Aug. 22, 1950 F. J. BURNS 2,519,998

FRAMELESS WINDOW SCREEN

Filed Nov. 29, 1946 2 Sheets-Sheet 1

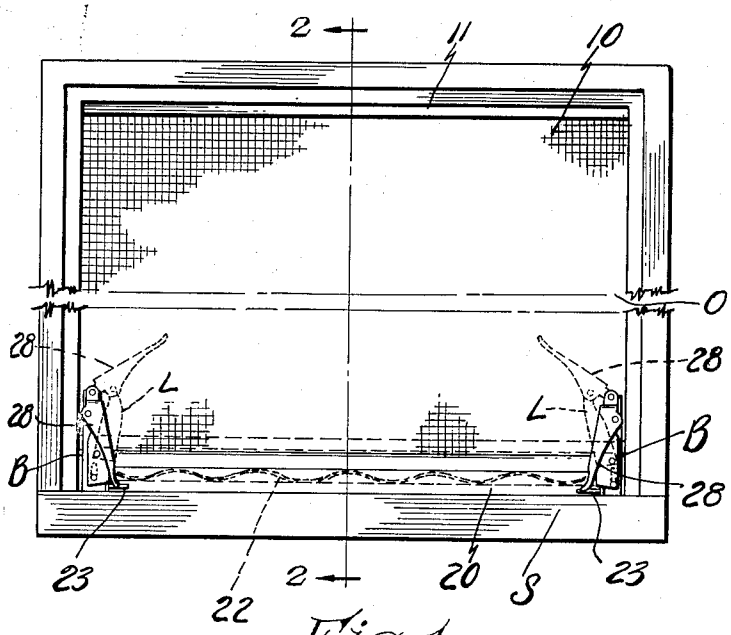


Fig. 1

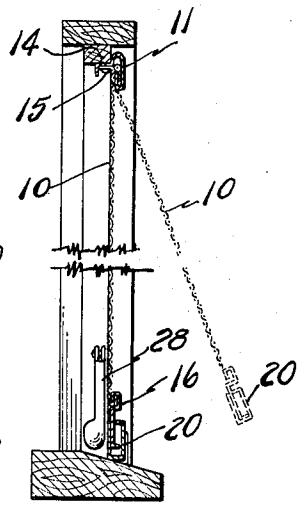
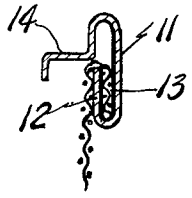


Fig. 2



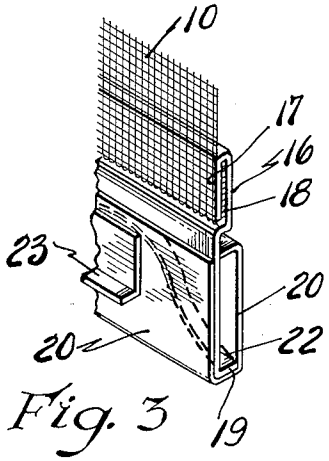


Fig. 3

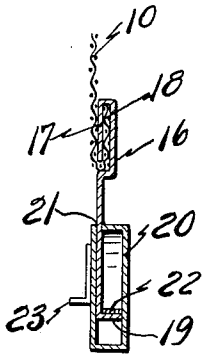


Fig. 4

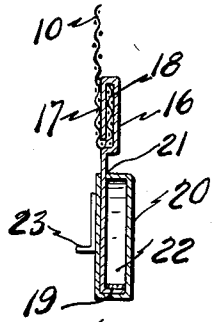


Fig. 5

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FRAMELESS WINDOW SCREEN

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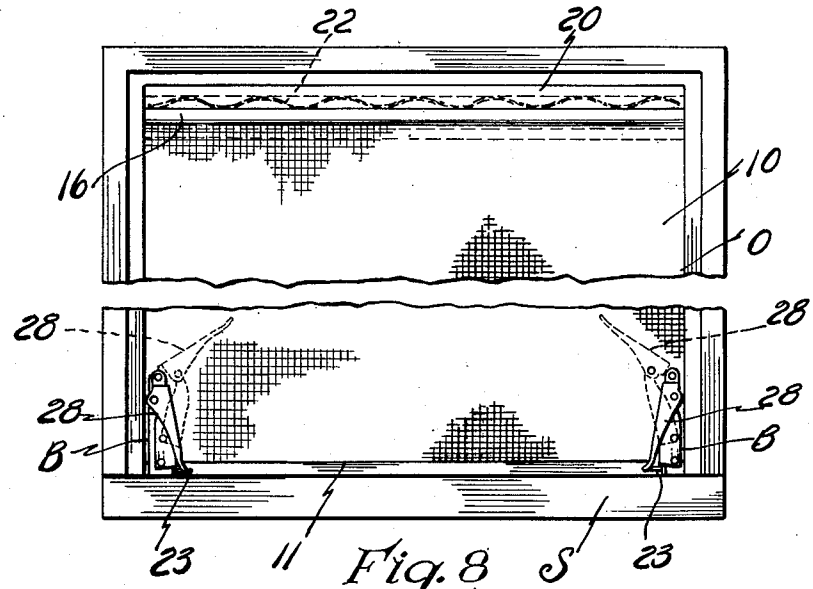


Fig. 8

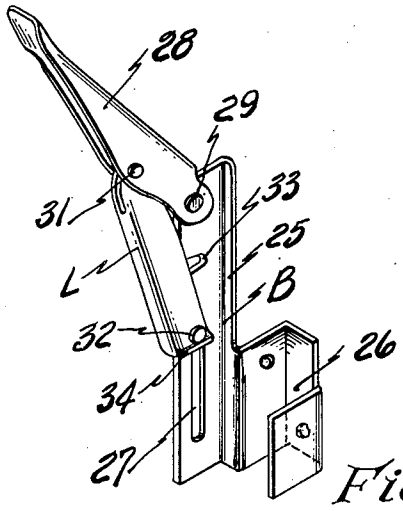


Fig. 6

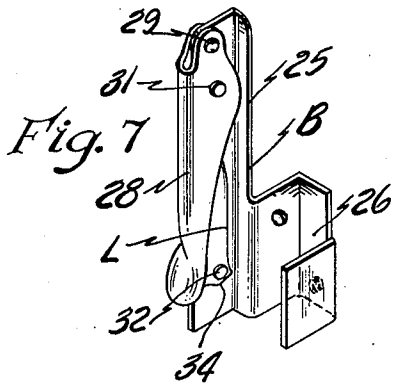


Fig. 7

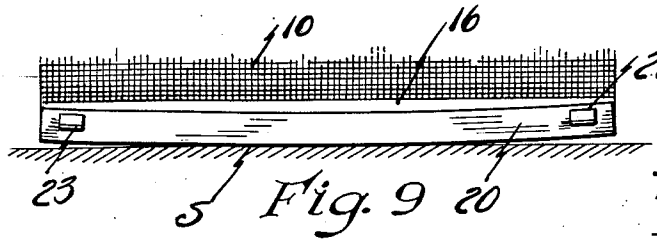


Fig. 9

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FRAMELESS WINDOW SCREEN

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Application November 29, 1946, Serial No. 712,861

1 Claim. (Cl. 160—329)

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This invention relates to window screen which is substantially frameless, and which can be drawn sufficiently taut to seal a window opening against the entrance of flies, insects or foreign matter into a building.

One of the salient objects of the invention is to design an automatically tensioned frameless screen which can be readily unhooked, and rolled or swung up so that the windows may be washed or the window frame or sash repaired if desired.

Another object is to provide a frameless screen that can be readily manufactured, assembled, and packaged, and which can be installed by any skilled or unskilled labor from the inside of the house, and without any special preparation of the window opening.

A further object is to provide a frameless window screen that is quickly detachable, so that it can be readily removed for storage; and which eliminates the necessity of screens or hardware in the sill of the window frame, so that it remains clear of any obstruction for cleaning, painting, repairs, etc.

A still further object is to design a frameless screen in which the anchor strip is shaped to closely hug the surface of the window sill.

A further object still is to design a screen which is automatically tensioned when installed, thus taking up any slack, compensating for window variation, as well as providing sufficient resiliency so that the screen will not kink or form permanent bulges when struck with any object, or subjected to sharp pressure in certain localized spots or areas.

With the above and other objects in view, the present invention consists in the combination and arrangement of parts, hereinafter more fully described, illustrated in the accompanying drawings and more particularly pointed out in the appended claim, it being understood that changes may be made in the form, size, proportion, and minor details of construction, without departing from the spirit, or sacrificing any of the advantages of the invention.

In the drawings:

Fig. 1 is a front-elevational view of a window frame showing my frameless screen in position, the solid lines showing the screen in locked position, the broken lines showing the anchor bar raised and the locking means in unlocked position.

Fig. 2 is a transverse-sectional view taken on the line 2—2 of Fig. 1.

Fig. 3 is an enlarged, fragmentary, perspective view of the lower holding strip and anchor bar assembly.

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Fig. 4 is an enlarged, transverse, sectional view of the lower holding strip and anchor bar showing it in locked position.

Fig. 5 is a view similar to Fig. 4 showing it in unlocked position.

Fig. 6 is an isometric view of the bracket securing means with the lever in raised position.

Fig. 7 is a view similar to Fig. 6 showing the lever swung down to locked position.

Fig. 8 is a view similar to Fig. 1 showing the tensioning means located at the top of the window opening.

Fig. 9 is a detail view illustrating the curvature of the anchor bar.

Referring now to the drawings in which I have shown the preferred embodiment of my invention. The numeral 10 designates a strip of screen cloth used in connection with my invention and which is usually of a size to fit the standard window frame or opening "O" in connection with which it is used, and the screen cloth is usually selvaged on its edges to permit it to be drawn taut without tending to distort or bulge when assembled and placed in position to cover the window opening.

Holding strips are provided at the upper and lower ends of the screen cloth 10, the upper strip comprising a flat, horizontally disposed metal strip 11, bent back upon itself as at 12 to provide an intervening space 13 therebetween, and in which the upper end of the screen strip 10 is clamped.

The upper edge of the strip 11 is bent at right angles to the main body to form a horizontally disposed upwardly projecting section 14, and screws 15 are utilized for securing it to the upper section of the window frame to form an insect-proof connection thereat.

The lower holding strip 16 is also formed of sheet metal, the upper edge 17 being bent downwardly upon itself to form an intervening space 18 in which the lower edge of the screen cloth 10 is clamped, and the lower section of the strip extends downwardly with the end 19 being bent at right angles to the main body and for a purpose to be presently described.

A preferably rectangular-shaped anchor bar 20 is loosely connected to the holding strip 16 and is provided with an open slit or passage 21 in the upper wall thereof to accommodate the lower section of the strip 16, and one or more spring members 22 are mounted in said anchor bar, said springs being interposed between the lip 19 and the upper wall of the bar 20, so that

the screen strip is automatically tensioned when the bar is in locked position.

Laterally projecting brackets **23** are secured to the anchor bar **20** in spaced relation and are adapted for engagement by links L which are mounted on brackets B secured to the side wall of the window frame S, each bracket being preferably in the form of a stamping formed with a vertically disposed body **25**, and a channel-shaped section **26** is formed integral with the lower section of said body, these sections forming guides to slidably accommodate the ends of the anchor bar **20**.

An elongated, vertically disposed slot **27** is provided in the wall of the body member **25**, and a locking lever **28** is pivotally connected to the upper end of said member by means of a pin **29**, a stamped link L being pivotally connected to the lever **28** at the point **31**, the lower end of the link having a pin **32** therein, and which is slidably mounted for sliding movement in said slot.

A transversely disposed open passage **33** is provided in the body **25** at a point spaced from the pivot point **29** and is adapted to accommodate the pin **31** when the lever **28** is swung down to locked position.

Laterally projecting sections **34** are provided on the lower ends of the links L, these sections engaging the projecting clips **23** on the bar **20** to force the anchor bar into tight insect-proof contact with the face of the window sill S, this movement tending to collapse the spring and automatically provides a tension on the screen sheet.

If desired, the bar **20** can be arched as clearly indicated in Fig. 9 of the drawings, so that as the locking levers are swung down, the center of the bar first contacts the sill, and the ends are then forced down into tight contact when the locking levers are in locked position, the channel-shaped sections **26** of the brackets B eliminating the possibility of the anchor bar getting out of alignment.

This arrangement permits relative vertical movement of the lower holding strip **16** in the clamping bar **20** when the levers **28** are swung to locked position, this locking movement automatically tightening the screen so that the edges lie tight against the window frame, and any pressure caused by impact with an object or pressure by the hand, merely flexes the spring and will not kink or permanently bulge the screen.

In Fig. 8 of the drawings I have shown the upper and lower holding strips reversed so that the resilient connection is at the top instead of the bottom, and in this arrangement, the clips **23** are mounted on the holding strip **11**, as shown in solid lines in Fig. 8 of the drawings, and a flange **14** similar to that shown on the strip **11** must be provided on the bar **20** so that it may be secured to the head strip of the window frame. The action and operation, however, is exactly the same, it is merely a reversal of parts.

It will be noted that the anchor bar and the holding strips are open at their ends to facilitate the assembly of the parts and the screen cloth leads over turned portions of the strips, so that there are no sharp edges to cut or snag.

From the foregoing description, it will be clearly obvious that I have perfected a very simple, economical, and practical frameless window screen that is automatically tensioned and that can be readily manufactured, assembled, packaged, and installed.

What I claim is:

In a frameless window screen adapted to be mounted on a window frame comprising, a rectangular-shaped, hollow, anchor bar uniformly arched throughout its length and having an elongated, slitted opening in its upper face and extending from end to end, a flat holding strip secured to the end of the screen material and closely fitting and extending through said slitted opening, said holding strip being formed with an angularly-shaped lower end disposed in said bar and forming a support, and an elongated, resilient strip mounted in said anchor bar and interposed between the angular-shaped end of the holding strip and the upper face of the anchor bar for tensioning said strip of screen material.

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