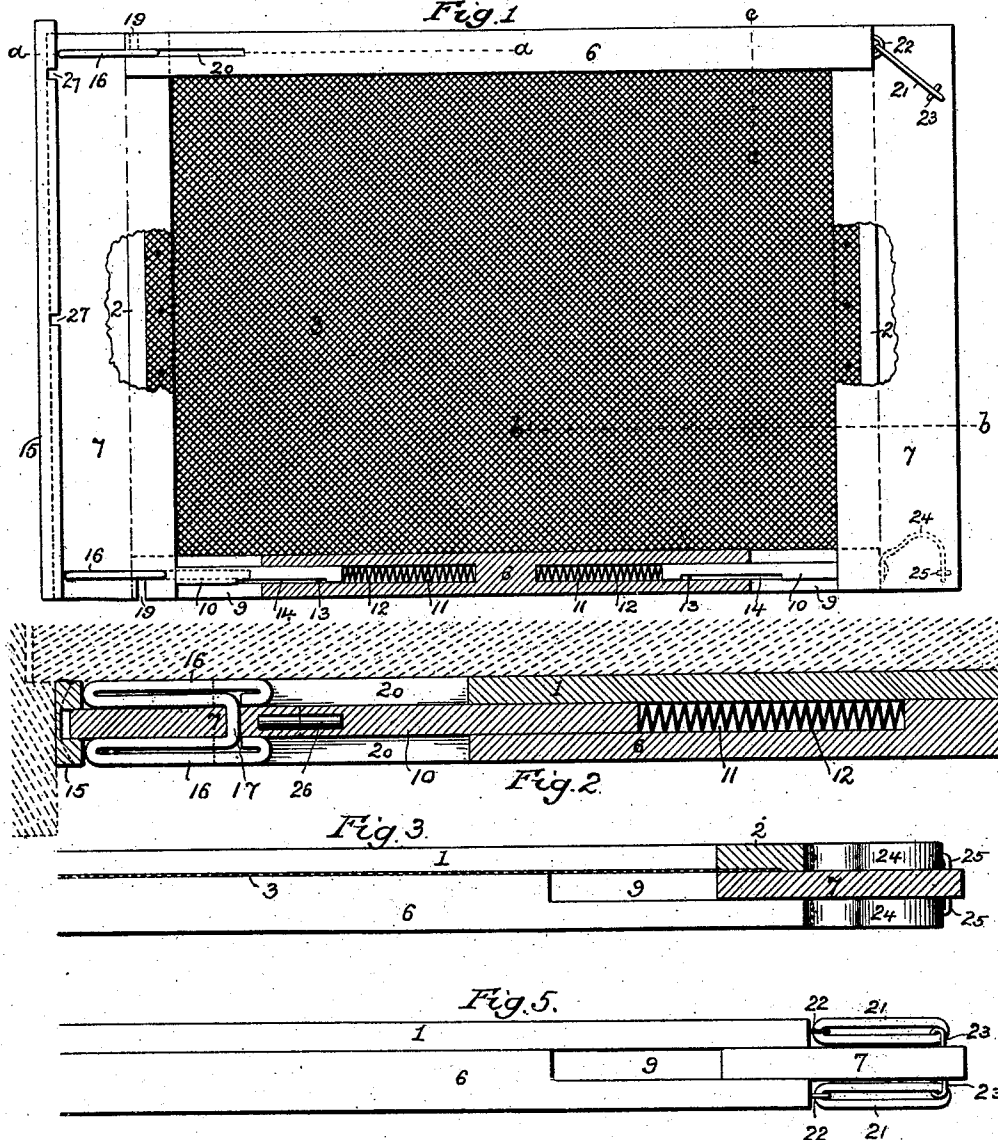


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E. L. LLOYD.
WINDOW SCREEN.

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WINDOW-SCREEN.

No. 850,026.

Specification of Letters Patent.

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To all whom it may concern:

Be it known that I, EDWIN L. LLOYD, a citizen of the United States, residing in Philadelphia, Pennsylvania, have invented certain Improvements in Window-Screens, of which the following is a specification.

My invention relates to that type of window-screen in which the face of the screen-frame bears against the face of the sash bar or rail when the screen is in position in the window in contradistinction to that type of screen which is confined between the bottom of the sash and the bottom of the window-frame, screens of the first type being preferable to those of the second type, because they permit raising and lowering of the sash without removal of the screen, while screens of the second type must be removed from the window before the sash can be lowered.

My invention relates especially to screens of the first type which are so constructed as to be adjustable to adapt them to window-frames of different widths, one object of my invention being to simplify and cheapen the construction of the screen as compared with prior screens of this type, a further object being to provide the screen with simple and efficient means for closing the gaps which would otherwise be formed between the sash rail or bar and the expansion-wing of the screen, because of the fact that the latter is of less width than the main screen-frame, and a still further object being to positively sustain the screen in an elevated position when desired.

In the accompanying drawings, Figure 1 is a view, partly in side elevation and partly in section, of a window-screen constructed in accordance with my invention. Fig. 2 is a sectional plan view on the line *a a*, Fig. 1. Fig. 3 is a sectional plan view on the line *b b*, Fig. 1. Fig. 4 is a vertical section on the line *c c*, Fig. 1. Fig. 5 is a plan view of the upper right-hand corner of the screen, and Fig. 6 is a sectional view illustrating some of the parts in a different position from that represented in Fig. 1. Figs. 2, 3, 4, 5, and 6 are on a larger scale than Fig. 1.

The main frame of the screen comprises top and bottom bars 1 and opposite end bars 2, secured together at the corners by mortising or in any other suitable way, this frame carrying the sheet of screen-wire 3, which is preferably secured to the inner faces of the end bars 2 by tacking it thereto, as shown in Fig. 1, but is secured to the top and

bottom bars 1 by pressing it into grooves 4 in said bars by means of tongues 5, projecting from supplementary top and bottom bars 6, which are secured to the top and bottom bars 1 of the fixed frame in any acceptable manner.

Opposite expansion-wings 7 bear against the face of the screen-wire 3 and are guided in slots 9, formed in the supplementary top and bottom bars 6 of the screen, and each expansion-wing has at top and bottom a projecting guide-finger 10, which fits in a groove 11, formed in the inner face of the supplementary top or bottom bar 6 of the screen, said groove also containing a coiled spring 12, which acts upon the inner end of the tongue and tends to project the corresponding portion of the expansion-wing to its full extent. The outward projection of the expansion-wings is limited by contact of transverse pins 13 in the top and bottom bars of the frame with the inner ends of recesses 14 formed in the guide-tongues 10, as shown in Fig. 1.

The outer edges of the expansion-strips 7 are intended to engage guides 15, secured to the opposite sides of the window-frame in order that the screen may be properly held in place in said frame, with the outer face of the top bar of the screen-frame in contact with the inner face of the lower bar or rail of the sash, a portion of the latter and a portion of one side of the window-frame being shown in dotted outline in Fig. 2.

As the expansion-wings 7 are of considerably less width than the composite top and bottom bars of the screen-frame, gaps would in the absence of some provision for closing the same be formed between the sash-bar and the upper portions of the expansion-wings 7 when the latter are projected beyond the limits of the upper bar of the fixed frame. Various means within the scope of my invention may be employed for closing these gaps.

At the left-hand side of Fig. 1 and in Fig. 2 I have shown such closing means as consisting of a wire bent to form strips 16, one on each side of the expansion-wings 7, these strips being connected by a transverse neck 17, which is dropped into a slot 19, extending to the upper or lower edge of the expansion-wing.

The filling-strips 16 are adapted to slots 20 formed in the bars 1 and 6. Instead of forming the filling-strips of bent wire in the manner shown and described they can, as

will be evident, be otherwise constructed—as, for instance, by cutting them from sheet metal.

At the upper right-hand corner of the screen, Fig. 1 and also in Fig. 5, is shown another form of filling-strip, consisting of a link 21, pivoted at one end to a staple 22, driven into the end of a member of the top bar of the frame, the inner leg of the link engaging, near its outer end, a staple 23, driven into the side of the expansion-wing 7. By this means the link 21 will, as the expansion-wing is expanded or contracted, simply change its angle, swinging upon the staple 22 as a pivot and sliding through the staple 23.

At the lower right-hand corner of Fig. 1 and in Fig. 3 I have illustrated still another form of filling-strip, consisting simply of a strip 24 of rubber or other flexible material secured at one end to the end of a member of the bottom frame of the screen and at the other end to a staple 25, driven into the expansion-wing 7.

The various forms of filler-strips are shown on both sides of the expansion-wings with which they coact, the purpose being to permit the screen to be used either on the inside or on the outside of the sash without change of position in other respects; but it will be evident that the filler-strips need be used only at the top portions of the expansion-wings and need be on one side only of said wings if it is not considered objectionable to reverse the screen in changing it from a position on the inside of the sash to a position on the outside of the same.

The tongues 10 are preferably secured to the wings 7 by means of a dowel-pin 26, as shown in Fig. 2, in order to insure a flush joint.

In the guide 15, at suitable intervals, are formed recesses 27, and when the screen is raised so as to bring the lower strips 16 into line with one of these recesses said strips are caused to enter the recesses, as shown in Fig. 6, because of the further projection of the wings 7 by the lower spring 12, the depth of the groove in the guide being sufficient to permit this further projection. By this means the screen can be supported in any desired raised position, and it is prevented from falling when raised, thereby overcoming an objection to screens which are held in the elevated position solely by the friction between the wings and guides. The recess may be formed in the guide on one side of the wing only, if desired; but in that case the strip on the other side of the wing, if such strip is used, should be shorter than the one which is intended to enter the recess.

As the closing-strips 16 are separate from the guide-tongues 10 of the expansion-wings, said strips need not exceed in length the width of the expansion-wing, in fact may be of less than such length, and where

the filling-strips are adapted to slots in the frame of the screen such slots will, owing to the relative thinness of the filling-strips, be so narrow as not to afford a means of passage for insects, even in the absence of the guide-tongue 10, which in the construction of screen shown in the drawings cuts off communication between the slots.

I claim—

1. A window-screen having a fixed frame composed of top, bottom and end bars and end expansion-wings, the top and bottom bars having internal grooves, supplementary top and bottom bars having tongues engaging said grooves, and screen-wire lying between the inner faces of the end bars of the frame and the expansion-wings and confined by the tongues and grooves of the composite top and bottom bars of said frame.

2. A window-screen having a fixed frame with top, bottom and end bars, the top and bottom bars being grooved, supplementary top and bottom bars, each having a groove and a projecting tongue, screen-wire bearing against the inner faces of the end bars of the frame and confined between the tongues and grooves of the composite top and bottom bars, and an expansion-wing at the end of the screen having inwardly-projecting tongues guided in the grooves of the supplementary top and bottom bars of the frame.

3. The combination, in a window-screen, of the main frame, an expansion-wing narrower than said main frame, guide-tongues on said wing adapted to recesses in the main frame and having recesses formed in them, springs for pressing said tongues outwardly, transverse pins on the bars of the main frame crossing said recesses and serving as stops for limiting such outward movement, and a filler-strip independent of said guide-tongues for closing the gap between the expansion-wing and the face of the sash, said filler-strip being flush with the face of the corresponding bar of the fixed frame.

4. The combination, in a window-screen, of the main frame, with an expansion-wing at the end of the same, said wing being of less width than the main frame, guide-tongues projecting from said expansion-wing into recesses in the main frame, and a filler-strip carried by the expansion-wing for closing the gap between the same and the face of the sash, said filler-strip sliding in a slot in the top bar of the main frame, which slot is narrower than the guide-tongue of the expansion-wing, whereby the slotted portion of the bar provides lateral support for said tongue.

5. The combination, in a window-screen, of the main frame, with an expansion-wing at the end of the same, said wing being of less width than the main frame, guide-tongues on said expansion-wing adapted to recesses in the main frame, and filler-strips carried by the expansion-wing one on each side of the

same, said filler-strips being adapted to slots in the main frame, which slots are narrower than the guide-tongues of the expansion-wing, whereby the slotted portions of the bars provide lateral support for said tongues.

5 6. The combination, in a window-screen, of the main frame with an expansion-wing at one end of the same, and a duplex filler-strip having members on each side of the expansion-wing and a neck connecting said members and engaging a slot in the expansion-wing.

10 7. The combination of a window-screen having a main frame and a spring-pressed expansion-wing of less width than said main

frame, a notched guide for said wing, and a strip carried by the wing for engaging said notched guide to hold the screen in an elevated position, said strip being flush with the face of the main frame and thereby serving to fill the gap between the expansion-wing and the face of the sash. 20

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

EDWIN L. LLOYD.

Witnesses:

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KATE A. BEADLE.