

March 4, 1941.

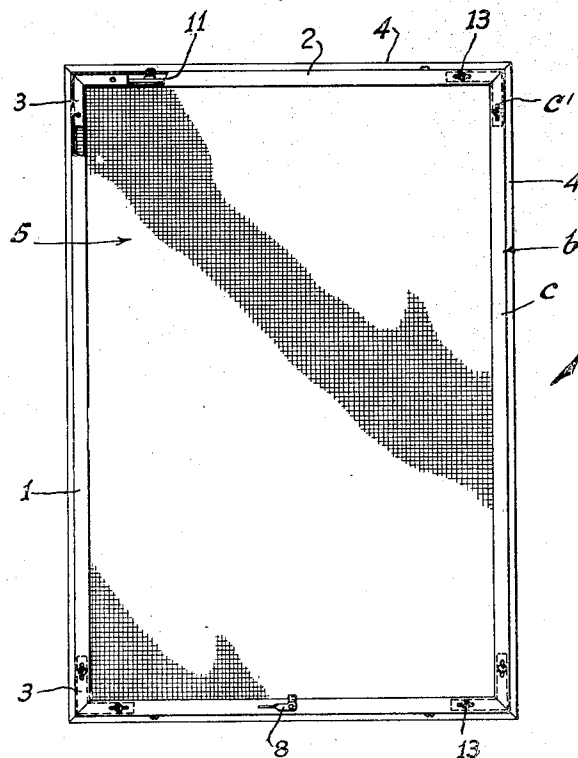
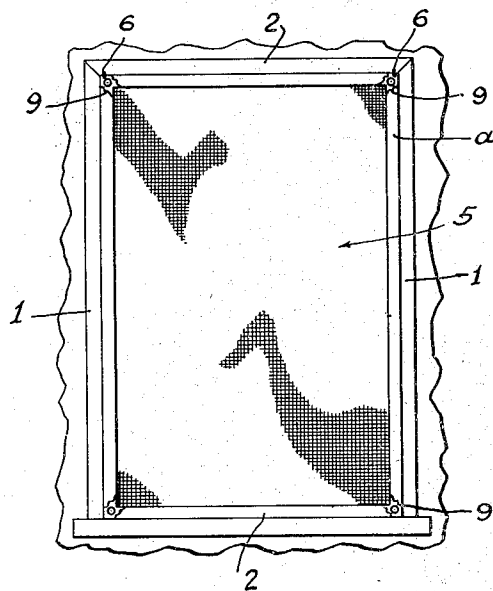
W. C. HILL

2,233,412

METALLIC WINDOW SCREEN

Filed July 3, 1937

2 Sheets-Sheet 1



INVENTOR

Willis C. Hill

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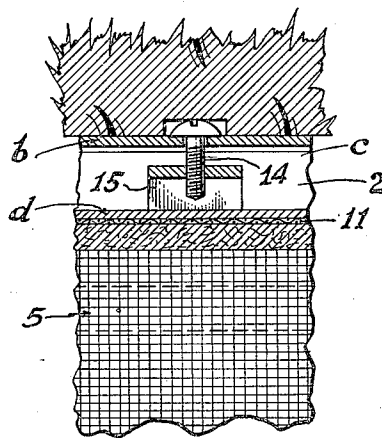
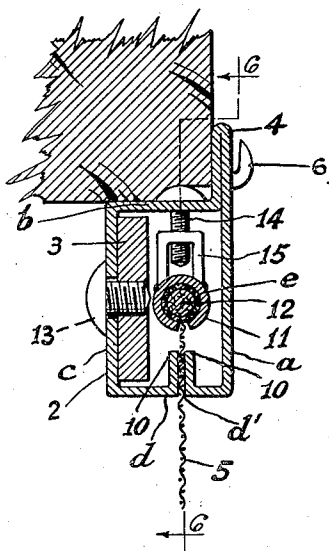
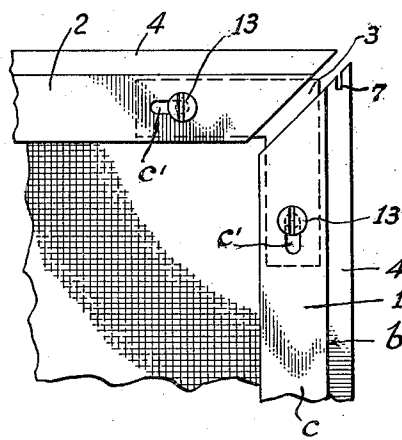
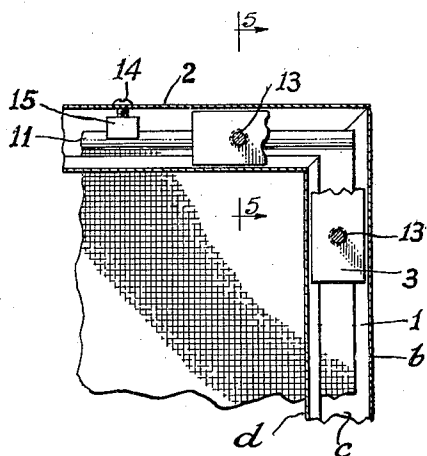
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2 Sheets-Sheet 2



INVENTOR

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UNITED STATES PATENT OFFICE

2,233,412

METALLIC WINDOW SCREEN

Willis C. Hill, Los Angeles, Calif.

Application July 3, 1937, Serial No. 151,815

4 Claims. (Cl. 156—14)

My present invention relates to adjustable window screens, and particularly to improvements over my former U. S. Patent No. 1,957,339 of May 1, 1934, for Metallic window screens.

One of the important objects of this invention is to provide a screen which is longitudinally and transversely adjustable and yet has the rigidity of a single unit screen.

An object also is the provision of a screen of this class in which the adjustment for length and breadth may be easily and quickly made from the inner side of the screen.

A further object is to conceal the corners, after adjustment is made, by corner pieces or rosettes at the outside of the screen.

An important object also is the provision of a screen of this class in which all of the side or frame elements are uniform in cross-section and may be rolled into long lengths and cut to sizes to suit the particular screen conditions.

Another important object of this invention is to provide a screen in which the screen or other element may be easily replaced, and installed by other than skilled mechanics.

Another object of this invention is the provision of a screen of this class in which only the opposite short edges or ends of the screen, or similar element, are secured into place within opposite frame members, and the other or intermediate edges are free but positioned a considerable distance within the intermediate frame members.

With these and other objects in view, as will appear hereinafter, I have devised an adjustable window screen having certain novel features of construction, combination, and arrangement of parts and portions, as will be hereinafter described in detail and particularly set forth in the appended claims, reference being had to the accompanying drawings and to the characters of reference thereon, which form a part of this application, in which:

Fig. 1 is an outside elevation of a window frame, showing my window screen, in its preferred form, placed thereover;

Fig. 2 is an elevation taken from the inside of the screen;

Fig. 3 is an enlarged fragmentary elevation taken from the inside of one corner and partly in section, omitting flange 4.

Fig. 4 is a similar view taken from the inside;

Fig. 5 is an enlarged sectional elevation of the top frame member and of the screen adjustably secured thereto, taken at 5—5 of Fig. 3; and,

Fig. 6 is another fragmentary sectional elevation taken at 6—6 of Fig. 5, also showing the

method of securing one edge of the screen to a frame member.

The frame for my screen, as shown in the drawings, is rectangular, and made from metal tubing of substantially rectangular cross-section. The sides 1 and upper and lower ends 2 are separate pieces, formed alike, and may be cut, with mitered ends, from a continuous length. These separate pieces or frame members are secured together by angles 3, as will be described hereafter.

For convenience of description, the front walls or face portions of the frame members will be designated *a*, the outer sides or walls *b* which form the peripheral part of the frame, the inside walls *c*, and innermost walls *d*.

Although the general cross-section is rectangular, there is provided a wide flange 4 which surrounds the frame, extending beyond the outer or peripheral walls *b* of the frame consisting of said frame members. The flange of each frame member is flush with the front wall or face *a* of the particular member. The flange consists of double metal plate and is made by folding over the outer portions of the face *a* of the frame members and the adjacent outer walls *b* of the frame members. The flange thus formed locates the frame against the outer face of the window frame.

The angles 3 consist of legs extending at right angles to each other forming angle plates. The legs are inserted into the ends of adjacent tubular frame members and are positioned against the inner sides of the inside walls *c*. The angles 3 are adjustably secured to the frame members by screws 13 which are screwed into the angles and extend through longitudinal slots *c'* near the ends of the inside walls *c* of the frame members.

The screens are constructed to fit certain general sizes of window frames, but are adjustable to fit variations of about one-half inch ($\frac{1}{2}$ "') of such sizes, due to inaccuracies, shrinkage, or the like. Enlargement of the screen frame will separate the mitered ends of the frame members and present an unfinished and unsightly appearance. To remedy this defect, I have provided corner pieces or rosettes 9 which are fastened over the joints of the corners in any suitable manner such as by snapping the same into place, or by screwing the same into place from the outside, as shown in Fig. 1.

The screen may be hung over the window frame in a conventional manner, which may consist of hooks 6 at the opposite sides of the top, 55

of the window frame. At the upper ends of the flanges 4 of the side frame members 1 and in the upper rosettes 9 are slots, designated 7 in Fig. 4, of the drawings, for the reception of the supporting hooks 6. On the inside of the bottom rail or frame member 2 is a suitable latch or hook 8 for securing the screen frame into place.

The removable or replaceable screen element consists of a wire mesh or cloth 5 which normally has its edges inserted through a slot *d'* located between flanges 10 extending inwardly from and intermediate the edges of the innermost walls *d* of all of the frame members, as shown best in Fig. 5. Only the top and bottom edges of the wire cloth or screen element 5 have rolled edges, beads, or enlargements *e*. These beads or enlargements are formed by rolling the edges around cords 12 and then rolling tubular bars 11 around the rolled portions of the screen, or inserting the rolled edge portions of the screen within the split tubular bars.

The bar 11 may have lateral extensions or yokes 15 for the reception of the shanks of adjusting screws 14 which extend through the outside walls *b* of the upper and lower, or transverse frame members 2. At least two of such adjusting screws 14 are provided at each end of the screen element, that is, through the transverse frame members 2. As the adjusting screws 14 are tightened the screen element 5 is drawn taut between the upper and lower frame members. This taut condition of the screen element prevents the same from being withdrawn from the slots *d'* of the side frame members 1.

In order to replace a screen, the adjusting screws 14 are removed from the end frame members 2, the rosettes 9 at the coincident ends of the members 1 and 2 are removed, and also the adjusting screws 13 are removed from such coincident ends. This permits the side frame member 1 to be removed from such ends and also the rods 11 to be withdrawn from the open ends of the end frame members 2. A new screen is substituted by inserting the rods 11 into the open ends of the top and bottom frame members 2, securing the removed side frame members 1 back into position, replacing the rosettes, and inserting and drawing up the adjusting screws 14.

Though I have shown and described a particular construction, I do not wish to be limited to the same, but desire to include in the scope of my invention the construction, combination, and

arrangement substantially as set forth in the appended claims.

I claim:

1. In a screen of the class described, a frame comprising tubular frame members having slits at their inner sides, one of the frame members at one side of the frame being removable exposing open ends of adjacent frame members, a screen element having enlargements at opposite ends insertable into said open ends of said frame members, said enlargements being considerably larger than said slits, and means in one of the latter frame members for tightening the screen.

2. In a screen of the class described, a frame comprising tubular frame members, opposite frame members having slits at their inner sides, one of the frame members at one side of the frame being removable exposing open ends of adjacent frame members, a screen element having opposed roll edges at opposite sides, said roll edges being insertable into said open ends of the frame members and the adjacent portions of the screen into the slits of the latter frame members, said roll edges being larger than said slits, and means in one of the latter frame members for tightening the screen.

3. In a screen of the class described, a frame comprising opposed tubular frame members, two of said opposite frame members having slits at their inner sides, one of the other frame members being removable exposing open ends of said two frame members, a screen element having enlargements at opposite ends, said enlargements being insertable into said open ends of said frame members with the adjacent portions of the screen insertable into the slits of the latter frame members, said enlargements being larger than said slits, and means in one of the latter frame members for tightening the screen.

4. In a screen of the class described, a frame comprising opposed tubular members having slits at their inner sides, said frame members being open at one of their coincident ends, a screen element having enlargements at opposite ends, said enlargements being insertable into said open ends of said frame members with the adjacent portions of the screen into the slits thereof, said enlargements being larger than said slits, and means in one of the latter frame members for tightening the screen.

WILLIS C. HILL.