June 18, 1940. V. PASCUZZI ET AL 2,204,909

WINDOW

Filed May 20, 1938 2 Sheets-Sheet 1

Fig. 1.

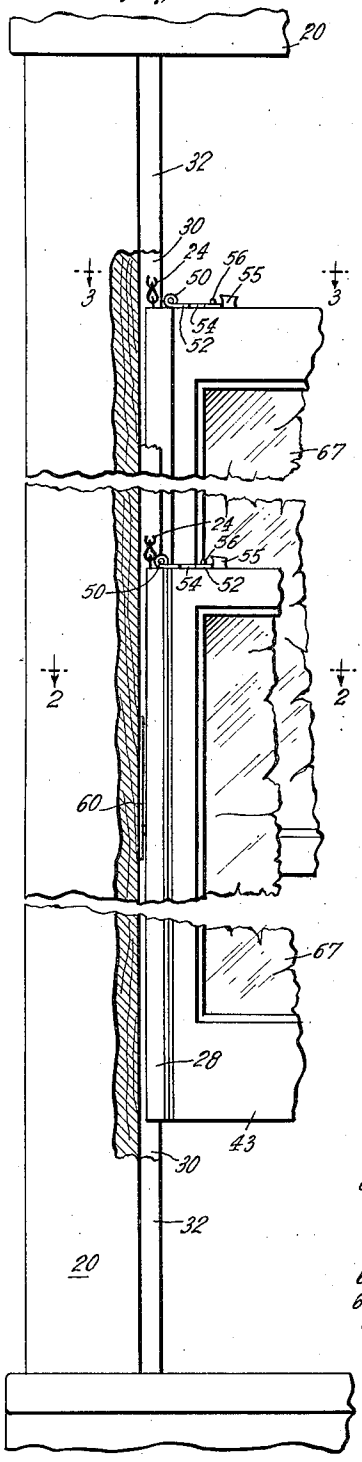


Fig. 2.

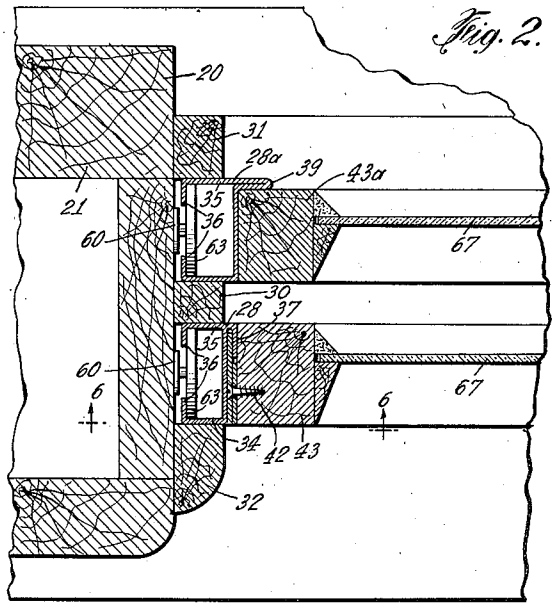


Fig. 3.

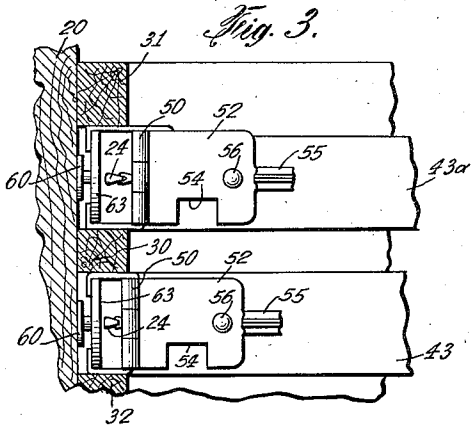


Fig. 4.

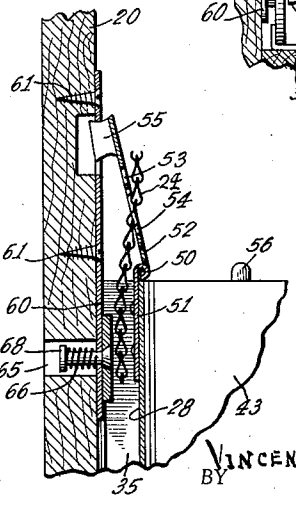
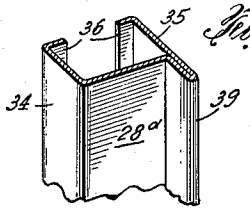


Fig. 5.

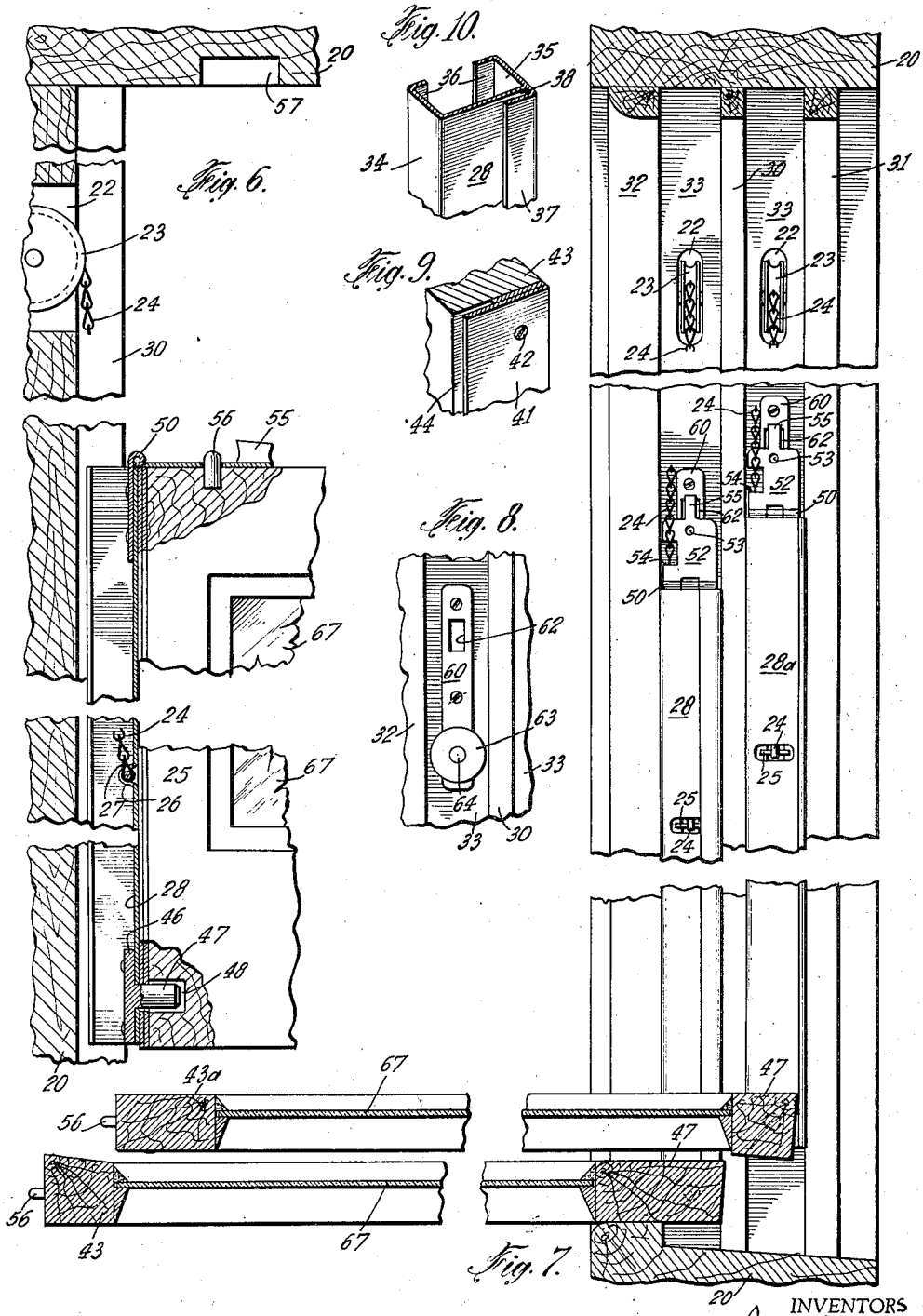


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WINDOW

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Patented June 18, 1940

2,204,909

UNITED STATES PATENT OFFICE

2,204,909

WINDOW

Vincent Pascuzzi and Frank Cavallaro, Brooklyn, N. Y.

Application May 20, 1938, Serial No. 208,976

3 Claims. (Cl. 20—49)

This invention relates to windows, and more particularly to those in which each sash is pivotally secured to slides that are movable up and down in the usual vertical runways in the window frame so that the sash can be tilted inwards in any vertical position, either for ventilation or for cleaning the window.

A feature of the invention is an improved mechanism for pulling a slide towards the adjacent wall of the groove, the mechanism automatically compensating for variations due to expansion or contraction or other causes.

A further feature of the invention is an improved mechanism for locking a sash against pivotal movement with reference to its slides.

A further feature is an improved mechanism for locking a slide against vertical movement when its sash is tilted inwardly; further, in which a part of this locking mechanism is mounted on a part of the mechanism that locks the sash against pivotal movement away from its sides; and further, in which the sash-chain is utilized to form a weighted holder for the slide lock.

A further feature is an improved device for fastening a chain to a slide without removing the slide from its runway. Other features will appear in the description.

Fig. 1 is a front elevation, left side of a window, the sashes raised and lowered respectively, with parts broken out and away,

Fig. 2 is a horizontal cross-section on line 2—2 of Fig. 1,

Fig. 3 is a plan view on line 3—3 of Fig. 1,

Fig. 4 is a vertical section through a window lock,

Fig. 5 is an isometric view of the weather strip for the upper sash,

Fig. 6 is a vertical section through the upper left corner of the window frame and parts of the lower window sash,

Fig. 7 is a section at right angles to the view of Fig. 1, parts being broken away, showing both sashes turned inwardly for cleaning and the improvements on the left side of the frame as shown in Fig. 1,

Fig. 8 is an elevational plan of a guide and compensating device in the left runway,

Fig. 9 is an isometric view showing an interlocking weather strip fastened on the left side of the lower sash,

Fig. 10 is an isometric view of an interlocking weather-strip fastened on the lower left slide to engage the strips shown in Fig. 9, swung halfway around with reference to Fig. 9.

Referring now to Figs. 1 and 7 of the drawings in the modification of the invention shown, there are two window sashes, each sash being provided with a pane of glass 67, the lower sash is designated as 43 and the upper sash 43*a*. As shown in Fig. 1, the upper sash is lowered a few inches and the lower sash is raised a few inches. As shown in Fig. 7 both sashes have been turned inwardly to the left as shown in the figure, in which position they are accessible for washing or polishing and also throw the entire space of the window frame open for ventilation. The invention set forth in this specification comprises various mechanical devices whereby this type of window can be cheaply built and easily installed, whereby the pulley or weight chains can be easily inserted or attached to the window sashes, whereby the tiltable sashes can be easily and securely locked in their normal up and down sliding position in the slides or in the tilted position shown in Fig. 7. Any of the usual locking attachments may be used for locking the sashes 43, 43*a* in a tilted position at any desired inclination instead of the horizontal position shown. The window frame 20, as shown in Fig. 2, is constructed to provide the usual weight channels 21, a similar channel 21 being disposed on the opposite side but not shown.

Referring to Fig. 6 an opening 22 of the usual form provides a mounting for the window pulley 23 which is fixed in position in the usual manner and which supports a chain 24 which carries in the channel 21 the usual iron or other weight not shown, and the lower outer end of which is secured by a cross-pin 25 after the end of the chain has been passed through a vertical slot 27 formed in the transverse recess 26 which is pressed outwards in the face of the slide 28 of the lower window sash or the slide 28*a* of the upper window sash. The cross-pin 25 snugly fits the recess 26 and when the chain is engaged on the cross-pin the weight attached to the other end of the chain holds the cross-pin 25 securely in the recess. Similar recesses are formed on the opposite side so that there are two chains supporting weights on each window sash counterbalancing the weight of the window sash so that it is easily raised or lowered.

Referring also to Fig. 7, in the side of each frame is a vertical dividing strip 30, an outer strip 31, and an inner mouldng 32, these three strips being spaced apart to provide two vertical runways 33 on each side of the frame. Referring to Fig. 6 or Fig. 1 it is clear that upon removal of the moulding 32 the lower window sash may be easily taken out inwardly.

Referring particularly to Fig. 10 the slide 28 has a front and rear extent which is of a width to exactly fit one of the runways 33 which also corresponds with the thickness of the window sash 43, 43a. The slide is formed of a strip of metal bent back at right angles to form edges 34 and 35 which have the depth of the runways, and which are turned at right angles at the outer side to form a vertical slot 36. The edge 37 of the face that is exposed to the weather is bent out and backward parallel to the face 28 to form a slot or groove 38. These slides may be manufactured from long strips and cut to any desired length according to the size of the window sash to which they are to be attached.

Referring to Fig. 5 a different form of strip is shown for the upper sash 43a which is similar to the slide 28 except that the slide 28a applied to the upper sash has a simple right-angled weather strip 39. It is understood that the slides applied to the opposite side of the window sashes are symmetrical with the slides described but the parts are turned in the opposite direction.

Referring to Fig. 9 a metal strip 41 of the same width as the window sash 43 is fastened thereto by screws 42 and has a cut-away portion to provide a slot between the inner face of the plate 41 and the edge of the sash 43. This slot is co-extensive with and is adapted to receive the weather strip 37 shown in Fig. 10. The interlocking engagement of the two pieces to form the weather strip being clearly shown in Fig. 2. It is also shown in Fig. 2 that no metal strip is formed on the edges of the sash 43a but the weather strip 39 engages the outer edge of the sash 43a. This is a modified form which could if desired be used on the lower sash also. The slide 28a is thicker than the slide 28 so that the sash 43a may be tilted inwards without interference. Inside of each slide 28, 28a near the bottom is secured a bracket 46 provided with an inwardly projecting cylindrical pin 47 which passes through a hole in the strip 41 and into a cylindrical socket 48 formed near the bottom and on the outer edge of each window sash.

Referring also to Figs. 3 and 4 a hinge 50 is mounted at the upper edge of each sash 43, 43a, each hinge having a part 51 formed so that it fits within a slide 28 or 28a behind the face of the slide and is permanently secured thereto at the top of the slide. The hinge 50 also has a flat part 52 substantially the same in width as the window sash and is pierced to form a hole 53 and cut-away at the inner edge to form a notch 54. The end of the part 52 is provided with a finger piece or lock 55. A pin 56 is so mounted on the top of the sash that it passes through the hole 53 when the part 52 is turned down on top of the window sash, as shown in Figs. 3 and 6. This engagement of the hinge with the pin securely locks the slide 28, 28a on the window sash preventing it from moving in any direction, in combination with the pin 47. To tilt the sash to the position shown in Fig. 7 the finger piece 55 is lifted to take the pin out of engagement with the hole 53. In the top of the frame a recess 57 is formed so that in case the window sash is pushed clear up to the top, the finger piece 55 and pin 56 may enter this recess to permit the sash to be fully raised. It is understood that the hinges 50 and finger pieces are symmetrical on the opposite side of the sash but turned in the opposite direction.

Referring to Fig. 7 a plate 60 is set in the bottom of each runway 33, the outer plate 60 being set a bit higher than the inner plate 60 and is secured in the runway by screws 61. These plates are provided with notches 62 and the runway may be cut away also under the notch 62 as clearly shown in Fig. 4. As shown in Fig. 8 and Fig. 4, a roller 63 is rotatably mounted on a pin 64 which is mounted in an aperture near the lower end of the plate 60 and in a cylindrical recess 65 in the bottom of the runway 33. The pin 64 is headed to hold the roller 63 in position on the face of the plate 60 and behind the plate 60 a compression coil spring 66 engages the plate 60 and a washer 68 to resiliently hold the roller 63 in contact with the plate 60 or with the inwardly turned edges of the sides 34, 35 of the slides 28, 28a. The plate 60 is of such a width that it enters and fills the slot 36 formed in the outer edge of each slide 28. It will be understood that changes of temperature and humidity vary the exact position of the parts of a window but this spring mounting of the roller 63 assures that in any position of contraction or extension the roller 63 firmly and resiliently engages at all times the inwardly turned portions of the inside of the inward extensions 34 and 35. The roller mounting tends to eliminate noise and provides a two point contact for this purpose.

It is believed the mode of operation is now clear and explicit from the foregoing description. The window sashes are operated as the ordinary window sash when the device is in the usual position. However, if it is desired to clean the lower window the hinges 52 are operated by the finger pieces 55 and are turned back into the notches 62, the chain 24 being pulled inwardly as the part 52 is turned sidewise to lie in the notch 54. It is obvious that this position of the chain 24 produces a pressure on the part 52 tending to hold the locking piece 55 in the notch 62 so that when the sash 43 is tilted inwardly the slides 28, 28a are prevented from rising in the runway 33. If now a chain 24 has become twisted or broken and needs replacement the pin 25 may be pulled out of the recess 26, the pin slipped out of the chain and the lower part of the chain 24 removed so then a new chain may be placed in the slide 28, passed through the slot 27 into the recess 26 and again locked in position in the slide 28 by the pin 25. The upper sash 43a is similarly released by tilting back the part 52 of the hinge 50 and may then be turned inwards into the position shown in Fig. 7.

Having shown and described the foregoing modification of our invention we realize that many changes, in view of our disclosure will become obvious to those skilled in the art and therefore we do not choose to limit ourselves except as in the appended claims.

We claim:

1. In a window having straight runways for the sides of a sash, a sash having slides pivotally mounted on both sides thereof and substantially filling said runways transversely, means for holding the slides in the runways, comprising a vertical slot in the outer side wall of each slide and an interengaging part mounted in the adjacent runway for holding the slide in engagement with the runway and having a head within the runway and wider than the slot, said interengaging part having a circular washer of substantially a diameter the equivalent of the inside width of the slide and rotatably mounted on a pin countersunk in the wall of said runway, a hole in the side of the runway, a plate mounted over said hole, a pin headed on the outside end, connected with said

washer, and mounted in said slide, and a compression spring mounted on said pin between the headed end and the plate.

2. In a window having window weights and straight runways for the sides of a sash, a sash having slides pivotally mounted on both sides thereof and substantially filling said runways transversely, hinged members mounted on top of the slides near the runways and being swingable from a vertical position near the runway to a horizontal position on top of the sash, a post on top of said sash, an aperture in the hinged member for engaging said post, a recess in the window frame, means on said hinged member for engaging said recess to prevent vertical motion of the slide with reference to the window frame, and a chain connected with the window weight and secured to said slide, a notch in the side of said hinged member so placed that when the hinged member is in engagement with the window frame, the chain may be slipped in the notch to hold the projection on the hinged member in the aperture in the window frame.

3. In a window having window weights and straight runways for the sides of a sash, a sash having slides pivotally mounted on both sides thereof and substantially filling said runways transversely, hinged members mounted on top of the slides near the runways and being swingable from a vertical position near the runway to a horizontal position on top of the sash, means for engaging the hinged members and the top of the sash, a recess in the window frame, means on said hinged member for engaging said recess to prevent vertical motion of the slide with reference to the window frame, and a chain connected with the window weight and secured to said slide, a notch in the side of said hinged member so placed that when the hinged member is in engagement with the window frame, the chain may be slipped in the notch to hold the projection on the hinged member in the aperture in the window frame.

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