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2,624,404

FLEXIBLE STORM WINDOW SECURING MEANS

Filed Oct. 21, 1950

2 SHEETS—SHEET 1

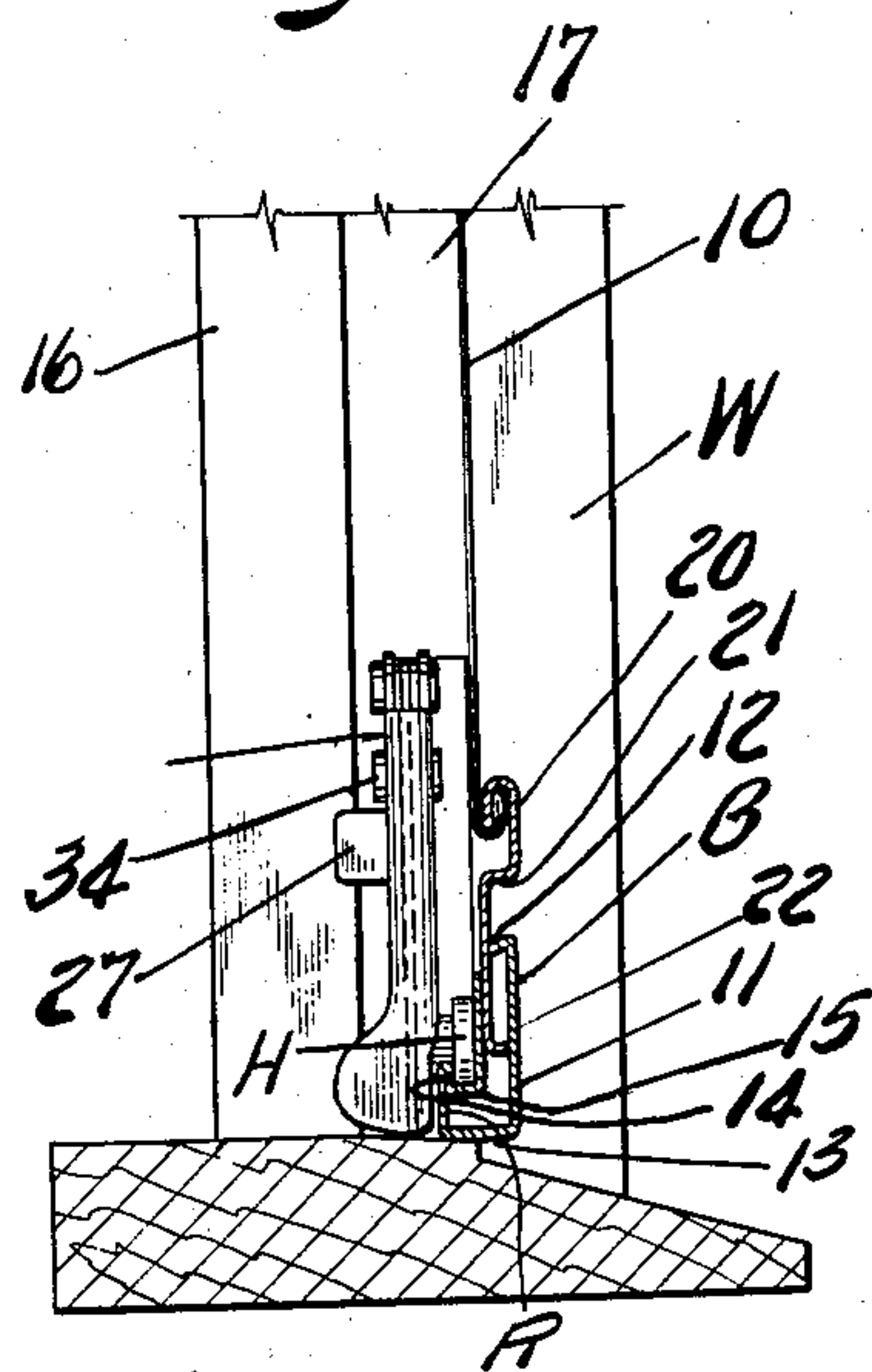
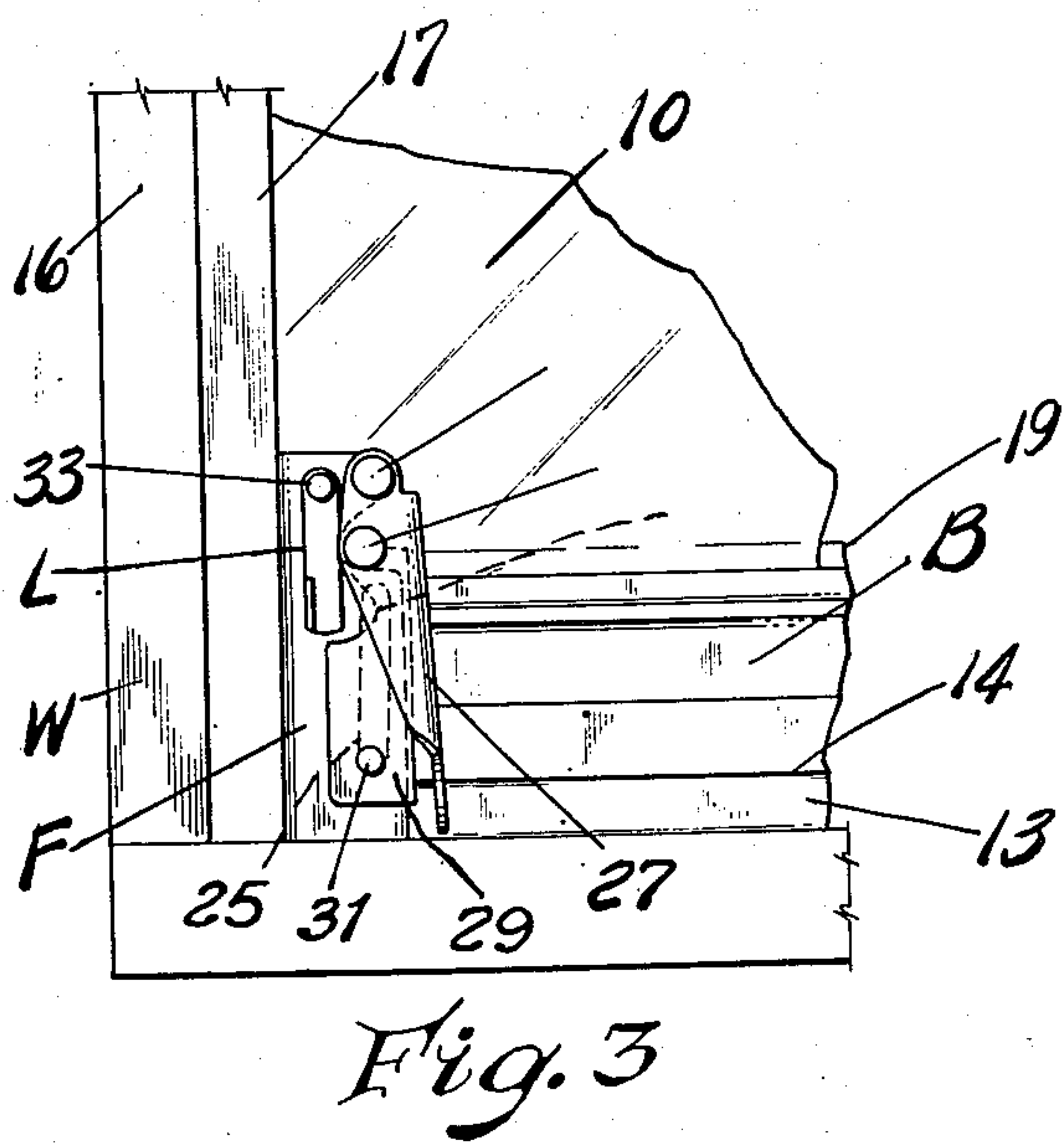
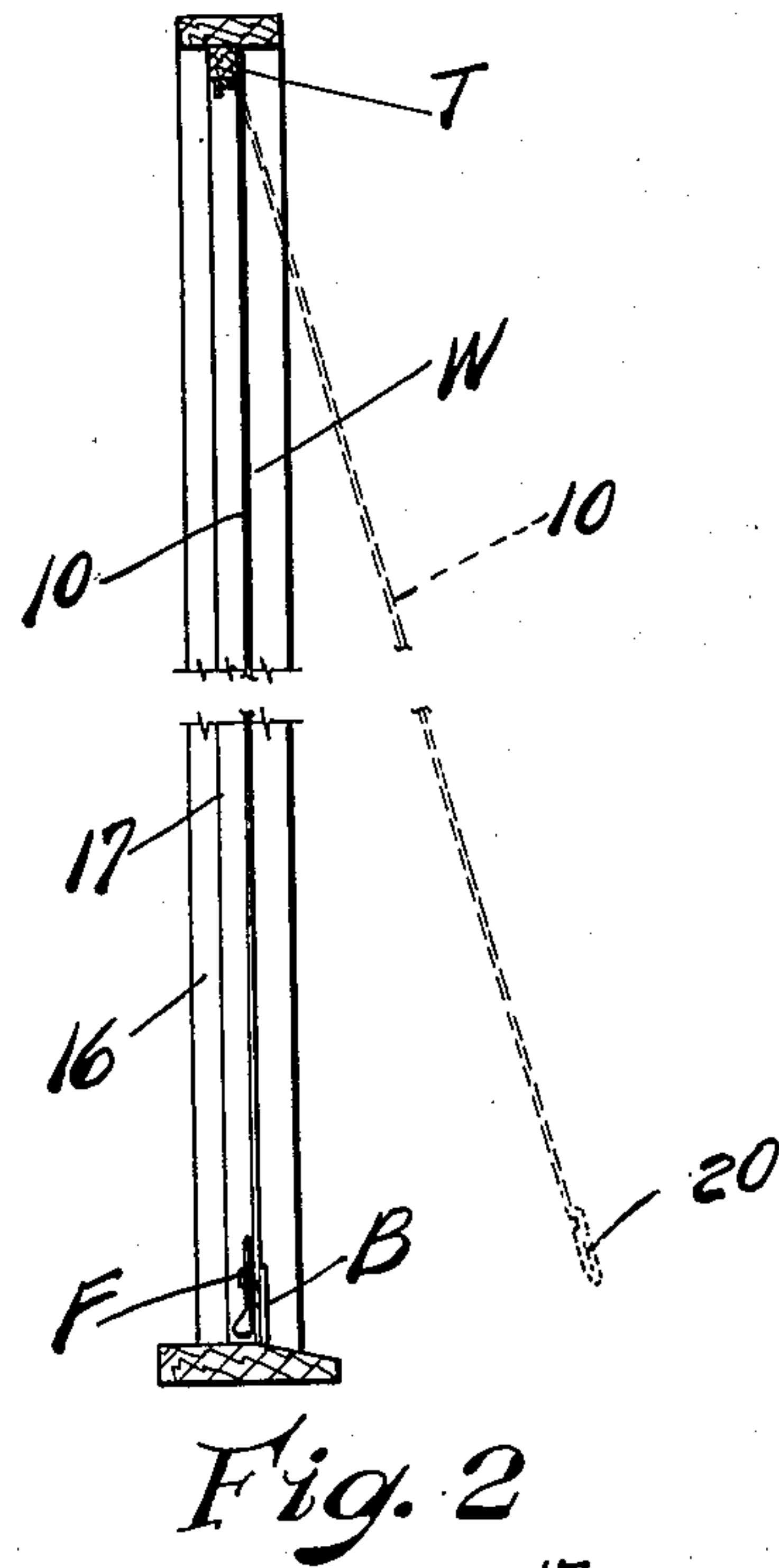
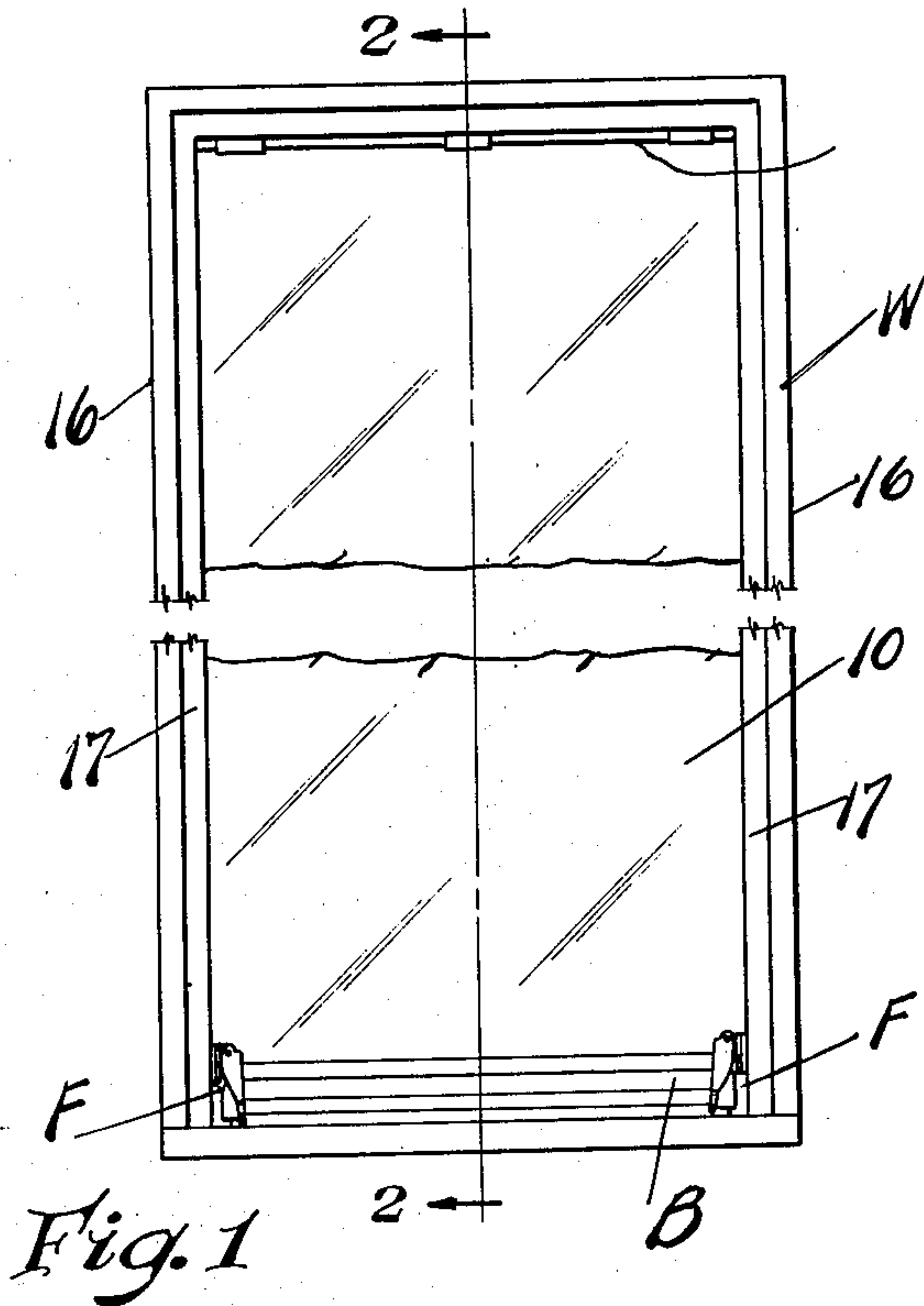


Fig. 4  
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2 SHEETS—SHEET 2

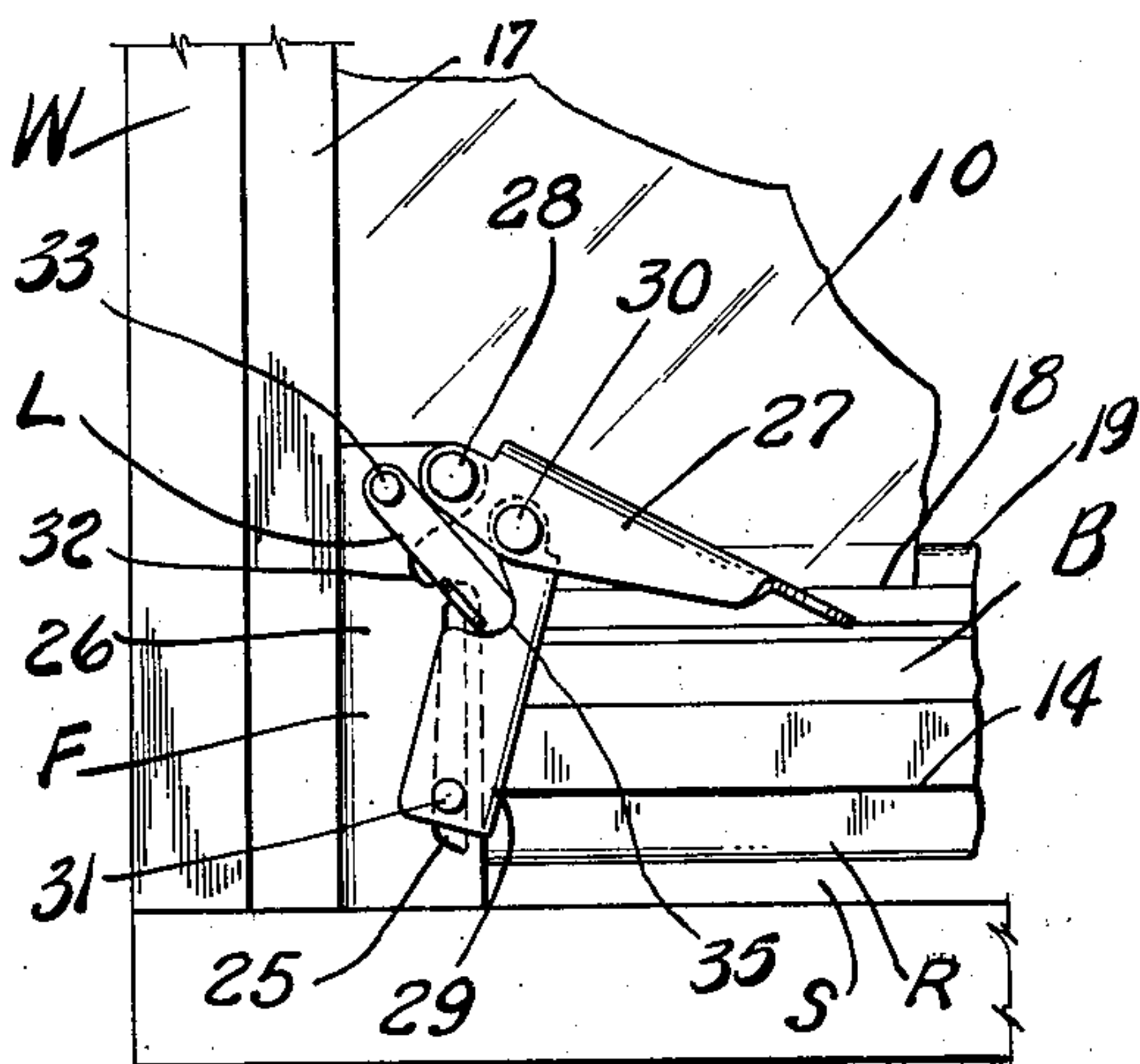


Fig. 5

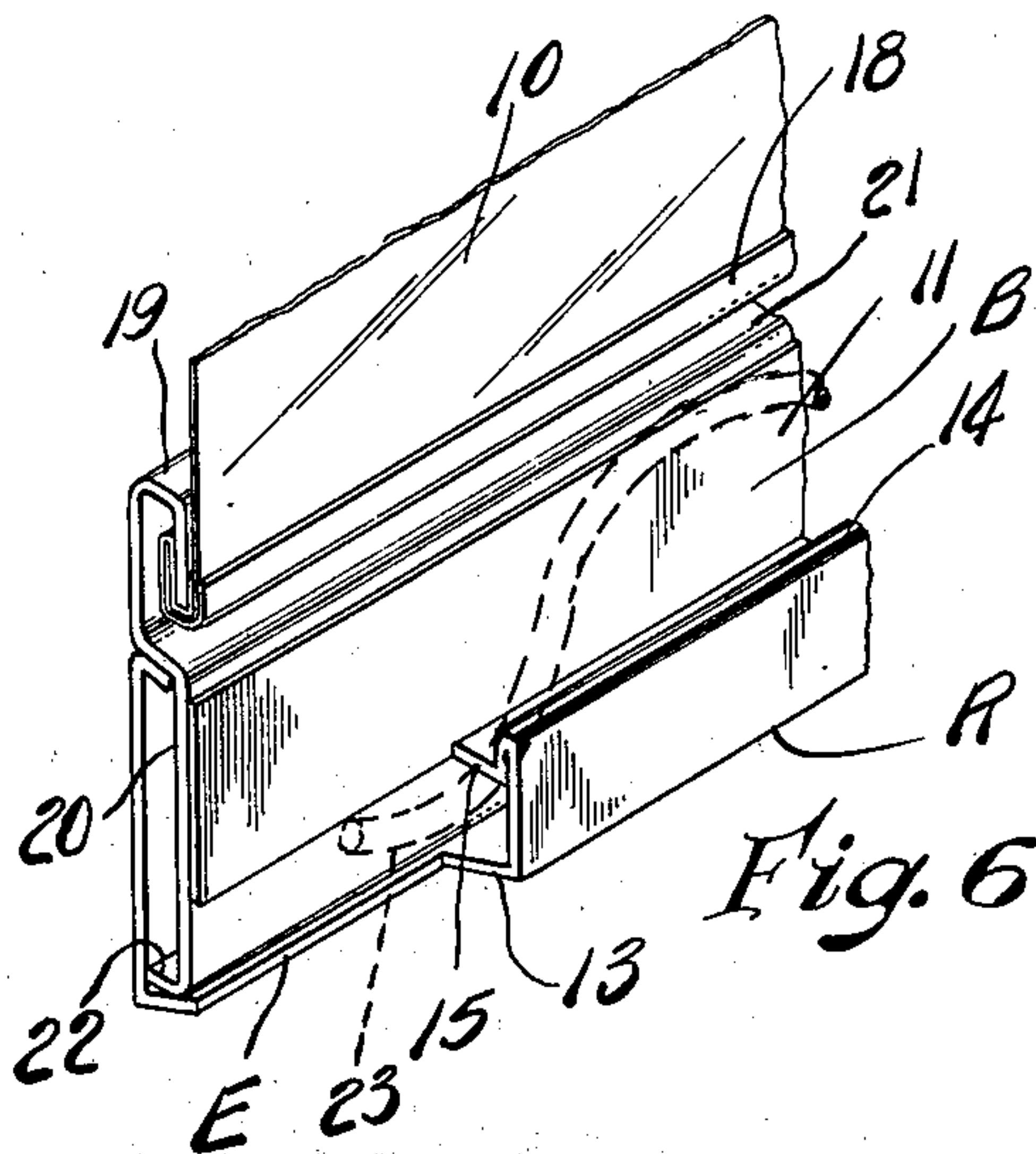


Fig. 6

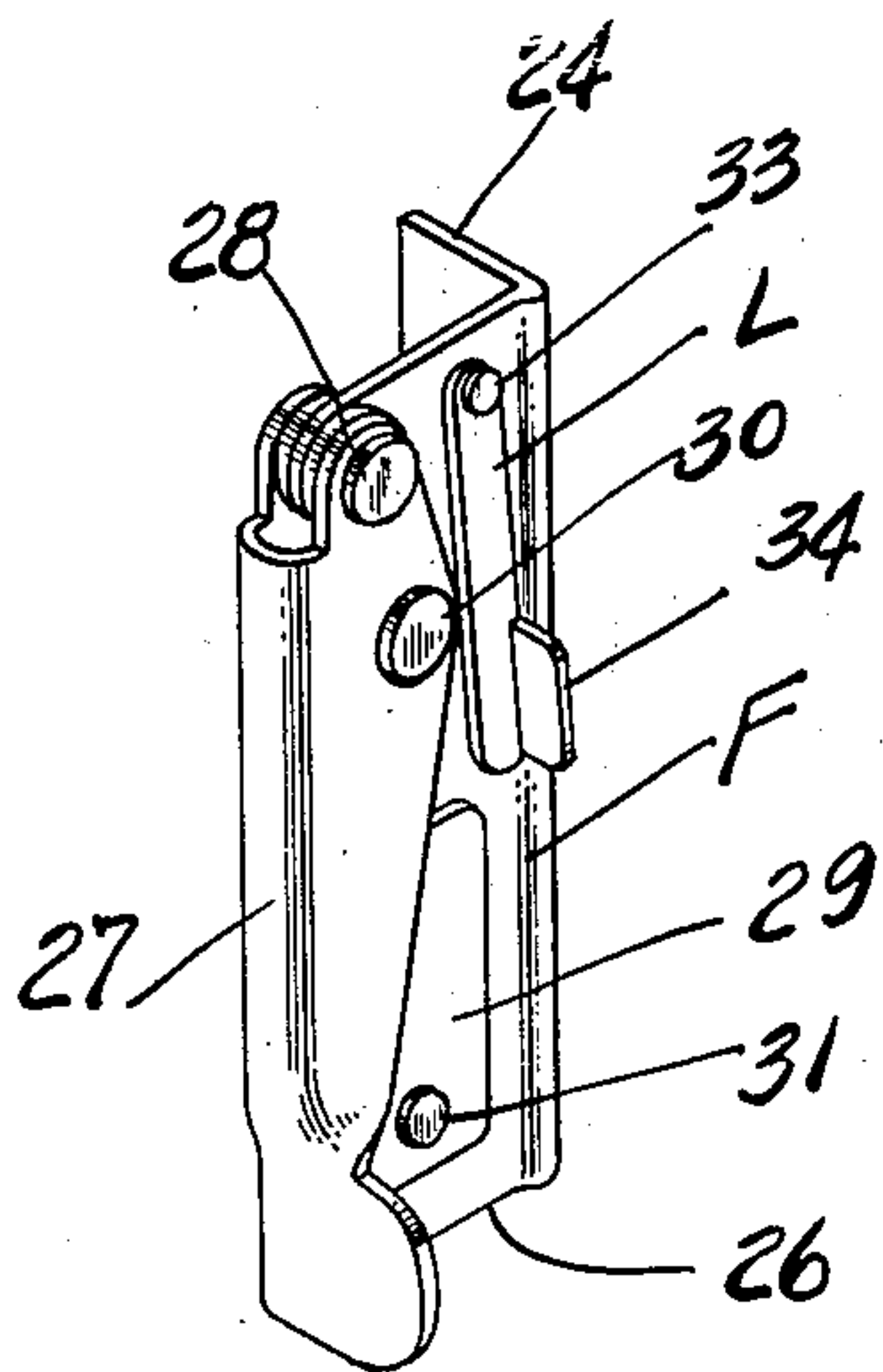


Fig. 7

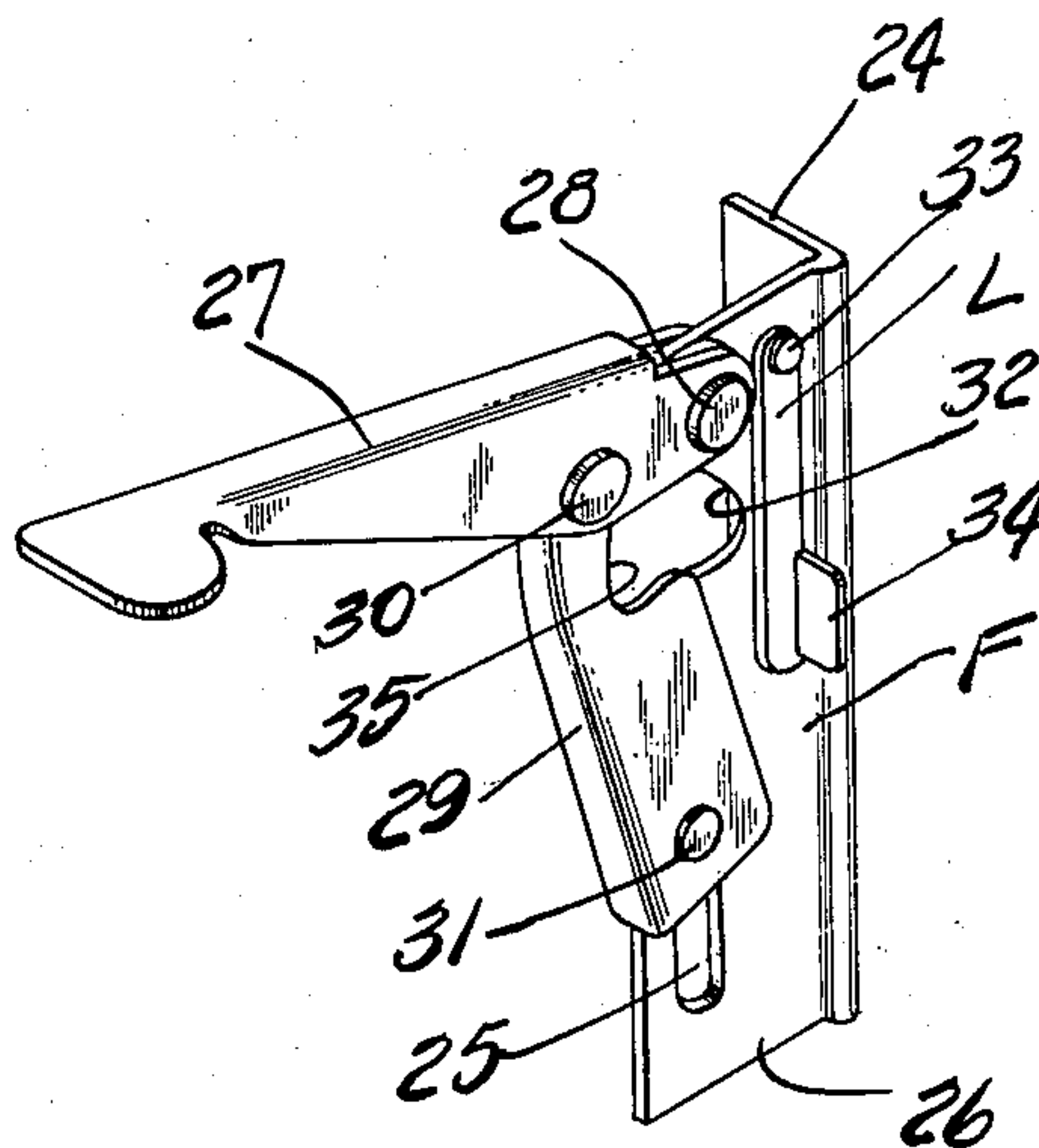


Fig. 8

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## UNITED STATES PATENT OFFICE

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## FLEXIBLE STORM WINDOW SECURING MEANS

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2 Claims. (Cl. 160—328)

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This invention relates to securing means of the type used to draw taut and secure the free end of flexible storm windows, window screens and other equipment of a similar nature for releasably securing it to a window sill or other support.

One of the prime objects of the invention is to design a very simple, practical and inexpensive hold-down bracket engageable with a flexible storm window strip for securing the window strip in various positions of adjustment, so that the bottom bar of the window or other member may in one position be held and securely locked tightly against the window sill, or in another predetermined raised position provide an open area between the bottom bar and the face of the sill to permit entrance of fresh air and which is particularly desirable in bedrooms and sleeping quarters in general.

Another object is to provide a substantial storm window securing means and bracket of neat and pleasing appearance, which can be readily operated, which can be easily manufactured and assembled, and which can be formed of stampings, thus lending itself to mass production with the consequent savings in manufacturing costs.

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 claims, 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 face elevational view of a window frame showing my holddown brackets mounted on the window sill and associated with the bottom bar of a flexible storm window.

Fig. 2 is a vertical, sectional view thereof taken on the line 2—2 of Fig. 1.

Fig. 3 is an enlarged, fragmentary view similar to Fig. 1 showing the brackets in locked position and the bottom bar tight against the sill.

Fig. 4 is a sectional, edge elevational view thereof.

Fig. 5 is also an enlarged, fragmentary view similar to Fig. 3 showing the storm window secured in partly raised position to provide an air space between the window sill and the bottom bar.

Fig. 6 is an enlarged perspective view showing the cut out on the ends of the bottom bar.

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Fig. 7 is a detailed, perspective view of the hold-down bracket showing it in locked position.

Fig. 8 is also a perspective view showing the bracket in open position.

Holddown brackets of the type referred to in the instant application are designed for use with window screens, flexible storm windows and similar equipment, which in one position will releasably lock the bottom bar of the storm window tightly against the sill to exclude insects of all kinds, prevent unauthorized entrance to the room, and also to form a dead air space between the conventional windows, and the flexible storm window, and in another position to hold and lock the bottom bar in raised position to form an unobstructed space between the sill and the bottom bar, permitting entrance of air to the interior of the room, but preventing any further raising movement of the storm window by persons on the outside of the building.

Referring now more particularly to the drawings in which the window frame is indicated at W, and the frame opening is covered by a flexible storm window 10, preferably made up of a single sheet of transparent, flexible plastic material, the upper end being secured to a top bar T and the lower end being releasably connected to a metal bottom bar B, and in a manner to be presently described.

The bottom bar B is formed as clearly shown in Figs. 4, 5 and 6 of the drawings and comprises an elongated, substantially rectangular shaped sheet metal bar 11 having an elongated slit 12 in the upper face thereof, the bottom wall being of greater width than the upper wall, extending outwardly as at 13, thence upwardly a predetermined distance parallel to the main body, thence being folded upon itself to form an upwardly projecting lip and convenient finger grip 14 which extends the length of the bar, thence being bent horizontally as at 15, and thence upwardly parallel to the main body, thus forming an enlarged rib section R which provides maximum contact with the window sill as well as reinforcing the bottom bar and providing an elongated finger grip.

In order to provide a dead air space between the flexible window strip and the conventional window (not shown), it is of course necessary that a reasonably tight fit be provided, and inasmuch as the jambs 16 of the window frame project beyond the window stops 17, it is necessary to remove a predetermined length of the rib R as shown at E in Fig. 6, from each end of the bottom bar, and this permits the reduced end sec-



tions to fit tightly against the jambs, and the edges of the flexible window to lie in intimate facial contact with the back face of the stops 17; this also brings the lip 14 into proper alignment for engagement by the brackets.

A relatively thin metallic loop shaped strip 18 is secured to the lower edge of the storm window to reinforce and prevent tearing, said strip interlocking with the turned U-shaped upper end 19 of the tensioned member 20, said member being bent as at 21 to fit the upper face of the bottom bar, thence extending through the slit 12, with its lower end turned at right angles as shown at 22, and a flat, undulated spring member 23 is interposed between the turned lip 22 and the upper wall of the bottom bar to provide a simple and effective tensioning arrangement.

The holddown bracket F is preferably, but not necessarily in the form of a stamping, the main body being triangular in shape, and suitable openings (not shown) are provided in the flange 24 to accommodate screws (not shown) for securing the bracket in position.

An elongated slotted opening 25 is provided in the flange 26 of the frame F, and one end of the locking lever 27 is pivotally secured to the upper end of the flange by means of a rivet 28. A link 29, preferably U-shaped in cross section, is pivotally secured to the lever 27 by means of a rivet 30, and a pin 31 is anchored in the lower end of said link and extends through the slotted opening 25, the inner end of the pin terminating in an enlarged head H, which head releasably engages over the lip 14 for forcing the bottom bar downwardly when the lever is actuated to compress the spring 23 and stretch taut the flexible window strip, thus forcing the bottom bar snugly against the face of the sill. The flange 26 is recessed as at 32 to accommodate and provide clearance for rivet 30, all as clearly shown in Fig. 8 of the drawings, and the bottom bar is released by swinging the lever 27 upwardly to position as indicated in Fig. 8.

An auxiliary locking lever L is pivotally mounted on the flange 26 by means of a rivet 33, and an offset section 34 is formed on the lower end of said lever, so that it can be readily manipulated. A socket 35 is provided in the edge of the link 29 and when the lever 27 is swung to partially raised position, the auxiliary lever L can be swung to bring its lower end into engagement in the socket 35, all as shown in Fig. 5 of the drawing, preventing any further upward movement of the bottom bar, and maintaining an open space S between the lower edge of the bar and the face of the window sill.

The flexible window strip is cut to predetermined

length so that when the bottom bar is forced into facial contact with the sill, the sheet 10 will be tensioned and drawn taut, and the spring 23 will be compressed, said strip being under considerable compression even when the mechanism is in position shown in Fig. 5 of the drawings.

To release the auxiliary lever L, it is merely necessary to force the lever 27 downwardly and swing lever L to released original position, and the main lever 27 can then be operated to lock and/or release the storm window as desired.

From the foregoing description, it will be obvious that I have perfected a very simple, practical and inexpensive flexible storm window and securing means for securing the bottom bar in various positions of adjustment.

What I claim is:

1. A holddown bracket of the class described comprising a main frame adapted to be secured to a support, a locking lever hingedly secured to the upper end of said frame, a link pivotally connected to said lever at a point spaced from said hinge connection, a vertically disposed guide track in said frame and a pin in the lower end of the link for travel in said track and formed with a projecting head on the end thereof, an auxiliary lever on the frame adjacent the locking lever, a socket formed in the link at a point intermediate its length for engagement by said auxiliary lever to lock the lever and link in predetermined partly raised position.

2. A holddown bracket of the class described comprising, a main frame adapted to be secured to a support, a locking member hingedly secured to the upper end of said frame, a link pivotally connected to the lever at a point intermediate its length, a vertically disposed slot in said frame, a pin in the lower end of the link for movement in said slot, said pin projecting beyond the edge of the link for engagement with the bar of a flexible storm window, a socket formed in said link adjacent the upper end thereof, and an auxiliary lever pivotally connected to the frame with its free end releasably engageable in said socket for locking the locking lever in predetermined partly raised position.

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#### REFERENCES CITED

The following references are of record in the file of this patent:

#### UNITED STATES PATENTS

Number	Name	Date
2,449,275	Burns	Sept. 14, 1948
2,519,998	Burns	Aug. 22, 1950