June 2, 1931. I. I. ABRAMS 1,808,199

ATTACHMENT FOR SCREENS AND THE LIKE

Filed Aug. 19, 1929 2 Sheets-Sheet 1

Fig. 1.

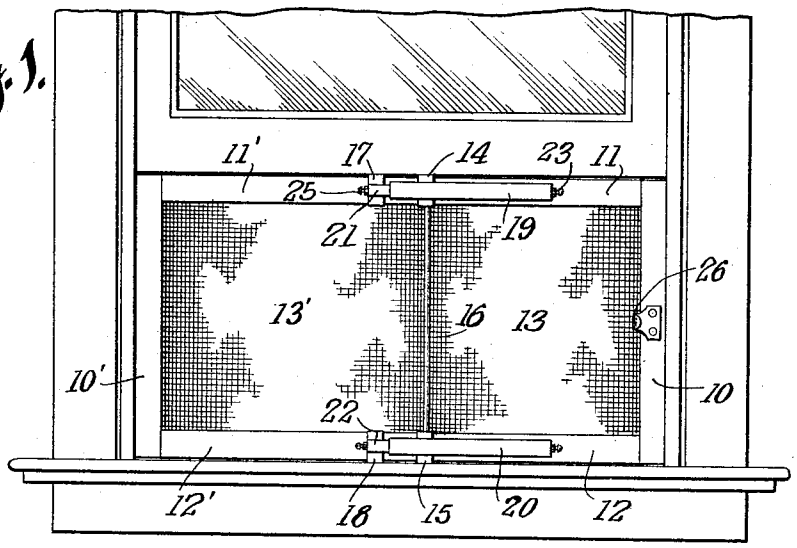


Fig. 2.

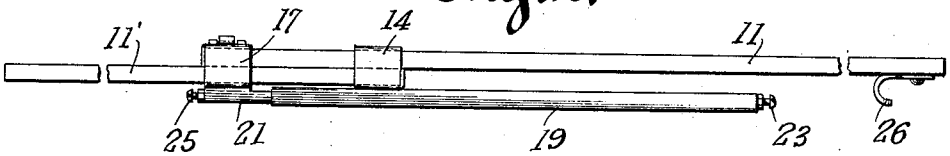
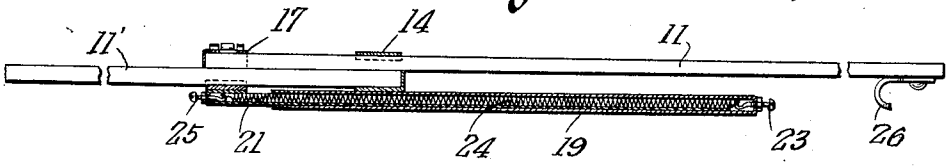


Fig. 3.



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Filed Aug. 19, 1929 2 Sheets-Sheet 2

Fig. 4.

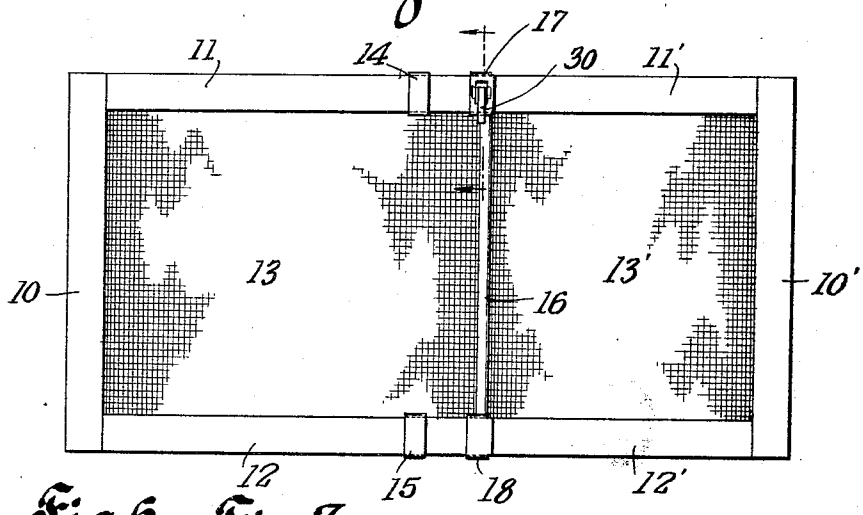


Fig. 6.

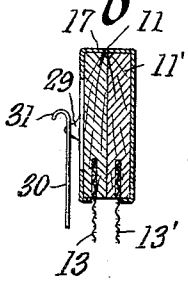


Fig. 7.

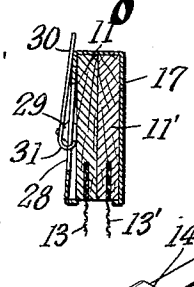


Fig. 5.

Fig. 8.

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UNITED STATES PATENT OFFICE

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ATTACHMENT FOR SCREENS AND THE LIKE

Application filed August 19, 1929. Serial No. 387,039.

This invention relates to net screens as used at windows, ventilator and like openings in the walls of buildings, to permit the free passage of air in either direction therethrough, but to prevent the ingress of insects and animals or air-borne articles, the invention being specifically concerned with the frames in which the screen material is supported.

Ordinarily, such screens are made in two sections, relatively slidable, the end members of each frame section being engageable in the opposed grooves of a window casement, in which the sash slides, and above or below the sash as may be preferred.

In the present invention, it is an object to provide resilient means on the upper and lower elements of each frame section whereby the sections are pressed outwardly at their ends to seat in the guiding grooves with sufficient force to maintain them in position and prevent rattling, and without other securing means.

A further feature is in the provision of means for locking the frame sections when in adjustment, in a manner to prevent meddling by mischievous children, but capable of being released by mature persons.

Further important purposes are in the production of inexpensive frame members, which include lightness in weight, stiffness and strength, means for conveniently shifting the sections of the frame, and good appearance; all these several objects being attained by the novel construction, combination and arrangement of parts hereinafter described and shown in the accompanying drawings, forming a material part of this disclosure, and in which:—

Fig. 1 is a front elevational view of the lower part of a conventional type of window, showing the application of the invention.

Fig. 2 is a top edge view of the frame as assembled for use.

Fig. 3 is a longitudinal section view of the same.

Fig. 4 is a rear plan view thereof.

Fig. 5 is a fragmentary perspective view of the upper elements of the frames at their overlapping portions.

Fig. 6 is a transverse sectional view taken on line 6—6 of Fig. 4, showing the frame locking means prior to engagement.

Fig. 7 is a similar view of the same shown in operative engagement.

Fig. 8 is an edge view similar to Fig. 3, but showing an alternative form of spring and guide arrangement.

As clearly shown in Figs. 1 and 4, the device is applicable to ordinary types of screens wherein two rectangular frames of uniform height are employed, the same consisting of upright outer members 10—10′ suited to engage in the window sash guide recesses and having rigidly attached at their ends upper and lower horizontal members 11—12 and 11′—12′, between which members is stretched wire netting 13—13′, the free edge of which is bound by a bar 16.

The inner portions of the upper and lower members overlap and carry between them net screen sheets 13—13′, their inner edges being free and their outer edges fixed in the upright 10—10′.

All these several frame members may be made of wood or metal and preferably present, in cross section, narrow elongated rectangles.

Secured on the inner portions of the elements 11′—12′ are metal strips 16 bent to form loops 14—15 completely encircling these elements and also the juxtaposed portions of the elements 11—12, which are freely slidable in the loops when adjusting the total length of the screen as a unit.

These loops are cut away at their inner ends to avoid interference with the screens 13—13′, which obviously must pass therethrough.

A similar pair of loops 17—18 are attached to the respective end portions of the members 11—11′ and constitute guides for the members 11′—12′, which extend freely therethrough.

Rigidly fixed on the inner faces of the loops 14—15 are rectangular tubes 19—20 having closed outer ends, and slidable telescopically therein are similar but smaller tubes 21—22 secured at their extending ends to the loops 17—18.

Hook bolts 23, passing adjustably through the closed ends of the tubes 19—20, engage the ends of helically wound tension springs 24, extending through the inner tubes 21 and engaging other hook bolts 25 adjustable in the closed ends of these inner tubes, whereby they are drawn inwardly with respect to the outer tubes and the two sections of the screen carrying frame urged outwardly in a manner which will be clearly understood.

In order to facilitate removal or entry of the screen, with respect to its guiding grooves, a handle 26 may be secured to the frame member 10 and the bar 16 grasped by the other hand, thus moving the two frame sections towards each other against the pull of the springs 24.

The loop 17 is cut away, as at 28, on the outer or far side of the frame and fixed adjacent the opening is a lug 29 in which is pivoted a lever 30 having a cam end 31 adapted to pass through the opening and impinge on the frame member 11, pressing it forcibly against the mating member 11′ and substantially preventing relative motion of the frame sections.

It is to be noted that the locking lever 30 is only accessible by raising the window upward, away from the screen, and therefore inaccessible from the inner side of the window except to persons of considerable strength and height.

In the modification shown in Fig. 8, in place of the telescopic tubes 19—21, a somewhat similar outer tube 35 is fixed to the loop 17 on the frame member 11, both ends of the tube being closed.

A strip 36 of metal is permitted to enter the inner end of the tube 35 and provided with a flange 37 slidable in the tube.

A coiled compression spring 38 is interposed between the flange 37 and closed inner end of the tube 35, urging the strip 36 inwardly and as the strip is turned re-entrantly at its outer end and secured to the loop 17, carried by the frame member 11, it will be seen that the frame section will be spring urged in opposite directions, as in the previously described structure.

While certain preferred embodiments of this device have been shown and described, it will be understood that changes in the form, arrangements, proportions, sizes and details thereof may be made without departing from the scope of the invention as defined in the appended claims.

Having thus described my invention, what I claim as new and desire to secure by Letters Patent, is:—

1. The combination with a screen frame composed of two sections each having upper, lower and outer end members, the sections being arranged to slide past one another, of a loop secured on the adjacent ends of each upper and lower member, said loops being adapted to slidably receive the upper and lower members of the other section, rectangular tubes arranged in telescopic relation and fixed to the loops on the respective sections, and adjustable means in said tubes to resiliently press said sections outwardly in opposite direction.

2. The combination with a screen frame composed of two sections each having upper, lower and outer end members, the sections being arranged to slide past one another, of a loop secured on the adjacent ends of each upper and lower member, said loops being adapted to slidably receive the upper and lower members of the other section, cam means on one pair of said loops to engage the members of the section slidable therein, said cam means being on the outer side of the frame, and means to exert resilient pressure on said sections to move them outwardly.

3. The combination with a screen frame composed of two sections each having upper, lower and outer end members, the sections being arranged to slide past one another, of a loop secured on the adjacent ends of each upper and lower member, said loops being adapted to slidably receive the upper and lower members of the other section, a handle on one section, means carried by said loops to urge the sections apart longitudinally, and means for locking said sections when in adjustment, said locking means being inaccessible from the front of the screen.

4. As an article of manufacture for use on window screens, composed of relatively slidable framed sections; an attachment comprising loops adapted to be removably secured on the adjacent ends of the screen frame sections, rectangular tubes arranged in telescopic relation and fixed to their respective loops and adjustable means in said tubes to resiliently press said loops outwardly in opposite directions.

Signed at New York in the county and State of New York, this 11th day of July, 1929.

ISIDORE I. ABRAMS.