

Build Home Suitable for Family Income

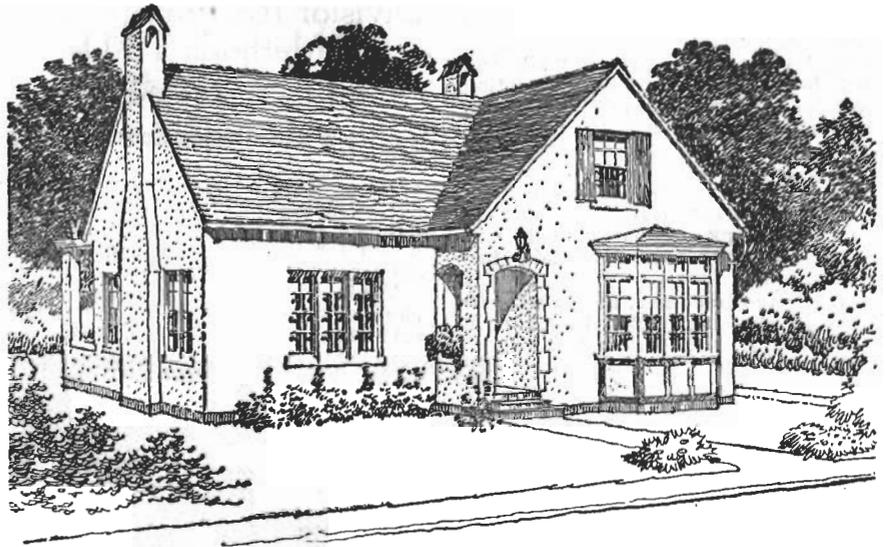
Olsen & Urbain, Architects, Chicago, Illinois

THIS original house has been especially designed for the man who is looking forward to a good home, but lacks funds to complete it at the start. The dining room, kitchen, bedroom and bath form a complete unit so that the upstairs might be left unfinished or the building of the wing containing the living room left till later, as the house would look well without it.

The fine living room of this six-room house is lighted on three sides and has a lofty beamed ceiling which lends distinction to the interior. The living-porch, which may be glazed if desired, is located primarily for comfortable use. The dining room and kitchen are of ample size and are arranged to provide maximum convenience; both have good light. The central hallway also gives access to the ground floor bedroom, a fine feature, and the adjoining bath. On the second floor are included two bedrooms of good size, and the roomy closets provide plenty of clothes storage space.

This house should have a lot not less than 50 feet wide. It is intended for south or east aspect as shown, or for north or west with the plan reversed.

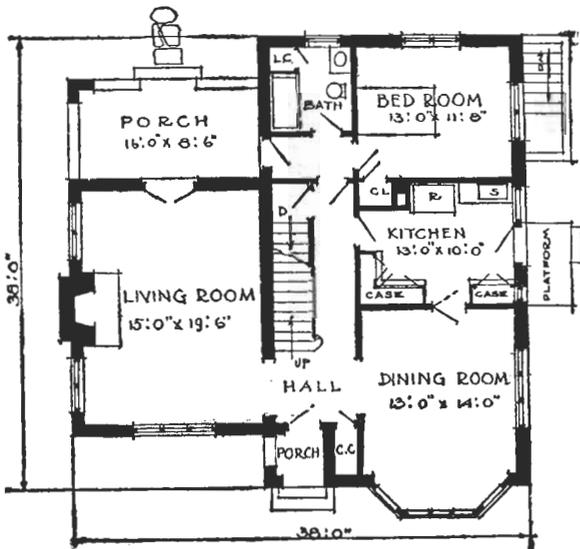
When built with concrete block walls, upon which an exterior covering of portland cement stucco of



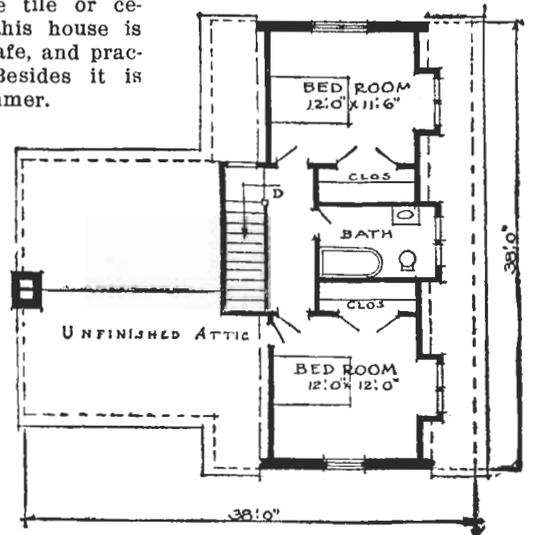
No. 6204—THE PELHAM

chosen tint has been applied, and with an appropriately colored concrete tile or cement asbestos shingle roof, this house is attractive in appearance, fire-safe, and practically free from up-keep. Besides it is warm in winter and cool in summer.

An illustrated booklet containing pictures of more than a dozen homes in different sections of the country may be obtained free of charge by writing to the Editor. In it also is much other information of interest and value to anyone planning to build a home.



FIRST FLOOR PLAN



SECOND FLOOR PLAN

Photographs and Descriptions
of Homes Owned
by Frisco Employes
Are Wanted by the Magazine



1.—Marvin Tong, Jr., 2 years; son of Marvin Tong, West Shops, Springfield. 2.—Kathryn Ellizabeth Cummings, age 10 months. 3.—Raphael, 3 years; Daren, 19 months; sons of E. E. McClanahan, Spaulding, Okla. 4.—Ruth and Richard Grayson, children of W. J. Grayson, Cuba, Missouri. 5.—Margaret Clarice Ford, 6 months; daughter of Clyde Ford, Sherman, Texas. 6.—Willma Margarite Clark, 14 years; Johanna Mae Clark, 13 months, children of Rufus Clark. 7.—Left to right: "Bob" Pitchford, Margaret Leah Cook and John Newton Pitchford, sons of N. E. Pitchford, Southern Division, and daughter of H. V. Cook, Memphis, Tenn. 8.—Wesly, Beatrice, James and Geraldine Cummings, ages respectively, 11, 9, 7 and 4 years. 9.—Agnes, 10 years, Louise, 21 months, sisters of Launa A. Chew. 10.—Fern E. Hines, 11 years; daughter of O. D. Hines. 11.—William Edgar Tait, age 18 months. 12.—Dorothy Alice Parrigin, 6 years; daughter of Dan W. Parrigin, Sherman, Texas.

Story of Recent Improvements In Valve Gear Frisco Locomotives

TO THE average citizen an engine is an engine, either passenger, freight or switch, large or small.

To the mechanic or foreman in the shops the engine is judged by its condition, good or bad, and ability to turn promptly if needed. The engineer and fireman, and also to a large extent the trainmen and dispatcher, have an entirely different vision; and in the language they speak, can the engine in question handle its tonnage dependably and with dispatch, or in passenger service make its schedule, or better, with regular train or extra cars; or in other words, is the engine smart.

The engineer and fireman feel most keenly failures on the part of the engine to do the work that should and is expected of them and the engine in their charge, and are the first to have to bear the criticism of their superior officers. These men are also the first, through their training and experience, to know whether the engine is going to deliver the goods, and they do not have to go many miles before they have a line on the capacity of their engine. If it is a poor engine, it is mutually agreed that it is going to be hard sledding and everything is going to have to break right if they make the time. Many a train is put over the road right on time and to all outward appearances the engine is doing fine when it is quite to the contrary; the facts are, it was done only by the extraordinary exertion and perfect teamwork of a skillful engineer and fireman and their working together to that end. At the end of the trip about the only remark heard is that they had a hard trip and a loggy engine.

It is of this loggy engine that this article is written, and why two engines of identically the same class, one will be, in the common parlance of the engine crew, smart as a whip, and the other engine will be loggy. They will say of an engine handling a heavy tonnage on ruling grade that she almost knocked the hill down and only gave her five notches, and of another engine that it seems as if she wants to go under the hill instead of over it and had her in the corner before half way up. If other conditions are equal, namely, steam pressure is maximum, engine well lubricated, water kept down, engine not blowing, the answer will usually be found in the setting of the valves and consequently the steam distribution.

Improper setting of eccentric on Stephenson gear engines and improper setting of cranks of Walschaert gear engines, with some factor of either type cutting down the valve travel such as improper length of reach rod, improper spacing of or blocking of quadrant, improper adjust-

Told In Trainmen's Own Language

By P. O. WOOD

ment of air reverse piston travel or adjusting rods and reach rods operating air reverse.

The question is often asked by our engineers, "What is being done to the engines, causing them to handle tonnage differently than same engine formerly did?" One of the contributing factors, others will be handled in a later article, is the re-designing of valve gear, properly proportioned and properly suspended to perfect the steam distribution that will develop maximum drawbar pull and maximum efficiency of the engine. Advantages of tight valves and cylinders, good firebox conditions, good steaming engines well handled are entirely nullified by improperly designed and set valves.

It naturally follows that a road of the size of the Frisco has been some time in the making and necessitated a number of mergers and consolidations. Power taken over by the parent line, designed and built with the ideas of a number of mechanical men incorporated in the various locomotives. This results in different proportions affecting heating surface, grate area, factors of adhesion, distribution of weights, etc., and most important among these items are port clearances, valve gear arrangement, design and length of valve travel. The latter is a very important item of which I will write in detail.

Passenger engines that formerly had as low as five-inch valve travel have been increased to six and one-half to seven inches. Valves that were line and line exhaust are now set with $\frac{1}{8}$ -inch exhaust clearance and ports in valve bushings enlarged and lead increased. Freight engine valve travel increased from $5\frac{1}{2}$ and 6 inches to $7\frac{1}{2}$ and $7\frac{3}{4}$ inches and steam lap increased. Valve gear parts corrected to blue print dimensions, air reverse gears checked and travel corrected and on engines with air reverse gear a calibrated plate placed by side of reverse lever with a pointer indicating zero for dead center of lever and gear, then 25 per cent, 33 per cent and 40 per cent cut off of gear stenciled so enginemen can at a glance, know his working notch and the cut-off that his engine is working in per cent of cylinder stroke.

The 4100 and 1500 class engines have a valve travel of $8\frac{3}{4}$ inches, giving these engines a total maximum cut-off of 90 per cent. The 1015 class engines, 1000 class engines and 1400 class engines now coming out of the shops,

the 1040 class and Mallets are examples of improvements partly due to lengthening the valve travel. The 1015 class formerly had a $5\frac{1}{2}$ -inch valve travel with lever in the corner. These engines had maximum cut-off of about 80 per cent, and with 7-inch travel nearly 90 per cent maximum cut-off. With 80 per cent cut-off the steam escapes after expansion when the crank pin is between the eighth and center and when there is still quite a leverage in the crank pins' position to perform more work if the valve had not opened and let the expanding steam escape. With the 90 per cent maximum cut-off, the expanding steam has continued to expand and continued to perform work until the piston has traveled 90 per cent of the piston's stroke and in this position the crank pin is so near its center that there is practically no leverage left.

The net results of increased maximum cut-off are a more constant torque due to both sides of engine having power applied through a large part of the stroke, and a reduction of the distance that the momentum of the engine plus the live working side has to put the engine over its four consecutive dead points of travel of the wheel making one revolution and is similar to the power transmitted by a six cylinder car as against a four cylinder car and results in a more powerful and smooth running engine and an increased tractive power. Another marked advantage of longer valve travel is the power built into the engine due to what is known as over travel. This is the valve instead of wire drawing the steam through; slow-moving valve port that barely opens port to maximum and immediately starts traveling back and cutting off the steam, also by a wire drawing process as in the short valve travel way will with long valve travel permit of the valve not only opening port wide, but will over travel or travel on by the edge of steam port $\frac{3}{8}$ to $\frac{1}{2}$ inch, and the port is in turn held wide open for free rush and building of steam pressure behind the piston not only while the valve is over traveling the $\frac{1}{2}$ inch by the port, but also while it has to travel the $\frac{1}{2}$ inch back, which permits the piston to travel a large part of its most effective part of the stroke due to advantages of its crank pin maximum leverage and with a full mean effective pressure instead of steam being wire drawn to the cylinder.

This builds up a higher cylinder pressure behind piston and reduces the drop in pressure from boiler pressure to the working pressure of the cylinder. The longer valve travel permits of wider steam lap, therefore, steam and exhaust ports less restricted, also more lead which, in passen-

ger engines, is desirable, increasing the port openings at short cut-off and obtaining a maximum movement from the cross head motion which is rapid and preliminary to any movement imparted by the crank arm. With wider steam lap for given cut-off a wider and longer maintained exhaust opening is secured, giving steam more time to escape and reducing compression account not so much steam trapped to compress; this gives smoother running engine at high speed and short cut-off. The longer maximum cut-off increases the tractive power of the engine to a marked degree, therefore, more power for starting train and correspondingly more power under any condition of service.

The over travel permits building up of nearer boiler pressure and therefore increases the mean effective pressure, and is equivalent to an increase in boiler pressure on the locomotive so far as results are concerned. The soft exhaust partly due to increased steam lap on engines working in short

cut-off is due to greater expansion of steam account being held on to longer expanding to a lower pressure and exhausting at a lesser terminal pressure, naturally getting more work out of the engine and saving both fuel and water. An engine which has long valve travel will accelerate faster if after getting few turns out of wheels the lever is brought back a few notches quickly unless engine is loaded to and working full capacity account unfavorable grade line.

Will in later article write of and give results of tests on what has been and is being done to reduce back pressure, the combining of correct steam distribution and minimum back pressure insures the elimination of the so-called loggy engine and gives us an engine smart, powerful and one that can develop its maximum drawbar pull with the least fuel and water cost, and permits of refinements of handling by the crew that makes it a pleasure to run and fire the engine.

It is perhaps not usually thought of as a fraternal organization. Yet there permeates the very soul of the most noble brotherly bearing.

The hand of good fellowship, helpfulness, kindness, liberality, integrity, ever is ready to greet warmly and sincerely its fellow members.

The fraternity of which I speak goes further than that, for the same unwritten principles that so illustriously guide the conduct of its members toward one another, unwittingly are brought into play in its dealings with the general public which embraces every living, breathing person in America.

There are no officers. It has but one rule—the Golden Rule. Its members need pay no dues.

Its lodge rooms may be found any place where there is a railroad office.

Traffic men constitute the greatest fraternity in America.

Be Careful What You Say

In speaking of a person's faults,

Pray don't forget your own;
Remember, those with homes of glass,
Should seldom throw a stone.

If we have nothing else to do
But talk of those who sin,
'Tis better we commence at home,
And from that point begin.

We have no right to judge a man,
Until he's fairly tried;
Should we not like his company,
We know the world is wide.
Some may have faults—and who has not?

The old as well as young;
Perhaps we may for aught we know,
Have fifty to their one.

I'll tell you of a better plan—
You'll find it works full well;
To try your own defects to cure
Before of others tell;
And though I sometimes hope to be
No worse than some I know,
My own shortcomings bid me let
The faults of others go.

Then let us all when we commence
To slander friend or foe,
Think of the harm one word may do,
To those we little know,
Remember, curses, sometimes like
Our chickens, "Roost at home."
Don't speak of others' faults until
We have none of our own.

VOTE
NOVEMBER 4th

VOTE
AS YOU PLEASE

BUT
VOTE!

Wonder if There's Anything Personal in This "Bug Editor" Stuff?

"Bug Editor,"

Frisco Employes' Magazine,
St. Lou's, Missouri.

I have been requested by the manager and wife chief at Ft. Scott, Kan., to handle with you the matter of furnishing "bug-proof" screens for the relay office at that point. I am quoting below correspondence handled on this subject:

"EES. 6-24-24.

If entirely agreeable with the management of the office, I suggest you have a screen placed over the train order window. The bugs are getting fierce there. There are large and small ones, long, short, thick, thin ones; in fact they come in droves of all sizes; some bite, some of them only crawl, others shimmy all around.

They get in my eyes, ears, nose and mouth, and in my hair, in my pockets and up my pants legs, also in my shoes. In fact, I get partly intoxicated at times on bug juice. It is not my wish to violate rule "G" and thereby lose my job. I explore you to get a screen for this opening.

Long, LNC."

"Mr. W. O. Long:

Replying to your request for a screen for the train order window.

I have taken up with the department of bugology with a view of ascertaining if this insectivorous influx constitutes a hazard sufficient to justify the expenditure for the screen. In the meantime use Professor Skeet-nomore's Sketerene applied freely to the exposed parts.

E. E. S."

"R. D. S.:
Please note and return.

E. E. S.

"E. E. S.:
Abumbargladiflumhastiloquantus.
R. D. S."

"W. O. L.:
Please note the B. & B. Department says 'No.' I presume this is on account of no appropriations available at this time.

Now that the season has advanced well along, can you not make it over until next summer? Why this complaint not registered during the past winter so as to give us a chance to provide proper screening?

E. E. S."

You will note the matter is becoming quite serious. Can you not do something to have this screen furnished?

Lill'an Hultsch,
Reporter, Telegraph Department.

The Greatest Fraternal Organization

By W. S. Merchant

General Eastern Agent, Frisco Lines
New York City

Go where you will in the United States and you find temples or lodges, often magnificent structures, of various fraternal organizations. Collectively they are an American institution. They are typical of American life and ideals.

Even in the tiniest hamlet there is the inevitable Odd Fellows' Hall, or the Junior Order of American Mechanics.

These homes house orders or societies, that are strongly entrenched in their splendid purposes. They accomplish much that is good.

But there is one fraternity in America greater than them all, that possibly is not generally recognized as such.

INTERVIEWING A CIRCUS

(WHICH "AIN'T" NO SMALL JOB)

By MARTHA C. MOORE

Prologue:—(With due apologies to Ben Lewis!) This is a story of a tour through a circus, culled and cut as much as possible so it will have a chance of slipping by the Editor. My thanks go to each and every body who made it possible for me to get this story, which I shall write down in my little book, as one of the most thrilling experiences of my life. Finest folks—those circus folks—wish you all could meet them.

"Say, mother, I'm sure having a time writing up that circus story for the Magazine. I just simply got so much wonderful information I can't conceive of a way to write it up. I've just thought and thought until my head aches."

"Well," said mother, "I don't suppose you can think of anything very original. Original ideas are hard to find. Don't sit up so late this evening. I think you need some sleep. You'll think of something pretty soon."

"Well, I ought to—with all the things I saw and the wonderful people I met and the letters—you know Mr. Meighan of the Ringling Brothers & Barnum Bailey Circus of Chicago wrote Mr. Geo. Smith at the main entrance to introduce me to those I wished to interview, and Mr. Baltzell, who knows the circus people so well, wrote everybody, asking that I be allowed the privilege of getting inside, and I got there and now to write up my experiences."

"I'm going to bed," said mother. "Don't stay up too late."

"Hey!"
 "Hey, yourself. Who are you?"
 "Me? Why say, don't you know me? I'm your ambition; your 'suppressed desire' so to speak. You've certainly been working me overtime. What's the matter, can't you get the BIG IDEA?"

"No, and if you're who you say you are, why don't you help? Where are all our big ideas anyway; yours and mine?"

"Well, that's just what I thought I'd drop around to see you about. You see all night long I keep right on

working. Hardly ever have a rest. Work in connection with your subconscious mind you know, and maybe I can help you. I work out all kinds of your problems, but when you awaken, you never can remember your dreams; so I don't help you much. You've been running me to death lately, just thinkin', and I've either got to get busy or move. Suppose you just put your head down on that table; kinda drop off into unconsciousness. I'll stay right here with you and keep you just enough awake to remember what I make you dream, see?"

"Say, I'm so sleepy that table looks

ed 'Main Entrance,' but I couldn't find him in the cars, so I went on over to the grounds."

"Remember those big black boys pounding posts?"

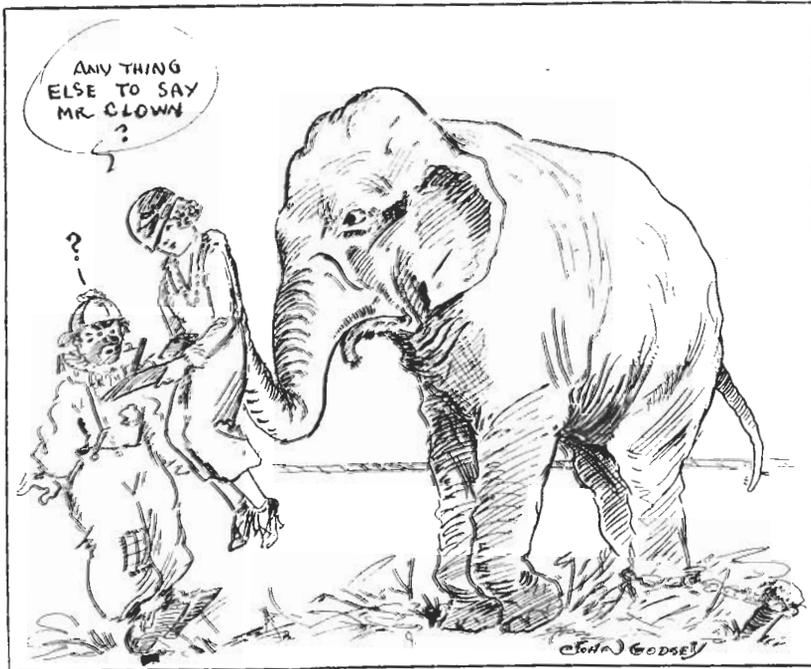
"Oh, sure. You know I got there before they had many of the tents up, and a wagon was driving over the ground, containing a post-driving machine, setting up posts and after they were started in the ground, about 10 or 12 big black boys with sledge hammers, all hitting the same post, drove it on in, to hold the big canvas down. That ground was certainly confusion—trying to get wagons, tents and paraphernalia that covered 12 acres on

about 5. The ground was wet with recent rains, and the wagons got stuck, and if 8 horses couldn't pull it out, they got 16, if 16 couldn't, they got 24. I was standing on a corner of the field and saw a tent go up marked 'Main Entrance.' I shifted toward it, and hung around trying to find Mr. Smith and give him that letter."

"I remember what a time you had finding him!"

"Thought I never would; but while I was waiting I got both eyes and ears full. You know I always did want to know how they loaded and carried a giraffe. Well they drove one big wagon up in front of me and opened the door and out stepped two

giraffes. They stretched their neck around and I just wondered if they got sore throats which part you'd start to doctor. My curiosity was terribly relieved. I didn't think they had elastic necks and were loaded on box cars, and when they went under a bridge they would bend down and then spring back, but I never could find out for sure how they were carried. The floor of their wagon is very low and the sides all padded—so if they can keep their neck folded up—they're all ok. Well, pretty soon I found Mr. Smith. He was worth looking for, for he was one of the finest fellows I ever met, and he called over one of his assistants, Mr. Karl Steinbrooke, and told him to take me around, all over the circus grounds and introduce me to everybody I wanted to meet."



MARTHA AT THE CIRCUS

like a feather bed; but if I ever do start sleeping, I'll never wake up, so you'll have to keep busy so I can remember all this help you think you can give me. Gosh, I'm half asleep now, so get busy!"

"You remember where you went first, after you left the office, don't you?"

"You bet I do. Went down to the tracks where they were unloading the cars. Great big old red wagons drawn off the cars by a team of horses, and as each one came down the plank, there stood the four big horses to take it on to the show grounds. Don't seem like I ever saw so many beautiful horses. The train was in four sections, consisting in all of 98 cars. Of course I had letters of introduction to Mr. Geo. Smith, address-