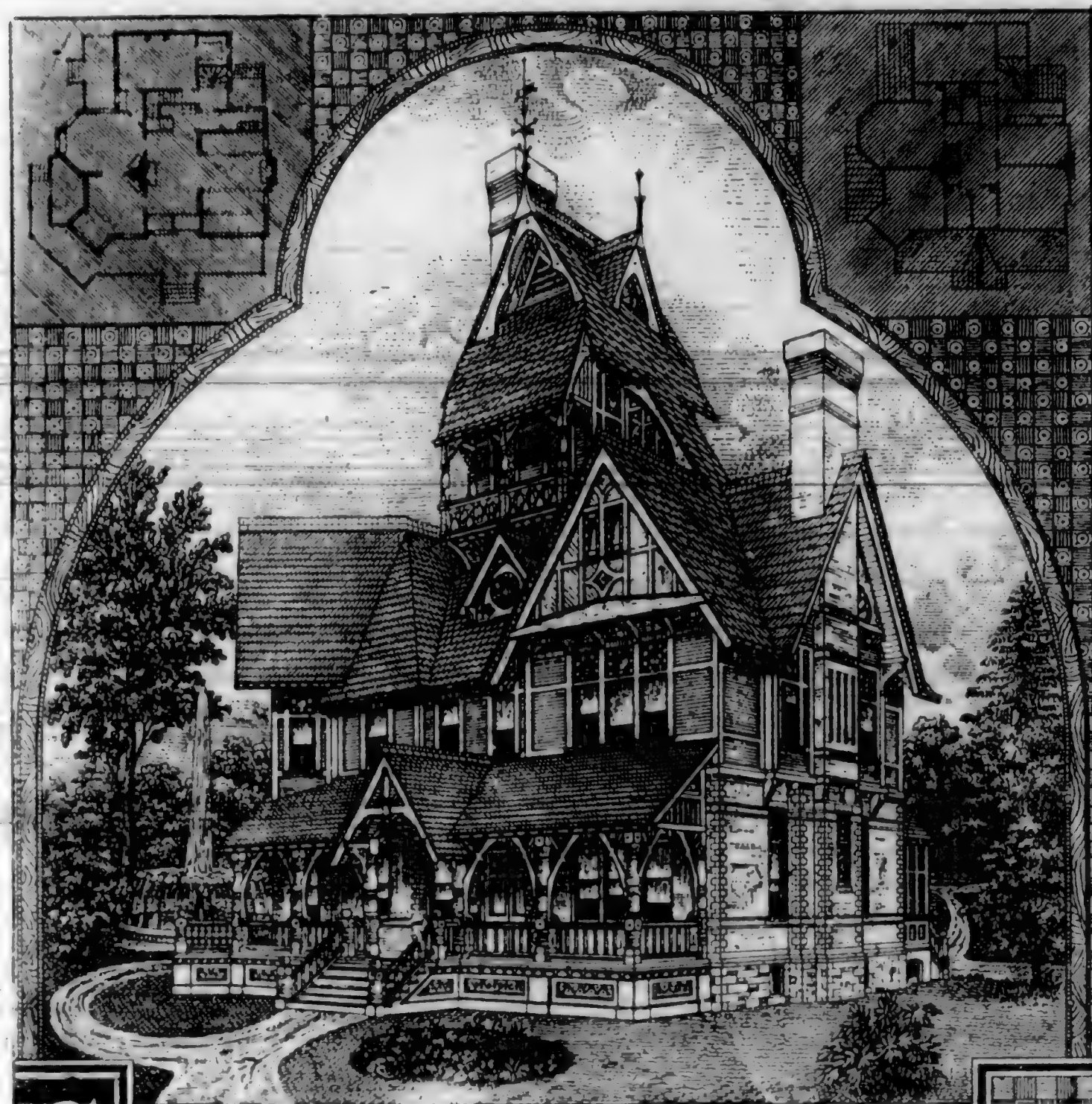
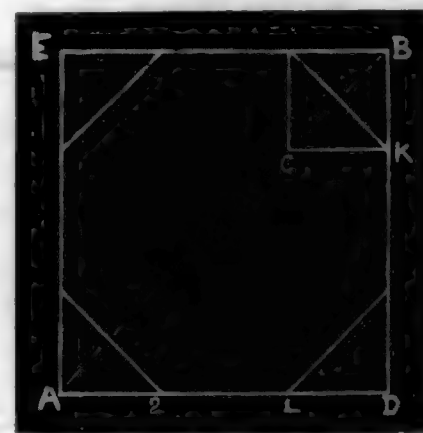




A COUNTRY VILLA.

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.*

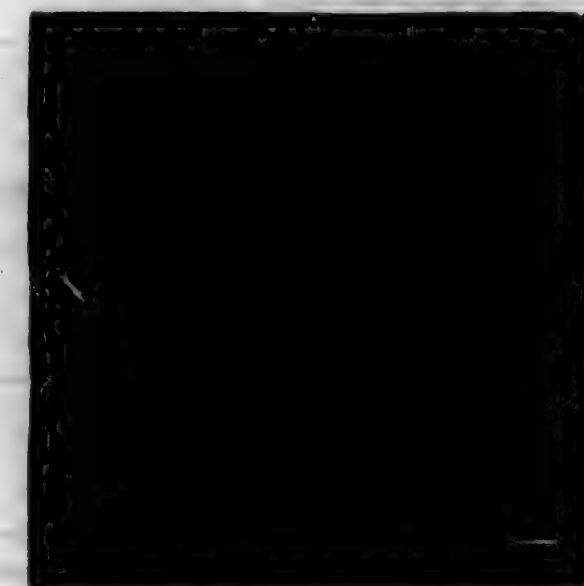
How to Lay off an Octagon.



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.

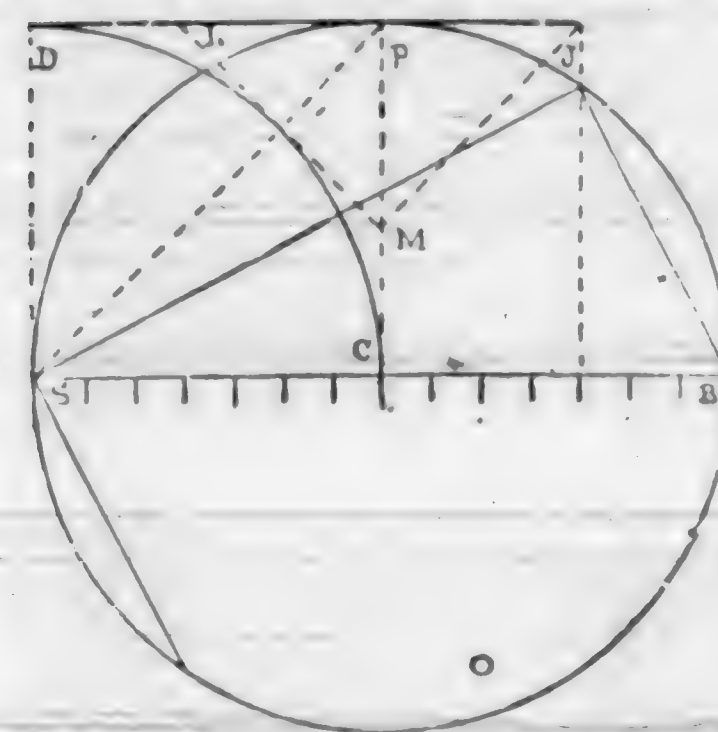
A Country Cottage.

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.



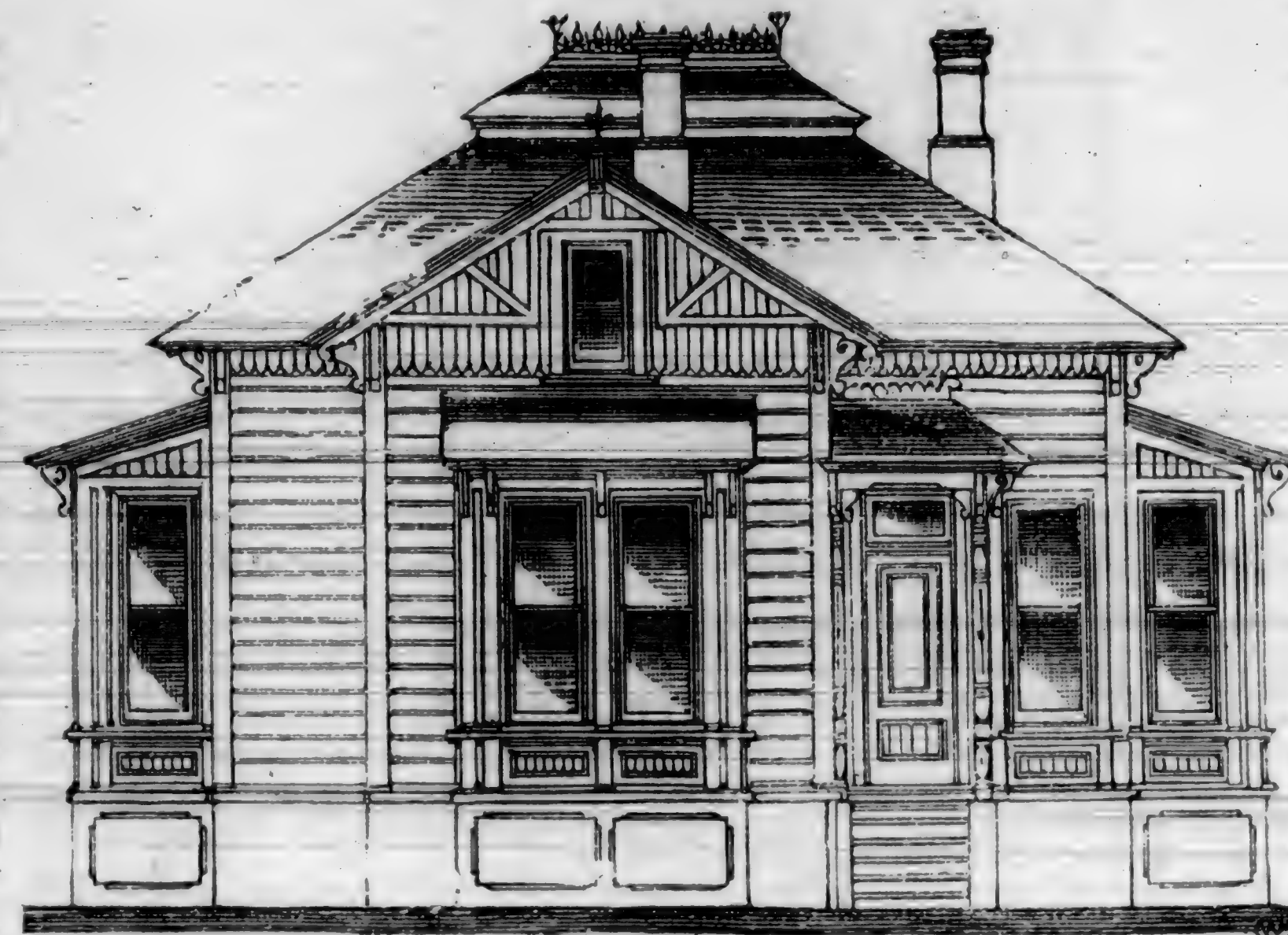
TO square the circle is to find the circumference when the radius is given, and for effecting this it is necessary to know the ratio of the diameter to the circumference.

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."

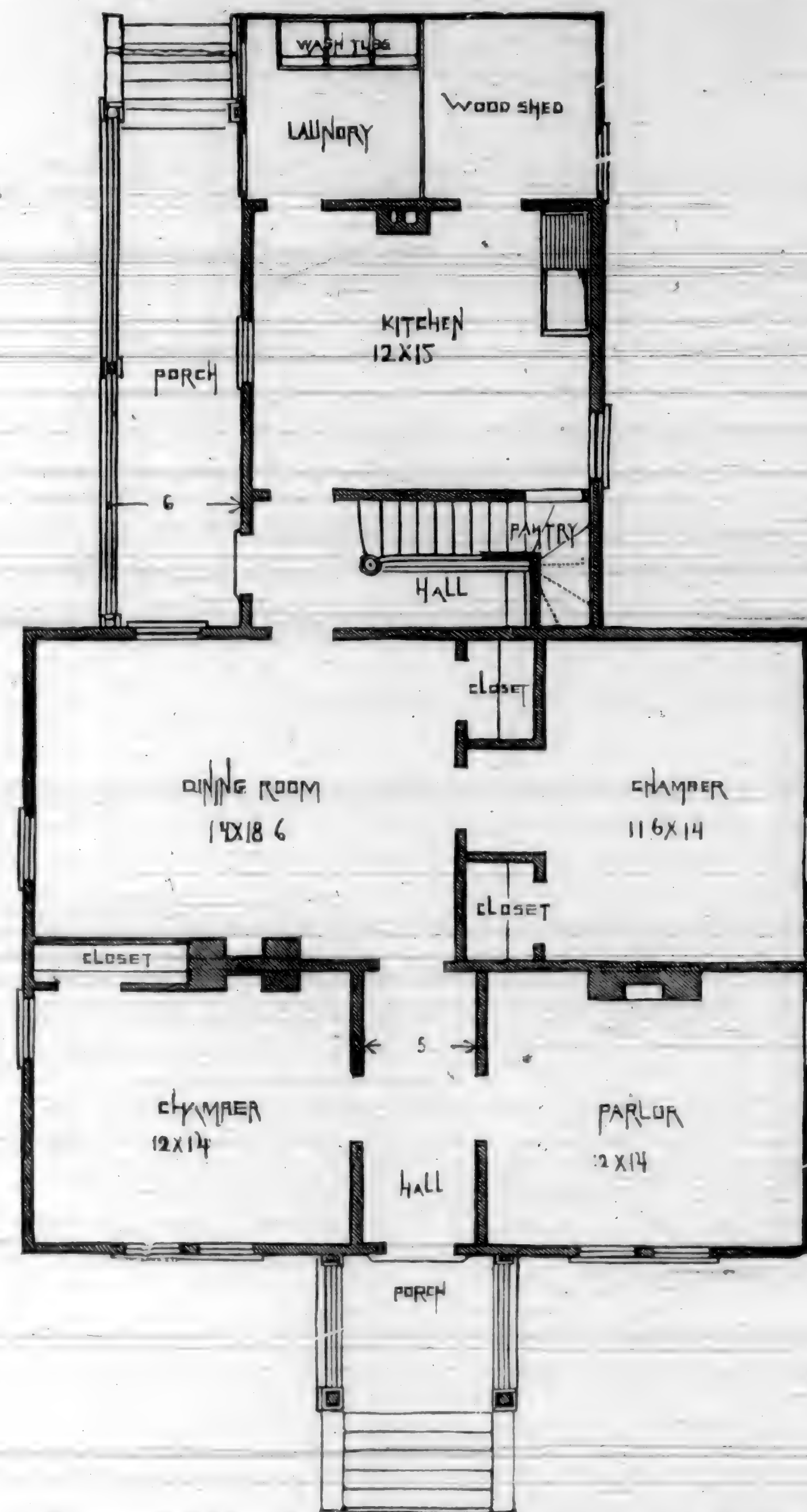
BUSINESS MANAGER OF ARCHITECT: What is the rule for finding the length of braces between two posts, when they incline one foot in six feet rise?



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."

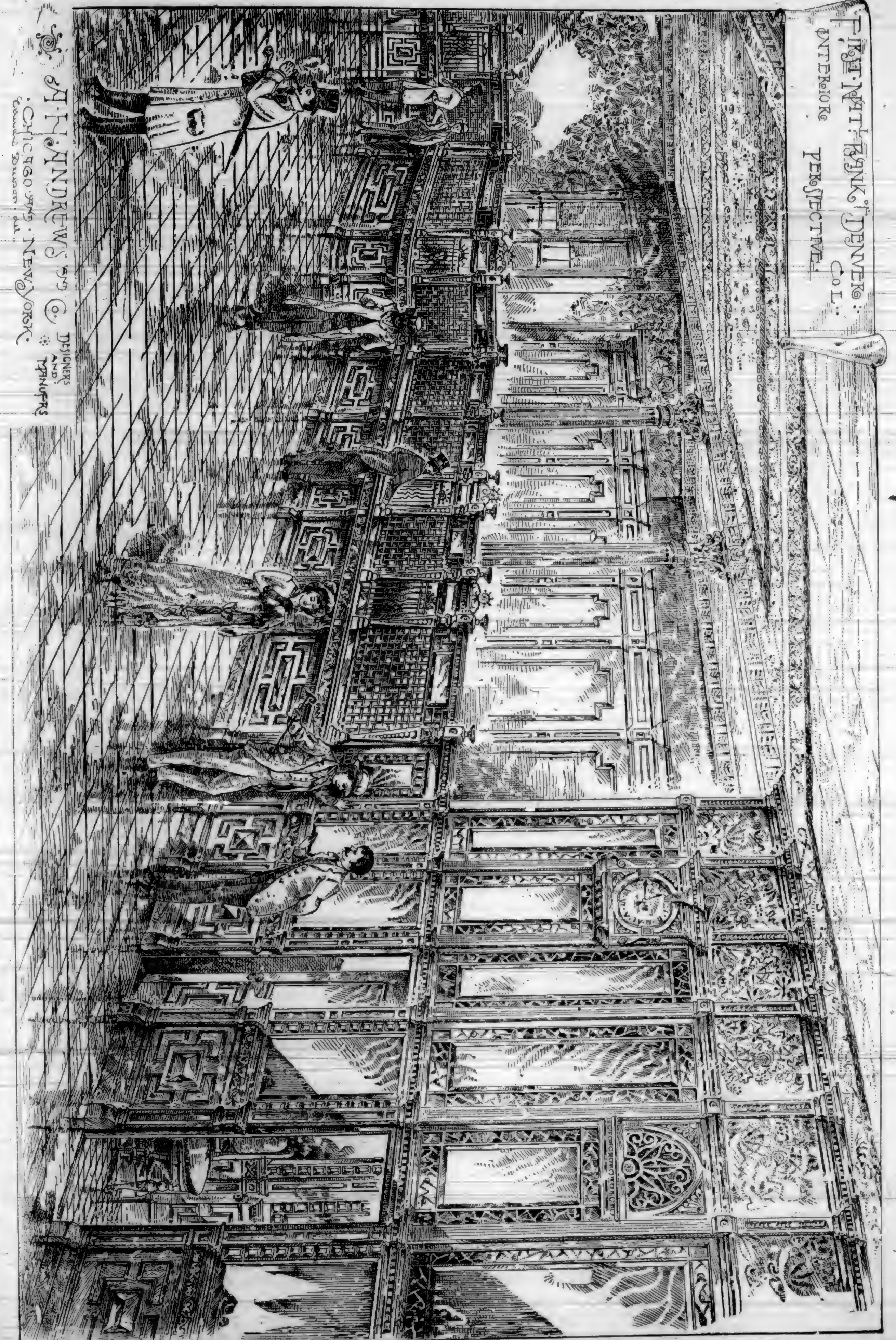
"The same is true of railroad ties, and all such timber as may be exposed to the altering influences of wet and heat. Could the entire timber be changed from its perishable condition to one solid piece of charcoal, the durability would be promoted to a surprising length of time; but the strength of the 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 53 1/2 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.

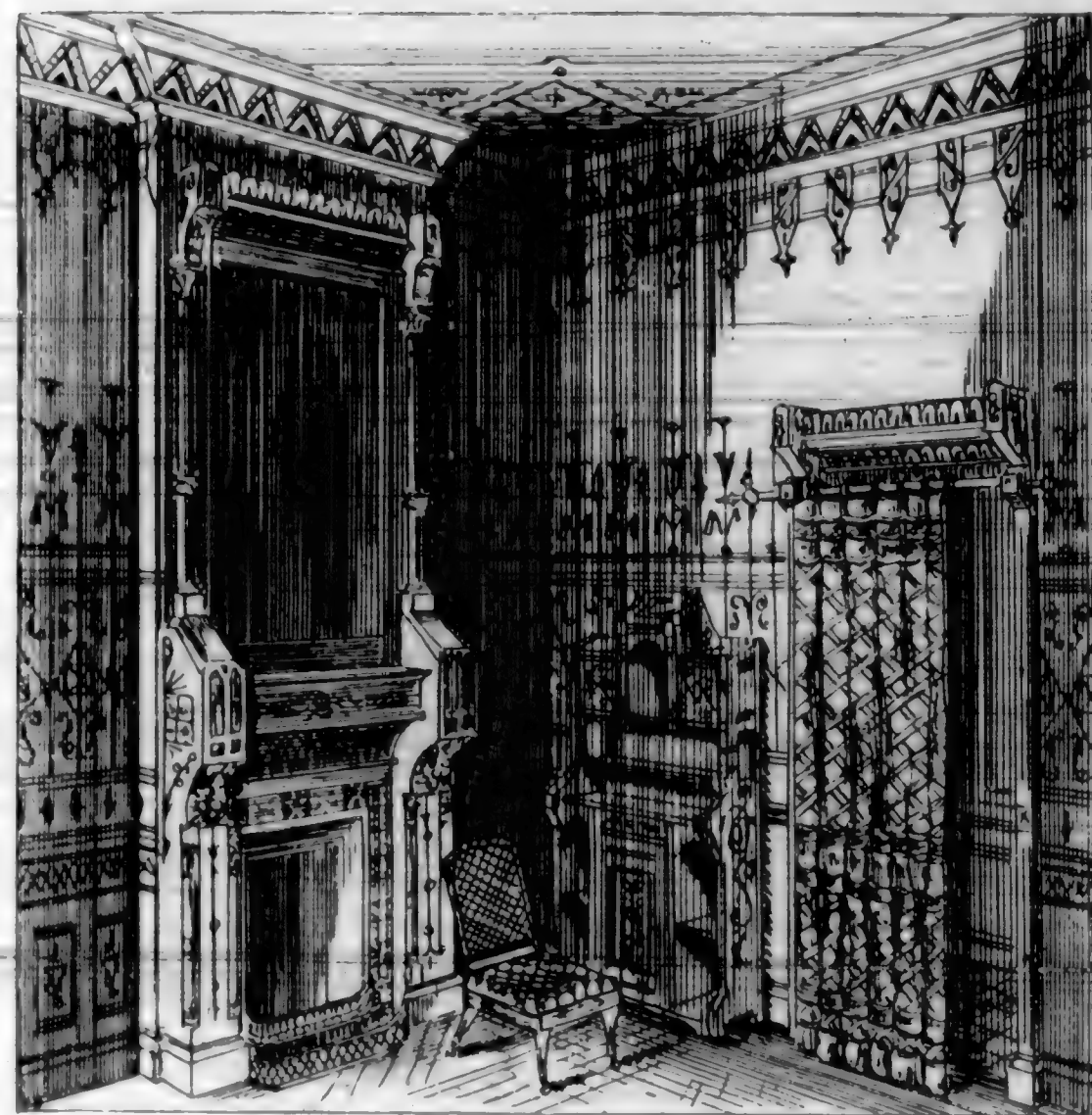
ALL the cannon foundries of Europe are overrun with orders and working day and night. While they make guns abroad, we make plows and work to raise the food that must support the luxury of war.

Notice Our Holiday Offer on
Page 161.

PETER BANK DENVER
INTERIOR PERSPECTIVE
C.O.L.

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

M. Didot's explanation of the failure of the wall already built to interrupt the transmission of noise and jar from the stable to the tenements, and his advice as to the proper remedy, are interesting and suggestive, while his communication is such a model of clearness and conciseness that we regret our inability to print it entire. Briefly resuming, he ascribes the failure of this intercepting wall chiefly to the fact that it stands upon the same footing as the original stable wall, and that through this footing all jar and vibration produced in the stable wall are transmitted practically undiminished to the new wall and thence to M. Ezebeck's premises. The new wall is thus practically one with the old one as to the noise and shock complained of. He also finds the distance of this new wall from the old one, namely, ten centimeters, altogether too slight. M. Didot recommends that a new wall be constructed at a distance of two to five meters from the stable wall; that the new wall have a footing entirely separate from the stable footings; that it

be sunk to a greater depth, and that the space between the walls be left open or filled with some non-conducting substance. He also suggests that the inclined ascend to the second floor might be removed to some part of the stable more remote from the tenements, and also that the horses be stalled in some other portion. Incidentally he mentions the precautions imposed on other noisy occupations, as that of gold-beating, printing, and numerous manufactures. Sometimes their machinery rests upon special foundations, built up from the ground wholly independent of the building itself, or upon columns rising from special foundations, or on rubber cushions. We may add that sand boxes are sometimes used for a like purpose. M. Didot's comparison between the stable and a gold-beater's shop is vivid and impressive. He says the former establishments, at the most, seldom have more than twenty hammers in operation, while in the stable, even if there are but eighty horses present at a time, the noise from their iron-shod hoofs on the reverberating floor would be equivalent to that of 320 gold-beaters' mallets, or sixteen times the noise from one gold-beating shop.

The Strongest Brick Walling.

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

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

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

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

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

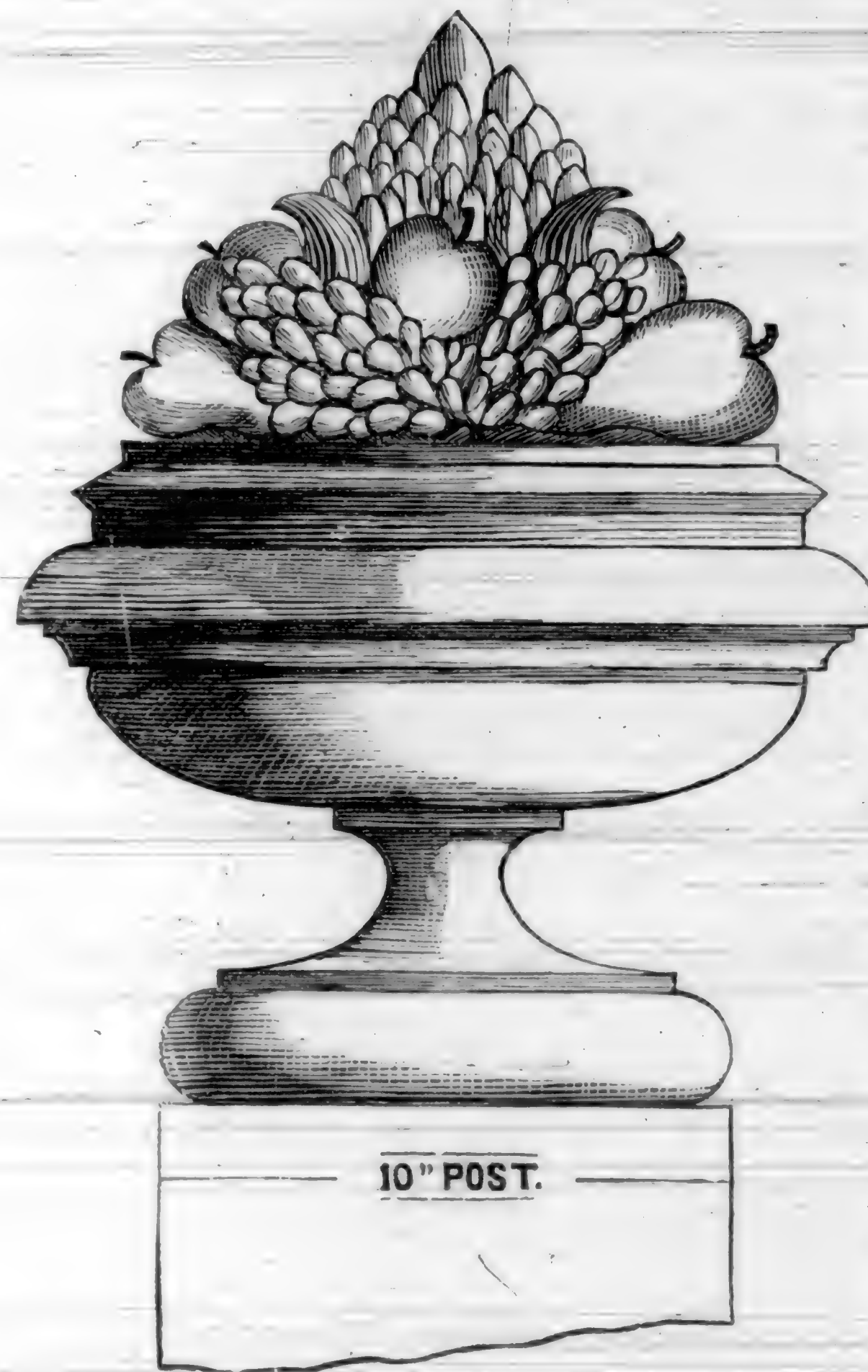
TAKE any saw running constantly in one direction, and after having made 10,000,000 revolutions, examine its particles at a newly broken surface with a microscope, and it will be found that every molecule of iron composing that saw has been displaced.

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

The Carpet Beetle.

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

"The carpet beetle belongs to the family *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 larvae 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 larvae 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 larvae, 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, 1/2 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.

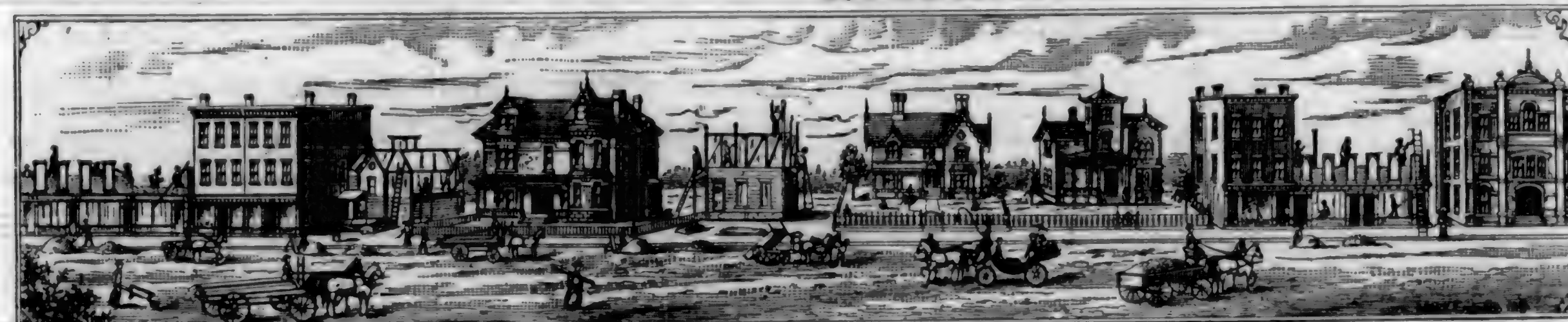
MEMBERS.

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. Leddy. 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. \$1,200.	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 & Gutherbertson. 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. McKirman; 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. McKirman; 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.

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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.

(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 rate 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.

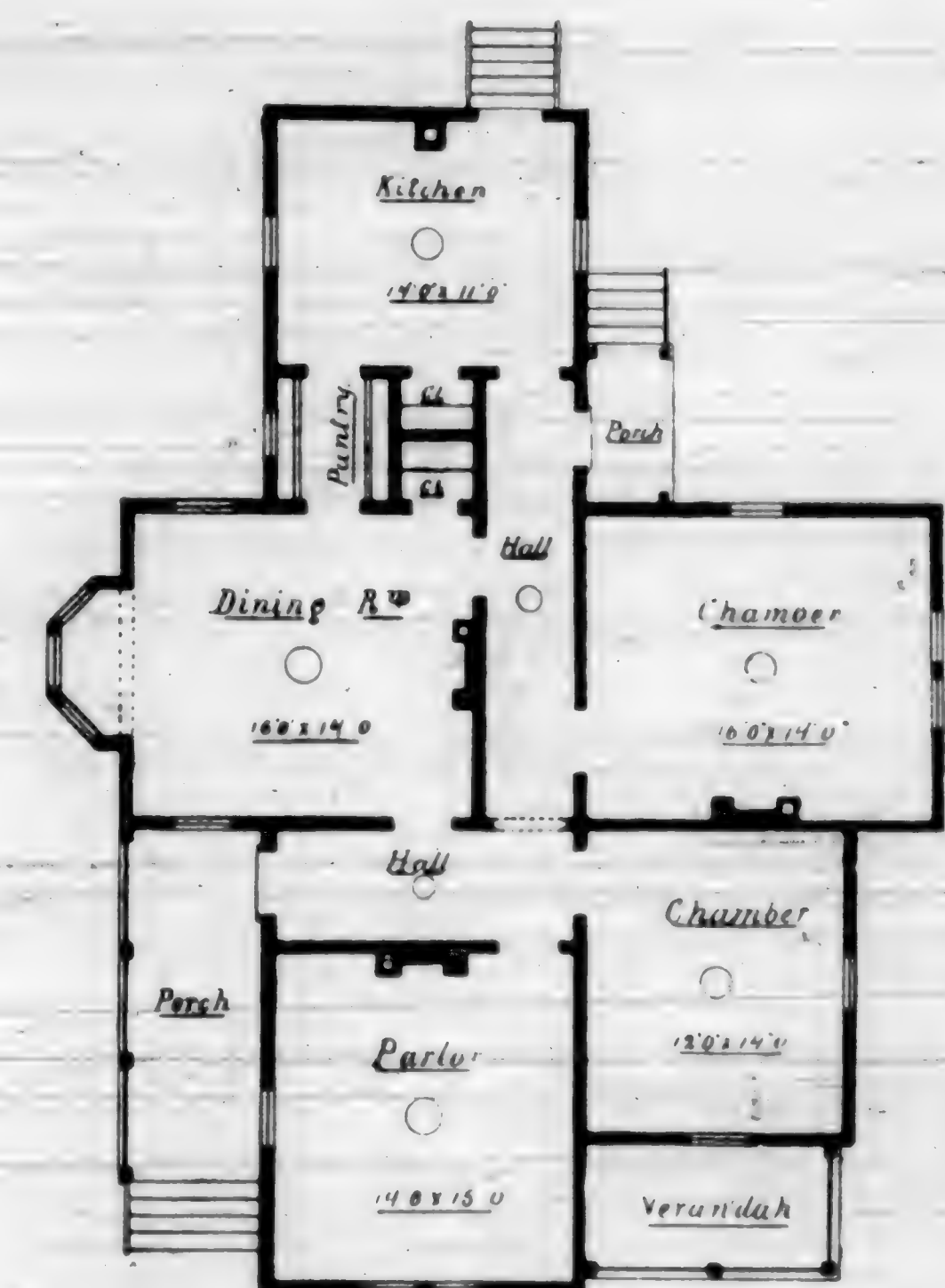
TREES UNFELLED ARE REAL ESTATE.—There was an amusing case tried here the other day. Some smart fellows from up North were perusing around for timber and happened upon an old, unsophisticated farmer and bought from him forty walnut trees for \$5.00 apiece as they stood. They paid the money and took a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

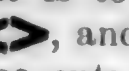
EDITOR CALIFORNIA ARCHITECT AND BUILDING NEWS: Will you please give a receipt in the Everybody's Column of your journal to dissolve silver, for instance a piece of coin, so as to make a solution of silver, and oblige a

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.

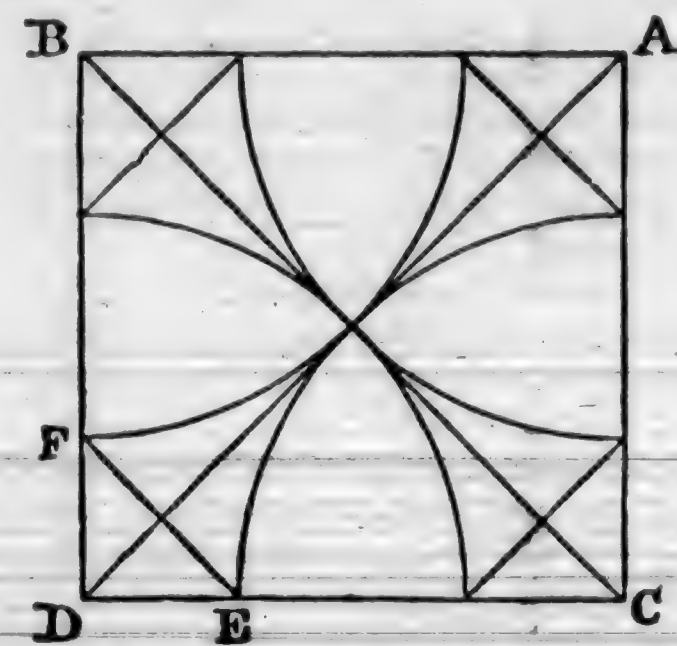
EDITORS ARCHITECT: Don't want your paper another year; you don't got good philosophy in it, and don't tel how to get a hip raftur so the joints will be strate, nor how to Rekote old sand paper with new sand when the furst sand is rubd off. What diskount wil you allow for new names on your book?

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.

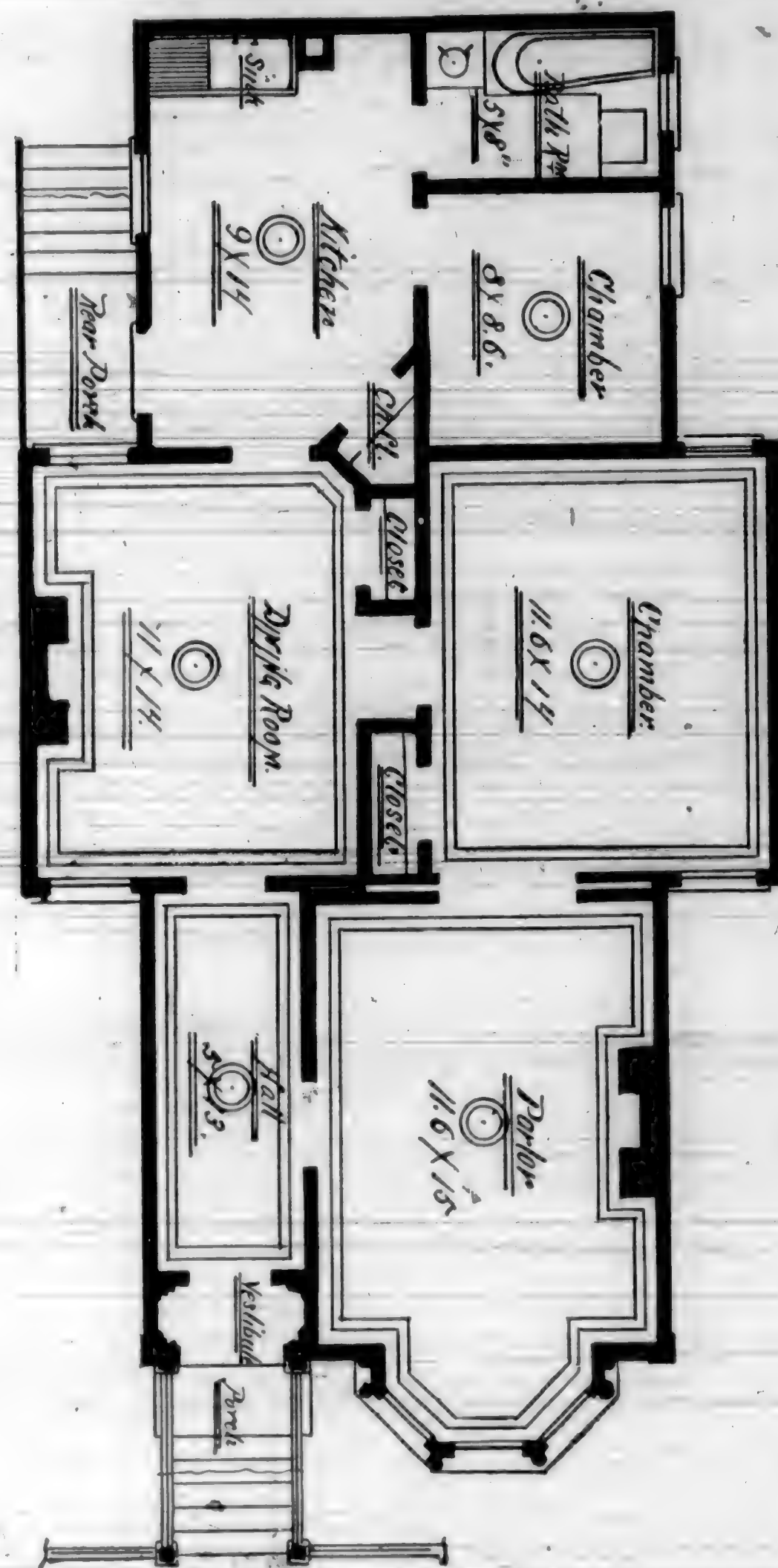
As He Begun It So Shall He Finish It.

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*.

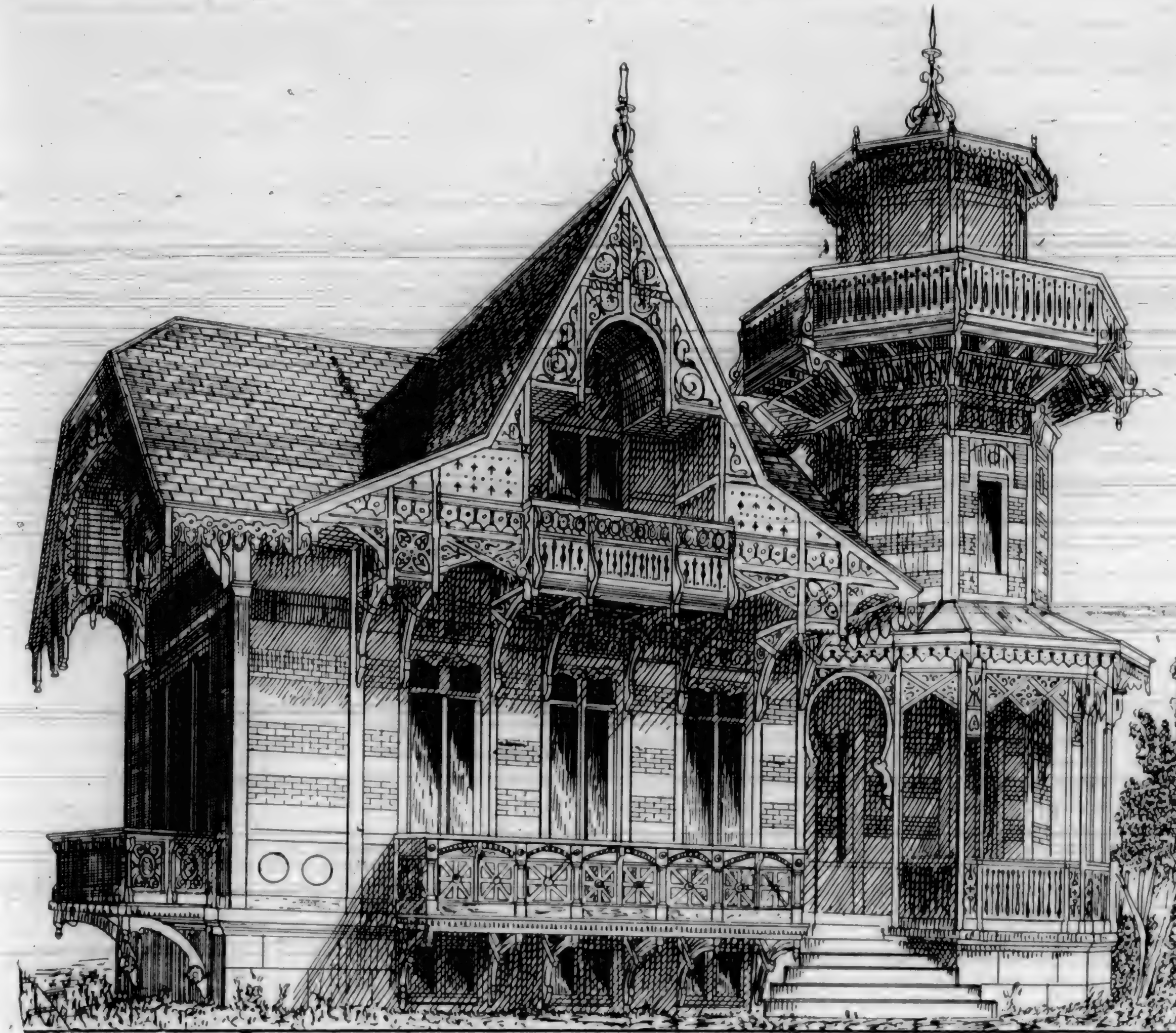
A Good Old Idea.

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.

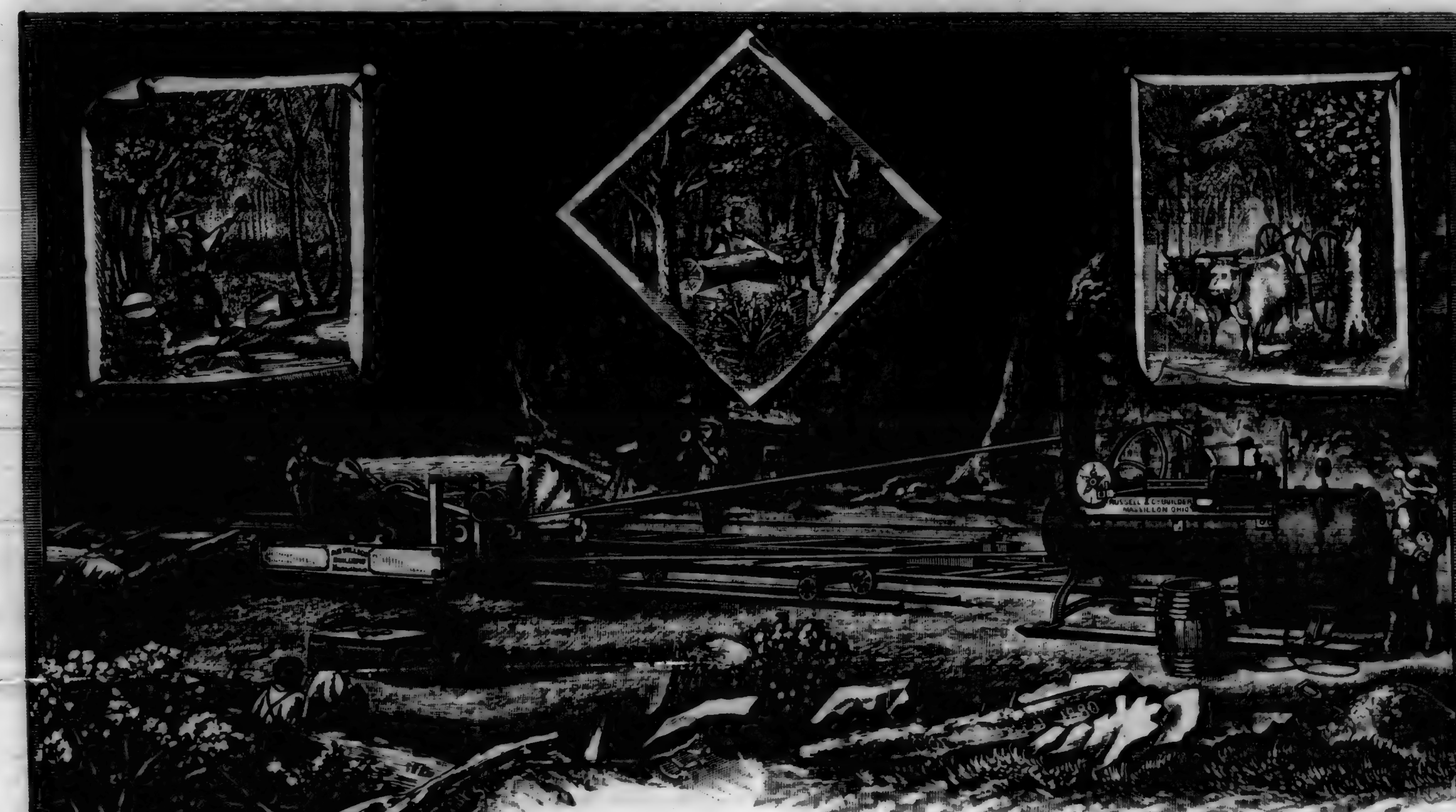
People of culture, enjoying at least some liberty, and whose means of learning were above the necessities to sustain life, such will certainly wish to have an own art practice, and try to come to its assistance and do all that is possible to retain itself in the possession of the flowering art. Of course 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.

Subscribe now for 1887.

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

Report of the Building Interest of Woodland and Yolo
County for 1886.

EDITOR OF THE CALIFORNIA ARCHITECT AND BUILDING NEWS.—
Dear Sir: We submit the following report of the building and improvements for our city and county as kept and corrected monthly, and may be considered as approximately right, having devoted time in collecting and care in estimating the value of all on our list; and, although the amount in comparison with last year presents a falling off, still we are gratified for having so large amount to show, it being above the average of the past six years, both in number of engagements and amount of capital invested. The following table will present the number of engagements, their kind, and value of each as substantially set forth. It also shows the work has been evenly distributed throughout the entire year, as a sure evidence of a healthy and substantial growth, which is noticeable by all citizens.

1886		City of Woodland.						Yolo County.					
Month.	No. per month.	Frame buildings.		Brick buildings.		Additions and improvements.		Frame buildings.		Brick buildings.		Total value per month.	
		No.	Value.	No.	Value.	No.	Value.	No.	Value.	No.	Value.		
Jan.	16	10	\$10,800			4	\$1,500	2	\$5,000			\$17,600	
Feb.	17	7	8,000			5	3,000	5	13,200			24,500	
Mar.	19	8	10,000	1	\$ 2,000	6	3,200	3	5,800	1	\$5,000	26,000	
April	18	8	7,600			1	1,500	9	21,200			30,100	
May	15	3	30,800			2	2,300	4	8,400	2 Imp.	800	31,300	
June	14	4	11,600			2	1,050	4	5,950	2 "	1,800	20,405	
July	14	5	8,300	1	500	4	1,500	1	6,000	3	8,600	24,900	
Aug.	11	6	7,100	2	14,000			2	1,800	1 Imp.	500	23,400	
Sept.	10	5	10,500			5	2,400					12,900	
Oct.	8	7	7,700	1	4,000	3	3,000	2	2,550			17,850	
Nov.	15	11	25,000	3	12,500	1	1,000					42,500	
Dec.	8	4	3,800	1	2,000	1	500	2	2,500			8,600	
Total	172	79	\$135,205	9	\$35,000	36	\$21,650	33	\$72,000	9	\$16,700	\$280,55	

The preceding monthly statement, with its total footing, shows our building and improvements for the past twelve months to be—city of Woodland, 124 buildings, valued at \$191,855; Yolo County, 48 buildings, valued at \$88,700; final aggregate, city and county, 172 buildings, with a value of \$280,555.

In scanning over our record for the past six years, we find the *average* number of engagements for each twelve months to be 104, while the value of the same is \$267,934.75. With this fact in view, our most sanguine citizens cannot but be satisfied with the labors and improvements of the past twelve months.

Accept our hearty thanks for the many courtesies and favors tendered us during the past year, and our best wishes for your future welfare and prosperity.

We remain most respectfully yours,
Woodland, Dec. 4, 1886.

Labor Fable.

A RICH man had a piece of land on which a young mule was grazing. "I shall harness you," said the man to the mule, "and make you plow this land to grow melons on, of which I am very fond, while the stalks will supply you with food." To which the mule replied: "If I consent to toil on your terms, you will have all the melons and I will be worse off than now, inasmuch as I shall have to eat dry stocks instead of the fresh, green grass. I'll not do it, sir." "How unreasonable you are," remonstrated the land owner; "your father never had any other food but thistles, and yet worked sixteen hours a day without grumbling." "Alas! that is true!" retorted the mule, "but then, you know my father was an ass."

The California Architect

Is a success in every respect, not only to its proprietor, but in the estimation and good opinion of its numerous subscribers.

WE agree that all disputes between capital and labor are deleterious to the interests of both and should be settled in an amicable spirit.

STRIKES and rumors of strikes are the order of the day in different parts of the country. There is prospect of a good fall and winter trade, providing labor troubles can be avoided; but if troubles arise there is no doubt that they will have a tendency to depress and stagnate business.

PLUMBERS should be careful not to use lead in contact with oak, unless the latter is perfectly dry and free from sap, otherwise the gallic or acetic acid in the wood will turn the lead into acetate of lead or ceruse.

Bridging.

THE object of bridging floors is not only to prevent the joists overturning, but it is principally to distribute the weight resting directly on one joist over those joists immediately adjacent, and in that way to considerably stiffen the floor as a whole. The pieces of timber of which the bridging is composed may, and do, act either as ties or struts, according to the manner in which the load is centered; and, in the case of a moving load, as of a person passing over the floor, will act alternately as ties and struts in quick succession. The strutting being placed obliquely to the joists, the strain is practically neither that of a direct tie nor of a direct strut; that is, neither simple compression nor simple tension in either case, but is in both modified by a cross strain. There is some tendency for the joists to turn over, which augments the cross strain, so that of the three stresses, the cross strain is of most importance.

Now, it is a very well known rule that the strength of a beam or a piece of timber subjected to a cross strain is directly as its breadth and as the square of its depth; and it will be obvious, therefore, that the system of placing the bridging with its greatest scantling vertical, is the proper one, and is a good deal stronger than the system usually employed. In the first system the bridging is reversed alternately, so that the pieces may butt against the joists at points directly opposite one another, which tends to further strengthen and stiffen the floor.

The only advantage in the second system over the first is that it does not necessitate a man turning round to nail the pieces alternately as he comes to them, and therefore is saving of a small amount of time. But when it is considered how much additional strength is obtained by the first method, it will be seen that the saving of time, under the circumstances, is by no means a wise economy.—*Building.*

M. MASPÉRO'S EGYPTIAN DISCOVERIES.—Among all the countries in which archaeological explorations are going on, Egypt, which is the oldest, remains the most interesting. M. Maspéro presented last summer to the Academy of Inscriptions a report of his operations for the previous nine months. He has made a wise change in giving up the monopoly of antiquities which the Bulak Museum had, offering to share all that are found with the finder. The result is that now he is informed when a discovery is made, and finds the tombs unpillaged. He has, as it were, made the poachers gamekeepers. One such undisturbed tomb, besides the owner, his wife, and a large family, contained all the implements of his trade, and, best of all, the first part of the romance of "Sinuhit," a work of the seventeenth or eighteenth dynasty, of which only the second had been previously known. These romances, it is supposed, were put into tombs to amuse the leisure of the dead; the "Book of the Dead" has one chapter designed to teach the dead to play chess in the other world. The correctness of the portrait-statues of the Egyptian monarchs has received a striking confirmation. M. Maspéro presented to the academy photographs of mummies of various kings that have been unrolled at the Bank Museum, and stated that the face of Seti I. (an account of whose tomb, by the way, with over a hundred plates, has just been published as the ninth volume of the *Annales du Musée Guimet*), which is perfectly preserved, shows a wonderful resemblance to contemporary portraits of him that have been found on monuments. Such confirmation was not needed. The features of the Egyptian kings are so individual and full of character that one could not suppose they were fancy sketches. It is curious to hold an inquest on a corpse forty centuries old. Coroner Maspéro determines on examination of the body of Ra-skenen, that he died fighting. There are three wounds, one that knocked him over and two others that finished him, and traces of decomposition show that some time was lost in bringing him from the field of battle. Another case is not quite so clear. A man twenty-five or thirty years old was left in most unusual style, without any inscription. Moreover, he was embalmed as usual; the internal organs were not removed, but the exterior was covered with some matter at once fat and caustic. The body shows that the man died in horrible suffering, and the question arises, was he poisoned or was he embalmed alive? Here is a hint of a palace tragedy on which some antiquarian novelist may write a novel more sensational than anything that Ebers has yet given us.

TRAVELICK made a speech in Toronto the other day and said some good things. "Lawyers are a necessary evil in a bad society and a single mechanic is worth a dozen of them." A single mechanic is worth a hundred. Reform the corrupt and oppressive laws and the lawyers will have to work for a living instead of living on the workers.

Market Reports.

CORRECTED FOR DECEMBER, 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 1/2 x 6, 1 x 4, 1 1/2 x 4, 1 1/2 x 3, }	" "	30 00
" " 1 x 3, and narrower	" "	
" " No. 2	" "	22 00
Stepping	" "	35 00
" " No. 2	" "	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	" "	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 1/4	" "	3 75

NAILS—Rates were recently reduced to:—

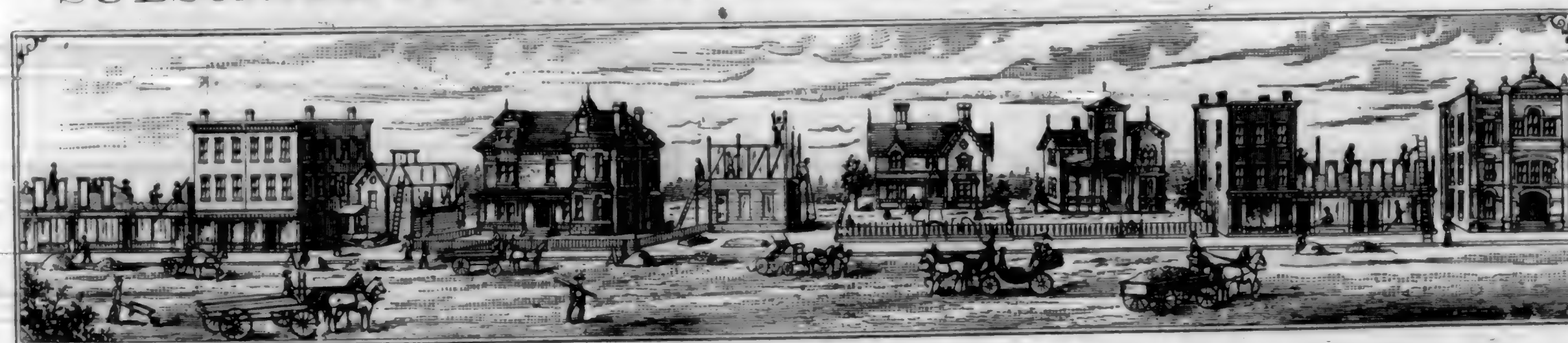
200 keg lots	2 50
100 "	2 60
Smaller quantities	2 70

PAINTS AND OILS:—

Pioneer and Nevada White Lead, 1,000-lb. lots	6
“ “ “ “ less quantities	7
“ White Lead (local factory), 5-ton lots	6
Cal. Linseed Oil, raw (small bbl. lots)	45
“ “ “ “ boiled “ “	47
Turpentine, per gallon	6
BRICK—California Building Description, soft, per 1,000	7
“ “ “ “ red “	7
“ “ “ “ hard “	0

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

SUBSCRIBE NOW FOR 1887.



Building Intelligences.

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

A
Austin, cor. Polk. Public hall.
O.—Captain Taylor.
A.—W. Moore.
C.—J. B. Gonyeau.
\$3,700.

B
Bush, cor. Polk. Fitting up store.
O.—Mr. Valschmidt.
C.—H. Norton.
\$2,200.

Brownan, nr. Valencia. Additions.
\$600.

Bush, cor. Mary Lane. Alterations.
O.—Fustin estate.
A.—G. E. Voelkel.
C.—J. Beck.
\$1,200.

Bush, bet. Dupont and Stockton. Additions.
O.—Church Notre Dame.
A.—Phila & Moore.
C.—J. Geary.
\$6,000.

B
O.—H. Maginnis.
\$900.

Bronway, bet. Pierce and Scott. Repairs.
O.—W. Thomas.
A.—Smith.
C.—Gray & Sto er.
\$2,200.

Bronway Place. One-story frame.
O.—Mary E. Carey.
A.—J. J. Clark.
C.—W. E. Sweet.
\$1,700.

Bush, nr. Devisadero. Additional story.
C.—A. Jackson.
\$1,600.

C
California, bet. Mason and Taylor. Two-story stone mansion.
O.—J. C. Flood.
A.—A. Laver.
Estimated cost, \$250,000.

[We have no means of knowing the exact cost of this building, and so have placed it at a figure which we deem as near right as possible to obtain.]

California, nr. Fillmore. Additions.
\$900.

California, No. 213. Additions.
C.—F. Williams.
\$800.

Central Ave., nr Jackson. Additions.
O.—Carrie McFarland.
C.—I. Reban.
\$4,600.

D
De Boom, nr. Second. Four tenements.
O.—D. Sullivan.
A.—J. J. Clark.
C.—Creamer.
\$4,000.

F
Fifth, bet. Mission and Howard. Four-story frame.
O.—J. H. Gardner.
A.—C. J. Pavlin.
C.—M. J. Kerri an.
\$6,500.

O.—State of California.
C.—B. McMahon.
\$1,600.

Folsom, No. 1039. Additions.
O.—Wm. Dorgan.
A.—A. J. Barnett.
C.—C. S. Carter.
\$4,000.

Front, nr. Market. Additional story and general repairs.
O.—J. C. Johnson.
A.—H. C. Macy.
Mason—G. D. Nagle.
Carpenter—F. Klatt.
Cost, about \$20,000.

G
Geary, bet. Kearny and Dupont. Alterations.
O.—J. Rosenberg.
A.—P. R. Schmidt.
C.—M. C. Lynch.
\$7,650.

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
DOWNES, CHAS.	41 Second Street
DUFFY BROS.	17 Trinity Street
ENRIGHT, WM. & CO.	39 Sutter Street
FIRMING, 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 Montgomery Avenue
REILLEY, C. J.	214 Montgomery Avenue
BRIDGERS	626 California Street
SLEELY & 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

CARBOLIC ACID FOR CUTTING TOOLS.—Carbolic acid is recommended for moistening the tools with which metals are worked. The efficiency of the grindstone is even said to be increased by the use of acid. The dark and impure acid can be used for this purpose.

NOR long since, in an arbitration case, an engineer was thus examined as to his professional experience and capacity, so called: "How long have you been in the profession?" "Twelve years." "Are you thoroughly acquainted with your work, theoretically and practically?" "Yes." "Do you feel competent to undertake large constructions?" "Yes, most certainly." "In what engineering works have you been engaged during the last twelve years?" "The manufacture of iron bedsteads." We fear that many professed first-class men in other pursuits would make similar irrelevant replies if they were subjected to a test as to their capacity.

GLAZE your sashes with putty if you will, but make your miter and other joints without it.

HIT the nail straight upon the head and you will save many crooked blows.

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

BUILDING INFORMATION FROM THE COUNTRY WILL BE THANKFULLY RECEIVED.

Golden Gate Avenue. Two-story

O.—D. Marcuzzi.
A.—J. J. Clark.
C.—C. E. Dunshee.
\$4,700.

Gough, bet. Geary and O'Farrell. Three-

story frame dwelling.
O.—B. Etlinger.
A.—J. E. Wolfe.
Mason—E. R. Shane.
Carpenter—Wickersham.
\$13,500.

Guerrero, bet. Fifteenth and Sixteenth.

Two-story frame.
O.—J. Kreling.
A.—F. Raabe.
Superintendent—F. Raabe.
\$5,000.

Guerrero, bet. Fourteenth and Fifteenth.

Two two-story frames.
O.—J. Wolf and wife.
A.—Huene & Everett.
C.—W. J. Brownrigg.
\$4,500.

Geary, nr. Fillmore. Additional story.

\$1,500.

H**Howard,** nr. Erie. Two-story frame.

O.—Mrs. Purcell.
C.—S. G. Worden.
\$2,000.

Howard, nr. Fourteenth. Additions.

\$800.

Howard, nr. Ninth. Two-story frame.

O. and B.—J. Ziegenbein.
\$700.

Howard, bet. Twenty-first and Twenty-

second. Additions.
O.—McCanle.
C.—Sanches.
\$2,100.

Hyde, bet. Ellis and Eddy. Alterations.

O.—G. Edwards.
A.—J. J. Clark.
Day work.
\$4,700.

K**Kearny,** cor. Morton. Alterations.

O.—Lexi Strauss.
A.—P. R. Schmidt.
C.—R. McCann.
\$900.

L**Linden Avenue,** bet. Buchanan and

Webster. Two-story frame.
O.—J. W. Grellis.
A.—Townsend & Wyneken.
C.—A. McDonald.
\$2,000.

Langton Street, No. 318. Alterations.

O.—J. Wilson.
A.—Townsend & Wyneken.
\$950.

M**Market** nr. Sixth. Improvements.

O.—G. Campbell.
\$800.

Mission, nr. First. Additional story.

O.—J. Carroll.
A.—Dylin.
C.—G. D. Nagle.
\$2,000.

N**Nineteenth,** nr. Sanches. One-story

frame.
O.—Springer.
C.—McFarland.
\$1,200.

Noe, nr. Seventeenth. Two-story frame.

O.—Rohrder.
\$600.

Notre Dame Academy. Additions.

A.—Huene & Everett.
C.—J. Blake.
\$500.

O**Oak,** bet. Devisadero and Broderick. Two-

story frame.
O.—James G. Martin.
A.—Miller & Armitage.
C.—F. Kern.
\$2,500.

Oak, nr. Fillmore. Two-story frame.

O.—N. Wynne.
A.—J. J. Clark.
\$6,300.

P**Post,** nr. Gough. Three two-story frames.

O.—Mrs. Ewert.
A.—
C.—
Estimated cost, \$15,000.

Pennsylvania Avenue, bet. Solano

and Butte. One-story frame.
O.—James Eve.
\$1,800.

Pine, cor. Stock Exchange Alley. Improve-

ments.
O.—Bell Telephone Co.
C.—McKillean.
\$3,700.

Park Avenue, bet. Harrison and Bryant.

Two two-story frames.
O.—F. Meyers.
C.—W. Little.
\$8,000.

Pierce, bet. Haight and Page. Two-story

frame.
O.—Mrs. Luckey.
A.—J. Marquis.
C.—Martin & Maguire.
\$4,500.

S**Summer,** nr. Howard. Two-story frame.

O.—Catherine McMahon.
A.—Townsend & Wyneken.
C.—Hawkes & Mannion.
\$2,000.

Sacramento, bet. Kearny and Dupont.

Additions.
O.—Yeong W. Co.
C.—D. J. O'Brien.
\$8,000.

Santa Clara, cor. Mississippi. One-

story frame.
O.—Mr. Kelly.
\$1,800.

St. Mary's Hospital. Alterations.

A.—J. J. Clark.
Cost, indefinite.

San Jose Road, bet. Twenty eighth and

Twenty-ninth. Three one-story frames.
O.—J. McKibben.
C.—H. Keenan.
\$1,200.

MISCELLANEOUS.

Alameda—One-story frame. O., Mr. Locke; A., H. D. Mitchel; C., W. H. Studley;
\$2,400.

Clayton—Stone w. e. house. O., Mt. Diablo Wine Co.; A., J. E. Wolfe; C., J. D.
Nagle; \$2,500.

Mountain View—One-story cottage. F. Hinzlot; A., Miller & Armitage; C.,
J. A. Wright; \$3,000.

Fresno City—Two-story frame. O., Schmolz; A., G. E. Voelkel; day work;
\$3,000.

Madera—One two-story and four one-story brick buildings. O., T. L. Cludine; A.,
G. E. Voelkel; total cost, \$10,500. Frame cottage. O., L. Knuser; A., G. E. Voelkel;
\$2,200.

Los Angeles—Alterations and additions. O., J. D. Huray; A., Curlett & Cuth-
bertson; day work; \$2,500.

Sixth, nr. Harrison. One-story frame.

\$500.

Sanches, bet. Twenty-ninth and Valencia.

One-story frame.
O.—Anderson & Co.
C.—J. E. Loomer.
\$1,000.

Stevenson, cor. Annie. One-story and

basement brick.
O.—Sharon estate.
C.—S. M. Hills.
\$10,000.

T**Twentieth,** cor. York. Two-story frame.

O.—Jas. Holle.
A.—G. E. Voelkel.
C.—J. Wineohl.
\$3,200.

Twenty-second, cor. Capp. Two-story

frame.
\$9,500.

Tenth, nr. Mission. Two-story frame.

\$1,800.

Twentieth, nr. Valencia. Additions.

\$500.

U**Utah,** nr. Twenty-third. Two-story frame.

O.—Mr. Sullivan.
C.—W. Shaffield.
\$1,200.

W**West Mission,** bet. Ridley and Her-

mann. Two-story frame.
O.—Donahue.
\$2,500.

West Mission, cor. Hermann. Two-

story brick.
O.—Market Street R. R. Co.
\$4,000.

HILL'S PATENT INSIDE SLIDING WINDOW BLINDS

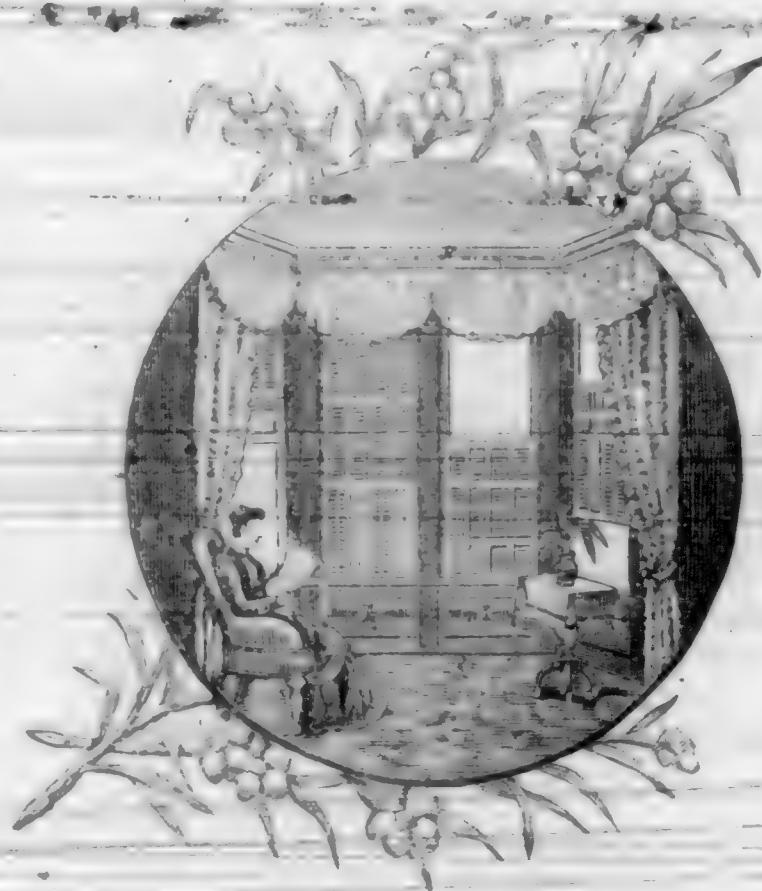
Are Adapted to Any Style of Window

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 for 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 BANGING, LINGING, 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 MacKenze, 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 Marquis. 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 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.

TITLE THE CALIFORNIA ARCHITECT AND
BUILDING NEWS
FORMERLY THE CALIFORNIA ARCHITECT AND
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FORMERLY THE QUARTERLY ARCHITECTURAL
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THE CALIFORNIA ARCHITECT AND BUILDING NEWS.

VOLUME VIII

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

NUMBER 1.

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. JANUARY 15, 1887.

Our patrons are informed that C. L. Crabbe has no connection whatever with this Journal. He is not authorized to make any collections, or receive either subscriptions or advertisements.

Bound Volumes of the year 1886 are now ready. We will forward a copy to any address upon receipt of \$2.50.

HAND IN OR SEND

Your SUBSCRIPTIONS for 1887

To those who so promptly responded to our request for immediate settlement of subscription and advertising balances,

WE SAY, THANK YOU.

To those against whose names remain unpaid balances, we say,

PLEASE PAY UP AT ONCE.

Remembering THAT—Defrauding an editor is considered one of the meanest kinds of peculation; THAT—"Honest men are the gentlemen of nature;" THAT—"The man who pauses in his honesty, lacks but little of the rogue;" THAT—"A rogue in spirit is a rogue in gain."

Therefore,—Let every one who receives or reads this journal, forthwith forward to this office, its subscription price for 1887, and any and all unpaid indebtedness.

The Outlook for 1887.

IT IS PROMISING. True, the natural tendencies of the human mind, hopes and desires, are to anticipate and prognosticate continuance of good things, and to grasp after every appearance or indication of better; and often, the mere "wish being father to the thought," induces prophesying and predictions which have no other foundation than the desire that the thing predicted may be realized and enjoyed. False hopes are often stimulated by unreal appearances, which, logically and intelligently considered, fail of any reasonably well assured probability; hence people frequently deceive themselves, and venture out upon the merest crust of prospect, beneath which may lie almost fathomless depths of disappointment.

Fully impressed with the correctness of the suggestions made,

we glance cautiously at the impenetrable future, and as far as its mysteries can be judged by the appearances and indications possible of utilization, we feel well assured in saying that the building business in San Francisco will be good during the year 1887. There are signs of encouragement in all directions, and it is safe to anticipate large activities in building improvements.

An Effort in the Right Direction.

THE responsible and better class of carpenter contractors in San Francisco, have for a considerable time, maintained an organization designed to remedy the many gross and glaring irregularities, an evil long existing in the building trade. And as we understand it, while the objects and purposes of the society are mutual protection and individual rights and interests, they are claimed upon rational, intelligent, just, and equitable grounds.

To say that the building, particularly the carpenter contracting, business, has, in the main, been run loosely in San Francisco during the past three decades or more, commencing in the early periods of this city's history, and at times since becoming most deplorably bad, with failure succeeding failure, followed by *pro rata* settlements, and discredit upon an honorable business, does not fully express the state of things that has been. The object of the organization is, to arrive at right understandings as between owners and contractors, and the establishment of such practices as will be *impartially* just between all parties. Owners and contractors have respective equal rights and equities. Neither should seek nor wish to gain undue advantage. But the fact must be admitted that the man who does honest work and pays his bills, one hundred cents on every dollar, stands but little show in competition with those who substitute wood butchery for workmanship, and settle their indebtedness at ninety or perhaps ten per cent on the dollar. And it must also be admitted that it is a most provoking and distressing attitude for men of integrity to be forced to occupy, to silently witness their chosen life avocation demoralized and abused, and the once honorable distinction of "honest mechanic," besmeared with the filth and foulness of men enjoying but limitedly, or not at all, mechanical knowledge, to an extent entitling them to recognition as "skillful workmen," and whose honesty of purposes and practices are ever contingent upon the uncertainties of either their defective or designing judgments, with no care for the often damaging results that follow.

Any number of right thinking men who can combine and bring into practice methods and procedures which will abate the evils that have been and are in the building business, and bring about a bettered and improved condition of things, deserves commendation; and we hope that a generous and just disposition will be exercised by all in interest—contractors, architects, and owners alike—each of whom, being just and honest in every intent and purpose, should have but one common sentiment in reference to matters so plain of understanding as those involved in the erection of buildings.

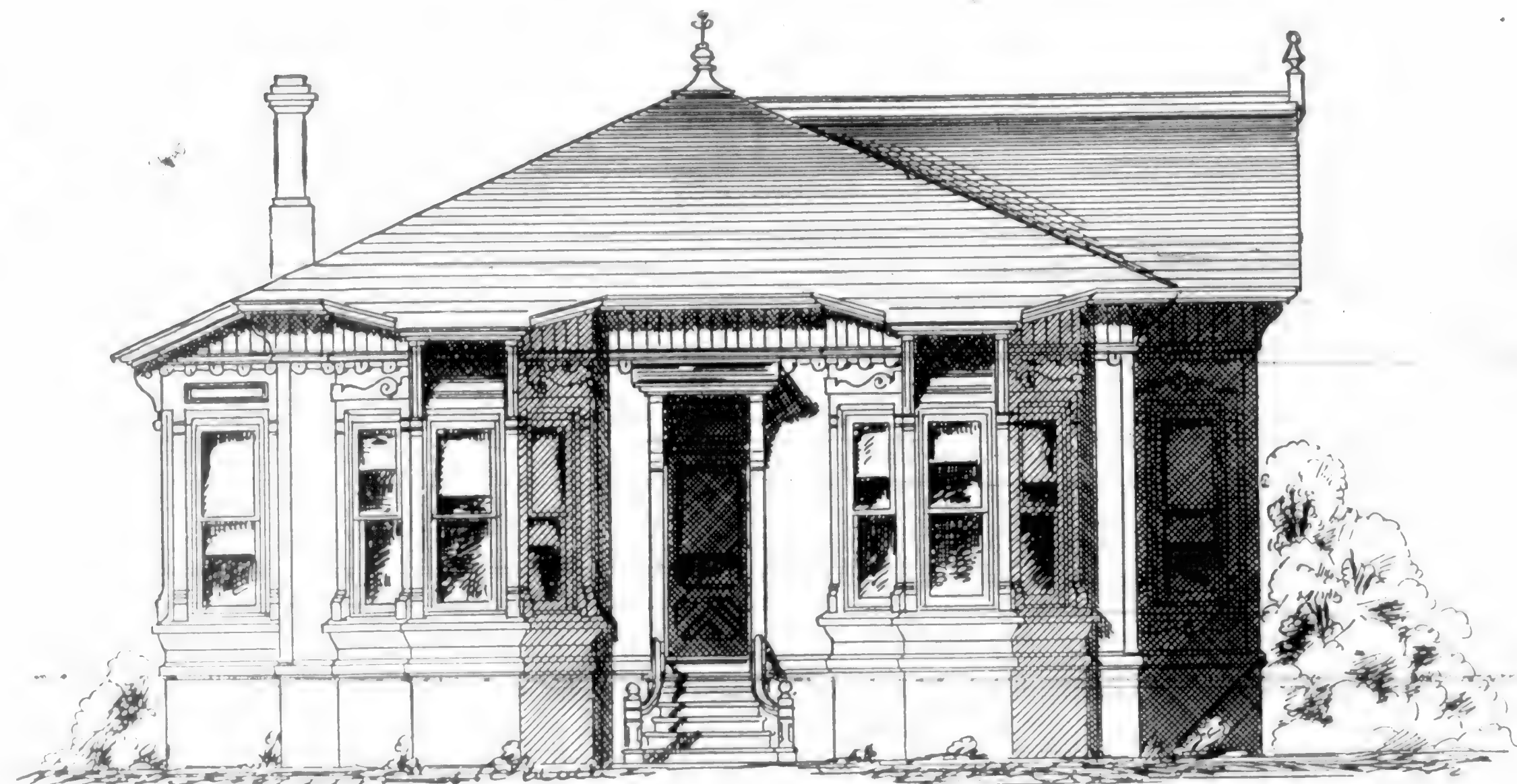
Meeting of the S. F. Chapter.

THE regular monthly session of the Chapter was held on the 7th inst, President A. Pissis presiding, B. E. Henricksen, Secretary.

Minutes of previous meeting read and approved. Mr. Sanders on behalf of the Committee on Classes, read an interesting paper in relation to the progress of the class work, and the necessity for increased facilities in the shape of a convenient room for class meetings, as well as a permanent place—a headquarters for the Chapter. Mr. Sanders read the paper with much earnestness, and expressed the hope that ere long there would be that concert of action applied, which would secure all that is necessary to make both the class work and the Chapter grand successes. The report was adopted and ordered spread upon the minutes.

The committee on the application of Arthur M. Squires, for student membership, reported favorably, and the candidate was elected. The appointment of a committee to confer with the Board of Freeholders, in reference to a Board of Public Works and a

EACH SUCCESSIVE ISSUE OF THIS JOURNAL WILL SHOW A MARKED IMPROVEMENT.



FRONT ELEVATION FOR A CONVENIENTLY ARRANGED COUNTRY HOME.

City Engineer was suggested, and a committee of three, consisting of Mr. John Wright, James E. Wolfe, and J. Gash was appointed for the purpose.

A committee of three—James E. Wolfe, T. J. Welsh, and J. Gash was appointed to consult with a like committee from the Builders' Association of California, in reference to amendments to the Mechanic's Lien Law.

A general discussion of the Lien Law ensued, and some of its many objectionable features reviewed, showing its inequities and uncertainties, and its illy expressed intents, meanings, and applications.

The reading of a paper on ancient and modern plumbing was deferred until the February meeting.

Building Summary for January.

CONSIDERING the dull period through which this city has been passing, the statement for the current month is very satisfactory, exceeding in amount any similar period on record. Our country building interests are looking up very finely, and a great deal of work is assured to mechanics during the coming year.

In January, 1885, we reported in this journal,

73 Building Engagements, of the value of \$602,585.

In January, 1886,

79 Building Engagements, of the value of \$623,250.

In January, 1887,

Eleven brick buildings.....	\$475,000
Forty frame ".....	160,200
Eight additions, &c.....	15,500
Making a total for January, 1887, of	

59 Building Engagements of the value of \$650,750.

COUNTRY BUILDING ITEMS.

We call especial attention to our list of improvements in every portion of the Pacific slope.

"Carpenters' Steel Square and Its Uses."

We have just received a large consignment of this practical work for mechanics, and upon receipt of \$1.00 will forward a copy to any address.

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

OUR EIGHTH VOLUME.

With this number we begin the eighth volume of this journal. Since January, 1879, we have successfully carried on the enterprise of establishing an architectural journal on the Pacific Coast. We enter the new year full of confidence for the future, and our ambition is more than gratified when we reflect that, from a few subscribers in the start, we can boast of a larger circulation than all the rest of architectural journals combined that are published west of the Rocky Mountains. We sincerely thank our numerous patrons who have done so much to help us. Subscription price will remain the same, viz., \$2.00 per year in advance.

The Best of Drummers.

THERE is no better drummer for business men than a well-established and reliable trade journal. It pays no railway fare, for no extra baggage, for no luxurious hotel bills, for no cigars or other incidentals usually charged up to the firm by the regular traveling man. It goes directly to the customer each and every week at all seasons of the year. It is a constant medium of friendly intercourse between the wholesaler and retailer. It tells the latter from week to week how and where he may order the latest and most attractive goods, and points out to him the most favorable time for buying and stocking up his store. The trade journal is constantly growing in importance. Its merits are being recognized more and more each year, as is evidenced by the increase of its subscription list, and the extent of its advertising patronage.

It is a common idea that a "chimney cannot be too large;" in other words, the larger the area of the flues the better the draught will be. This is not always the case. In many cases—in foundries, manufactories, etc.—where a chimney has been built large enough to serve for future additions to the boiler power, the draught has been much improved as additional boilers have been set to work. The cause of this is to be found in the increased steadiness of draught, where several boilers are at work and are fired successively, as also in the better maintenance of the temperature of the flue.

An old saw-mill man explains the origin of the term "mill culls" thus: "In old times this was the class of culls that went to the mill man in lieu of a saw bill, consequently 'mill culls.'"

Conveniently Arranged Country Home.

ON page 2 we present the elevation, and on page 3 the plan, for a very desirable and well arranged country or suburban home. The elevation is one that will attract attention from its neatness and simplicity. It is especially designed to do away with all fancy outside work. The plan is admirably adapted for a home in the country where fluctuations of temperature occur. A perfect system of ventilation can be had through the various parts of the house. In case of a hot spell, there is room enough on the side porch for a table, so the occupants can dine in the open air.

The bath-room is handy of access from several rooms, as well as being in easy communication with the outside porch. A pass slide between the pantry and dining-room closet enables the servant to confine all the smell of cooking to its proper quarters.

The front chamber is conveniently arranged for visits from "city cousins." There is ample closet room. If thought more desirable, one of the windows looking out on side porch can be changed for a door.

CARPENTERS' STEEL SQUARE AND ITS USES, PRICE \$1.00

History of the Saw-Mill.

THERE are few tools more ancient than the saw. All the ancient nations appear to have had it; certainly the Hindoos, the Egyptians, the Greeks, and the Romans. The saw may have existed even before there were any men on earth. There is a creature called the saw-fly, with the saws in its tail, which it actually uses for sawing the stems, leaves, and fruits wherein its eggs are to be deposited. There is also a saw-fish, the long snout of which is a saw. It is said also that the original inhabitants of the island of Madeira found a ready-made saw in the backbone of a fish.

The Greeks had a pretty story attributing the invention of the saw to the accidental finding of the jaw-bone of a snake by one Talus, who used it to cut through a small piece of wood. Being a slave, and finding that the jaw bone eased his labor, he made a saw of iron, and thus gave mankind a new and most valuable tool.

The ancient saws differed from ours in two ways. The teeth were so arranged that the cut was made by pulling instead of pushing; and the teeth, instead of being set one to the right and one to the left alternately, were set so that ten or a dozen in succession were slanted one way, and the same number the other way. The ancients had several varieties of the implement. The Greeks, for example, had crosscut saws for two men, also saws for cutting marble into slabs. And they had a kind of tubular saw for hollowing out a marble bath-tub, similar in principle to the method now employed.

Among the pictures uncovered in the buried city of Herculaneum there is a representation of two genii sawing a piece of wood on a carpenter's bench very much like ours, and using a saw with a wooden frame similar to those now employed. Still more strange, the frame saw, tightened with a rope and stick, such as our street wood-sawyers use, was probably as familiar to the Romans as it is to us.

A saw-mill, however, by which wind, water, or steam is made to do the hardest part of the work, was not known to any ancient nation. Sawing by hand, next to digging a stiff clay soil, is about the hardest work that men ordinarily have to do. It is therefore not surprising that our ease-loving race began to experiment a good while ago with a view to applying the forces of nature to the performance of this toil.

A learned German investigator, who has investigated the subject very thoroughly, states that the first trace of the saw-mill yet discovered is in the records of the German city of Augsburg for the year 1337. The reference is slight, and does not fix the fact with certainty. But there are two saw-mills near that city which are known to have existed as far back as 1417, and they are still used. Before that valuable invention, all boards and planks were split with wedges, and then hewn to the requisite smoothness with the ax. The splitting of boards is still practiced in remote settlements, as I myself have seen; and it is recorded of Peter the Great, of Russia, that he had much difficulty in inducing the timber cutters of his empire to discontinue the method. At length he issued an edict forbidding the exportation of split planks. Even in Norway, covered with forests as it was, there was not one saw-mill before 1530. Nowhere in Europe, it appears, was the introduction of the saw-mill so long resisted as in England. In 1663 a Hollander erected one in London; but it brought upon the poor man such an outcry and opposition that he was obliged to abandon it. The sawing of



PLAN FOR CONVENIENTLY ARRANGED COUNTRY HOME.

timber by hand furnished occupation, at that time, and long after, to large numbers of strong men. In every town there were saw-pits, as they were called, for the convenience of the sawyers, one of whom stood at the bottom of the pit and the other on the log. We can easily imagine that when every beam, plank, and board, thick or thin, had to be sawed by hand, the sawyers must have been a formidable body, both from their numbers and their strength.

After the failure of the Dutchman in 1663, there was no serious attempt to start another saw-mill in England for more than a hundred years. In 1767, an English timber dealer of large capital built a saw-mill to be moved by the wind. It was thought to be a great and difficult enterprise, and it attracted much public attention. Some years before an author had explained the advantages and economy of saw-mills; then the Society of Arts gave the scheme of building one their approval, and finally the mill was actually built by an engineer who had studied the saw-mills of Holland and Norway. No sooner was the mill complete than the sawyers assembled in great force and tore it to pieces. The Government compensated the owner for his loss, as was just. Some of the rioters also were convicted and imprisoned. A new mill was then built, which was allowed to work without molestation, and proved so profitable that others were soon introduced.

BUILDING CORRESPONDENCE DESIRED FROM EVERY PORTION OF THE PACIFIC SLOPE.



DESIGN FOR COUNTRY MANSION.

In no part of the world, probably, has the saw been more minutely and curiously developed than in Great Britain, where they have saws so fine as to cut diamonds, and circular saws nine feet in diameter and a quarter of an inch thick. They have also veneer saws so accurately adjusted as to cut eighteen slices of veneer from a rosewood plank an inch thick. In London they will put a log of mahogany upon the mill and cut it into slices so thin that the sawdust weighs more than the veneer. Yankees have beaten this performance. They take a piece of mahogany or rosewood, soften it by steam, and cut it into veneers with a knife, without making a grain of sawdust.

Daniel Webster tells us that his father had a saw-mill after his removal to New Hampshire, at the source of the Merrimac River. Daniel, who was by no means fond of labor at any part of his life, liked nothing better in his boyhood than to attend this saw-mill, because when he had put his log in position and started the saw, he had sixteen good minutes for rest or reading before the business required further attention.—*Journal of Progress.*

And we may further add that it is a part and parcel of the history of the successful saw-mills on this coast that they have been supplied with saws made by the works under the control of Messrs. Spaulding, Patterson & Sheffield, and known as the Pacific Saw Manufacturing Co. Nos. 17 and 19 Fremont Street, San Francisco. All the saws in the mills are supplied with the patent Spaulding inserted teeth. The one fact that it is the successful mills that have used these saws, should induce every proprietor on the Pacific slope to at once replace their old-fashioned saws by the splendid new manufactures of the Pacific Manufacturing Co.

A 4x8 billiard table requires a room not less than 13x17 feet.

EVERY ARCHITECT SHOULD TAKE A PRIDE IN BEAUTIFYING THIS JOURNAL.

Design for Country Mansion.

THE accompanying engraving is taken from a design that was awarded a diploma at one of the fairs held by the Mechanics' Institute in this city. James E. Wolfe, architect.

MECHANICS' GEOMETRY,
Price \$4.00.

Closet Ventilation.

A NEW JERSEY architect claims the distinction of being the first house-designer to ventilate clothes closets, and this fame-making act was performed in the year of grace '86. Some of our readers may contest the claim, but we are compelled to admit we have never seen a ventilated clothes closet in a private dwelling, although we have long been in search of one. Seriously, this failure on the part of architects is a matter of grave importance, and when it is considered that no cost is attached to the obtaining of what all admit the necessity for, the continued neglect of architects in this respect is past accounting for. The *St. Paul Farmer* has been publishing a series of excellent articles on common sense in building, and while it emphasizes the housekeeper's demand for closets, it forgets to ventilate them. It says: "So, in planning a home, the ladies' wishes must be attentively considered, 'first, last, and all the time.' Generally the first demand is for closets large and closets many, closets dark and closets airy, closets here and closets there—closets everywhere! But though closets may be classed in the category of those good things of which it is difficult to have too many, still they are to be kept judiciously in the background, filling space which would not otherwise be of much use, as at the end of halls and in 'half stories' in the low space under the roof at the side of rooms. For instance, if the wing of a house is sixteen feet wide, and the walls run up but three feet above the second floor level, leaving the ceiling to slope from that height upwards, the space near the walls is of very little use in a room. But if three feet be taken off for a closet at each side, then there results a room ten feet wide, with side walls high enough for most purposes in a bedroom, and with two good closets, or one of the closets may be entered from another room or hallway."—*Ed.*

[We print the above merely to show the errors in the article to those acquainted with facts. Plans are on file in this office that are nearly a quarter of a century old, showing plainly the ventilation of closets by means of a hole in the ceiling covered with wire cloth, and having direct communication between the joists with the outside air. How anyone can have the cheek to claim a new invention in '86 that is of almost ancient origin, is an insolvable mystery.—*ED. ARCHITECT.*]

A Simple Rule for Measuring Straight Logs.

THE *Southern Lumberman* says an experienced log and lumber inspector gives the following short and easily remembered rule for ascertaining the contents of a log by Doyle's rule when a copy of Scribner's book is not available:

RULE.—Square the diameter of the log after subtracting 4 inches from it, and the result will be the exact contents in inch boards of a log 16 feet long. A log 8 feet long will be half this amount, 12 feet long three-quarters, 14 feet long seven-eighths, and so on.

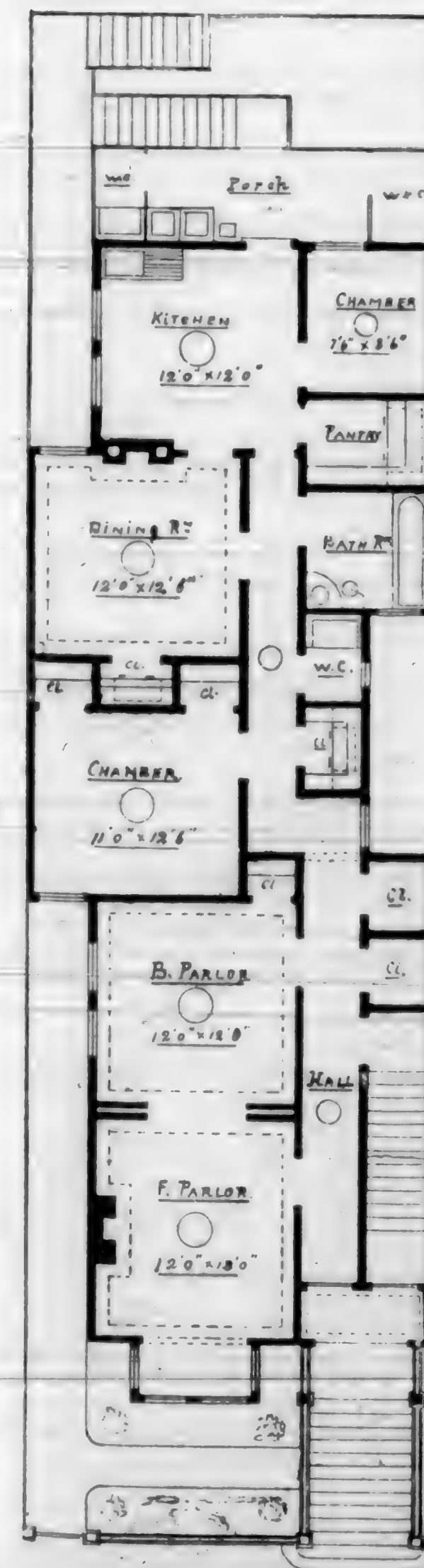
OAK may be darkened by exposure to the fumes of ammonia in a close box, but if the work is first oiled with linseed oil and wiped dry with a cotton or linen cloth, and then a solution of bichromate of potash (say half ounce of potash to one pint of water) be applied, it will darken it and not raise the grain, either of oak, mahogany, or cherry. Care, however, must be taken that the work is not made too dark by too many applications of the solution.

Design for City Flats.

[The accompanying elevation and plans for city flats were prepared by Mr. Salfeld, architect, 216 Kearny Street. We append his personal description of the same. In future it will be the aim of the editor of this journal to secure the best talent available for illustrations of houses of every conceivable design and form.]

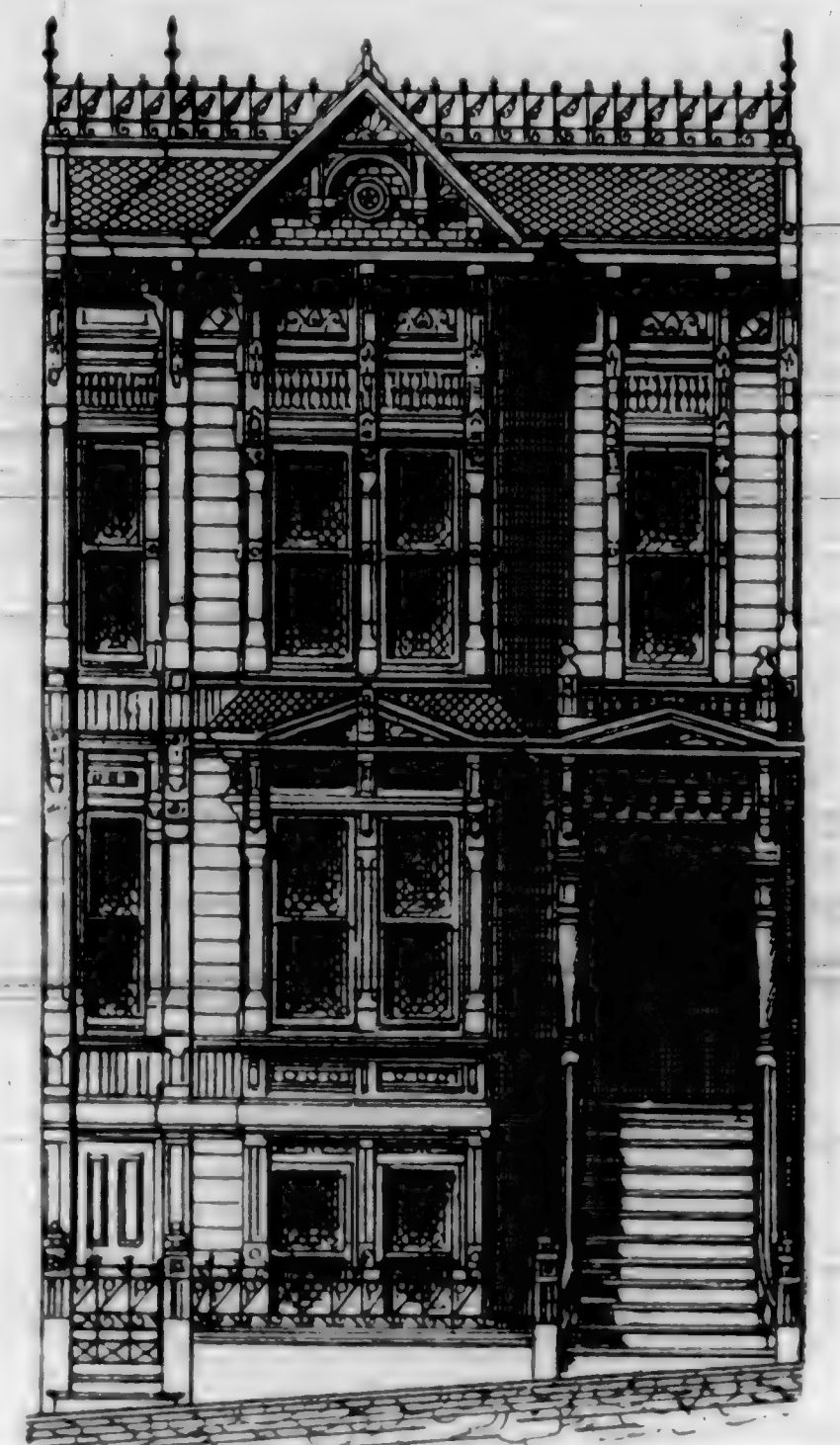
WE present on this page a design for two flats in the Eastlake style of architecture, the first containing six rooms and the second seven. With the exception of a hall bedroom on the second floor, and one or two closets on the first, the two plans are designed nearly alike, and one description will answer for both. The elevation has a graceful and picturesque effect, and is cheap and economical in construction. The architraves of the bay-window and entablature over portico are supported by small turned columns, unique in design, and very pretty and attractive. The columns of the porch are turned with octagon cap, faced with small rosettes. The frieze of the entablature is constructed with turned balusters, with ornamental scroll work, and blocked bed mould above. The projecting gable over bay-window is finished with turned rosettes, fancy shingling, and moulded cornice. The light and airy exposure, convenient arrangement, closet accommodations, etc., of the spacious rooms, can readily be seen by referring to the floor plans. The halls extend through the building, thus affording communication with any of the rooms without passing through others. In the hall of the first story are two large closets, and a flight of basement stairs, with door opening into hall, is constructed under stairs leading to second story. The basement is seven feet and six inches high, planked and partitioned off into cellars and other rooms. The rooms are well proportioned, provided with commodious closets, and all other necessities required by a family who appreciate the conveniences of a model home. We wish our readers to understand that a plan is the main consideration in building, and that an elevation can be changed into any style to suit the taste of the owner, therefore we devote more time and space to the study and description of the plan, knowing it to be most important.

[The above is from a new California work entitled, "Country and City Homes." It contains eighty pages of designs for all classes of buildings, and is sold for 50 cts. a copy. We will forward one to any address upon receipt of the amount.—*Ed.*]

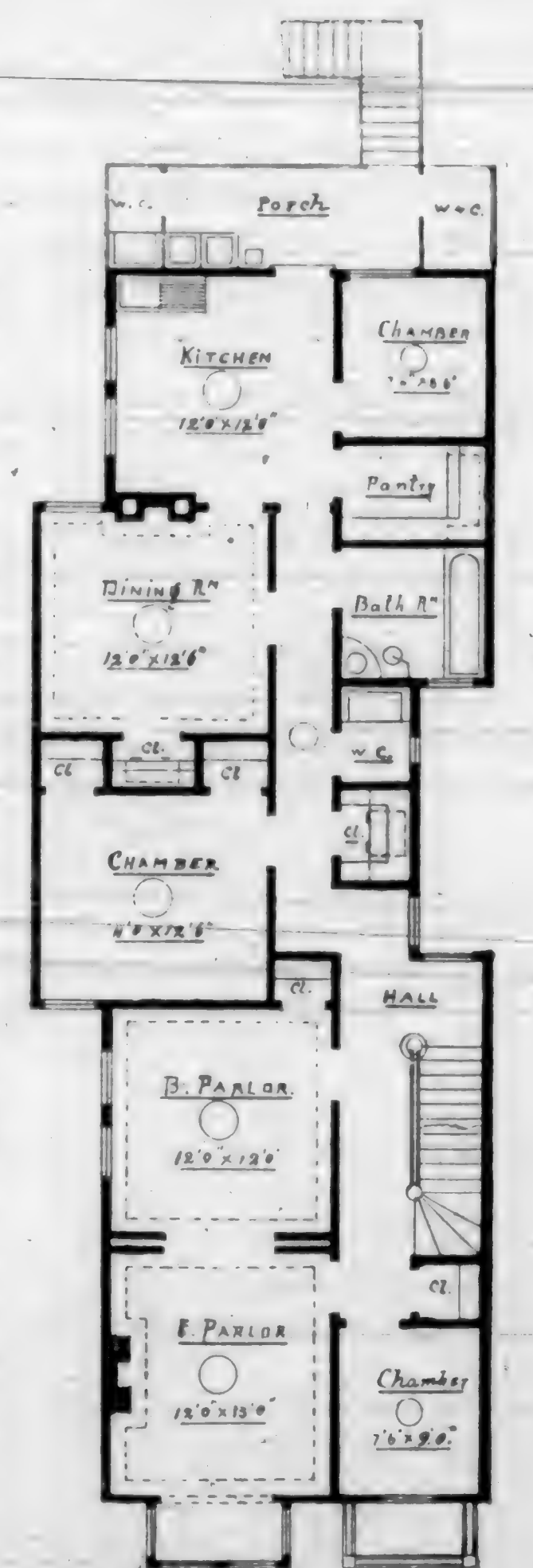


FIRST FLOOR PLAN.

INCREASED PATRONAGE WILL ENABLE US TO MAKE STILL FURTHER IMPROVEMENTS.



Elevation



SECOND FLOOR PLAN.

ASKED, ANSWERED, AND COMMUNICATED.



Free to All.

THE columns of this journal are open to all who differ with us upon any subject presented. We are too old in years and experience to assume that we have passed the reef of human liability to err, or for one moment to suppose that we have reached the realms of thought where perfection reigns supreme. But this we do assure—that whatever 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.

We intend to make a specialty of this department of our journal, and, in order to make it thoroughly interesting, we desire the co-operation of all architects, mechanics, etc., whether subscribers or not. In this column there is a great opportunity for comparison of ideas on the practical questions of the day; and we hope to receive from those interested, and especially amongst builders, questions arising in their daily practice. No matter what may be the solutions given to the various problems presented, we shall only be too pleased to receive replies from our readers, where they see other and better solutions for them. If a general interchange of ideas can be brought about, great advantages will ensue to all. Let not a month go by without bringing up for discussion practical topics in the architectural, mechanical, or scientific pursuits. We desire a general expression of opinions, for or against, of every article presented by us. Every communication will receive deliberate and careful consideration.

EDITORS ARCHITECT: I noticed in your December issue that Mr. D. Bink was in trouble, and had applied to you for information in regard to a rule to mark out the top and bottom cut of a sloping brace of square timber, with the diagonal corners standing vertically over the opposite. In answer, I offer the following:—

1. To a man that can make all the cuts and bevels necessary for framing a hip roof. If you compare the top end of the brace with the ridge and valley rafter in a roof, you will readily see that they are the same. So if you take a square stick, say a 4x4, it will form a $\frac{1}{2}$ pitch. If the brace is set at an angle of forty-five degrees, you get the bevel thus:—



FIG. 1.

Take one-half of the diagonal width, as at A B, and measure this distance along the edge of the stick, as at C D. Square over to the other and join D F. Measure as before, making E F equal to C D. Square across timber again, and join F G.

2. For a simpler way, that will suit all braces and at any angle, take a piece of timber and mark as above. Suppose you have a 4x4 to be cut, say 6 feet from a post, and run up on the post 8 feet 6 inches. Lay your square on the lines laid down thus:—

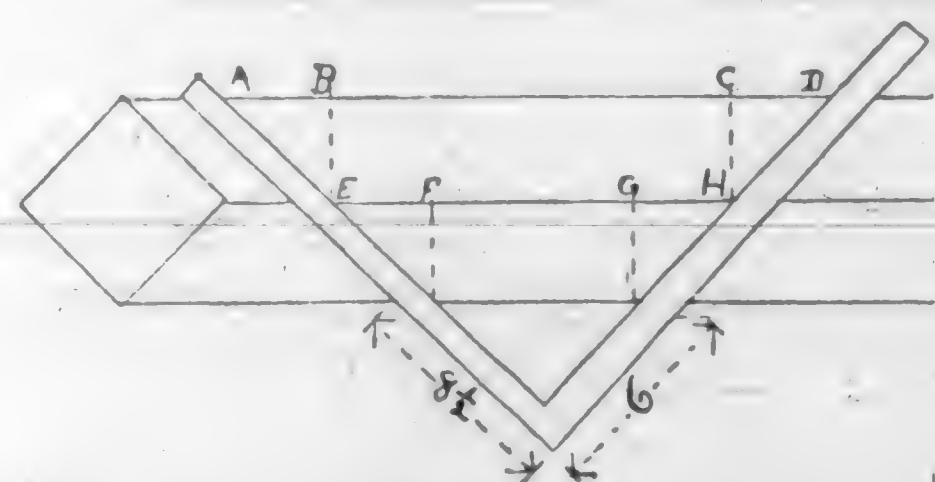


FIG. 2.

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

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.

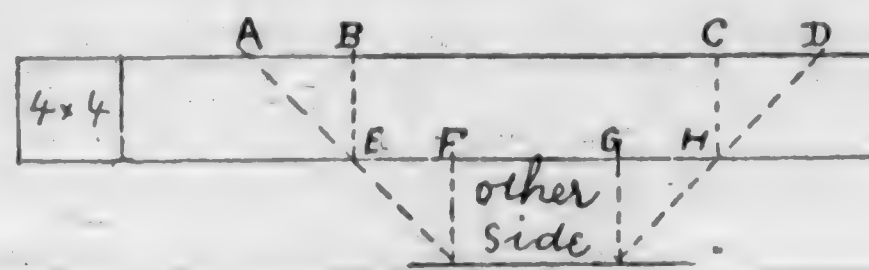


FIG. 3.

Transfer the distance A B in figure 2 to the side of the timber in figure 3. Square over to the other edge, and join the angles as before; then cut.

Another way: Take your square and find the distance across from 8 $\frac{1}{2}$ on one arm of the square to 6 on the other, same as for a common rafter. This distance will mark the side, using the line formed by the arm of the square with the 6.

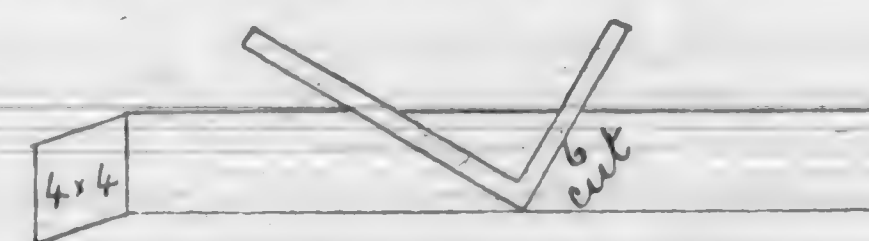


FIG. 4.

Cross over on the other side and cut.

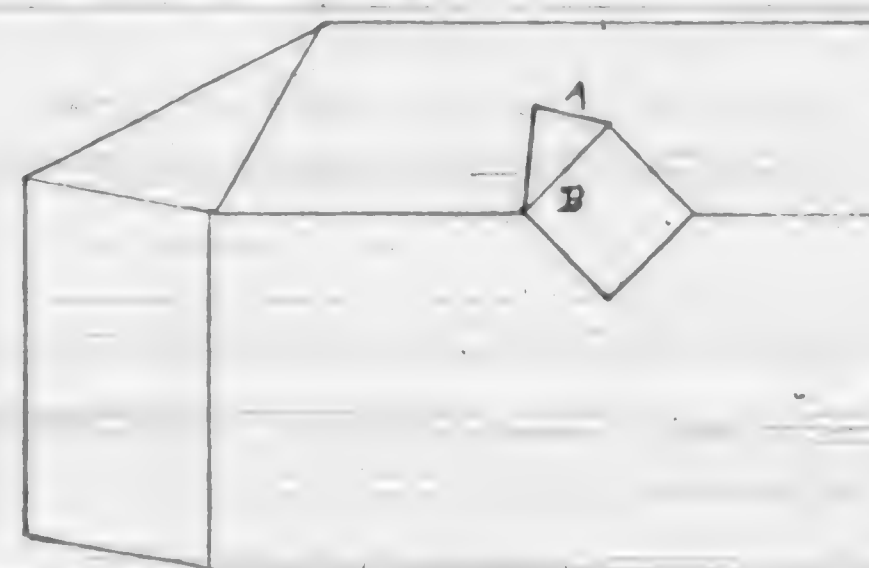


FIG. 5.

A B represents the ridge or edge of the 4x4; the line to the left of B the valley or side of the 4x4. It will be noticed that the ridge A is one-half the width of the width B.

Of course if my propositions hold good, and practical experience has so proven them, any distance can be used instead of those given, by applying the instructions given.

Yours truly,

B. McMANUS.

Oakland, Dec. 29, 1886.

[The above is one of several answers received in regard to the inquiry of Mr. Bink. We thank its author for the interest shown, and trust that all of our mechanical friends will emulate his example. We will be pleased to hear from those who make a practical demonstration of above theory in regard to the correct working of the principles advanced.—ED. ARCHITECT.]

EDITOR ARCHITECT: The liability to split and waste of the common channel rustic, has long been a cause of complaint among lumbermen and builders. Nor is the V rustic entirely free from the same objection, but is open to a still worse one from the fact that a split in the tongue will not show after it is covered by the board above, and careless workmen will sometimes take advantage of that fact. The plugging required by channel rustic is another objectionable feature.

I herewith submit a tracing of beaded rustic that in my humble opinion obviates all the above objections. If you think its merits sufficient to warrant an illustration in the CALIFORNIA ARCHITECT, I would be very much pleased to see it submitted to the readers of your JOURNAL for their criticism.

W. H. CARSON.

Woodland, Jan. 4, 1887.

TO FIND the weight of round iron per foot, square the diameter in quarter inches and divide by six; the quotient is the answer, and very near the actual weight.

It is sound business policy to patronize the liberal advertiser. He has confidence in his goods, or he would not risk his money in advertising them. He can sell cheaper than a non-advertising competitor because he can manufacture in large quantities and get material at lower prices.

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.

It has been ascertained that timber which has been floated in water for a considerable time is no longer liable to the attack of dry rot. The albumen and salts are slowly dissolved out, thus depriving the fungus of the nutriment needful for its development. A French experimenter has shown that fresh sawdust rots away in a few years in damp earth, whereas sawdust from which the soluble matters have been soaked by water, remains unchanged under like circumstances.

THE question of how to prevent checking in the ends of timber when it is being seasoned is engaging the attention of English engineers. According to a recent report, it has been ascertained, after trying a number of expedients, that by painting the ends of the timber with thick glue several kinds of lumber can be dried without checks. It is supposed that the glue penetrates far enough to cement the layers of the wood together near the ends, and thus keep the ends from drying faster than the rest of the wood. Of course this method requires seasoning under cover, since rain would have the effect of dissolving the glue.

POWDERED glass is largely taking the place of sand in the manufacture of sand-paper. It is readily pulverized by heating it red hot and throwing it into water, the finishing being done in an iron mortar. By the use of sieves of different sizes of mesh the powder can be separated into various grades, from the finest dust to very coarse, and these should be kept separate. A strong paper is tacked down and covered with a strong size of glue, and the surface covered with powdered glass of the desired fineness; when the glue is dry the surplus glass is shaken or brushed off. Muslin is better than paper, and lasts much longer in use.

THE blistering of paint upon wood is not, as is generally believed, the direct effect of heat upon oil in the paint. If it were, we should find it taking the same action upon iron or plaster, which, we need scarcely say, is not the case. Heat, in the case as above noted, is a secondary agency, the primary one being steam, generated from the moisture in the porous wood, below or behind the impervious face or coating of paint. It is truly speaking a blister; but it is also a blow, expansion or cavity caused by the generation of steam. Blisters formed on wood, if cut or pricked at an early stage, so as to let out the steam, may be erased by carefully rubbing them down to their original bed, especially so if separation has taken place on the face of the wood, in preference to the face of the priming, or first coat of paint.

Wooden Bolts.

THE following article from an exchange on the subject of wooden bolts will doubtless prove of interest to our readers: "Why do you make so lavish a use of nails in the carpenter-work of our houses, to the exclusion of the honest, old oaken pin? Pull down any building, if it be merely a barn, more than two hundred years old, and you will not find a single nail in the original work; rafters and joists were all bolted together so stoutly as almost to defy the tools of the destroyer. Many an old manor barn, when pulled down of late years—as, unfortunately, only too many of them are—has shown itself to have been better built than most palaces are now. There are arguments in the way of economy of time, and so on, in favor of the use of nails in house building, but they are as nothing compared with the solid advantage of using wooden bolts. The iron nails in time canker and rot rafters and floors, but bolts hold them together 'like grim death,' and render a house practically indestructible."

THE ash is one of the most valuable of trees. Its timber is elastic, tough, and durable. It is called the "husbandman's tree," on account of the great variety of household and agricultural implements that are made of it. It used also to be called "the martial ash," because weapons of war were formed of its light, yet tough wood.

RECENT inquiries show that among the 20,000 carpenters in London, the expert workers average only eighteen cents an hour, while the inexpert get only twelve cents. Carpenters in Paris can only earn \$1.70 for ten hours' work; in Berlin they work only eight hours a day for \$1.05 per day, and are out of work on the average three months in the year.

THE latest example of "Queen Anne," or nondescript architecture, is furnished by the Philadelphia Mint, the superintendent of which, in order to obtain more room, and in the absence of ground to build upon, added a roof story, putting a French mansard on a building of pure Grecian architecture. *Engineering News* dubs the new style Franco-Grecian.

"MOONLIGHT nights are the bane of railroad engineers," recently remarked a head official of the Baltimore and Ohio Railroad. "All engineers dread moonlight nights. They try the nerves to the utmost. Engineers like to run on dark nights. On a moonlight night the trouble with them is no trouble at all—shadows. An engineer, looking out from his engine, sees before him all manner of shadows. He is sure that the dark shadow across the track he sees is a man, or a rock, or some kind of an obstruction. He doesn't know, and he is kept in a state of nervous excitement all the time. Going around curves, along hillsides, many curious shadows are outlined on the track; and very often an engineer is so worked up over a night's ride that he is scarcely able to perform his duties."

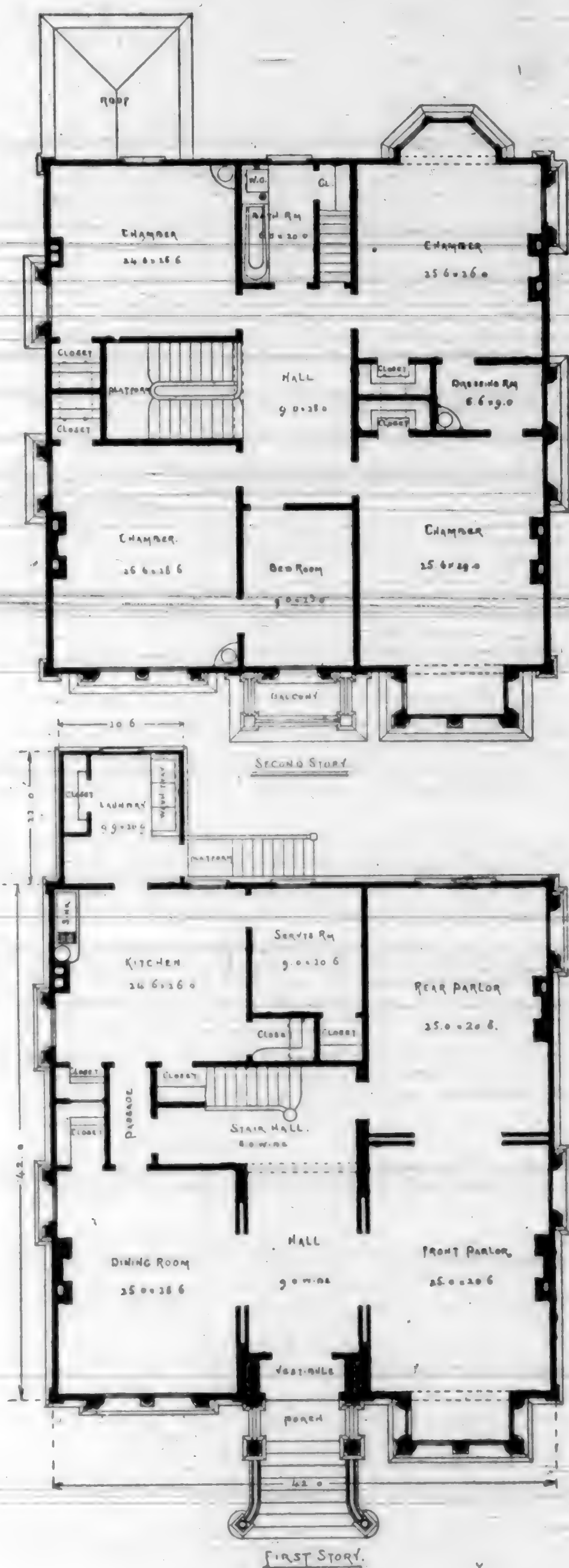
Built-up Doors.

A FEATURE of the building trade is the extensive use that is made of veneers. The method of building up doors of strips of pine has tended directly to this result. The built-up door, made of strips of pine glued together, is stronger than any other kind, at least of equal weight, and will not warp. But it necessitates the use of veneers of some kind. For heavy doors, quarter-inch stuff is used; but for the smaller doors in residences, one-eighth inch is often considered thick enough. The kind of wood depends on the finish of the room. Mahogany, cherry, oak, and curly or bird's-eye maple are perhaps the most common. This method of construction is particularly valuable where the opposite sides of doors have to be finished differently, to correspond with the rooms which they respectively face. This has often been done by making the door of two layers generally of equal thickness, the unequal shrinking and swelling of which would twist the door, and often tear it to pieces. The objection is raised against veneering that it is dishonest, and so not true art. That criticism should never be made in regard to such work as that mentioned. The built-up door of pine, veneered with mahogany, costs about as much as one of solid mahogany, and is a better one.—*Ex.*

Have a Specialty.

THE following from an exchange is well worth reading:—"Many persons fail in achieving their ends, for the reason that their efforts are too diffused and cover too much ground. In engineering, the details are so great, and the fields so vast, that many may be specialists without coming in direct conflict with each other, and the man who knows one thing well, instead of many things superficially, is always in request. Special information, provided it is thorough, is always better paid than general information, that skims the surface and leaves the depths untroubled. In these days of technical papers and encyclopedias, the average reader can know a little of many subjects, but it is notorious that a little knowledge is dangerous, and, we might add also, that it is useless. The versatile man is generally an inefficient one, and, while he may be interesting as a companion, or to while away an hour in gossip, he is of no use in mechanical emergencies. Where would the versatile man be in certain of these, which often arise in the profession? From the necessity of his calling, an engineer may know and be well informed on a great variety of technical matters. He must know these thoroughly or indifferently, according to his desires, but this does not prevent him from making a study and investigation of some particular line or subject."

ARCHITECTS SHOULD REGULARLY CONTRIBUTE ARTICLES TO THIS JOURNAL.



A Convenient Country "Box."

The accompanying plan is an admirable one for a country or suburban house. It will repay careful study. Prepared especially for this Journal, by James E. Wolfe, architect.

The Architectural Draughtsman.

NUMEROUS inquiries have reached us from time to time from persons anxious to acquire a knowledge of architectural or mechanical drawing, asking us to indicate a course of study which, while being thorough, should not be too extended. Some of the inquirers wished to gain a knowledge of the subject for the purpose of making it a profession, while others desired to learn something of it for the purpose of assisting them in their trades.

The investment of time occupied in learning architectural drawing is almost certain to prove profitable. A mechanical draughtsman who is fairly well educated in other respects is nearly sure of finding employment at a fair salary in almost any town of size, for where there is a town there will be building going on, and the services of a draughtsman needed in getting out the drawings and plans. Even in comparatively new settle-

ments, the services of a man who can make working, and other drawings, are generally in more or less demand. Draughtsmen and designers are required in nearly all the mechanical trades,—in the manufacture of silk, woolen and textile fabrics, paper-hangings, lace, carpet, and floor cloths; in fact, it is scarcely too much to say that there is not a mechanical art in existence in which the services of a draughtsman are not either directly or indirectly required.

It is a most erroneous idea to suppose that so long as a man can "draw to scale" he is entitled to call himself a mechanical draughtsman. To become justly entitled to such a term, a course of study of no mean order is necessary. First, we have geometry, which is the real basis and foundation of all mechanical drawing, and a knowledge of that subject is therefore absolutely essential; but a man who wishes to become a good draughtsman must go far beyond that. In the course of his vocation it will frequently happen that problems will arise needing a very intimate knowledge of the principles and practice of orthographic projection for their solution, so that he must make himself acquainted with the subject in a deeper and more extended manner than would be sufficient for the preparation of simple plans.

Then besides a good idea of coloring, and an artistic filling in finishing off drawings, a draughtsman should know something of isometrical projection. Take the case of farm buildings. Probably there is no simpler and clearer way of giving an accurate idea of the extent and arrangement of the agricultural class of buildings than to make the drawings in isometric projection, showing the plans and elevations in one view, and at the same time permitting perfectly accurate measurements being taken from them. The system is simple and very easily acquired, and is of great practical advantage in many other ways. Then perspective drawings are required, and a knowledge of that subject is necessary. The ordinary plans and elevations of a building prepared for working from are not sufficient to give an accurate idea of it to persons unaccustomed to such drawings. As a matter of fact, an elevation is a drawing of a building as it is, and not as it appears, and on that account it is desirable, when preparing drawings for a client, to show them in perspective. The art displayed in the coloring and finishing of such a drawing will do much in helping a man to decide upon the eligibility of a design for his purpose. Many architects, in designing the external portions of a structure, remembering this fact sketch their rough designs in perspective, from which they obtain a much better idea of the final appearance than they could possibly get from the ordinary plan and elevation.

What is sometimes termed "free-hand" drawing, that is, drawing without the aid of instruments, is very necessary to a good draughtsman. There is scarcely a drawing, large or small, in which some detail or other has not to be put in by hand, and the neatness of the drawing, as a whole, will largely depend upon the accuracy with which this is done. In the best perspectives the lines are first set out to rule in pencil, and are afterwards inked in by the unaided hand. In this way the stiff and conventional appearance of ruled drawings is avoided. Again the draughtsman must be able to work freely with his unaided hand, in order to put the lettering in neatly. It is surprising how many drawings are spoiled in appearance by the slovenly and inexact manner in which the lettering is done. On even, well-executed drawings it is not at all uncommon to see the lettering put in, as far as possible, by mechanical help, all the straight lines being ruled, and the curves put in with the compass. This practice is to be condemned, because the letters drawn in such a way will always have a stiff and inartistic appearance, while the very obvious manner in which they were drawn can scarcely redound to the credit of the draughtsman. In finishing off all drawings, excepting, perhaps, highly finished and elaborate perspectives, and other drawings of much importance, many architects only take the trouble to write the various titles upon the drawing, whilst others stamp them on with a rubber stamp, or stencil them on with special stencils made for the purpose. All these methods are equally objectionable. With a little practice anyone can learn to put in the lettering by hand almost as quickly as stenciling or stamping. For ordinary working details, and other purposes where a comparatively rough style of lettering suffices, the upright engrossing style answers very well, as it looks neat and is quickly executed. In ordinary "printing" letters it is usual to fill in each letter with a fine-pointed pen. This method, although probably the best where extreme accuracy is required, occupies too much time in ordinary cases. We therefore recommend students to try the use of the "inking in" pen for the purpose. It should be held in the hand in the same way as a pencil, and each stroke of a letter be traced with one movement of the pen. In working upon a smooth-surfaced paper or tracing linen, this method is of great advantage, as all

(Continued on page 10.)

CONTRACTORS SHOULD REGULARLY CONTRIBUTE ARTICLES TO THIS JOURNAL.

A List of Mechanical and Architectural Works

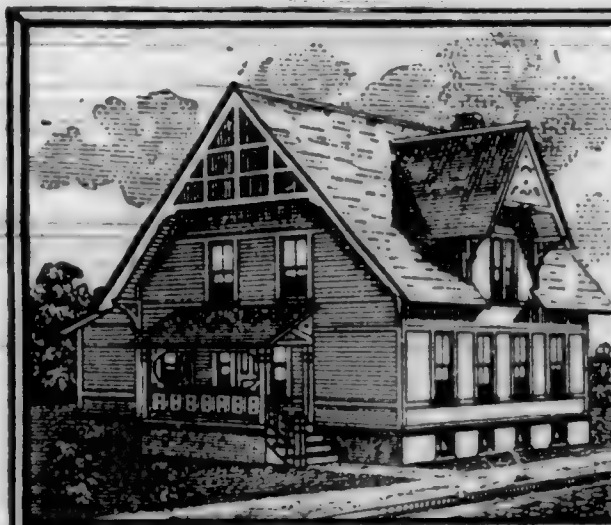
DEDUCT

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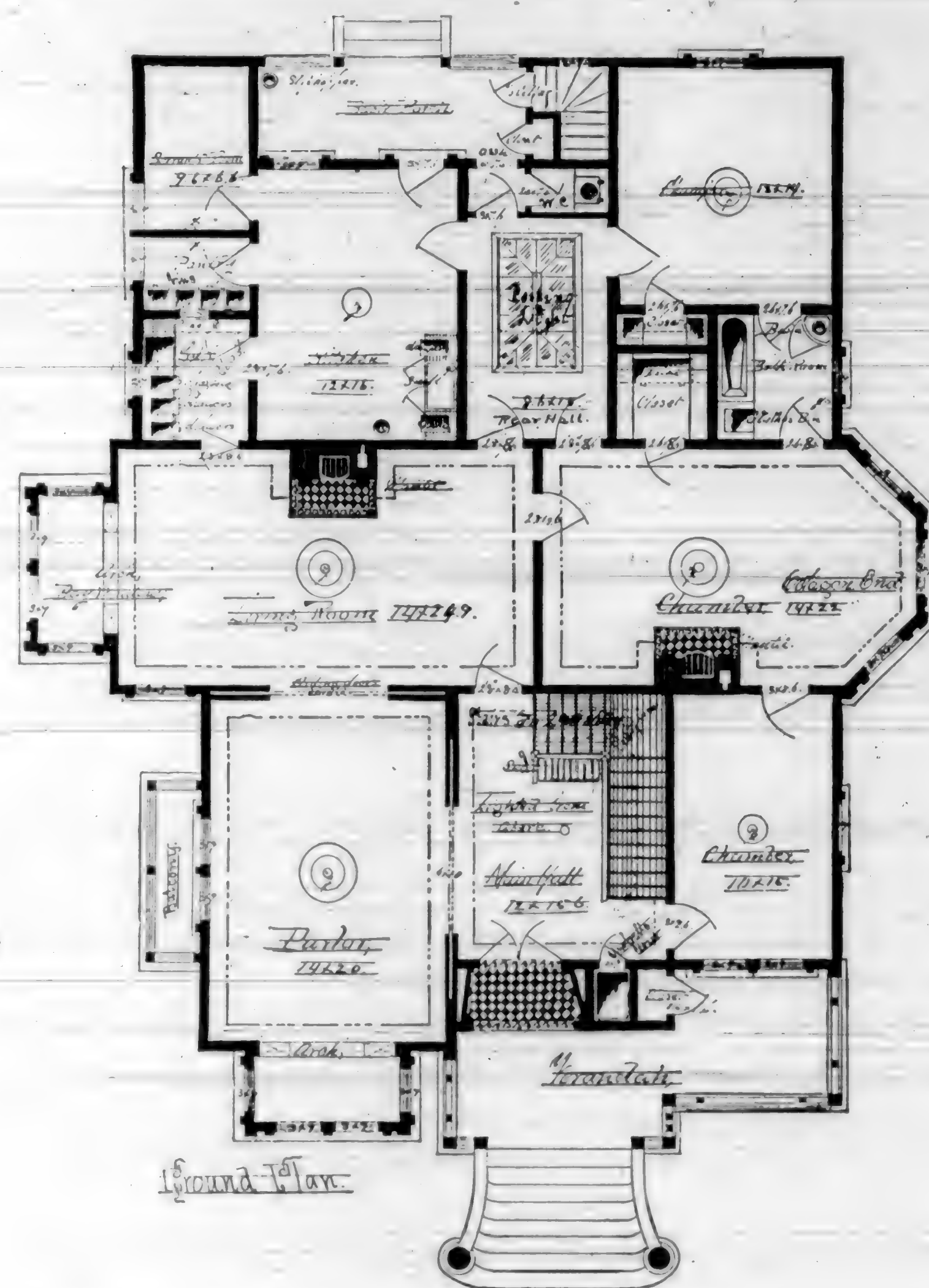
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PLAN FOR COUNTRY HOUSE. (See opposite page.)

the parts of the letters are of one thickness and uniform throughout, while the time occupied is little more than that taken in writing the word in the ordinary way.

Those who are deficient in the art of free-hand drawing will find the following an excellent system of practice. The object is to render the hand free, and to train the eye in accurately judging distances. Obtain a blackboard and a piece of chalk, or, in the absence of these, a sheet of rough paper—a newspaper answers the purpose—and a soft pencil. Then take chalk or pencil firmly between the finger and thumb, and rapidly draw a curve of some kind, moving the hand and arm from the elbow, and not from the wrist. Draw a number of curves in the same way in all directions, taking care not to sketch them, but to trace the whole curve with one movement of the arm. Then draw a number of parallel lines in various directions—horizontal, vertical, and oblique—and then draw fresh curves joining onto the straight lines. This is literally to “get the hand in,” and a half an hour’s practice occasionally will be of considerable benefit. The student may afterwards proceed to make upon paper careful copies of free-hand drawings, choosing at first figures of simple outline, such as the outline of a vase, or a number of curves meeting at a center and forming some kind of a design. The method in this case will be entirely different from the blackboard practice. Lightly sketch vertical and horizontal guide lines, mark off upon them points where the figure intersects, and then lightly sketch in the outline through these points, and, when satisfied as to the accuracy of the figure, complete with a bold, even, and continuous line. Remember that the distances must all be judged by the eye alone, and the use of rule or measure never be resorted to. After having become somewhat proficient with this class of figures, the student may next proceed to take more difficult copies. The designs for terra cotta, and other ornamental panels and belt courses taken

from the manufacturers’ catalogues, can be easily obtained, and will answer the purpose admirably.

The subject of coloring is important. Many a good drawing has been hopelessly spoiled by indifferent coloring. In most cases the colors required are simple washes, but it is quite necessary that they should be perfectly uniform. To obtain a flat, uniform wash, the drawing should be placed on a board, which should be slightly tilted. A full brush of color should be taken each time, so that there is always a little pool of color upon the paper until the bottom is reached, when it will be gathered up. The secret of obtaining good flat washes is to keep the colors very thin, that is, to add plenty of water to them. If the color is too thick it will not flow readily, and it dries too quickly to make it possible to obtain a flat and uniform wash. In cases where a deep flat wash is required, it may be easily obtained by giving the drawing several washes, one on the other, of course allowing each coat of color to dry before another is added. The colors used should be of the best quality. It is absolutely impossible to obtain a satisfactory result with inferior colors, no matter how skillfully they may be applied. Those imported and manufactured by either of the firms, Newton & Windsor, Rowney or Reeves, are among the best.

In conclusion, we would urge the would-be draughtsman to make a systematic study of the subjects above mentioned, to practice regularly and constantly, and to acquaint himself with the technical details of the art he proposes devoting himself to. If architecture, then the construction of the various details of building, making himself perfectly familiar with the various technical terms, and obtaining at least some considerable knowledge of the orders of architecture. Remember that absolute accuracy is not only essential to a good drawing, but that an error or a mistake of any kind in the plans may be productive of the most serious consequences when the building is actually erected. A case in point is within our recollection. A draughtsman, in drawing out

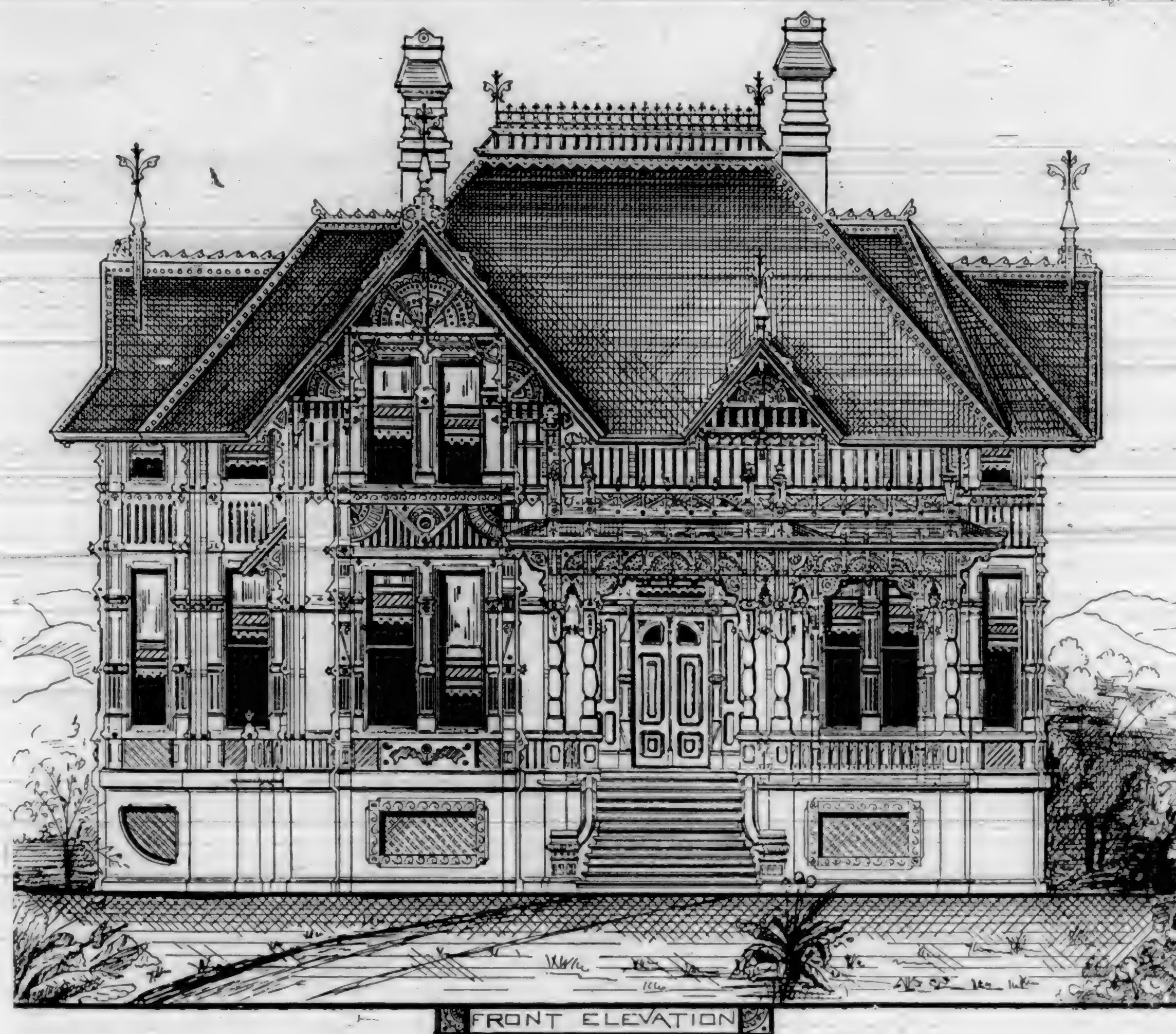
the plans for a certain building, omitted to show a window opening onto a light shaft. The plan from which the omission was made was of the second story and four upper stories, which were all alike. There were six houses being erected from the same designs, so that the simple omission of four lines from the drawing meant the omission of thirty windows altogether. The joinery used in the houses was supplied by a firm under contract for the whole quantity, and they of course declined to supply these windows, as they were not shown on the plans, and they had not therefore allowed for them in their estimate. A clause in the contract to the effect that every article of joinery necessary to properly complete the buildings should be supplied whether shown upon the plans or not, caused the owner to affirm that these particular windows were obviously necessary. Upon this, however, they could not agree, and litigation was the result, all caused by a small act of carelessness on the part of the draughtsman. Probably the best way to avoid errors is to carefully go over the drawings, after they are finished, in the most minute manner, and to check every detail and item. If the specifications are then prepared without reference to the finished drawings, and the two are afterwards compared, errors will be avoided as far as possible.

ARTUS.

A Popular Journal.

THAT this journal is extensively read, and its contents duly criticised, is proven by the fact that an error, which was shown in one of our plans not long since, has been the subject matter of twenty-nine communications received at this office in regard to the blunder. Who will say that this is not the best advertising medium on this coast, when even a little error is so extensively noticed. Terms for advertising are so reasonable that our pages should be filled with notices from those having wares in the building line to dispose of.

BOUND VOLUMES OF 1886 ARE NOW READY. PRICE \$2.50 EACH, POST-PAID.



DESIGN FOR A COUNTRY HOME.

Design for a Country Home.

WE are indebted to Messrs. S. and J. C. Newsom for the above elevation and the accompanying plan on opposite page. The arrangement is one that recommends itself to the lovers of a well-planned house. The elevation will suit those who desire a very showy house, without appearing too gorgeous.

Downing a Redwood.

NOW she takes it! Keep clear!” shouted Jim Lake, a muscular Sonoma “bull-whacker,” in warning to the group of woodchoppers in the redwood forest at the northern end of the San Francisco and North Pacific Railroad, as the death-rattle of a California giant was heard. After hours of under-cutting and cross-sawing, they had cut through all but one and a half inches of the monstrous trunk, fifteen feet in diameter, and the cracking of the wood announced that the monarch was about to fall. Its lofty top, 275 feet above the ground, wavered a moment, and bowed gracefully and with a stately air, like a grand lady courtesying; then gathering impetus as it left the perpendicular, the great trunk rushed to the earth with terrific force. Keeping to the course marked out for it by the woodsmen, it tore the foliage from the protruding limbs, filled the air with flying branches and bits of bark, swept away every article in its path, and descending with tremendous force, struck the ground with a thud to be heard a mile. Clouds of dust shot up sixty feet; the earth shook and rumbled. The prostrate giant trembled once from top to stump, and all was over. It was a death-scene of awful grandeur and solemnity. Even the lumbermen, accustomed to the sight daily, dropped their sledges, double-bitted axes, mauls, goads and water buckets, and gazed in silence at the overthrow of the many-centured monarch.

SOMETIMES an elevator brings a man nearer heaven than he wants to go.

Just Published, “Modern Architectural Practice.”

THE initial architectural publication for 1887 has been received. It is from the well-known architectural book publisher, W. T. Comstock. The full title of the book is “Modern Architectural Practice,” No. 1. A large country house. Bruce Price, architect.

In this work the author presents the full plans and details for a large building to be erected in San Mateo County, Cal. The general design is calculated to represent the “American style” of architecture. The author tersely remarks in the preface: “In handling the problem no style has been followed, for no style could be attempted in its purity. It would answer equally the assertion that ‘it is French in its feeling,’ ‘Romanesque in its handling,’ or ‘Dutch in its mass,’ still it is an American house, planned for American uses, and built of American materials. Its disposition of rooms is new to any style of the past, yet the wants of the client have been fully met, and upon them it has been built.”

The book is handsomely bound, printed on heavy paper, and contains twenty-four 12x15 plates, and full specifications illustrated by wood-cuts and diagrams, showing special features of construction; containing a large variety of doors, windows, and finish, wainscoting, paneled ceilings, staircases, balustrades, mantels, sideboard, pantry, bath-room, and laundry fittings, and other interior details; also exterior details, giving full and complete drawings of stone work, carved work, porches, main entrance, entrance doors, outlines of mouldings, gables, bay-windows, porte cochère, and all other details necessary for a full and complete understanding of the work. The price of the work has been placed at \$5.00, upon receipt of which we will forward a copy to any part of the country.

Set out your work with accuracy, and the time you will save will bring profit as well as credit to your employer and yourself.

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