July 31, 1945. D. J. RUST 2,380,794

TENSIONING AND LOCKING DEVICE FOR FRAMELESS WINDOW SCREENS

Filed Nov. 17, 1944

Fig. 1

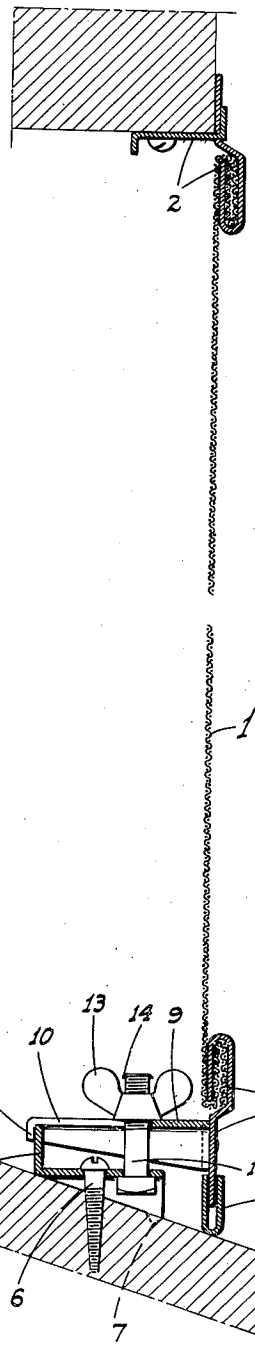


Fig. 2

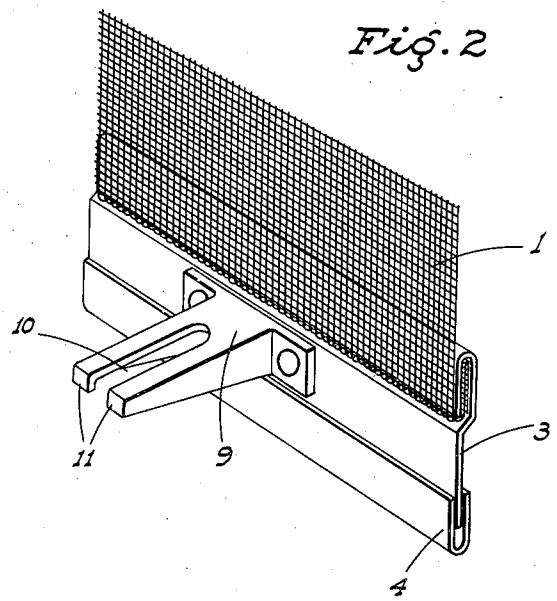
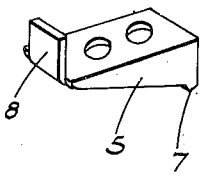


Fig. 3



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TENSIONING AND LOCKING DEVICE FOR FRAMELESS WINDOW SCREENS

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5 Claims. (Cl. 160—328)

This invention relates to the building art, and particularly to frameless window screens of that type disclosed in Patent No. 2,372,912, dated April 3, 1945.

The particular object of the present invention is to provide a novel and effective tensioning and locking device whereby the frameless screen may be easily and effectively placed under tension and against the blind stop with a minimum of effort.

Another object of the invention is to permit the screen to be tensioned downwardly in the plane of the screen without distortion or tipping and to any desired tension.

A further object of the invention is to provide a tensioning and locking means which comprises a standard wing nut and bolt, the operation of which is readily understandable by anyone and which can be readily tightened or loosened in order to permit the screen to be placed under tension or relieved from such tension and swung outwardly for access purposes.

These objects I accomplish 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 drawing similar characters of reference indicate corresponding parts in the several views.

Figure 1 is a vertical section of the frameless screen structure showing my improved tensioning and locking means attached thereto.

Figure 2 is a perspective view of a fragmentary portion of the lower end of the screen showing my improved tension lever arm attached to the flange of the lower screen retaining rail.

Figure 3 is a perspective view of my improved sill bracket carrying an upstanding fulcrum thereon.

Referring now more particularly to the characters of reference on the drawing, the numeral 1 designates the screen secured as at 2 to the portion of the window frame, preferably by means disclosed in my above identified patent.

At the lower end edge the screen is provided with a securing rail or bar preferably of the type shown in above mentioned patent, and which includes a flange 3, preferably projecting into a floating U-shaped bottom strip 11, which automatically seals any space between the flange 3 and the window sill as the screen is placed under tension.

My improved tensioning and locking means for the screen structure which is described includes a sill bracket 5 which is preferably fastened to the sill by a wood screw 6. The bracket 5 is substantially channel shaped and is provided with prongs 7 which engage the wood of the sill to prevent shifting of the bracket 5 under the tensioning action of the tension arm as hereinafter described.

At the inner end of the bracket 5 is an upturned flange or like member 8 forming a fulcrum.

The numeral 9 is a lever tension arm which is rigidly fixed to the flange 3 of the screen structure. This lever arm 9 is substantially channel shaped and is provided with a longitudinal slot 10 opening through the outer end of such arm 9. The outer ends of the portions of the arm adjacent such slot are turned down to form detents 11 so that the arm 9 may be projected over the fulcrum 8 and held against forward, longitudinal movement while still being permitted a rocking action about such fulcrum.

Permanently secured in the bracket 5 is a bolt 12 which is adapted to project upwardly through the slot 10. On this bolt 12 above the arm 9 is a wing nut 13 capable of movement along the threaded portion of the bolt. The bolt is upset at its outer end as at 14 to prevent the wing nut from travelling off of the bolt when once the parts are assembled.

When the screen is to be placed and locked into position, the arm 9 is manipulated to receive the bolt 12 and to have the detents 11 projected over the fulcrum 8. When in this position, the wing nut 13 may be moved along the bolt 12 and into contact with the arm 9. As the wing nut 13 is then further advanced along the bolt, it frictionally engages the lever arm 9 and causes it to rock about the fulcrum 8, so that the forward end of the arm 9 moves downward, carrying with it the flange 3 and thus placing the screen under tension.

Since the head of the bolt 12 is locked within the flanged bracket 5, it cannot turn, but due to its position in the slot 10, it can move enough to keep proper vertical alinement as the lever arm rocks downward in bringing the screen under tension.

When it is desired to open the screen for any purpose, all that it is necessary to do is to loosen the wing nut 13, lift the detents 11 off of the fulcrum 8, and then slide the lever arm off of the bolt 12, which leaves the screen free to be moved away from the window frame for any purpose such as cleaning the window frame, washing the window or the like.

It will be apparent that with the simple and effective tensioning means disclosed, any house-

wife may readily and easily maintain the screens under proper tension or relieve them for any purpose without any great effort or the necessity of using any special tools. Furthermore, it will be apparent that a screen structure having this tensioning means may be very easily and properly installed by any skilled or unskilled person without a great deal of effort.

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 claims.

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

1. A tensioning device for a frameless window screen comprising a sill bracket having an upturned end forming a fulcrum, a tension arm adapted to be secured to one end edge of the screen, means on the outer end of the arm adapted to engage such fulcrum and rock thereon, and means to rock such arm on the fulcrum whereby the screen to which the arm is attached may be placed under tension.

2. A tensioning device for a frameless window screen comprising a sill bracket having an upturned end forming a fulcrum, a tension arm adapted to be secured to one end edge of the screen, means on the outer end of the arm adapted to engage such fulcrum and rock thereon, and means interposed between the sill bracket and the arm operable to rock the arm on the fulcrum whereby the screen to which the arm is attached may be placed under tension.

3. A tensioning device for a frameless window screen comprising a sill bracket having an upturned end forming a fulcrum, a tension arm adapted to be secured to one end edge of the screen, means on the outer end of the arm adapted to engage such fulcrum and rock thereon, a bolt mounted in the sill bracket and projecting through the arm, and a nut on the bolt adapted to be moved along the same and against the arm to rock the latter on the fulcrum whereby the screen to which the arm is attached may be placed under tension.

4. A device as in claim 3 in which the arm is provided with a longitudinal slot through which the bolt projects.

5. A tensioning device for a frameless window screen comprising a fulcrum adapted to be mounted on a window sill and upstanding therefrom, a lever arm adapted to be secured to one end edge of the screen, the outer end of the lever arm being engageable with the fulcrum for rocking movement thereon, and means to rock the arm about said fulcrum whereby the screen to which the arm is mounted may be placed under tension.

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