

J. A. LENHOFF.
SCREEN.
APPLICATION FILED OCT. 9, 1914.

1,144,856.

Patented June 29, 1915.
2 SHEETS—SHEET 2.

Fig. 6.

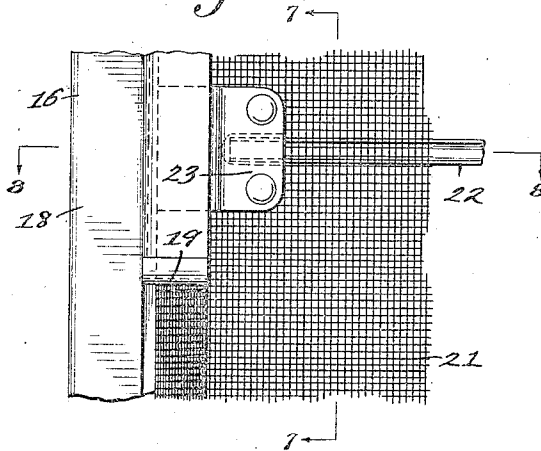


Fig. 7.

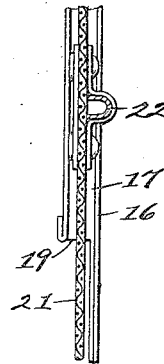


Fig. 8.

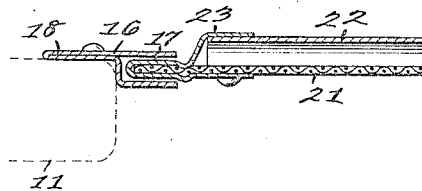


Fig. 9.



WITNESSES

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2 SHEETS—SHEET 1.

Fig. 1.

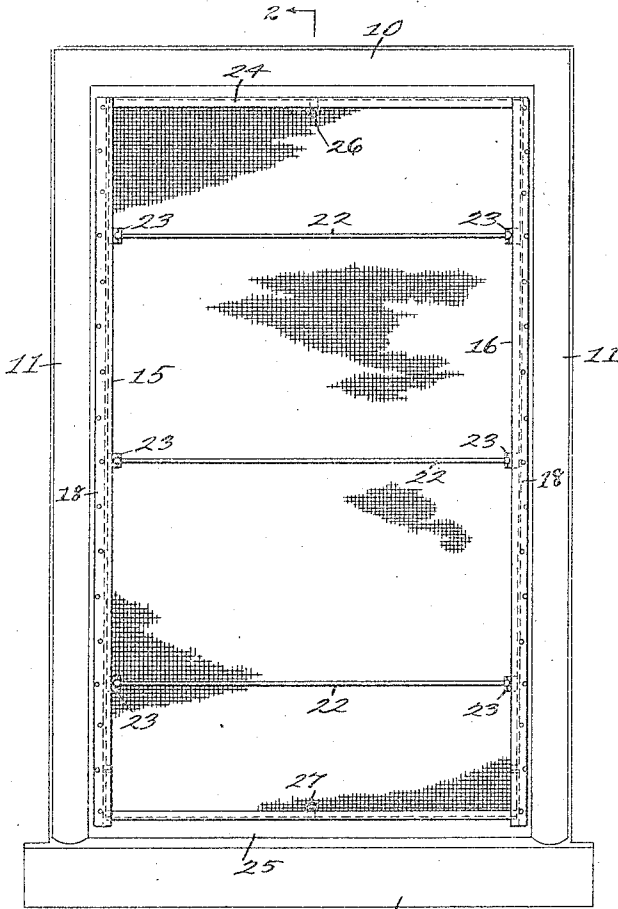


Fig. 2.

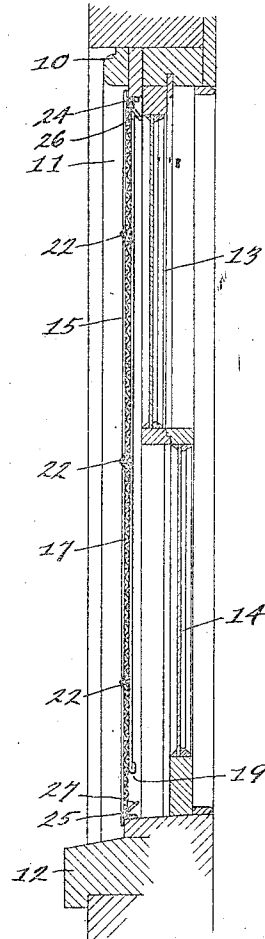


Fig. 3.

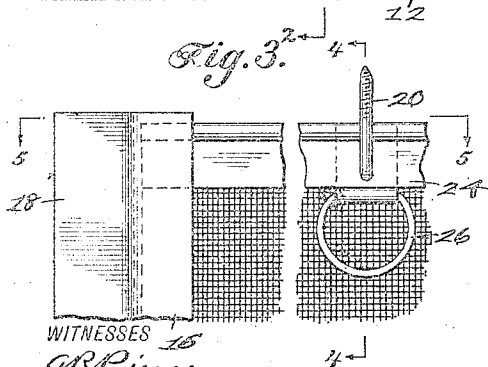


Fig. 4.

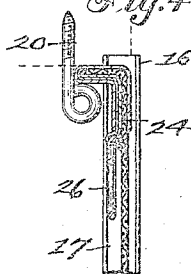
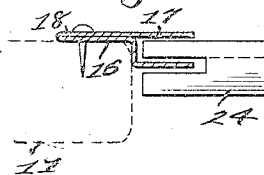


Fig. 5.



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SCREEN.

1,144,856.

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To all whom it may concern:

Be it known that I, JOHN A. LENHOFF, a citizen of the United States, and a resident of Wilmington, in the county of Newcastle and State of Delaware, have invented certain new and useful Improvements in Screens, of which the following is a specification.

My invention relates to insect screens for windows, porches, and the like, and one of the main objects thereof is to provide such devices which may be quickly and easily placed in position by unskilled persons, and which may be removed and replaced whenever desired without trouble.

A further object is to provide such devices which provide a maximum ventilating area with respect to the size of the opening covered.

A further object is to provide such devices which are held in close engagement with the frame of the opening, whereby no insects may pass through said opening.

A further object is to provide suitable guides along the sides of an opening to be covered, whereby the screen is held in exact relationship with said sides.

A further object is to provide transverse bracing means to prevent the screen from buckling in the center; and further objects are to provide such devices which are constructed entirely of metal, are simple both in construction and installation, are well adapted for the purpose for which they are designed, may be readily removed and rolled into a compact bundle for storage, when not in use, and are comparatively inexpensive.

My invention is fully described in the following specification, of which the accompanying drawings form a part, in which the separate parts are designated by the same reference characters in each of the views, and in which:—

Figure 1 is an elevation of the exterior of a window frame provided with my invention; Fig. 2 is a section taken on the line 2—2 of Fig. 1; Fig. 3 is an enlarged fragment of Fig. 1, inside thereof; Fig. 4 is a section taken on the line 4—4 of Fig. 3; Fig. 5 is a section taken on the line 5—5 of Fig. 3; Fig. 6 is another enlarged fragment of Fig. 1, on the inner side of the window; Fig. 7 is a section taken on the line 7—7 of Fig. 6; Fig. 8 is a section taken on the

line 8—8 of Fig. 6; and Fig. 9 is a sectional view of one edge of the screen, or rather the fabric thereof.

In the drawings forming a part of this application I have shown a window frame having top and side members 10 and 11, respectively, and a sill 12, as well as upper and lower sashes 13 and 14, respectively.

What may be called the permanent parts of my invention comprise side guides 15 and 16 which are formed of sheet metal bent upon itself, as shown in Figs. 5 and 8, to form a runway 17 and a planetary portion 18 through which screws or the equivalent are passed to hold said guides to the corresponding sides of the window frame, and lower portion of the inner member of each guide is cut-away, as shown at 19, Figs. 2, 6 and 7, and the metal turned to form a bead thereat, and another permanent portion of the device consists of a screw-eye 20 arranged centrally in the upper frame member 10.

The screen proper consists of the usual fabric, preferably metal, 21, the edges of which are preferably turned to present a smooth appearance, as shown in Fig. 9, and I provide a plurality of horizontally arranged brace rods 22, preferably U-shaped in cross section, as shown in Figs. 1, 2, 6, 7 and 8, and the ends of which are engaged in metal clips 23, shown in section in Fig. 8, as is also the wire mesh or fabric 21, and I locate said brace rods at as many suitable points as desired, but not at the top or bottom edges of the screen.

Secured to the top and bottom edges thereof, as shown in Figs. 2, 3, 4 and 5, are stay members 24 and 25, respectively, each of which consists of sheet metal bent U-shape with the fabric therebetween, and the resultant bent L-shape, to form flanges, this being very clearly illustrated in Fig. 4 with respect to the upper stay member 24, and I also provide top and bottom rings 26 and 27, respectively, and each of which is in pivotal connection with a metal strap also inclosed within the folds of the metal of the respective stay members.

With the permanent side guides 15 and 16, and the screw-eye 20, in position, the fabric is introduced into the said guides, at the cut away portion 19, and moved upwardly therein, until the upper stay member 24

touches the top frame member 10, after which the screw-eye 20, which had been turned parallel with the upper sash 13, is turned at right-angles to the stay member 5 24 and under the flange thereof, thus forming a suspending means for the screen proper, the weight of the lower stay member 25 maintaining the lower edge of the screen secure against the intrusion of insects, and it will be seen that the screen may be 10 swung inwardly of the window up to the point 19 of the side guides, to permit manipulation of blinds or shutters, or for brushing out dust and dirt, or for other reasons.

15 When it is desired to store the device, all that is necessary is to turn the screw-eye through an arc of 90 degrees of a circle, and lower the screen through and out of the side guides, and rolling the same into a compact 20 bundle, but it is not necessary to remove said guides nor screw-eye, as they are made of anti-rust material and are not in the way of the blinds or shutters, open or closed, but they may also be taken down if desired.

25 I have illustrated the device as for the full length of a window frame, but I may provide them of but half length, for either the upper or lower portion of the frame, the stay members, in such event, bearing against 30 the upper or lower stile of the upper sash in such use, but this is merely a matter of degree and does not alter the structural features described.

My device is long-lived, being made of 35 metal, and, while I have shown certain details of construction, it will be obvious that changes thereover may be made, within the scope of the following claims, within the spirit of my invention.

40 Having fully described my invention,

what I claim as new, and desire to secure by Letters Patent, is:—

1. A device of the class described, comprising permanent side guides formed of metal, a screen movable therein, said guides 45 being cut away to admit and remove said screen, a flanged stay member at the top of said screen, a flanged stay member at the bottom of said screen, said stay members comprising a strip of metal bent into U 50 formation to inclose the screen and being then bent at right angles at a point intermediate therewith to form a flange perpendicular to the plane of the screen, and a screw-eye supporting the upper stay, be- 55 neath the flange thereof to suspend said screen.

2. A device of the class described, comprising permanent side guides formed of metal, a screen movable therein, said guides 60 being cut away to admit and remove said screen, a flanged stay member at the top of said screen, a flanged stay member at the bottom of said screen, means for suspending said screen, a plurality of transverse braces 65 for said screen, and a socketed clip at each end of each of said braces, each of said clips comprising a strip of sheet metal bent into substantially U formation to inclose the corresponding end of a brace and the corre- 70 sponding edge of the screen.

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

JOHN AMBROSE LENHOFF.

Witnesses:

JOHN J. MONAGHAN,
ARCHIBALD S. REED, Jr.