

Feb. 26, 1929.

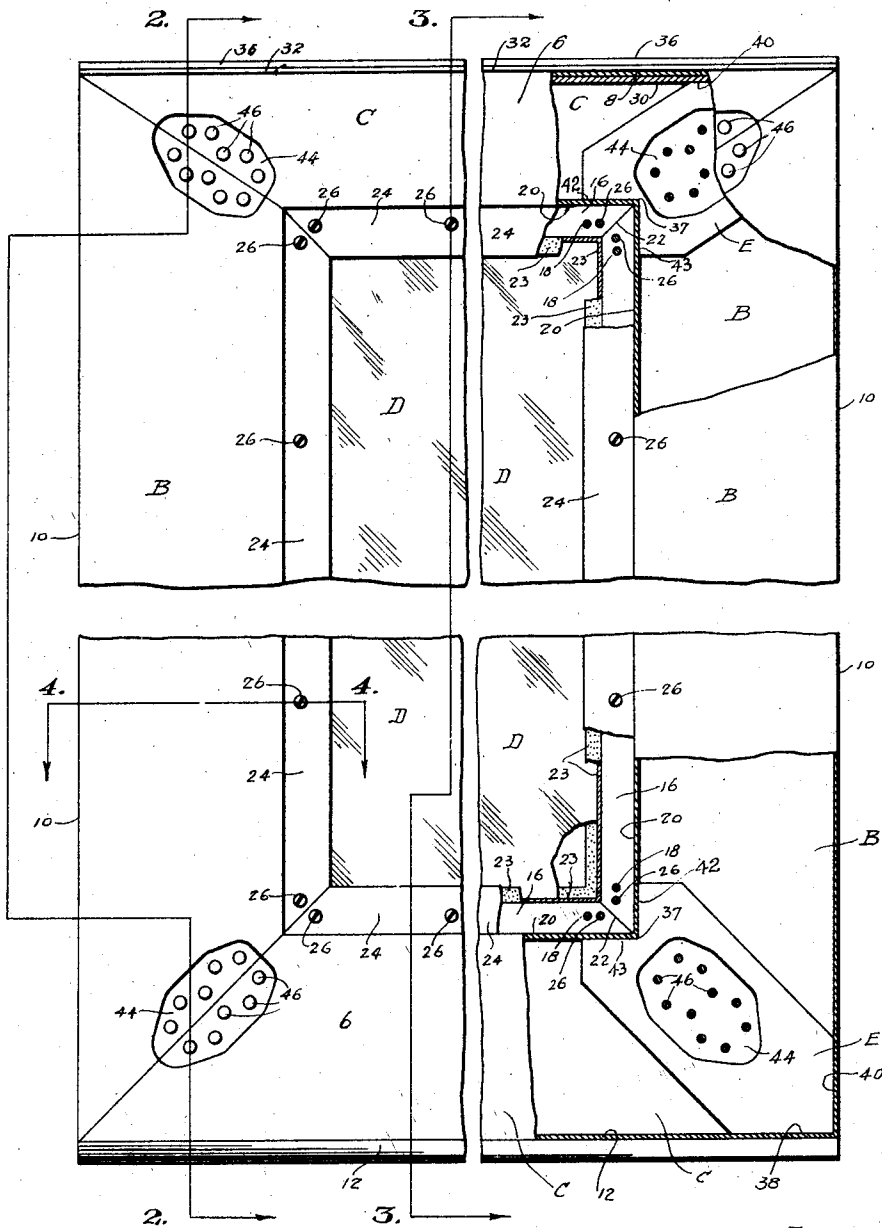
1,703,092

G. C. BISHOP
WINDOW CONSTRUCTION

Filed Nov. 30, 1927

2 Sheets-Sheet 1

Fig. 1



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FIG. 2.

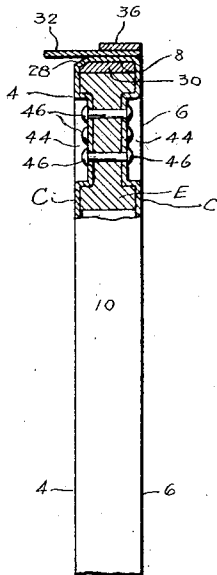


FIG. 3.

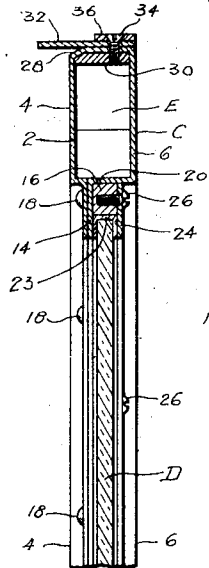


FIG. 4.

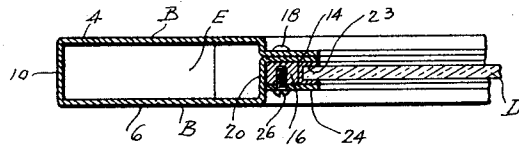
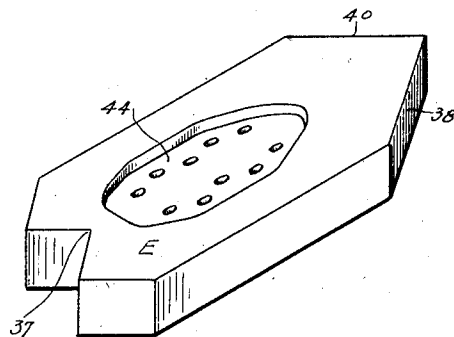


FIG. 5.



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UNITED STATES PATENT OFFICE.

GEORGE C. BISHOP, OF GARDEN CITY, NEW YORK, ASSIGNOR TO THE NATIONAL LOCK WASHER COMPANY, OF NEWARK, NEW JERSEY, A CORPORATION OF NEW JERSEY.

WINDOW CONSTRUCTION.

Application filed November 30, 1927. Serial No. 236,837.

This invention relates to window construction and refers more particularly to windows such as are used with railway cars, although obviously the invention is capable of adaptation to windows other than those for railway cars and also the thought may be carried out generally in the construction of doors, if desired.

One of the main objects of the invention is to provide a window frame of sheet metal pressed into the desired shape with the several parts thereof suitably connected and reinforced to provide a strong and durable structure.

Another object of the invention is to provide a window or the like which in the main is formed of aluminum or other suitable sheet metal, drawn, pressed or otherwise formed into the desired shape, and which is provided with means for reinforcing the adjacent corners of the frame.

Other objects and advantages of this invention will be apparent from the following description taken with the accompanying drawings which illustrate the preferred form of the invention, though it is to be understood that the invention is not limited to the exact details of construction shown and described, as it is obvious that various modifications thereof within the scope of the claims will occur to persons skilled in the art.

In the drawings:

Figure 1 is a contracted front elevation of the window of the present invention, certain parts being broken away to show the interior corner construction;

Figure 2 is a sectional view on the line 2—2 of Figure 1;

Figure 3 is a sectional view on the line 3—3 of Figure 1;

Figure 4 is a sectional view on the line 4—4 of Figure 1; and

Figure 5 is a perspective view of one of the corner reinforcing blocks.

Similar reference characters denote like parts in the several figures of the drawing.

The window comprises a frame composed of the stiles B, upper and lower rails C, and a pane D of glass or the like.

The frame as shown is substantially a hollow rectangular structure and is preferably formed of one piece of sheet metal such as aluminum or the like, folded, pressed or stamped into the shape shown whereby to

form the stiles and rails. The material forming the frame is folded upon itself to provide continuous front and rear faces 4 and 6 respectively, and continuous top, side and bottom walls 8, 10 and 12, respectively, the bottom 12 being bevelled whereby to properly seat on a correspondingly bevelled window jamb base, not shown.

In forming the frame, the sheet metal material is inwardly folded upon itself, and the ends or edges of the metal are lapped or arranged in juxtaposed position as shown at 14, to provide a continuous internal flange which is arranged at one side of the central line through the frame and to which is secured a filler strip 16 by means of the rivets 18, all as clearly shown in Figure 3.

In folding the material, as just described, a continuous internal wall 20 is formed at the inner edges of the stiles B and rails C, against which the filler strip 16 is positioned, the latter being formed of sections which meet in a miter joint within the corners formed by the vertical and horizontal parts of the wall 20, as shown at 22 in Figure 1.

The pane D is formed of glass or other suitable transparent material and is provided with a glazing strip 23 of felt or the like which abuts the filler strip 16, and the pane is secured against the flange 14 by means of a retaining strip 24 which laps the pane D and which is secured to the filler strip 16 by means of screws 26 or the like.

The upper rail C is bevelled along one edge thereof as shown at 28 and within the frame a reinforcing strip 30 is secured adjacent the top 8.

For obvious purposes, a weather strip 32 is secured to the top 8 by means of a screw 34 which passes through a clamping strip 36 into the reinforcing strip 30 within the frame, all as clearly shown in Figures 2 and 3.

It has been found desirable to reinforce the hollow frame at its corners, and to that end suitable blocks E are provided which are particularly of the form shown in Figure 5. The blocks E are positioned within the hollow frame and are so arranged that they closely fit within the outer corners of the frame and closely and tightly engage the angular portions of the inner corners of the frame, to prevent distortion of the latter.

As clearly shown in Figure 5, each block is generally of elongated form and one end is provided with a rectangular recess 37 and

the opposite end is pointed to provide the opposed rectangular bearing faces 38 and 40 respectively. In use, the blocks are arranged as shown in Figure 1, that is they extend as to their faces 38 and 40 within the outer corners formed by the side walls 10 and the top and bottom walls 8, 12, and the angled recess part 37 will conform to and closely fit the corners of the wall 20, the walls 42 and 43 of the recess lapping the adjacent portions of the walls 20.

From the description just above, it is apparent that the hollow frame is firmly braced and reinforced at the places where such reinforcements are most necessary, namely, the corner portions.

Each block is provided with opposed recesses 44 into which the material of the frame is pressed as shown most clearly in Figure 2, and to connect the frame and blocks at these corner portions, rivets 46 or the like are provided which extend through the front and rear walls of the frame, and the block.

What is claimed is:—

1. A window comprising a frame formed of a single piece of material folded upon itself to define front, rear, outer and inner walls, and a flange extending completely around the inner wall, and means for reinforcing said frame comprising blocks extending between opposed corners of the frame and engaging the outer and inner walls thereof, said blocks having in their opposite faces sunken recesses within which the front and rear walls of the frame are forced.

2. In a window, a single piece of material inwardly folded upon itself to define a continuous rectangular hollow frame having front, rear, outer and inner walls, the edges of said material being extended to form a continuous flange, a pane secured against the flange and a block extending between op-

posed inner and outer corners of the frame and lapping adjacent outer and inner walls, said block having recesses formed therein into which the front and rear walls extend, and means housed within said recesses for securing the frame to the block.

3. In a window, a single piece of material inwardly folded upon itself to define a continuous rectangular hollow frame having front, rear, outer and inner walls, the edges of said material being extended to lie against each other to form a continuous flange, a pane secured against the flange, and blocks extending between the opposed inner and outer corners of the frame, the ends of the blocks lapping the adjacent outer and inner walls respectively, said blocks having recesses formed therein into which the front and rear walls are forced, and rivets connecting the frame and block and housed within said recesses.

4. A window comprising a hollow frame having a continuous internal flange arranged to one side of a central line through said frame, a pane adjacent the flange, a retaining strip lapping said pane, and means for reinforcing said frame comprising blocks extending between opposed inner and outer corners of the frame, each of said blocks having the ends thereof pointed and recessed respectively whereby they are positioned in lapping relation to adjacent sides of the frame, said blocks having within their opposite faces sunken recesses within which the material of the frame is forced into close contact with the bottom and sides of said recesses, and means connecting the blocks and frame and housed within the recesses.

In witness whereof I have hereunto set my hand.

GEORGE C. BISHOP