

April 28, 1959

J. R. WALKER

2,883,715

DOUBLE HUNG WINDOW MOUNT

Filed Oct. 4, 1954

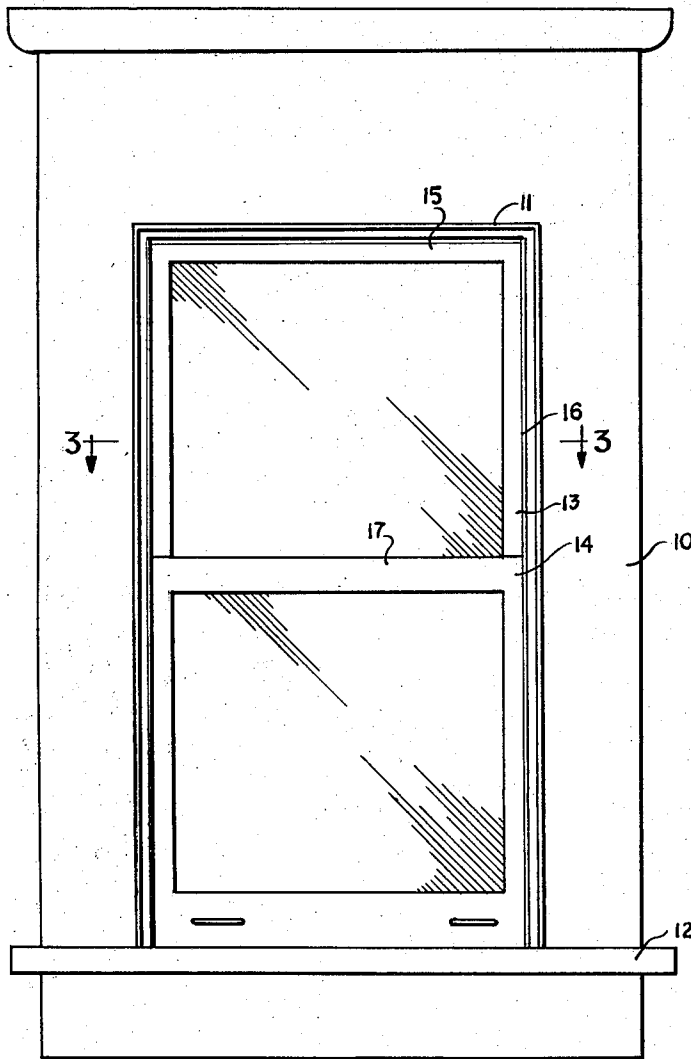


Fig. 1.

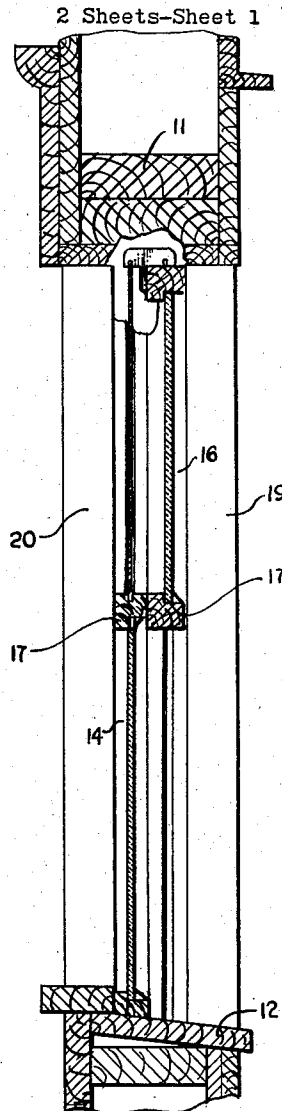


Fig. 2

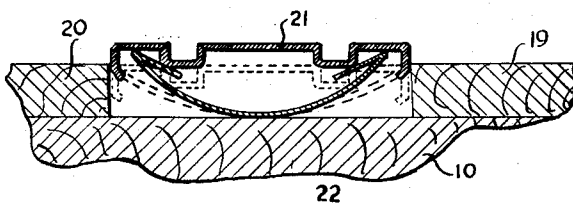


Fig. 8.

INVENTOR.
James R. Walker
BY
Richard A. Parsons

April 28, 1959

J. R. WALKER

2,883,715

DOUBLE HUNG WINDOW MOUNT

Filed Oct. 4, 1954

2 Sheets-Sheet 2

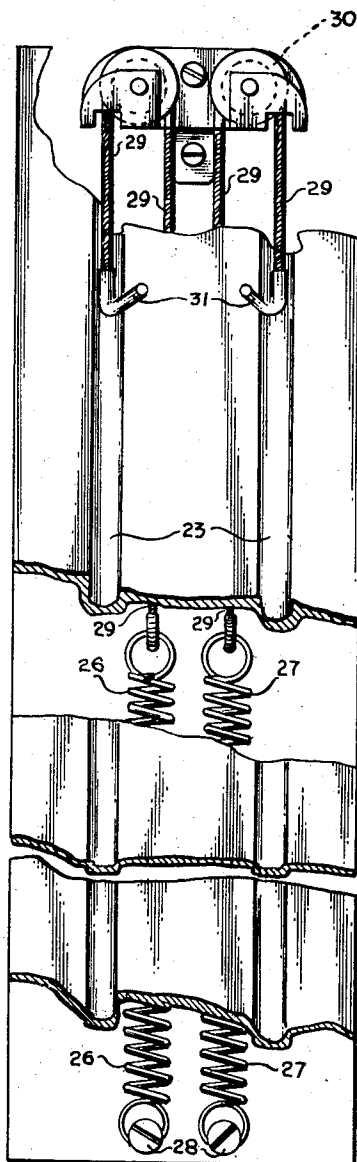


Fig. 4.

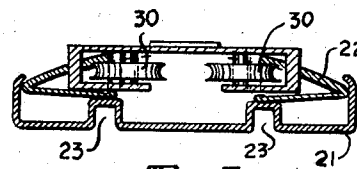


Fig. 7.

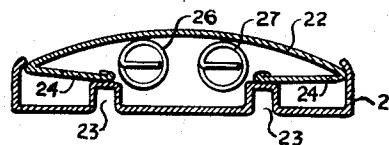


Fig. 6.

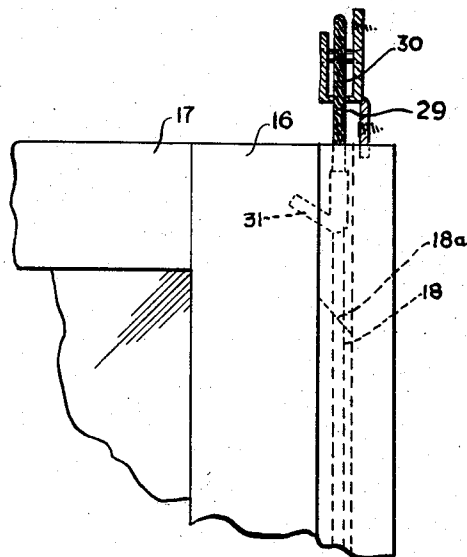


Fig. 5.

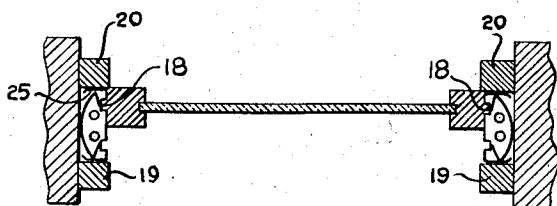


Fig. 3.

INVENTOR.
James R. Walker
BY
Richard A. Parsons

1

2,883,715

DOUBLE HUNG WINDOW MOUNT

James R. Walker, Lansing, Mich.

Application October 4, 1954, Serial No. 450,150

1 Claim. (Cl. 20—52.2)

This invention relates to windows of the double hung type and more particularly to a weatherstrip and counterbalance assembly that permits easy installation and removal of the windows.

The principal object of the invention is to provide a window guide and weatherstrip from which the windows can be removed simply and easily without tools, for cleaning or repair.

A further object of the invention is to provide a weatherstrip that provides a housing for concealing the counterbalancing means for the windows.

These objects will become more apparent when read in connection with the accompanying drawings, wherein:

Fig. 1 is a front elevational view of a window embodying the invention;

Fig. 2 is a fragmentary vertical cross-sectional view of the window;

Fig. 3 is a cross-sectional view taken on substantially the line 3—3 of Figure 1;

Fig. 4 is a fragmentary elevational view of an upright side frame with parts broken away to show the construction of the invention;

Fig. 5 is a fragmentary elevational view of a window sash and frame showing the means for attaching the counterbalancing mechanism to the sash;

Fig. 6 is a cross-sectional view of the weatherstrip;

Fig. 7 is a top view of the weatherstrip assembly and the pulleys for the counterbalancing cable; and

Fig. 8 is a fragmentary cross-sectional view of one side of the window frame and weatherstrip to show the action of the latter when the window is to be removed.

Referring now to the drawings in more detail, Figs. 1 and 2 show a window of the double hung type having a casing composed of upright side members 10, a header 11, and sill 12. In the casing are two window sashes 13 and 14. Each sash has a top rail 15, side rails 16 and a meeting rail 17. The side rails 16 are provided with ribs 18, the purpose of which will appear presently. Each rib extends from the bottom of the sash upwardly to a point near the top where it is cut away at 18a.

Each side member of the casing has a groove therein formed by the upright side member and a pair of stops 19 and 20 fastened thereto to contain the weatherstrip assemblies and counterbalancing mechanism.

There are two weatherstrip assemblies in the side members, one fixed and one laterally movable. The laterally movable one is composed of a channel member 21 formed of thin sheet metal such as aluminum, and a transversely bowed spring member 22. The web of the channel member is provided with a pair of spaced apart guide grooves for the window sashes. The channel flanges are turned laterally inwardly slightly at their free edges.

The spring member 22 is transversely bowed as shown and is provided with intumed flanges 24. These flanges contact the outside of the bottoms of the guide grooves 23 so as to bias the bowed portion outwardly.

The fixed member 25 is shown in Fig. 3. It consists of a channel exactly like the channel 21 of the movable assembly. It is mounted in the groove formed by the stops 19 and 20 on the window casing.

In the spaces between the channels and the window casing are two coiled springs 26 and 27. Each spring is fastened at its lower end to screws 28 attached to the

2

window casing. Cables 29 are attached at one end to springs 26 and 27 and run over pulleys 30. The opposite ends of the cables are provided with hook members 31 which are inserted in holes in the side rails of the window sashes as seen best in Fig. 5. Thus the sashes are counter-balanced by the coil springs.

As mentioned previously, the window sashes are provided with guide ribs 18. These are placed in the respective grooves 23 in the weatherstrip assemblies so that the sashes are guided during their vertical movement. See Fig. 8 particularly.

After the window casing and weatherstrip assemblies are assembled, the window sashes are very easily and conveniently placed therein. A guide rib on the outer sash is placed in its respective guide groove in the movable channel and pressure is exerted against the channel. This bends the flanges on the spring member 22 and pushes the channel into its groove in the casing far enough to permit the rib on the opposite side of the window sash to enter its respective guide groove. The sash is then released and the spring 22 forces the channel outwardly pushing the opposite rib of the sash into place.

The remaining sash may then be inserted in its respective grooves in a similar manner.

To remove the sashes it is only necessary to push them laterally against the movable weatherstrip assembly until the guide ribs on the opposite sides slip out of their respective guide grooves. The hook member 31 may then be released from the sashes if desired and the sashes completely removed from the casing. On the other hand it may be desirable to leave the sashes suspended from the counterbalancing mechanism so as to hold them in a convenient position for washing, as the sashes can easily be turned while still suspended.

From the foregoing it will be seen that this invention provides a weatherstrip and counterbalancing mechanism that enables the sashes to be easily installed and removed. Furthermore, it provides a convenient housing for the counterbalancing springs and completely conceals the same.

The scope of the invention is indicated in the appended claim.

I claim:

A window structure of the double hung type comprising an outer frame having vertical grooves in opposite sides thereof, weatherstrip assemblies in said grooves, one of said assemblies comprising an outwardly opening channel having a pair of parallel inwardly opening grooves intermediate the side walls, a spring member having a transversely bowed outer wall and intumed edges located within said channel, said intumed edges being in contact with the web of the channel and biasing said bowed wall outwardly from the channel, said bowed wall being in contact with the bottom of the groove in the side of the frame, a pair of coiled springs within the space between said bowed wall and the web of the channel and having their lower ends anchored to said channel, pulleys in said frame adjacent the top thereof, cables attached to the upper ends of the coil springs and running over said pulleys, the other ends of the cables being attached to a pair of sashes in said frame, said sashes having ribs on one edge located in the grooves in the web of the channel.

References Cited in the file of this patent

UNITED STATES PATENTS

2,284,436	Lundgren	May 26, 1942
2,662,255	Serley et al.	Dec. 15, 1953
2,688,165	Kinish	Sept. 7, 1954
2,718,677	Cornell	Sept. 27, 1955
2,740,171	McCubbin	Apr. 3, 1956