May 17, 1938. F. F. BEIL 2,117,269

FRAME CONSTRUCTION

Filed Feb. 18, 1937

Fig. 3.

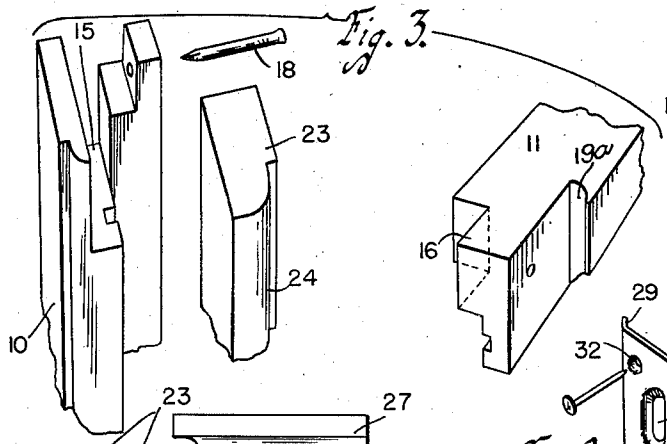
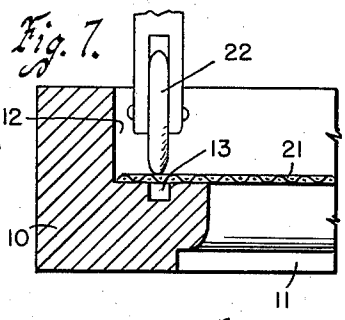


Fig. 7.



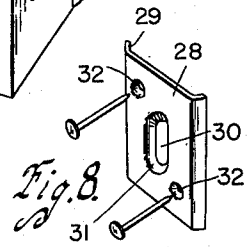


Fig. 8.

Fig. 5.

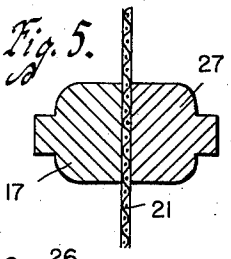


Fig. 4.

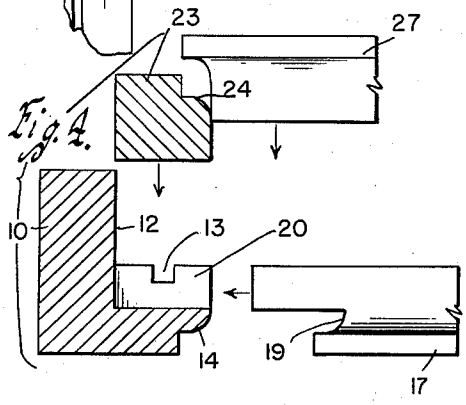


Fig. 6.

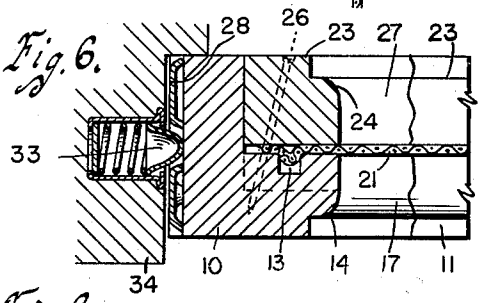


Fig. 1.

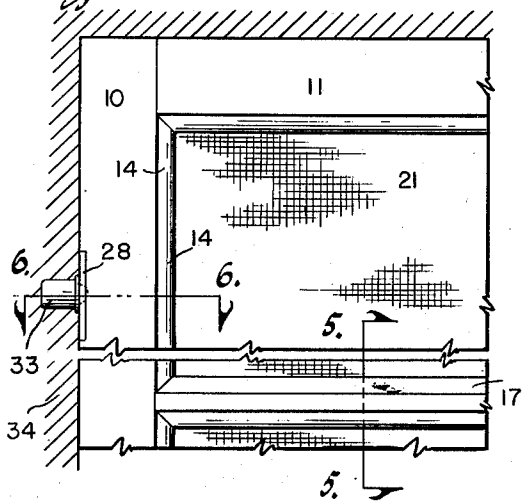
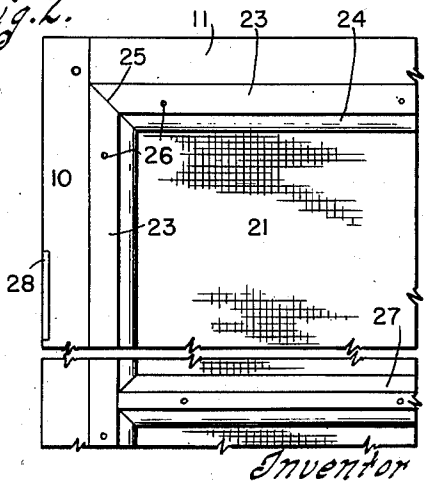


Fig. 2.



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UNITED STATES PATENT OFFICE

2,117,269

FRAME CONSTRUCTION

Forrest F. Beil, Clinton, Iowa, assignor, by mesne assignments, to Curtis Companies Incorporated, Clinton, Iowa, a corporation of Iowa

Application February 18, 1937, Serial No. 126,446

3 Claims. (Cl. 156—14)

The object of my invention is to provide a frame particularly adapted for window screens and the like, which is of simple, inexpensive construction.

Another purpose is to provide such a frame, peculiarly adapted for economical factory production.

Another object is to provide a screen having features of construction, giving it an improved architectural appearance.

Also I have here produced a reversible screen alike in appearance on both sides.

It is another purpose of my invention to provide such a structure as will enable wire cloth or screen wire to be secured at the center of the frame from front to rear, where the tension of stretching the wire is less likely to impose warping or bending on the frame members.

Another object is to provide a structure which can be so made as to give the frame the appearance of a neat small frame, less woody in appearance than the ordinary screen frame, thereby also effecting a reduction in the actual amount of wood used for making such a frame.

A further purpose is to provide a frame having flush faces on both sides, so that the frame may be laid flat for storing and piling.

With these and other objects in view, my invention consists in the construction, arrangement and combination of the various parts of my frame construction, whereby the objects contemplated are attained, as hereinafter more fully set forth, pointed out in my claims, and illustrated in the accompanying drawing, in which:

Figure 1 is a front elevation of one corner of a screen embodying my invention.

Figure 2 is a rear elevation of a corner of the same frame.

Figure 3 is a perspective view, illustrating several parts of the screen before assembly to illustrate their relations.

Figure 4 is a sectional view, showing the stile parts of one side of the frame, half of one of the cross bars, and part of one end of one of the molds.

Figure 5 is a detail, sectional view taken on the line 5—5 of Figure 1.

Figure 6 is a detail, sectional view taken on the line 6—6 of Figure 1.

Figure 7 is a detail, sectional view, cut through one of the stiles, and illustrating the mode of temporarily installing the wire; and

Figure 8 is a perspective view of the locking plate on one of the stiles.

The stiles and rails of the frames are broadly speaking alike.

In Figure 7, a stile is indicated at 10 and a rail at 11. Each stile and rail has cut lengthwise in one face adjacent its inner edge a rabbet, such as is indicated generally at 12 in Figure 7. The rabbet is cut from the outside face about half way through the stile and through the rail as illustrated for instance in Figure 7, and the inner face of each rabbet has a lengthwise groove 13.

The inner edge of the stile is preferably given the form of a molding, as indicated at 14 in Figures 1 and 4.

It will be seen that when the two stiles and two rails are put together to form a frame, the rabbet 12 will extend continuously around the frame.

It will, of course, be understood that the stiles are made in rights and lefts and that the rails are made in rights and lefts.

Considering the face of the frame as shown in Figure 1 to be the front, then it will be seen that in Figure 4 is illustrated the left-hand stile 10 and the upper rail 11.

At the corners, the stiles and rails are fastened together by a mortise and tenon joint.

It will be observed that as shown in Figure 3, the stile has the shouldered mortise 15 and the rail has the tenon 16, the rail being shown in this figure as turned a quarter turn from its normal position of assembly. The rail is coped out as at 19a to fit the mold-shaped portion 14 of the stile.

Assuming that a square frame has been formed by securing together right and left stiles and top and bottom rails, the parts are fastened together at the corners by dowel pins 18.

Incidentally, the front center cross bar 17 is installed before the stiles and rails are assembled.

The front cross bar 17 is provided with a notched and coped-out portion 19, so that the end of the bar 17 fits into a mortise 20 in the stile and the coped-out portion 19 fits over the molding shaped portion 14 of the stile.

When the frame has been completed with the two stiles 10, the top and bottom rails 11, and the front cross bar 17, the screen wire 21 may be put in place. It is, of course, cut to shape, so that its edges will rest on the inner faces of the rabbets 12. It may be stretched and temporarily held in place by running a wheel 22 along it and forcing it into the grooves 13 (see Figures 7 and 6).

There is provided a mold 23 with a molding shaped inner edge 24 for each stile and each rail.

The molds **23** are provided with mitered joints at their edges as indicated at **25** in Figure 2.

The molds **23** are nailed to the stiles and rails as indicated at **26** in Figure 6. After the molds **23** have been put in place, a rear cross bar **27** similar in cross section to the cross bar **17** is set in place. Its ends are shaped to fit the molding like edges **24** of the stiles **23** (see Figure 4).

On the outer face of each stile **10** is fastened a plate **28** having the flanges **29** at its sides and having the elongated slots **30** in its center with the metal flange pressed downwardly and inwardly around the hole as indicated at **31**, and having suitable nail or screw holes **32**. These plates **28** are inset in the outer edges of the stiles as indicated in Figures 1, 2, and 6.

The plates **28** with their openings **30** are intended to coact with spring-pressed buttons **33** inset in the window frames **34**.

A frame of this kind, as will be seen from the description, has the advantages mentioned in the foregoing objects and others which will be observable.

Changes may be made in the arrangement and shape and construction and combination of parts, and so far as such changes are within the scope of my invention, it is my intention to cover them in the claims herewith.

I claim as my invention:

1. A frame comprising a pair of right and left upright stiles, each having a rabbet adjacent its inner edge extending about half way through it, the stiles having opposite mortises in the inner faces of said rabbets and open to the inner face of said rabbets, a cross bar having ends received in said mortises and having in its outer surface at its ends coped-out portions to fit the inner edges of the stiles, whereby when the stiles and rails are fastened together, said cross bar will be locked in place against both longitudinal and transverse movement.

2. In a screen frame, a member having a mortise at its end, said mortise being open at the end of said member, one side of said mortise being a surface in a single plane, and the other side of said mortise comprising surfaces in two planes parallel to said first mentioned plane, said surfaces being connected by a shoulder; and a second member having an end shaped to interfit with said mortise.

3. In a frame symmetrical in three planes, a rectangular frame having adjacent its inner edge a continuous rabbet equal to half the thickness and half the width of the frame members, a frame filling member having its edges received in said rabbet, mould elements in the rabbet, the inner edges of the frame and the mould elements being of substantially the same shape, a cross bar between the sides of the frame midway between its ends on one side of the member having its ends fitted to the inner edge of the frame, the sides of the frame and the ends of the cross bar being provided with mortises and coacting ends received in the mortises and an adjacent cross bar on the other side of the member having its ends fitted to the edges, the cross bars being of the same total thickness as the frame and being alike in cross section.

FORREST F. BEIL.