

May 29, 1951

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2,554,542

LOCATOR AND WEAR SHOE FOR FRAMELESS WINDOW SCREENS

Filed April 3, 1950

Fig. 1

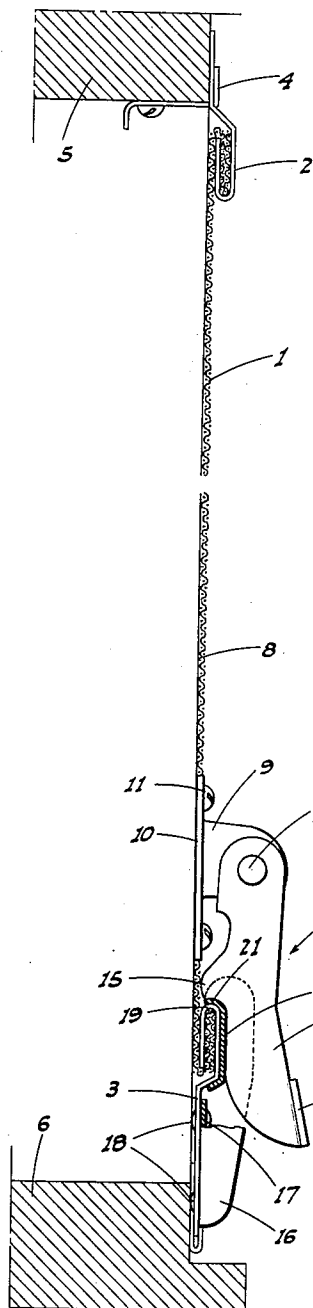


Fig. 2

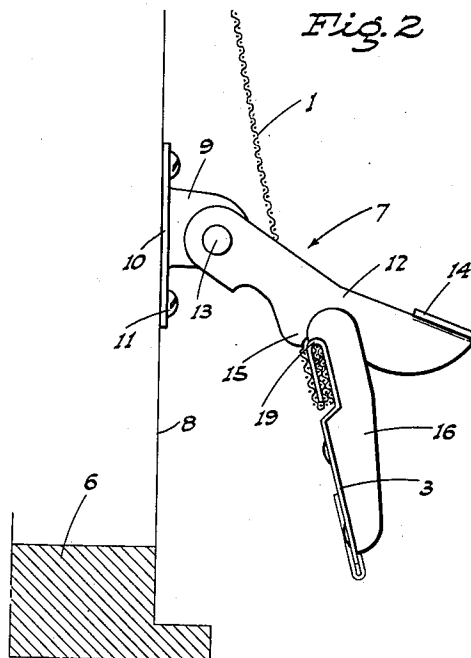
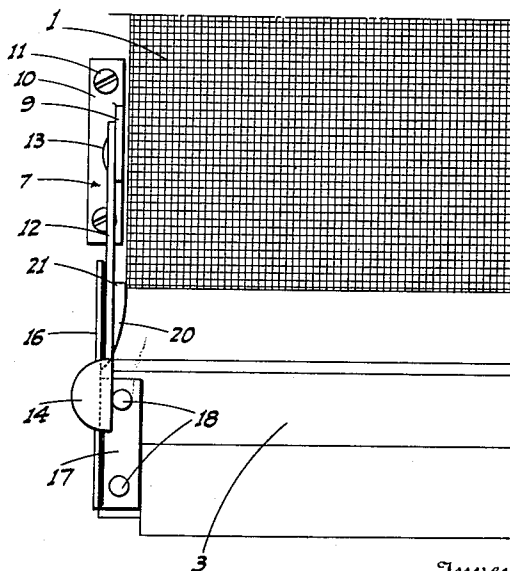


Fig. 3



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2,554,542

LOCATOR AND WEAR SHOE FOR
FRAMELESS WINDOW SCREENS

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Application April 3, 1950, Serial No. 153,621

3 Claims. (Cl. 160—328)

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This invention relates generally to the tensioning mechanism for a frameless window screen, and in particular the invention is directed to an improvement adapted for use in connection with a screen tensioning device as shown in copending application Serial No. 99,402, filed June 16, 1949.

Each such tensioning device includes a tension lever swingable downward to an over-dead-center position and having a downwardly opening hook which engages over the upper edge of the bottom cross bar of the screen forcefully urging the latter downwardly to tension the same.

A major object of the invention is to provide the bottom cross bar of the screen, at each end, with a novel device for properly locating the bar relative to the corresponding tension lever, and to prevent the latter from escaping the closely adjacent end of said bar.

Another important object of the invention is to incorporate, in the device, an effective wear shoe which the hook of the corresponding tension lever engages when the screen is under tension; such wear shoe serving to protect the upper edge of the bottom cross bar—which is of relatively thin gauge sheet metal—against damage when the tension lever is under heavy load.

A further object of the invention is to provide a locator and wear shoe, for the purpose described, which is of integral construction and permanently attached to the bottom cross bar; the device being simple but sturdy in structure, and designed for ease and economy of manufacture as a stamping from sheet metal.

Still another object of the invention is to provide a practical and reliable tension lever locator and wear shoe for mounting on the bottom cross bar of a frameless window screen, and yet one which will be exceedingly effective for the purpose for which it is designed.

These objects are accomplished by means of such structure and relative arrangement of parts as will fully appear by a perusal of the following specification and claims.

In the drawings:

Fig. 1 is an outer end elevation, partly in section, showing the device as in use with the screen held taut by the tension lever.

Fig. 2 is an outer end elevation of the device with the tension lever released and the screen slack.

Fig. 3 is a front elevation of the device in use.

Referring now more particularly to the characters of reference on the drawings, the numeral

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1 indicates a frameless window screen of the type which includes a top cross bar 2 and a bottom cross bar 3; the top cross bar 2 being secured by suitable attachment devices 4 to the header 5 of a window frame which includes a sill 6; the bottom cross bar 3 engaging said sill.

At each side of the screen 1 and adjacent the bottom thereof, there is a screen tensioning device, indicated generally at 7, affixed to the corresponding jamb 8.

Each such screen tensioning device 7 comprises a bracket 9 having a lateral flange 10 attached by screws 11 to the jamb 8.

A tension lever 12 is pivoted, as at 13, to the bracket 9 for vertical swinging motion from an out-swung released position, as in Fig. 2, to a down-swung, beyond-dead-center tension position, as in Fig. 1. Operation of the tension lever 12 by hand is facilitated by the inclusion of a laterally extending finger tab 14 thereon.

The bottom cross bar 3 projects at each end beyond the adjacent vertical edge of the screen 1, and the corresponding tension lever 12 includes a downwardly opening hook 15 which engages, forcefully, with the upper edge of said projecting end portion of the bottom cross bar 3 when the tension lever 12 is in its beyond-dead-center working position, as in Fig. 1.

As the tension lever 12 forcefully engages with the upper edge of the bottom cross bar 3 extremely close to the adjacent end of said bar, the present invention contemplates the following device to not only properly locate said bottom cross bar 3 relative to the tension lever 12, but also to prevent said lever from escaping the bar at said end.

The invention therefore provides a flat, upstanding locator flange 16 at each end of the bottom cross bar 3; said locator flange being disposed edgewise to the bar and projecting forwardly therefrom from a point slightly above the upper edge of the bar to adjacent the latter's lower edge.

The upstanding locator flange 16 includes, at its lower portion, a laterally inwardly projecting attachment plate 17 which is affixed to the face of the bottom cross bar 3 by rivets 18.

As so attached the locator flange 16 lies closely adjacent, but to the outside of, the tension lever 12 when the latter is in its downward-swung, beyond-dead-center position, as in Fig. 1; thus effectively locating the relative positions of the bar and lever 12, and maintaining the latter against escape off the adjacent end of the bar.

When the tension lever 12 is in said down-

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swung, beyond-dead-center position, with the hook 15 forcefully engaging the upper edge 19 of the bottom cross bar 3 for the purpose of tensioning the screen, there is a tendency to deform such edge—as the bottom cross bar is of relatively thin sheet metal—unless a protective element is provided.

To this end the locator flange 16 is formed, at its upper portion, with a laterally inwardly extending wear shoe 20 which includes a top portion 21 which seats on, and rounds over, the upper edge 19 of the bottom cross bar 3 in the zone of engagement of the hook 15.

Consequently when the tension lever 12 is down-swung to its beyond-dead-center position, the hook 15 forcefully engages on said top portion 21 of the wear shoe 20; effectively protecting the adjacent upper edge 19 of the bottom cross bar 3.

Additionally, the wear shoe 20, being formed as an integral part of the locator flange 16, stiffens the latter against undesirable lateral bending or play.

With the described device affixed to each end of the bottom cross bar 3 of a frameless window screen 1, the tension levers 12 of the tensioning devices 7 on the jambs 8 are effectively maintained in proper relative positions on the bottom cross bar; cannot escape from the ends of the same; and further the corresponding upper edges of said bottom cross bar are adequately protected by the wear shoes 20 against damage which might otherwise occur under the relatively great pressure which the tension levers exert when in operation.

From the foregoing description it will be readily seen that there has been produced such a device as substantially fulfills the objects of the invention, as set forth herein.

While this specification sets forth in detail the present and preferred construction of the

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device, still in practice such deviations from such detail may be resorted to as do not form a departure from the spirit of the invention, as defined by the appended claims.

5 We claim:

1. In the combination of a frameless window screen having a bottom cross bar, and a screen tensioning lever mounted on the window jamb above and adjacent one end of the cross bar in overhanging relation thereto and having a downwardly facing hook-notch to engage over the upper edge of the cross bar; a locating device for the lever comprising a flange separate from the bar projecting therefrom at right angles thereto at said one end thereof, and extending from the upper edge of the bar downwardly, and means securing said flange on the bar.

2. A device as in claim 1 in which the flange extends substantially to the lower edge of the bar and said means comprises a right angle flange integral with and projecting from the lower portion of the first named flange and abutting against and secured to the lower portion of the cross bar.

25 3. A device as in claim 1, with another flange, forming a wear shoe for the lever hook, integral with and projecting from the first named flange in overlying and engaging relation to the adjacent portion of the bottom bar at the top thereof.

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REFERENCES CITED

35 The following references are of record in the file of this patent:

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