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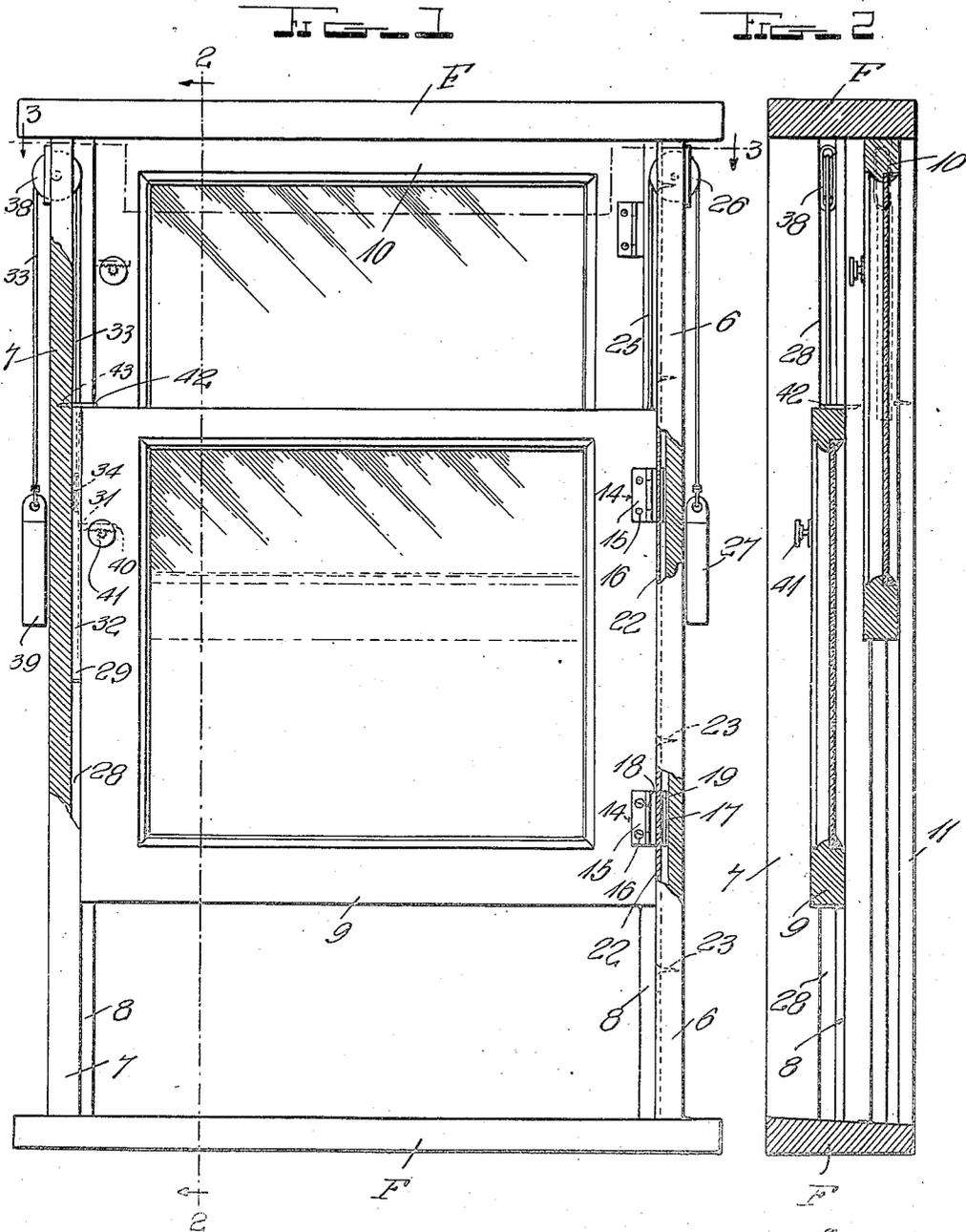
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SLIDING AND PIVOTED WINDOW

Filed Oct. 7, 1927

2 Sheets-Sheet 1



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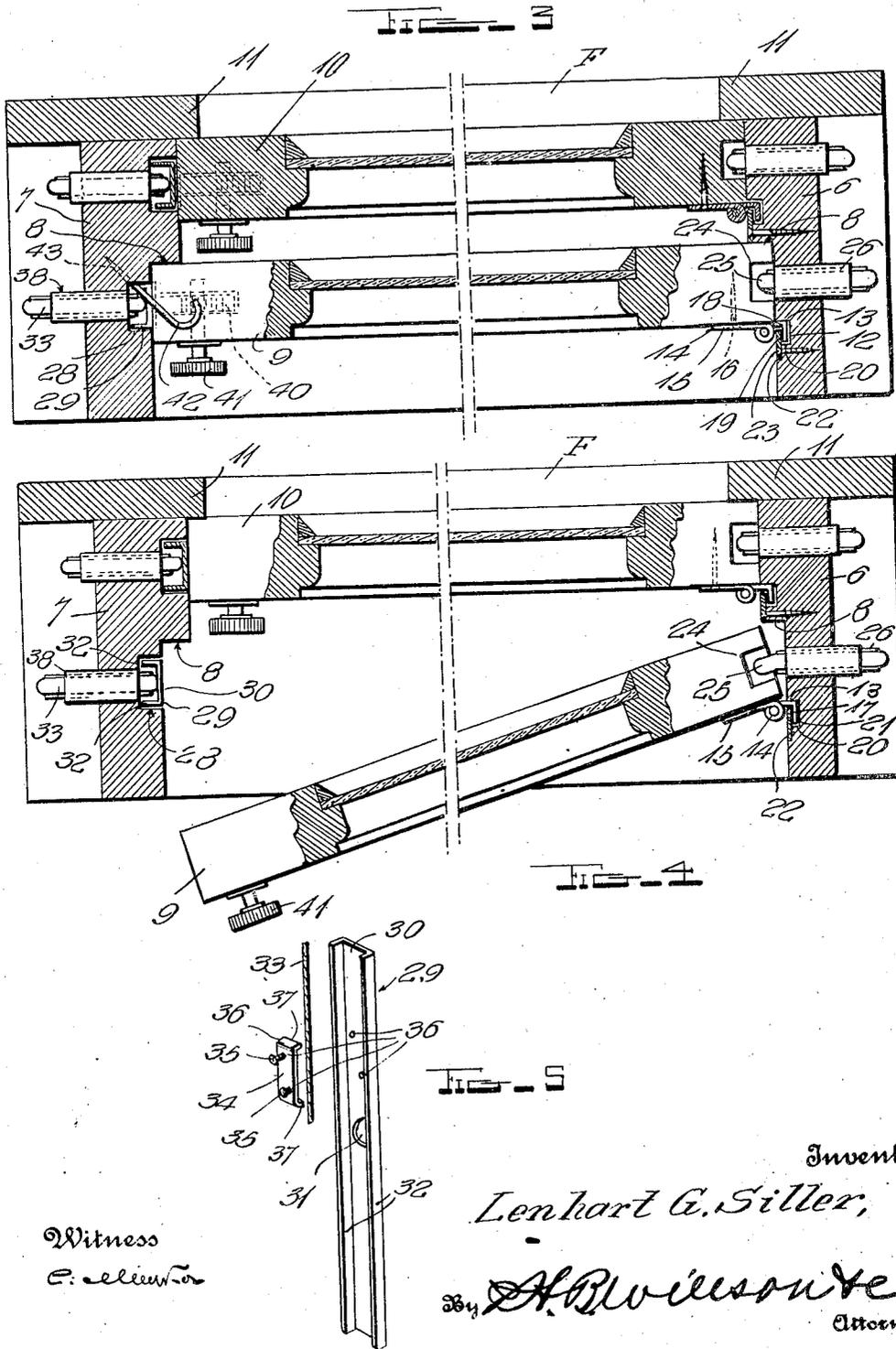
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2 Sheets-Sheet 2



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# UNITED STATES PATENT OFFICE.

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## SLIDING AND PIVOTED WINDOW.

Application filed October 7, 1927. Serial No. 224,658.

The invention relates to improvements in windows in which the sashes are mounted for vertical sliding and are also mounted for inward swinging, primarily to permit easy washing of the outer sides of the glass panes.

It is one object of the invention to provide new and improved and exceptionally simple and inexpensive means for slidably and pivotally mounting the sashes.

Another object of the invention is to provide unique means at the edges of the sashes remote from the pivots, for connecting said sashes with sash-balancing cords and permitting disconnection from such cords when the sashes are to be inwardly swung.

With the foregoing in view, the invention resides in the novel subject matter hereinafter described and claimed, the description being supplemented by the accompanying drawings.

Fig. 1 is an inner side elevation partly broken away and in section, showing a window constructed in accordance with my invention.

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

Fig. 3 is a horizontal section on line 3—3 of Fig. 1.

Fig. 4 is a view similar to Fig. 3 but illustrating one of the sashes swung inwardly.

Fig. 5 is a perspective view of portions of the means for connecting the sashes with the balancing cords.

The drawings above briefly described illustrate the preferred form of construction and while such construction will be herein specifically explained, it is to be understood that minor variations may be made within the scope of the invention as claimed. Moreover, while I will herein refer to sash balancing "cords", it is to be understood that chains or the like may be used if desired.

The numerals 6 and 7 denote the opposed vertical stiles of a window frame F, each stile being transversely stepped at its inner side, the innermost steps providing guide shoulders 8 against which the outer side of the lower sash 9, contacts. The upper sash 10 is slidably received between the outer steps of the stiles and contacts with suitable guides such as projecting edges 11 of the outside trim of the frame. The details of construction used in mounting both sashes, are identical. Hence, such details will be described only in connection with one sash.

The inner side of the stile 6 is formed with

a longitudinal groove 12, at one side of which the sash is positioned, the inner side of said sash being flush with the inner side wall 13 of said groove. Upper and lower hinges 14 are provided at this inner side of the sash, each hinge embodying one leaf 15 secured by screws or the like 16 to the sash, and another leaf 17 which is right angular in horizontal section, providing this leaf with an inner longitudinal portion 18 and an outer longitudinal portion 19. The leaf 17 extends into the groove 12, the inner portion 18 of said leaf is in substantial contact with the inner side wall 13 of said groove, and the outer portion 19 of said leaf projects toward and is substantially in contact with the outer side wall 20 of this groove, said wall 20 being parallel with said wall 13. The leaf portion 19 is also substantially in contact with the inner groove wall 21 which extends between the walls 13—20.

A flat metal strip 22 is secured by screws or the like 23 against the inner side of the stile 6, said strip projecting laterally across the major portion of the groove 12 in sliding contact with the leaf portion 19, the inner edge of said strip being substantially in contact with the leaf portion 18. Thus, it will be seen that the hinge 14 is mounted for vertical sliding and that it may also act as a hinge to pivotally connect the sash with the stile 6.

The edge of the sash disposed at the stile 6, is grooved at 24 to receive a sash balancing cord 25 which passes over the usual sheave 26 and is provided with a weight 27. The cord may obviously be secured to the sash in any desired manner.

The inner side of the stile 7 is formed with a longitudinal flat-sided groove 28 which is spanned by the adjacent edge of the sash. Slidably received in this groove, is a channel metal bar 29 whose flange connecting portion 30 abuts the sash edge and is formed with an opening 31, while the flanges 32 of said bar, project toward the inner wall of the groove. The lower end of a sash balancing cord 33 is received between the upper portions of the flanges 32 and is held against the flange-connecting portion 30 by a clamping plate 34 which is also received between said flanges, this plate being secured to said flange-connecting portion 30 by clamping screws 35 which pass through openings 36 in the plate and bar and straddle the cord 33. Preferably, the upper and lower ends

37 of the plate 34, are turned laterally to bite the cord 33 and prevent slippage thereof. This cord is trained over an appropriate sheave 38 and is provided with a weight 39.

5 Slidably mounted within a side rail of the sash, is a bolt 40 which may be projected and retracted by means of an appropriate knob 41. When this bolt is projected, it is received in the opening 31 of the bar 29, so that said bolt, said bar and the cord-clamping means, establish an operative connection between the cord 33 and the sash, and the latter will be effectively balanced by the two weights 27—39. When bolt 40 is retracted however, the sash is entirely disconnected from the bar 29, allowing inward swinging of said sash as shown in Fig. 4. When such disconnection is effected, it is of course desirable to hold the bar 29 against upward sliding under the influence of the weight 39 and the cord 33. For this purpose, a pin 42 may be inserted into a socket 43 in the inner side of the stile 7, in position to abut the upper end of bar 29, thereby holding the latter against upward movement.

Excellent results may be obtained from the details of construction herein disclosed and as above stated, these details are preferably followed. Attention however, is again directed to the fact that within the scope of the invention as claimed, variations may be made.

I claim:

35 1. In a combined pivoted and slidable window, a frame stile having a longitudinal groove in its inner side, a sash having an edge slidably contacting with said inner side of said stile at one side of said groove, a hinge having one leaf secured to said sash and another leaf extending into said groove, said other leaf being right angular in horizontal section providing it with inner and outer longitudinal portions, said inner longitudinal portion being disposed at one side wall of said groove while said outer longitudinal portion projects toward the opposite side wall of said groove, and a strip extending longitudinally of and secured to said inner side of the stile, said strip projecting laterally across the major portion of said

groove and overlapping said outer longitudinal portion of said other hinge leaf.

2. In a combined pivoted and slidable window, a frame stile having a longitudinal groove in its inner side, said groove being provided with opposed side walls disposed in parallel planes and with a flat inner wall at right angles to said side walls; a sash having an edge slidably contacting with said inner side of said stile, one side of said sash being flush with one of said side walls of said groove; a hinge having one leaf secured against said side of said sash and another leaf extending into said groove, said other leaf being right angular in horizontal section providing it with an inner longitudinal portion and an outer longitudinal portion, said inner longitudinal portion being disposed substantially in contact with said one side wall of said groove and said outer longitudinal portion being positioned substantially in contact with said flat inner wall of the groove; and a flat strip extending longitudinally of and secured to said inner side of said stile, said strip projecting laterally across the major portion of said groove in overlapping relation with said outer longitudinal portion of said other hinge leaf and having a longitudinal edge substantially in contact with said inner longitudinal portion of this leaf.

3. In a combined pivoted and slidable window, a frame stile having a longitudinal groove in its inner side, a pivotally and slidably mounted sash having an edge which spans said groove, a channel metal bar entirely and slidably received in said groove and having its flanges disposed toward the inner wall of said groove, the flange-connecting portion of said bar being flush with the inner sides of said stile and formed with an opening, a bolt carried by said sash and projectable into said opening to connect the sash and bar, and a sash cord in the aforesaid groove having its lower end received between said flanges of said bar and secured to the latter.

In testimony whereof I have hereunto affixed my signature.

LENHART G. SILLER.