Dec. 2, 1930. L. LEVI 1,783,732

WINDOW SCREEN

Filed July 31, 1929

Fig. 1.

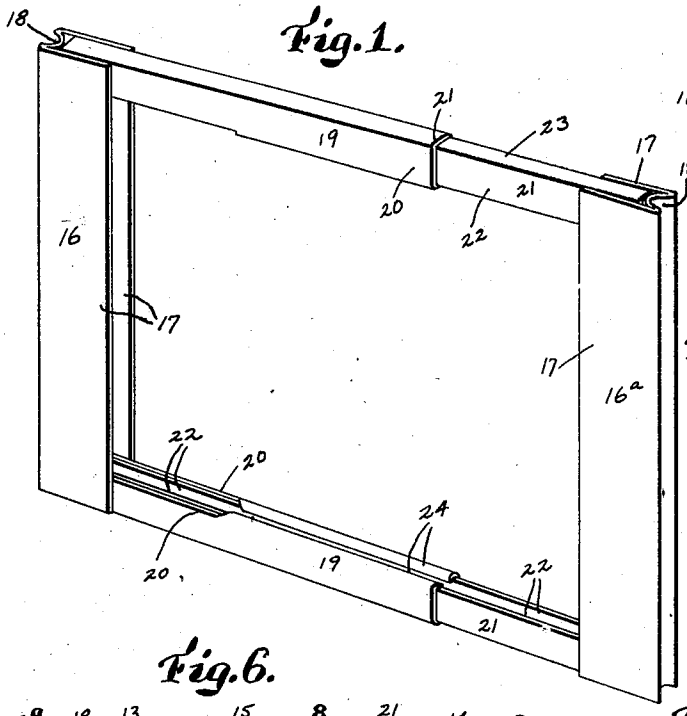


Fig. 2.

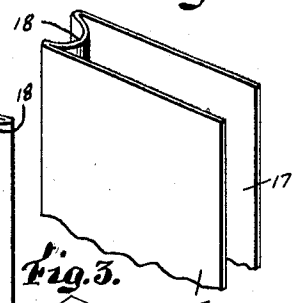


Fig. 3.

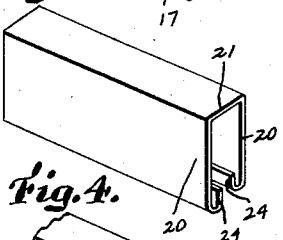


Fig. 4.

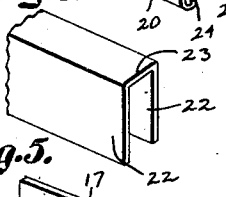


Fig. 5.

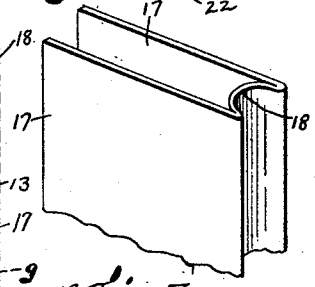


Fig. 6.

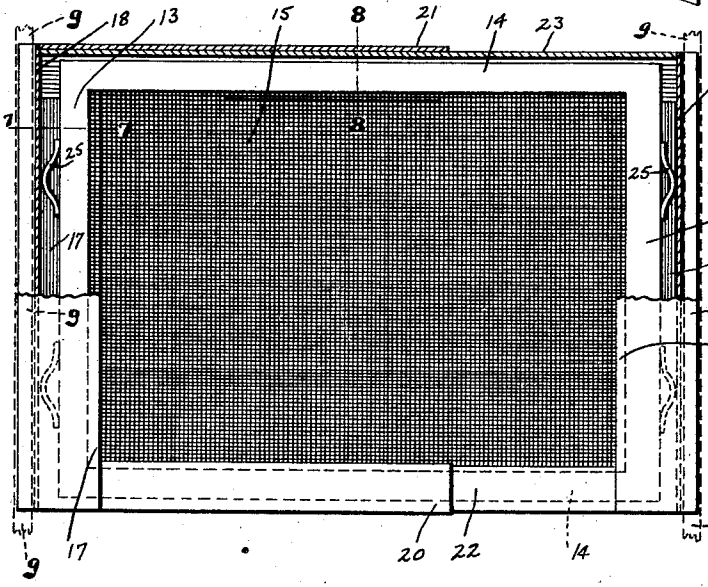


Fig. 7.

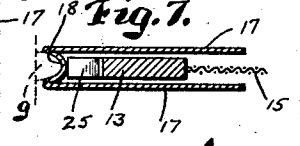
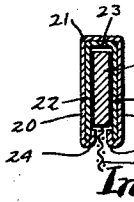


Fig. 8.



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UNITED STATES PATENT OFFICE

LOUIS LEVI, OF WINTHROP, MASSACHUSETTS

WINDOW SCREEN

Application filed July 31, 1929. Serial No. 382,526.

This invention is embodied in a window screen including a single inner frame carrying the usual screen fabric and invariable in size, a housing frame embracing the inner frame and formed to engage vertical screen guides on a window casing, the housing frame being variable in size horizontally and invariable vertically, and springs cooperating with said frames to permit convenient engagement of the housing frame with the screen guides, and compensate for variations in the distance between the screen guides, caused by swelling and shrinking of the casing.

Of the accompanying drawings forming a part of this specification,—

Figure 1 is a perspective view of a housing frame constituting an element of my improved screen.

Figures 2, 3, 4 and 5 are fragmentary perspective views, showing portions of the members of the housing frame.

Figure 6 shows in side elevation the inner frame and its screen fabric, and a portion of the housing frame, another portion of the housing frame being shown in section.

Figure 7 is a section on line 7—7 of Figure 6.

Figure 8 is a section on line 8—8 of Figure 6.

The same reference characters indicate the same parts in all of the figures.

The variable inner frame of my improved screen is rectangular and composed of rigidly connected metal members including vertical members 12, and horizontal members 14, and a filling 15 of screen fabric, secured in any suitable way to the frame members.

The variable housing frame, shown separately by Figure 1 is rectangular, embraces the inner frame, is engageable with the usual fixed screen guides g on a window casing c, and is variable in length horizontally to permit the convenient engagement of the frame with the guides, and compensate for differences in the distance between the guides caused by swelling and shrinking of the casing.

Said housing frame is composed of two angular sheet metal sections, each comprising a vertical screen guide-engaging member, and two horizontal members fixed to and projecting from the ends of the vertical member, the horizontal members of one section being telescopically interengaged with and slidable in those of the other, to vary the horizontal length of the outer frame. The vertical member of one section is designated as a whole by 16, and the vertical member of the other section by 16a. Each vertical member is preferably made from a single piece of sheet steel and includes two substantially parallel wings 17, forming the sides of a channel and a neck 18 connecting the wings, said neck being grooved from end to end to slidably engage a screen guide g.

The horizontal members of the section which includes the vertical member 16, are designated as a whole by 19, and each is preferably made from a single piece of sheet steel and includes two parallel wings 20 forming the sides of a channel and a neck 21 connecting the wings, the wings 20 being united to the wings 17 of the member 16, preferably by electric spot welding.

The horizontal members of the section which includes the vertical member 16a, are designated as a whole by 21, and each is preferably made from a single piece of sheet steel, and includes two parallel wings 22 forming the sides of a channel and a neck 23 connecting the wings, the wings 22 being united to the wings 17 of the member 16a, preferably by spot welding.

The horizontal members 21 are reduced to enter and slide in the members 19. The wings 20 are provided with hooked flanges 24, engaging the outer edges of the wings 21.

Springs 25 (Figure 6 and 7) preferably spot-welded to the inner sides of the grooved necks 18, are rigidly backed by the vertical members 13 of the inner frame, and exert outward pressure on the vertical members of the housing frame, tending to automatically elongate and permit the contraction of the housing frame horizontally and maintain the grooved necks in engagement with the guides g, regardless of swelling and shrinking, the inner frame serving as a rigid abutment for the springs.

It will now be seen that the members of the housing frame are channelled or recessed to receive and cover the members 13 and 14 of the inner frame, and that the horizontal length of the housing frame is variable, so that the grooved necks 18 may be conveniently engaged with the screen guides *g*, and automatically conformed to variations of the distance between said guides caused by the swelling and shrinking of the window casing.

It is to be noted that the single inner frame and the outer frame composed of recessed members embracing the inner frame, collectively constitute a screen of minimum thickness, without spaces or openings through which insects may enter, the screen being in this respect much more desirable than one having two or more fabric-carrying frames located side by side.

It will be seen that the screen constructed as described constitutes a complete article of manufacture engageable as a unit with the screen guides and adapted to conform automatically to such variations of the distance between said guides as may be caused by the swelling and shrinking of the casing. These variations are a frequent source of trouble, particularly those which decrease the distance between the guides and are liable to cause binding of the guides on the vertical members of the screen.

I claim:

As an article of manufacture, a window screen engageable as a unit with the fixed vertical screen guides of a window frame, and comprising a single invariable rectangular inner frame, including horizontal bottom and top members, vertical end members, and a filling of screen fabric, and a horizontally variable and vertically invariable rectangular housing frame, composed of two angular channelled sheet metal sections, each open at one end and including channelled horizontal lower and upper members telescopically interengaged to permit horizontal variation of the housing frame, and channelled vertical members connecting said horizontal members in pairs, and provided with screen-guide engaging grooves, the channelled members of the housing frame receiving the members of the inner frame, and springs interposed between the vertical members of the two frames, said springs being rigidly backed by the vertical members of the inner frame, and bearing on the vertical members of the housing frame, to horizontally vary the latter and thereby permit horizontal contraction of the housing frame when the screen is being engaged with the screen guides, and automatically compensate for variations in the distance between the screen guides caused by swelling and shrinking of the window casing.

In testimony whereof I have affixed my signature.

LOUIS LEVI.