Nov. 1, 1949 G. H. SLOOK 2,486,991

WINDOW

Filed March 14, 1947 2 Sheets-Sheet 1

FIG. 1

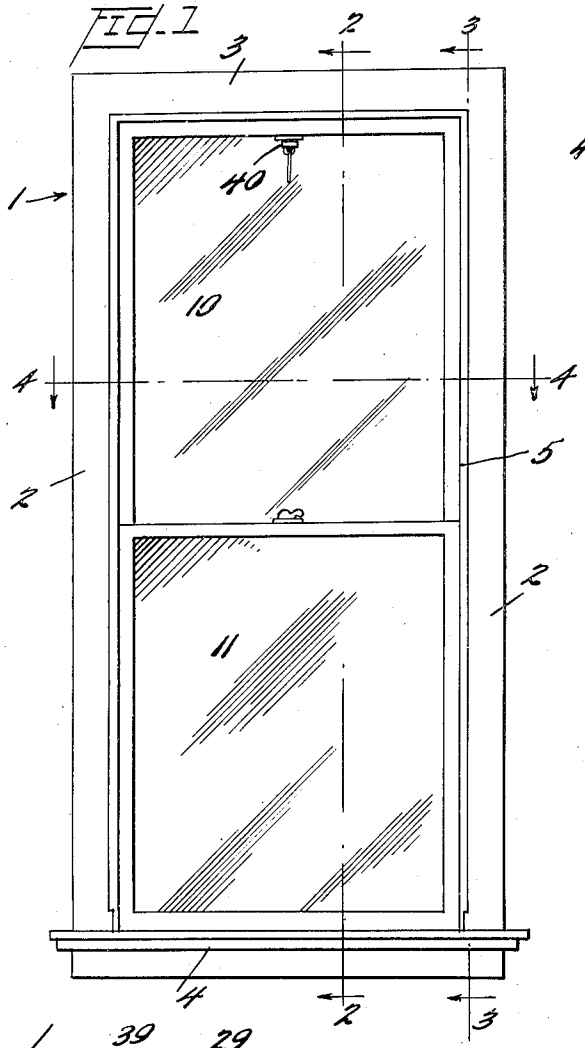


FIG. 2

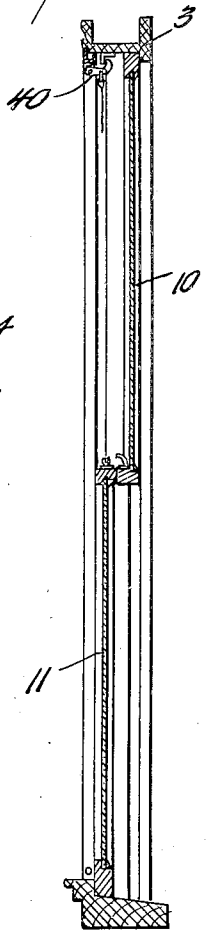
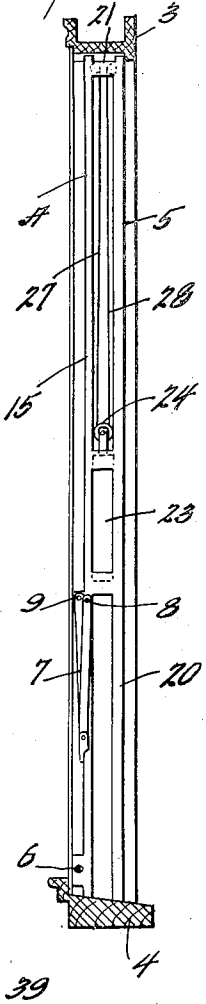
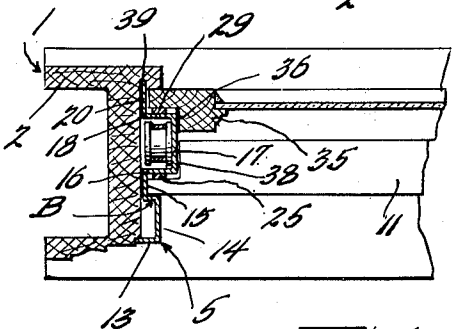


FIG. 3





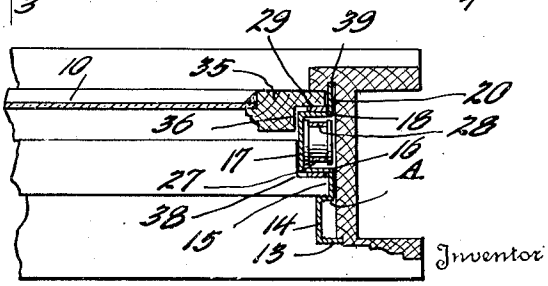


FIG. 4

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Nov. 1, 1949 G. H. SLOOK 2,486,991

WINDOW

Filed March 14, 1947 2 Sheets-Sheet 2

FIG. 5.

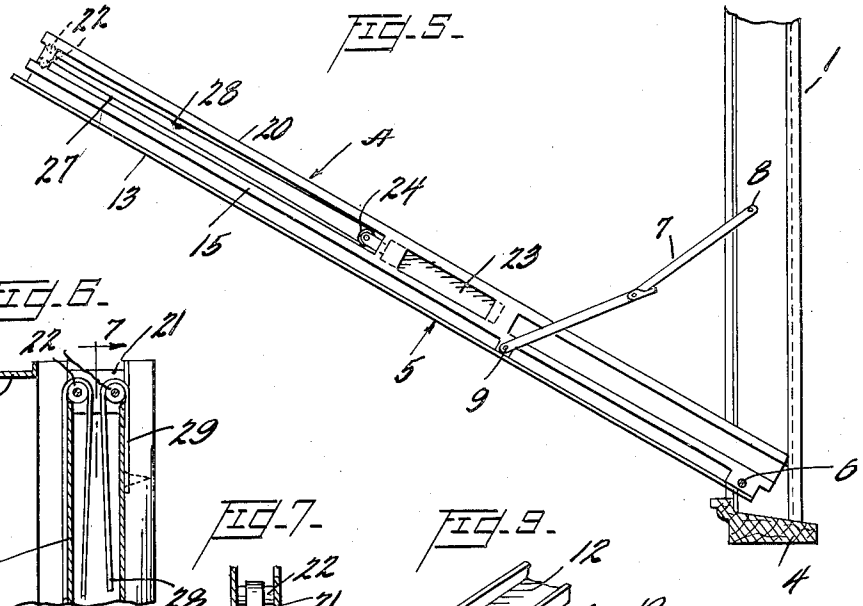


FIG. 6.

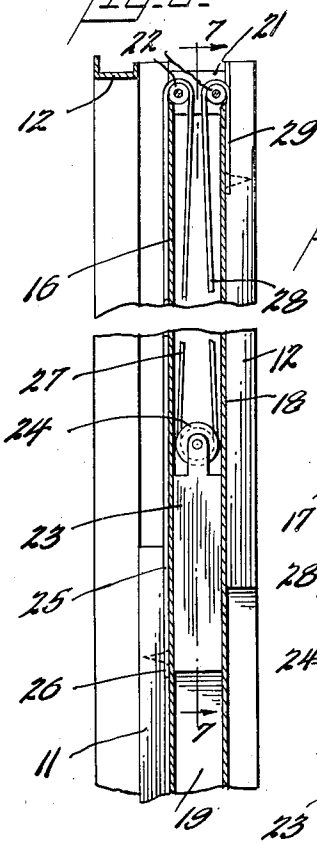


FIG. 7.

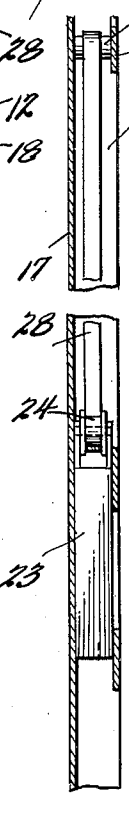


FIG. 9.

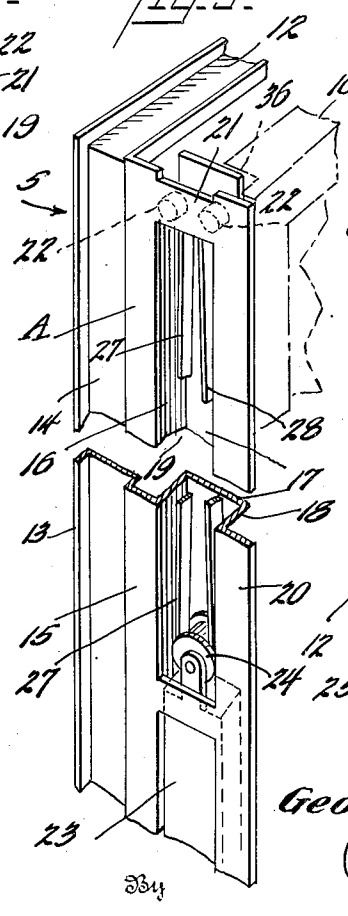
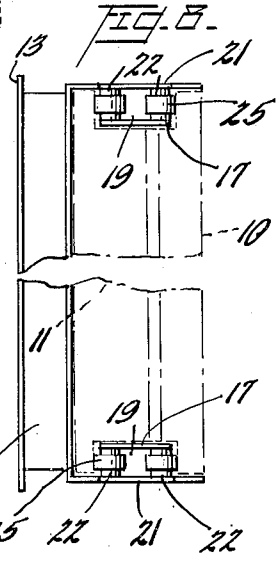


FIG. 8.



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WINDOW

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Application March 14, 1947, Serial No. 734,613

2 Claims. (Cl. 20—52)

1

My invention relates to new and useful improvements in windows, and, more particularly, to a window having a carrier frame or casing in which are mounted the upper and lower sashes, the carrier frame being pivoted near its bottom so that it may be swung inwardly and downwardly to thus make it possible to clean or wash the outer surfaces of the glass panes from within the room rather than from the outside.

Still another object of the invention is to provide a new and improved window provided with a tiltable carrier frame made of metal, in which the upper and lower sashes are mounted; and also in which frame are provided the counter-balancing weights for the sashes, which weights also slide up and down within this carrier frame.

Still another object of the invention is to provide a tiltable, carrier or supplemental frame in which are mounted the sashes together with the counter-balancing weights, one on each side of the frame; the weights being arranged so that they are supported by metal tapes or wires. Also, in case a metal tape should become damaged, it is a matter of but a moment to tilt the carrier frame forwardly and then tilt or remove a sash and substitute a new metal ribbon or tape on which the weights are supported.

Still another object of the invention is to provide a window with a metal carrier frame that is built to hold the sashes and provide tracks for the sashes and weights, the frame also being so formed as to act as a weatherstrip and guide for the respective upper and lower sashes.

Still another object of the invention is to provide a window with a carrier frame in which are slideably mounted the upper and lower sashes together with the counterweights, so that the frame, together with the sashes and weights forms a unit which may be quickly and readily pivoted in a window casing and afterwards swung inwardly for purposes of washing when so desired.

With these and other objects in view, the invention consists in certain new and novel arrangements and combination of parts as will hereinafter be more fully explained and pointed out in the claims.

Referring now to the drawings, showing a preferred embodiment,

Fig. 1 is a front or face view, showing my improved window,

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

Fig. 3 is a vertical, sectional view taken on line 3—3 of Fig. 1,

2

Fig. 4 is an enlarged, horizontal, sectional view taken on line 4—4 of Fig. 1,

Fig. 5 is a fragmentary, sectional view showing the carrier frame or casing in a tilted position,

Fig. 6 is an enlarged, fragmentary, sectional view, showing the manner of supporting the weights in the carrier frame,

Fig. 7 is a vertical, sectional view taken on line 7—7 of Fig. 6,

Fig. 8 is a top plan view of the metal frame and showing the pulleys for supporting the weights, and

Fig. 9 is an enlarged, perspective of one side of the metal frame, showing one of the counterbalance weights for supporting the sashes.

Referring now more particularly to the several views, and, for the moment to Fig. 1, there is shown a wooden window casing 1 as viewed from the rear inside, consisting of the usual side pieces or stiles 2, a top piece 3, and the sill 4. This frame is all made of wood and follows closely the ordinary window casings now in use.

However, fitted within this casing 1 is what I term a carrier frame 5 as will possibly be best understood from Fig. 9. This carrier frame 5 corresponds substantially in shape with the main casing 1 but is designed to movably fit therein.

As may be seen in Fig. 5, this frame 5 is pivoted as at 6 on its opposite sides within the main casing 1, there being also the stop arms 7 pivoted as at 8 to the frame 1 and to the carrier frame 5 as at 9, so that when this carrier frame 5 is swung inwardly, its resting position is limited or fixed by these foldable arms 7.

In this carrier frame 5 are mounted the upper sash 10 and the lower sash 11, as well as the counter-balancing weights 23 for these sashes, as will shortly be explained.

The metal carrier frame 5 is open across its top portion except for the narrow strip 12 (Fig. 9) which is at the front edge of the frame.

As the opposite sides of the metal frame 5 are identical, a description of one is a description of both. Referring now to Fig. 9, there will be seen the side strip or stile A and what might be termed the stop 13 which extends at right angles to the body portion 14 of the frame 5. Here the frame is bent to form a channel section forming a track 15, in which extends a cut-out portion of the side rail of the lower sash 11. The metal frame 5 then extends inwardly as at 16 and across at 17 and forwardly again at 18 (Fig. 9) to form the resultant channel section or compartment 19 for one of the balancing weights 23, this compart-

ment 19 and the track section 15 extending throughout the entire height of the frame 5.

From the side wall 18 extends the outer strip 20 which is parallel with the portion 15 as also may be seen in section in Fig. 4.

Likewise, the L-shaped portion of the metal at 18 and 20 forms a track or guide in which will slide the upper sash 10 as may be seen in Fig. 4.

As heretofore mentioned, the other side B of the frame 5 is formed in identically the same manner but there is no cross bottom metal portion, so that the carrier frame 5 in reality consists of two side pieces or stiles A and B and the cross piece 12 at the top as heretofore mentioned.

As far as the specification has proceeded, it will be seen that each of the side pieces or stiles A and B of the carrier frame 5 is bent to form composite channel sections, in one of which sections one side of the lower sash 11 slides, and in the other of which sections one side of the upper sash 10 slides.

Therefore, when the sashes are mounted in this carrier frame these sections of the stiles form tracks or guides for the sashes, while a central section of the stiles contains the weights 23 which counter-balance the sashes.

It will be understood that there are only two weights 23 used in each carrier frame 5 as each weight balances both the upper and lower sashes 10 and 11.

It will also be understood that this carrier frame 5, with its sashes 10 and 11 and weights 23 and means of supporting the weights, comprises a unit which may readily be fitted into the ordinary window frame, with but slight changes in the frame.

Referring now to the manner in which the counter-balancing weights 23 are mounted in the respective stiles A and B, reference is first made, for the moment, to Fig. 9.

There will be seen at the upper corner of the frame 5 that there is a connecting metal strip 21 which bridges the compartment 19, and extending from this compartment 19 to the rear wall 17 of the channel section are two pins on which are mounted a pair of supporting rollers 22.

Likewise this construction is repeated in the stile B as may be seen in Fig. 8.

Glancing at Fig. 6, for the moment, there may be seen the counter-balancing weight 23 which is mounted within the compartment 19 of the stile A, and this weight is provided with the pulley wheel 24 at its upper end. Also, there may be seen the metal ribbon or tape 25 with its lower end 26 fastened by a screw, or otherwise, to one side of the lower sash 11. This tape 25 then extends upwardly and over one of the rollers 22 and then downwardly as at 27 and under the pulley 24 of the weight 23, and then upwardly as at 28 over the other roller 22, and the end 29 of the tape 25 is fastened to a side rail of the upper sash 10.

Thus, it will be seen that there is in reality a loop formed between the portions 27 and 28, in which loop is supported the pulley wheel 24 of the weight 23.

This pulley and weight arrangement is duplicated in the stile B.

Thus, instead of having the usual two weights for the upper sash and two weights for the lower sash, it is only necessary, in the present instance, to have two weights 23, as these weights each counter-balance the upper and lower sashes 10 and 11.

Also, it will be seen that when the upper sash

10, for instance, is lowered, the side portion 28 of the loop will travel upwardly, raising the weight 23, and, of course, decreasing the length of the loop formed between the portions 27 and 28 of the tape 25.

On the other hand, on the raising of the lower sash 11, the weight will travel downwardly and the length of the loop will be increased.

Furthermore, the lower sash 11 may be partially raised and the upper sash 10 partially lowered, and then the both sashes operated at the one time without in any way interfering with the counter-balancing weights 23.

It will also be seen from above that the sashes 10 and 11 in no way counter-balance each other, but each sash is counter-balanced by the two weights 23, that is, the one weight on each side of the unit.

The weights 23 are relatively flat and are made to fit within their respective channels or compartments 19, and the length of the weight will be such that when the two weights 23 are in place, the load will be counter-balanced by these weights 23.

Referring now to the upper and lower sashes 10 and 11 and, for the moment, to the upper sash 10 as may be seen in section in Fig. 4 and dash lines in Fig. 9, it will be noticed that each of the side pieces 35 of the sash 10 is cut out as at 36, so that part of the side piece will bear against the rear wall 17 of the compartment 19, while the tongue of the cut-out portion will bear partly against the wall 18 and also against the wall 20 of its stile A.

It is true (in Fig. 4) that a portion of the tape 25 is positioned between the one wall of the stile A and the tongue of the sash 10. However, it will be understood that the tape 25 is in reality very thin and does not take up any appreciable space between the tongue of the sash 10 and the wall of the stile A. In other words, this tape 25 in no way interferes with the sashes fitting tightly within their respective channels.

In the same way, the lower sash 11 is cut out as at 38 to fit about one of the channel sections, as may also be seen in Fig. 4. In other words, as heretofore explained, these sashes 10 and 11 fit in their respective channel sections in the stiles A and B, so that they will be guided in their upward and downward movements and be tightly fitted so the sashes will not rattle.

It will also be seen in Fig. 4, that the forward edges 20 of each of the stiles A and B are fitted in receptive cut-out portions 39 in the forward edge of the main frame 1 which edge slightly overlaps the sashes 10 and 11.

In Fig. 1, there will also be seen a catch 40 fastened to the under-portion of the strip 12 of the frame 5, which will engage a latch (not shown) so that when the carrier frame 5 is in its normal, upright position within the frame 1, it will be locked against accidental disengagement.

From the foregoing, it will be seen that I have provided a window with the usual wooden frame, in which is pivotally mounted a metal carrier frame, the pivotal points being near the lower edge of the metal carrier frame; and this carrier frame in turn is made up as a unit with the metal stiles in which there is a center, inwardly extending compartment, and tracks or guides on the opposite sides thereof, in which the sashes travel.

It will also be seen that the upper sash bears against the overhanging portion of the frame on

its one surface, and on its rear surface against the channel sections that form the compartment for the weights; while the lower sash also bears against the central compartments and against a portion of the carrier frame.

Thus, the stiles of the carrier frame provide a tight and efficient track for the sashes, and a space for the weights, while the stiles also act like weatherstripping for the sashes, as the forward ends of the stiles are fitted into the rear face of the wooden frame when the carrier frame is in its upright position.

It will also be understood that should the tape **25** break, for instance, for the upper sash **10**, the carrier frame **5** is tilted inwardly and the upper sash may be lifted right out of the carrier frame **5**, so that a new tape may be secured thereto.

To remove the lower sash **11**, it will be necessary first to remove the catch **40** and then slide the lower sash **11** upwardly out of its track, so that a new tape may be attached to the lower sash **11**.

In other words, should these tapes break, it is but a matter of a few moments, without removing any wood or metal parts, with the exception of the catch **40**, to replace the broken tapes.

Also, if the light or glass should be broken in the sash, either sash may be removed in the matter of a few moments, as just above outlined.

Finally, it will be seen that by providing a tiltable carrier frame in which the sashes are mounted, it is but a matter of a moment to trip the latch at the upper end of the carrier frame, let the carrier frame with its sshes swing inwardly, so that the outer surfaces of the glass panes may be washed and cleaned readily without going outside of the room or building.

Many slight changes might be made without departing from the spirit and scope of the invention.

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

1. In a window unit, a metal carrier frame consisting of a relatively narrow top piece and two wider stiles, each stile formed with two track sections and a centrally disposed chamber, the track sections and chambers running the entire length of the stiles, upper and lower sashes mounted within the track sections, a sash weight in each of the central sections, two metal tapes, each secured to an upper and lower sash and each of said tapes forming a loop within the respective central chambers and supporting said weight, the metal carrier frame adapted to be pivoted at its lower end in a receptive wooden window casing, and the sashes slidable in the carrier frame at all times.

2. In a window, a self-contained unit, including a metal carrier frame consisting of a top piece and two stiles, each stile shaped to form longitudinally extending tracks and a centrally disposed compartment for a weight, sashweights, upper and lower sashes mounted in the respective tracks, a pair of pulleys mounted at the upper end of each of said central compartments, metal tapes passing over the respective pulleys and having their respective ends connected to an upper and a lower sash, each of the tapes formed in the shape of a loop within the central compartments and supporting the respective weights, the unit adapted to be pivotally mounted within a wooden frame, whereby the same may be swung inwardly, and the sashes being movable when the frame is either in its vertical or tilted position.

GEORGE H. SLOOK.

REFERENCES CITED

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

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