May 18, 1954 D. J. RUST ET AL 2,678,690

TENSION SCREEN WITH WOODEN CROSSBARS

Filed June 11, 1951

Fig. 1

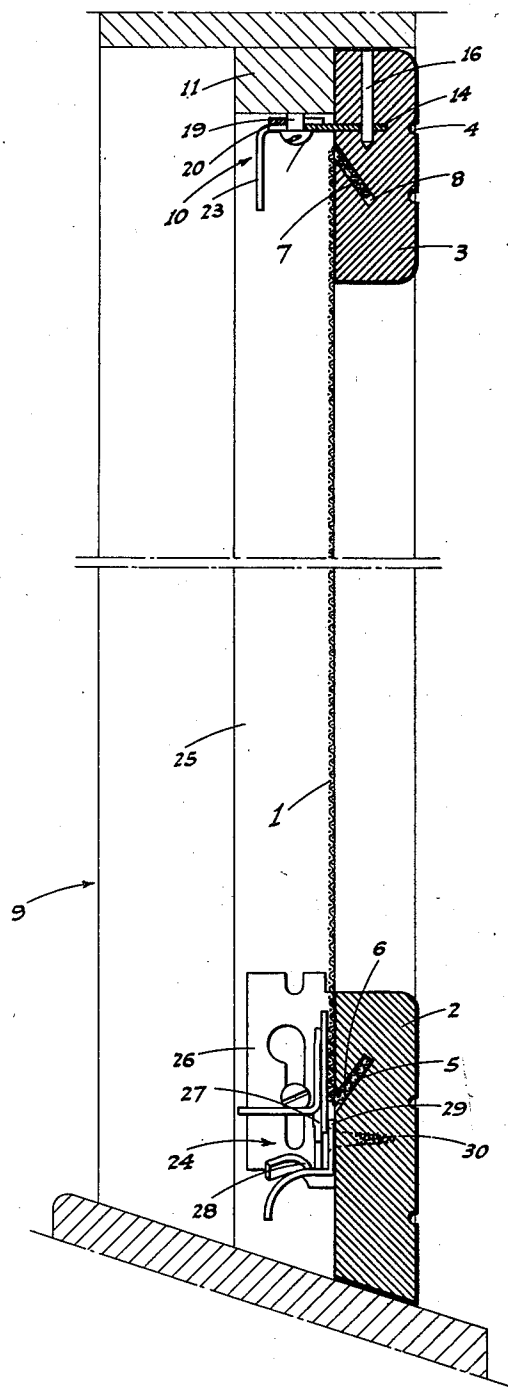


Fig. 2.

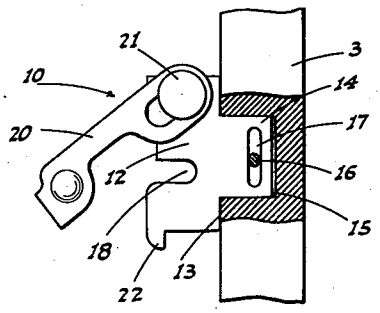
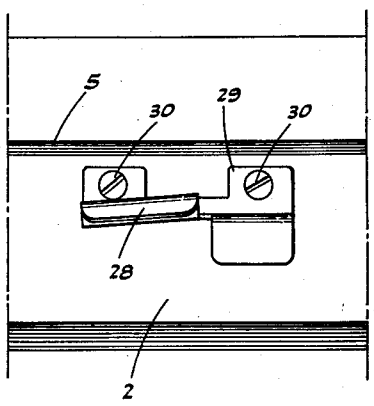


Fig. 3



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TENSION SCREEN WITH WOODEN CROSSBARS

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Application June 11, 1951, Serial No. 231,015

1 Claim. (Cl. 160—327)

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This invention is directed to window screens of frameless or tension type.

In this type of window screen a section of wire cloth is affixed at its upper and lower ends to corresponding cross bars, and the latter are secured to the window frame by means which maintain the wire cloth under tension.

Heretofore, these cross bars have been of metal; it being a primary object of the present invention to provide a tension type window screen wherein the cross bars are of wood, thus effecting a saving of metal, and reducing the cost of production.

A further object of the invention is to provide a tension type window screen, as in the preceding paragraph wherein the wooden cross bars are strong but attractive in appearance; being surface-finished in any one of the many ways available for wood treatment.

Another object of the invention is to provide novel connections between the ends of the section of wire cloth and the corresponding cross bars; these connections being simple though effective, and being capable of ready manual assembly without the use of nails or similar securing elements.

An additional object of the invention is to provide novel means for attaching the upper securing devices to the top cross bar of the screen.

It is also an object of the invention to provide a tension screen, with wooden cross bars, designed for ease and simplicity of manufacture.

Still another object of the invention is to provide a practical and reliable tension screen with wooden cross bars, and 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 claim.

In the drawings:

Fig. 1 is a vertical sectional view on a line through an upper supporting bracket for the screen device and breaking over to the inside of the opposing latching and retaining bracket at the bottom, and looking toward the nearer side edge of the screen.

Fig. 2 is a fragmentary plan view, partly in section, showing the manner of attachment of one of the upper securing devices to the top cross bar.

Fig. 3 is a fragmentary elevation showing the manner of attachment of one of the tensioning device channel members to the bottom cross bar.

Referring now more particularly to the characters of reference on the drawings, the screen comprises a rectangular section of wire cloth, indicated at 1; such section of wire cloth being attached, at its ends—in the manner hereinafter described—to a bottom cross bar 2 and a top cross bar 3. The cross bars 2 and 3 are wooden, being milled from clear straight grained lumber, and exteriorly such cross bars may be surface-finished as desired. Also, the cross bars 2 and 3 may have milled ornamentation, as at 4, in the face thereof.

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The section of wire cloth 1 is attached, at opposite ends, to the corresponding cross bars, as follows:

The bottom cross bar 2 is saw-cut from the back side to form a deep narrow groove 5 which extends longitudinally full length of said bar; the groove—from its open edge—inclining sharply upwardly into the cross bar. At the lower edge portion thereof the section of wire cloth 1 is folded double, as at 6, and such doubled edge portion is engaged in the groove 5; the section of wire cloth 1 turning sharply to vertical at the open edge of the groove, and thence extending upwardly flush against the back side of the bottom cross bar 2. With this arrangement the section of wire cloth 1 is effectively hook-engaged with the bottom cross bar 2, and tension on the section of wire cloth 1 tightens the connection rather than loosens it.

The connection of the section of wire cloth 1 with the top cross bar 3 is by means of the same arrangement as above, but in opposition. The upper edge portion of the section of wire cloth 1 is folded double, as at 7, and as so folded is hook-engaged in a full-length groove 8 which is relatively deep but narrow; the groove 8 inclining from its open edge downwardly into the top cross bar 3.

From the open edge of the groove 8 the section of wire cloth 1 extends downwardly flush against the back side of said top cross bar 3.

The screen comprised of the section of wire cloth 1 and the cross bars 2 and 3 in connection therewith is secured in a window frame, indicated generally at 9, as follows:

A pair of upper, transversely spaced securing devices, each indicated generally at 10, attach the top cross bar 3—from the inside of the screen—to the header or top blind stop 11 of the window frame 9. This specific securing device is shown in copending application, Serial No. 231,016, filed June 11, 1951, and patented June 10, 1952, as No. 2,599,725.

Each of the upper securing devices 10 includes

a horizontal bracket plate 12 having transversely spaced stop shoulders 13 which abut against the top cross bar 3. Intermediate the stop shoulders 13 the bracket plate 12 is formed with an attachment tongue 14 which projects in matching engagement into a groove 15 in said cross bar 3; there being a vertical holding pin 16 driven downwardly in the top cross bar 3 from its upper edge, and such holding pin 16 extends through the attachment tongue 14 to prevent its escape from the groove 15. The attachment tongue 14 is formed with an elongated, transverse slot 17 through which the pin 16 projects; the elongation being to permit of easy driving of said pin without exact longitudinal location.

The bracket plate 12 is notched, as at 18, and a headed screw 19 runs upwardly through the notch 18 to secure said bracket plate to the header or top blind stop 11.

The bracket plate 12 is releasably secured to the screw 19 by a normally closed but swingable latch finger 20 pivoted to the bracket plate, as at 21; such finger having a limited amount of longitudinal play with respect to the bracket plate 12, whereby the latter may latch with a nub 22.

A finger tab 23 depends from the free edge of the bracket plate 12 to aid in its manipulation when the securing device 10 is being applied to or removed from the corresponding screw 19.

The section of wire cloth 1 is normally maintained under tension by a pair of transversely spaced tensioning devices, each being indicated generally at 24, connected between the ends of the bottom cross bar 2 and adjacent portions of the side blind stops 25 of the window frame 9. Each of the tensioning devices 24, which are described in detail in copending application, Serial No. 223,764, filed April 30, 1951, and patented January 20, 1953, as No. 2,625,995, includes a bracket unit 26 secured to the related blind stop 25; a cam lever 27 pivoted to the bracket unit 26 for swinging motion in a transverse vertical plane; and a channel member 28 fixed to the bottom cross bar 2 in position such that the cam lever 27 works in said channel member 28 to urge it downwardly and thus tension the screen when the lever is swung from an upstanding, released position to a lowered operative position.

The channel member 28 is integral with an attachment plate 29 fixed to the bottom cross bar 2 by screws 30.

The above described tension type window screen can be manufactured readily and economically, is easy to install, and is attractive in appearance.

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 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 claim.

Having thus described the invention, the following is claimed as new and useful, and upon which Letters Patent are desired:

In a tension-type window screen which includes a section of wire cloth and a wooden top cross bar; transversely spaced devices to secure the cross bar to the window frame at the top thereof, each such device including a horizontal bracket plate, there being disengageable latch means between the plate and the window frame, a tongue projecting from one edge of the plate intermediate the ends thereof and leaving shoulders on said edge for engagement with the back side of the bar, the cross bar being provided with a groove opening to the back side of the bar to receive the tongue for its full depth in fitting relation, said tongue having a slot elongated in a direction lengthwise of the cross bar, and a vertical holding pin in said bar whose diameter is substantially the same as the width of the slot and projecting across the groove and through the slot.

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