H. HIGGIN.

WINDOW SCREEN.

APPLICATION FILED JAN. 24, 1916.

1,248,858.

Patented Dec. 4, 1917.

2 SHEETS—SHEET 1.

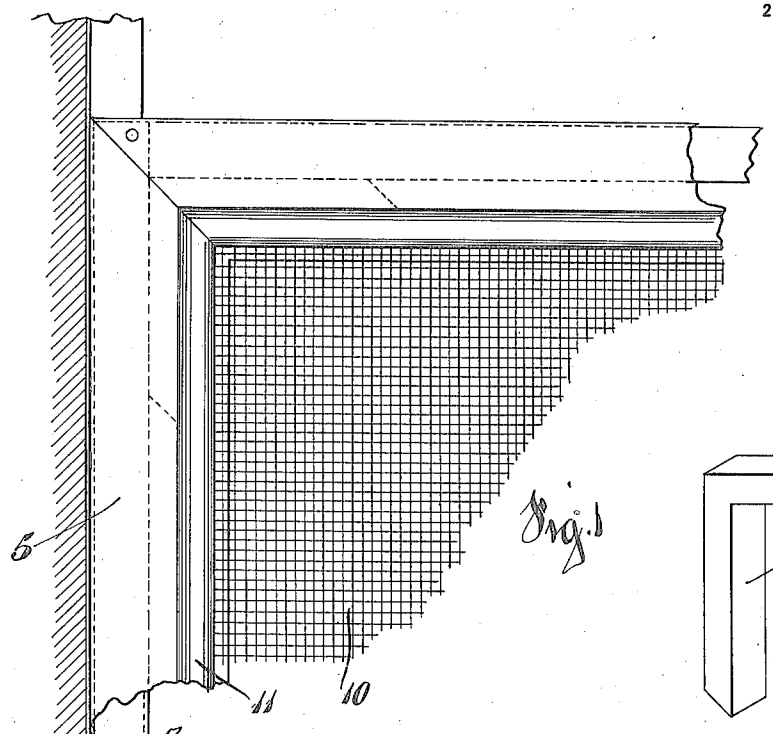

Fig. 1

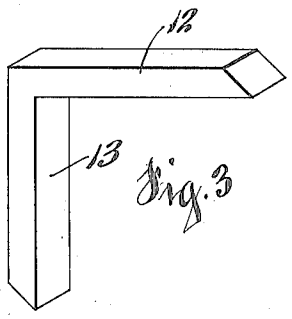

Fig. 3

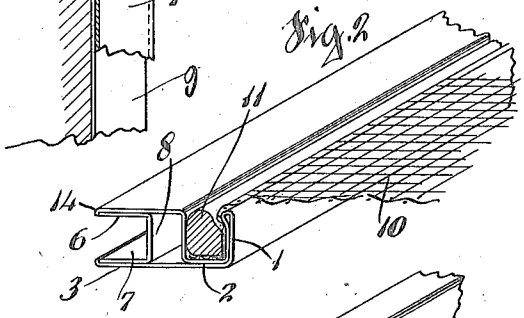

Fig. 2

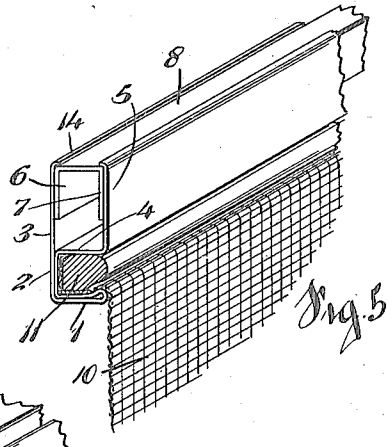

Fig. 5

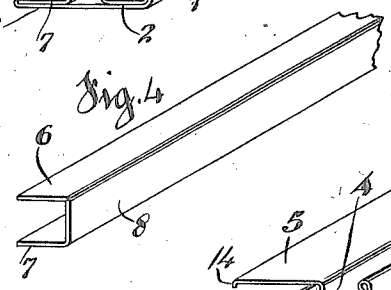

Fig. 4

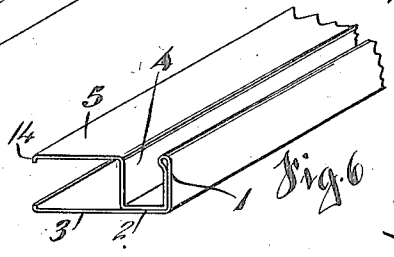

Fig. 6

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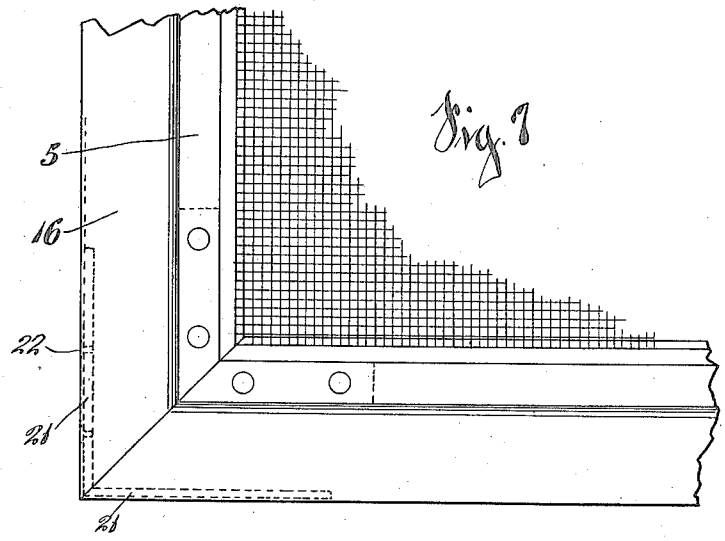

Fig. 7

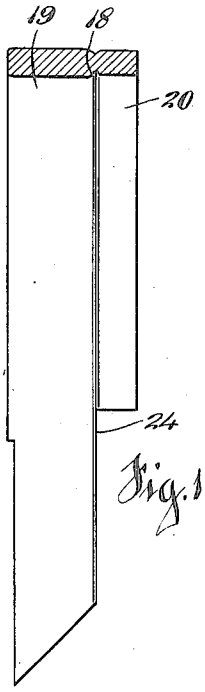

Fig. 10

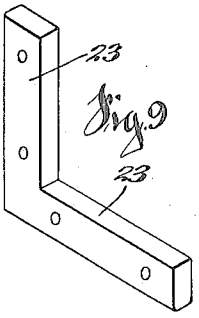

Fig. 9

Fig. 8

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UNITED STATES PATENT OFFICE.

HENRY HIGGIN, OF NEWPORT, KENTUCKY, ASSIGNOR TO THE HIGGIN MANUFACTURING COMPANY, OF NEWPORT, KENTUCKY, A CORPORATION OF WEST VIRGINIA.

WINDOW-SCREEN.

1,248,858. Specification of Letters Patent. Patented Dec. 4, 1917.

Application filed January 24, 1916. Serial No. 73,820.

To all whom it may concern:

Be it known that I, HENRY HIGGIN, a citizen of the United States, and a resident of the city of Newport, in the county of Campbell and State of Kentucky, have invented certain new and useful Improvements in Window-Screens, of which the following is a full, clear, and exact description, reference being had to the acompanying drawing, forming part of this specification.

My invention relates to window screens having metallic frames. In screens of this type, the preferred form as developed in the art is that wherein a frame portion is provided having smooth sides and a channel along the inside thereof in which is wedged the wire nettings. It is customary to take a strip of sheet metal and bend it over on itself so as to form this shape, and to cut the molding into four pieces which are mitered and joined together at the corners.

My invention relates to screen moldings of this character, which are in their essence mere metal framework made up in the shape of the older wood screens to which channel irons were attached to retain the screen wire. In making the frame parts of metal, however, it is necessary to make up the side moldings or frame pieces of different shape than the top and bottom pieces, because in the side pieces there must be left an additional channel to engage over the screen guides in the window frames where the screen is to be used. This shaping is complicated and expensive. It is accordingly one of the objects of my invention to provide a metal screen frame which is made up of two pieces of metal, one of said pieces being reversible in the other piece to make the screen guide channel, or not as desired. It is also an object to provide a strong screen frame out of light sheet metal, having two thicknesses of metal at the inner or wire channel and also at the outer or guide channel, and in the case where there is not needed a guide channel to have two thicknesses in the main or body portion of the frame.

These objects I accomplish by that certain construction and arrangement of parts to be hereinafter more specifically pointed out and claimed.

In the drawings,

Figure 1 is a side elevation of a portion of the new screen.

Fig. 2 is a sectional perspective view of a side frame piece.

Fig. 3 is a perspective view of a corner brace.

Fig. 4 is a perspective view of the secondary frame piece.

Fig. 5 is a sectional perspective view of an upper screen frame piece.

Fig. 6 is a perspective view of the primary frame piece.

Fig. 7 is a side elevation of a screen corner of a modification of my device.

Fig. 8 is a sectional perspective view thereof.

Fig. 9 is a perspective view of the modified inner corner brace, and Fig. 10 is an elevation of the filler block, partly in section.

The screen frame is made up for top and bottom, or for the sides out of two pieces of bent sheet metal. The primary piece is bent double at 1 to form the outer wall of the wire channel, continued double to form the base 2 of said channel and then separated with one side continuing straight at 3 and the other bent up at 4 to form the inner wall of the wire channel and then bent at 5 again parallel with the portion 3.

Thus there is provided a double ply channel and the two sides of a rectangular shape in conformance with the practice in the wooden screen of the past. The free ends of this primary piece are bent over at 14 to provide an abutment for the secondary strips.

In addition to this primary piece, a secondary piece is provided, of the width of the inside of the rectangular portion of the primary piece, and having sides 6 and 7 and a base 8. This secondary piece is to be inserted in the rectangular space noted in two ways. For the side frame piece it is to be set with its open end outward (Fig. 2). In this position it is then secured in place by spot welding or other desired means, and a channel is left at the side of the frame so formed which will engage over the guide molding 9 on the window frame.

The upper and lower frame pieces do not require a channel, and accordingly the secondary piece is inserted in the rectangular space in the primary pieces for such frame members and welded or otherwise secured in place (Fig. 5). The screen wire 10 is secured in the channel by means of a spline 11, as is customary.

The frame pieces are mitered at the corners, and corner braces are provided having members 12 and 13 to seat beneath the secondary piece in the primary frame piece. The arm 12 will fit under the edges of the side portions 6 and 7 in the top frame piece, for example, and the arm 13 will fit under the base 8 of the secondary piece in the side frame member.

It is thus seen that in making up the screen, but two kinds of strips need be made, one of which is very simple and inexpensive. It can be seen that the frame is double ply at the points where this is necessary, and that the welding or soldering is made at the outside of the molding instead of in the screen wire channel, as has been the case in the past. This is a distinct advantage, because in the old form of metal molding or frame, it was necessary to hold the lapped over portions from springing apart during soldering, whereas it can be seen that in this molding the secondary piece will remain in place without clamping it down in any way during the soldering operation. In soldering light metal, there is likely to be warping out of shape of the moldings, and if this occure in the wire channel the moldings are not fit for use.

The economy gained in making up the rectangular frame portions of the screen frame out of two portions of metal instead of out of one piece bent around and soldered or welded so as to make up a one-piece rectangular molding is now apparent. Other arrangements of primary and secondary frame portions could readily be devised, but the failure to mention these is not intended to exclude them from the scope of the claims that follow, where such claims are broad enough to include such equivalent devices.

It is another advantage of my wire retaining molding that it may be employed for various forms of work without the necessity of any welding or soldering whatever. As shown in Figs. 7 to 10, the screen wire molding is formed in exactly the same manner as the molding already described (Fig. 6). The balance of the molding for a heavier screen frame, as for doors and the like, is made of a single strip of metal bent to form a top 15 and sides 16, 16, said sides having a groove 17 to receive the flanges 14 on the molding, and the portion of the sides beyond the groove of a proper length to fit snugly into the end opening of the wire retaining or principal molding.

A filler block of wood is used with this type of screen frame to prevent springing of the metal, said block being cut with a groove 18 to engage the groove 17, and with a portion 19 to fill the outer part of the frame, and a portion 20 to fill the inner portion.

There are preferably employed two corner braces in this portion of the frame, the fitted and filled member being properly mitered at the corners as before. The upper brace for the outside corner is of comparatively thin metal, having arms 21, 21. The filler block is cut away on the outside to receive the brace arms at each side of the corner, and screws 22, 22, are used to securely hold the braces in place.

The braces for the inside corner are like the corner braces of the screen frame firstly described, except that they are thicker. They have arms 23, 23, and the fillers are cut away at 24 to permit of the insertion of these braces. This cut is made of the entire inner portion 20 and the brace is of a size sufficient to fill it.

These braces are also secured in place by separate means, such as rivets, because the strain on the molding in a large door or the like is very considerable.

Having thus described my invention, what I claim as new and desire to secure by Letters Patent, is:—

1. In a window screen, a frame molding for said screen comprising a primary portion having a screen wire channel therein, and a secondary portion having a guide channel therein, and means for securing the two together in a plurality of positions.

2. In a window screen molding, a primary portion and a secondary portion therefor, said secondary portion being mountable in the primary portion so as to form a lateral guideway and so as to form a closed top or bottom member for said molding, as desired.

3. In a window screen molding, a primary portion bent so as to form a wire receiving channel and an open ended rectangular portion for the main body of the frame, and a secondary portion adapted to be mounted within said rectangular portion, said secondary portion having a channel therein, and means for mounting it in the said rectangular portion so as to turn the channel outwardly for the side molding members, or inwardly for the top and bottom members.

4. In a wire screen molding, a primary portion bent so as to form a wire receiving channel and an open-ended rectangular portion for the main body of the frame, and a secondary portion adapted to be mounted within said rectangular portion, and corner braces for use in assembling said moldings, said braces adapted to seat in the rectangular portions beneath the secondary portions.

5. In a window screen, a frame molding for the screen, comprising a primary portion having a screen wire channel and an open side, and a secondary portion having a member to engage in and fill the open side of the primary portion, said secondary portion adapted to complete the molding.

6. In a window screen, a frame molding

for the screen, comprising a primary portion having a screen wire channel and an open side, and a secondary portion having a member to engage in and fill the open side of the primary portion, and a member extending laterally outside of the primary portion, said secondary portion adapted to complete the molding.

7. In a window screen, a frame molding for the screen, comprising a primary portion having a screen wire channel and an open side, and a secondary portion having a member to engage in and fill the open side of the primary portion, and a member extending laterally outside of the primary portion, said secondary portion adapted to complete the molding, and a filler block of wood or the like for said secondary portion to prevent springing of the moldings.

HENRY HIGGIN.