Dec. 19, 1933. B. J. CORNELIUS 1,939,955

WINDOW SCREEN

Filed May 20, 1932

Fig. 1.

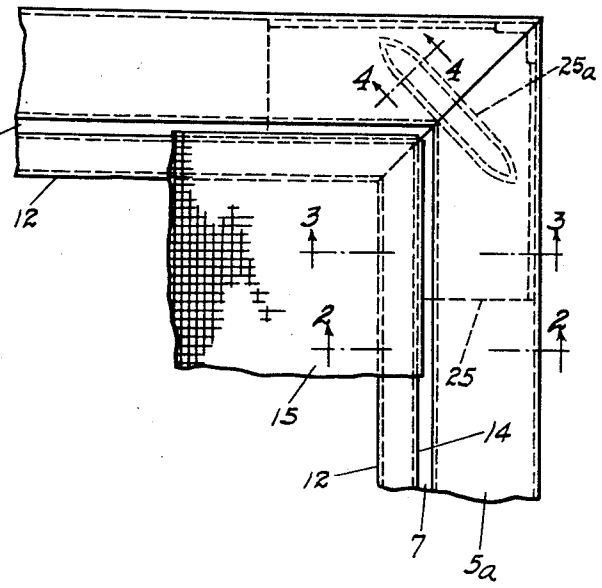


Fig. 2.

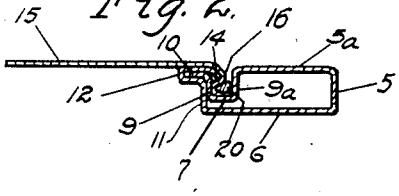


Fig. 3.

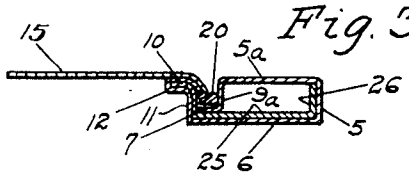
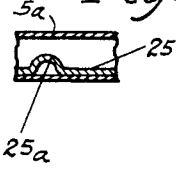


Fig. 4.



INVENTOR.
Benjamin J. Cornelius
BY Robt. G. Pearson
ATTORNEYS.

Patented Dec. 19, 1933

1,939,955

UNITED STATES PATENT OFFICE

1,939,955

WINDOW SCREEN

Benjamin J. Cornelius, Los Angeles, Calif., assignor to Ada Dill Galeener, Los Angeles, Calif.

Application May 20, 1932. Serial No. 612,496

7 Claims. (Cl. 156—14)

This invention relates to an improved means for securing a piece of sheet material such as window screen, commonly called screen cloth, in place within a frame.

An object of the invention is to simplify and reduce the cost of a structure of the kind stated.

Another object of the invention is to provide a simple means for securing the screen in place so that the same may be depended upon to remain attached to the frame, but which can be easily removed when the screen becomes worn, rusty or when for any reason it is necessary to remove the screen from the frame and substitute a new piece of the screen in its place.

More specifically considered the invention relates to a new combination of sheet metal frame, screen cloth, and retaining cord or connection to hold the edge portions of the screen cloth in place within the retaining groove provided for such edge portions within the frame.

Other objects, advantages and features of the invention may hereinafter appear.

Referring to the accompanying drawing, which illustrates what is at present deemed to be a prefered embodiment of the invention,

Fig. 1 is a plan view of a corner portion of the screen frame constructed according to the invention.

Fig. 2 is a vertical section on line 2—2 of Fig. 1.

Fig. 3 is a sectional view on line 3—3 of Fig. 1.

Fig. 4 is a sectional detail on line 4—4 of Fig. 1.

Referring in detail to the drawing, the sheet metal frame, as viewed in cross section, preferably consists of a single sheet metal strip 5 the body portion of which is bent into a rectangular shape, said strip being provided with the runs or extensions 6 and 7, the inside extension 7 forming the bottom of the groove 16. The inside extension 7 has, as viewed in Fig. 2, an upwardly directed portion 9 at the outer side of the groove, said portion 9 terminating in an outwardly directed flange 10. The bend 9*a* connects the part 7 with the face portion 5*a* of the frame.

The outside limb 6 is likewise provided with an upwardly directed portion 11 which has an outwardly directed fold 12 which embraces the flange 10, said fold being continued over said flange and terminating in a downwardly inclined flange 14 thereby providing a bent sheet which grips the flanged terminal portion 10 of the aforementioned upwardly directed part 9 of the portion 7.

The edge portion of the screen cloth 15 is brought down into the bottom portion of the groove at 16 whence it is extended across the bottom of the groove, if desired, but in any case it is extended down to a point below the edge of the downwardly directed flange 14. After this has been done, the cord or wire 20, preferably a rather large cord of a somewhat elastic or compressible nature, is crowded into the groove 16, being forced down into said groove along the entire length thereof and to a sufficient distance to pass below the lower end of the flange 14 in order that the edge portion of said flange 14 may serve as a locking shoulder to hold the edge portion of the screen cloth securely in place.

The downwardly directed edge portion 14 of the rebent part 12 is shown inclined at an angle of about forty-five degrees but it may be bent down to a greater or less extent as desired. Owing to the sheet metal being somewhat resilient a cord 20 may be provided having a sufficiently large diameter to deflect the lip 14 a little when the cord is forced down into the position shown in Fig. 2. In such a case the lip 14 will spring up slightly after the cord is fully inserted and will as a result lock the cord securely in place in the bottom portion of the groove with the marginal portion of the screen firmly gripped between said cord and the edge of the lip 14. In Fig. 3 is shown a slightly modified construction which in the main resembles the structure shown in Fig. 2 and which is therefore for the most part lettered in the same manner. In Fig. 3, however, an internal reinforcing strip 25 is provided having at one side a laterally extending limb 26 which extends across the width of the frame section. At the other side said strip 25 fits snugly between the parts 6 and 7 thus stabilizing the structure at this point so that when the cord 20 is forcibly crowded down into the groove there will be no danger of the grooved portion of the frame being distorted.

In both forms of the invention, the U-shaped fold 12 adds to the resiliency of the edge portion of the strip and causes it more firmly to grip the edge portion of the screen between itself and the retaining cord 20. When the retaining cord 20 is crowded down into place across the marginal portion of the screen 15, the first effect is to cause the edge portion of the fold 12 to retract slightly toward the left as viewed in Figs. 2 and 3, then when the cord 20 is crowded on past the constriction the edge of the folded portion 12 will react toward the right and draw upon and stretch the screen 15 more tightly across the window opening.

I claim:

1. A device of the kind described comprising a frame portion which consists of a sheet metal

strip bent upon itself to form the body portion of a frame and having also a groove adapted to receive the edge portion of a screen, one of the edge portions of said strip being folded over to add to the resiliency thereof and then directed downward into said groove in an inclined manner and in spaced relation both to the bottom of the groove and to the side wall of the groove from which it extends to form a locking shoulder for the marginal portion of the screen, and an elongated member insertible into the bottom portion of said groove to cooperate with said shoulder to keep the screen in place.

2. A device of the kind described comprising a frame portion which consists of a metal strip bent to enclose a generally rectangular space, as viewed in cross section at each side of the frame, said strip having one of its marginal portions directed downwardly toward the other marginal portion of the strip then directed outwardly to form the bottom portion of a groove and then directed upwardly to form the outer side of said groove, a shoulder being provided along the groove which projects inwardly from one side of said groove in spaced relation to the bottom thereof, the portion of said strip which forms the bottom of said groove being spaced away from a portion of the strip which forms one side of the frame, and an internal reinforcing strip of sufficient thickness to fill the space between said bottom and said frame side, the last recited strip occupying said space at one side of the frame and extending across the inside of the frame to the other side thereof.

3. A device of the kind described comprising a frame portion which consists of a metal strip bent to enclose a generally rectangular space as viewed in cross section at each side of the frame, said strip having one of its marginal portions directed downwardly toward the other marginal portion of the strip then directed outwardly to from the bottom portion of a groove and then directed upwardly to form the outer sides of said groove, a shoulder being provided along the groove which projects inwardly from one side of said groove in spaced relation to the bottom thereof, the portion of said strip which forms the bottom of said groove being spaced away from a portion of the strip which forms one side of the frame, and an internal reinforcing strip of sufficient thickness to fill said space, the last recited strip occupying said space at one side of the frame, extending across the inside of the frame to the other side thereof and then continuing in a portion which is directed at substantially a right angle across the inside width of a frame section and is in contact with the inner surface of that part of the frame.

4. In a screen or window frame having a plurality of hollow rails, each provided with a recess, a walled corner member connecting adjacent ends of said rails, said member comprising angularly disposed leg portions, the walls of each of said portions being engageable within the walls and recesses of said rails.

5. In a screen or window frame having a plurality of hollow rails, each provided with a recess, a walled corner member connecting adjacent ends of said rails, said member comprising angularly disposed leg portions, walls of unequal length in each of said portions, said walls being engageable within the walls and recesses in said rails.

6. In a screen or window frame having rails, a member connecting adjacent ones of said rails, said member including a wall telescoping with two walls of said rail to form a three pile wall capable of being spot welded or otherwise easily and permanently joined together.

7. In a screen or window frame having rails, a member connecting adjacent ones of said rails, each of said rails including spaced walls for receiving one wall of said member to form a three pile wall capable of being spot welded or otherwise conveniently and permanently joined together and means adapted to secure a screen, glass or other panel in place in said frame, said means serving to conceal the weld or other jointure of the walls of said rail and said member.

BENJAMIN J. CORNELIUS.