Aug. 4, 1936. N. GLOWACKY 2,050,003

REVERSIBLE SAFETY WINDOW

Filed March 5, 1936

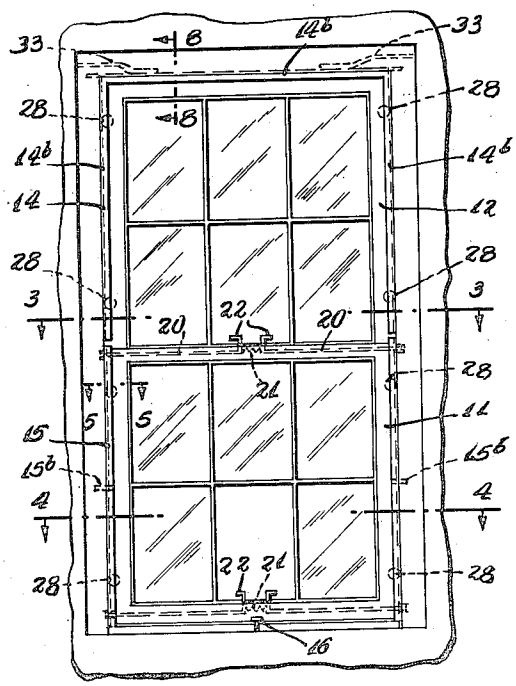


Fig. 1.

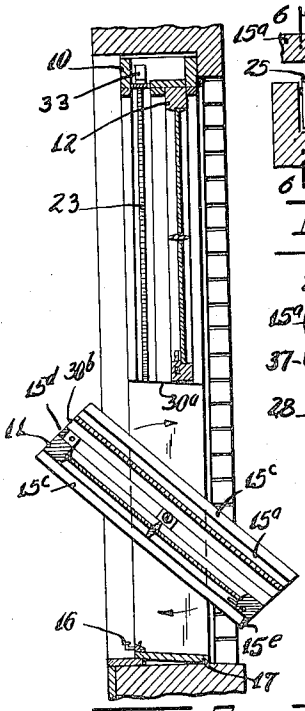


Fig. 2.

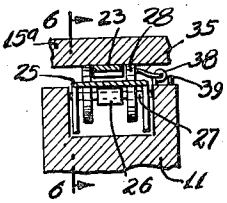


Fig. 5.

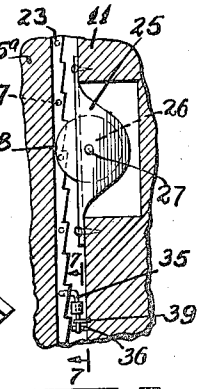


Fig. 6.

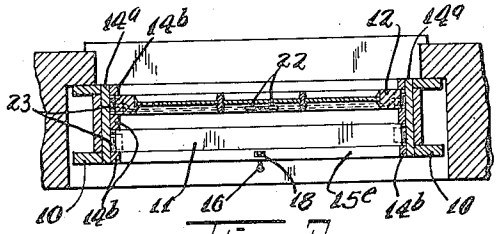


Fig. 3.

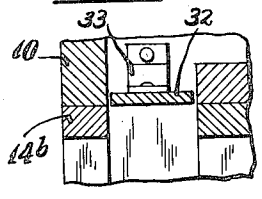


Fig. 9.

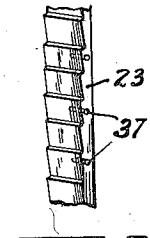


Fig. 8.

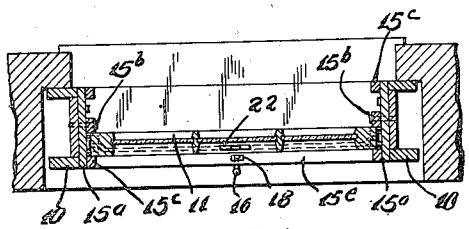


Fig. 4.

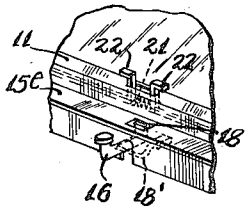


Fig. 10.

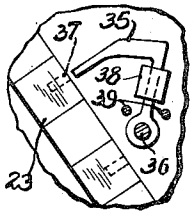


Fig. 7.

INVENTOR
Nicholas Glowacky
BY Zoltan A. Holachek
ATTORNEY

Patented Aug. 4, 1936 2,050,003

UNITED STATES PATENT OFFICE

2,050,003

REVERSIBLE SAFETY WINDOW

Nicholas Glowacky, New York, N. Y.

Application March 5, 1936, Serial No. 67,204

4 Claims. (Cl. 20—45)

This invention relates to new and useful improvements in a reversible safety window.

The invention has for an object the construction of a window as mentioned which is characterized by a window frame for an inner and outer sash slidable window, a stationary strip structure within the frame, and a swivel strip structure within another portion of the frame arranged so that the sashes may be moved from one to the other. When the sashes are in the swivelly mounted strip structure, the entire arrangement may be swivelled, as desired.

Still further the invention proposes the provision of a novel means for holding the swivel strip structure in an aligned position with the stationary strip structure.

Still further the invention also contemplates the provision of racks on the strip structures located adjacent the edges of the sashes and used in conjunction with catches upon the sashes whereby the window sashes may be supported in various elevated positions.

Still further the invention proposes to arrange the adjacent edges of the sashes when in their normally closed positions to be inclined so as to assist in weather proofing the window.

A further object of the invention is the provision of a gravity catch which is adapted to latch the sashes in the swivel strip structure when said latter device is pivoted to positions in which the sashes would fall.

Another object of the invention is the construction of a device as mentioned which is simple and durable and which may be manufactured and sold at a reasonable cost.

For further comprehension of the invention, and of the objects and advantages thereof, reference will be had to the following description and accompanying drawing, and to the appended claims in which the various novel features of the invention are more particularly set forth.

In the accompanying drawing forming a material part of this disclosure:—

Fig. 1 is a fragmentary inside elevational view of a window constructed according to this invention.

Fig. 2 is a vertical central sectional view of Fig. 1, but illustrated with the lower swivel strip structure pivoted open.

Fig. 3 is a horizontal sectional view taken on the line 3—3 of Fig. 1.

Fig. 4 is a horizontal sectional view taken on the line 4—4 of Fig. 1.

Fig. 5 is a fragmentary enlarged sectional view taken on the line 5—5 of Fig. 1.

Fig. 6 is a fragmentary sectional view taken on the line 6—6 of Fig. 5.

Fig. 7 is a fragmentary enlarged sectional view taken on the line 7—7 of Fig. 6.

Fig. 8 is a fragmentary perspective view of a portion of one of the racks used in the device.

Fig. 9 is a fragmentary enlarged detailed view of a portion of Fig. 2.

Fig. 10 is a fragmentary perspective view of the lower portion of Fig. 1.

The reversible safety window, according to this invention, comprises a window frame 10 for an inner sash 11 and an outer sash 12 of a slidable window. Within the frame 10 there is a stationary strip structure 14, within the top portion of the frame, for slidably supporting said sashes in raised positions. A swivel strip structure 15 is arranged within the bottom portion of the frame 10 for slidably supporting the sashes in lowered positions, when in alignment with said stationary strip structure.

A means is provided for holding the swivel strip structure in the aligned position. This means comprises a catch element 16 mounted upon a sill board 17 for the window and adapted to engage into a small opening 18 in the swivel strip structure 15. This catch 16 is in the form of a U-shaped bar, the outer end of which is in the form of a handle by which it may be operated. This bar is supported by a spring 18' which normally urges the catch into operative position.

The window frame 10 is of channel shape in transverse cross section with the arms of the channel directed outwards as clearly shown, for example, in Fig. 3. The stationary strip structure 14 comprises base plates 14^a pivotally attached upon the inner sides of the top portion of the frame 10. Several spaced guide strips 14^b are attached upon the base plates 14^a. It is between these guide strips that the window sashes slidably work.

The swivel strip structure 15 comprises a pair of side base plates 15^a which are swivelly mounted at their centers by bolts 15^b. Thus, the side plates 15^a may swivel, as for example shown in Fig. 2. Several spaced guide strips 15^c are attached on the base strips 15^a and serve to guide the window sashes in their sliding operation. At the top the base strips 15 are reinforced and held together by a transverse bar 15^d. At the bottom of the base strips 15^a are reinforced and held together by a transverse

bar 15e. This bar 15e is formed with the opening 18 into which the catch 16 may engage to hold the swivel strip structure from swivelling.

A mechanism is provided for holding each of the sashes in desired raised positions. This mechanism consists of a pair of oppositely directed rods 20 mounted in the base portions of each of the sashes and urged outwards by expansion springs 21. These rods have projecting handle portions 22 by which they may be drawn together. The outer ends of the rods are adapted to engage the teeth of racks 23 which are attached on the base plates 14a and 15a. The racks from the upper and lower base plates are aligned with each other when the swivel strip structure is in alignment with the stationary strip structure. Attention is particularly called to Fig. 8 which shows the rack 23 to have one way teeth, teeth directed upwards so as to permit the windows to be raised without the necessity of operating the rods 20. In all raised positions the rods automatically engage the teeth of the rack 23 and maintain the raised positions. It is only when the sashes are to be moved downwards that the handles 23 must be pressed together to retract the rods 20 and disengage them from the rack teeth.

In order to reduce the frictional resistance encountered in moving the sashes, the sashes are provided with rollers as shown in detail in Figs. 5 and 6. These rollers are arranged at several places along each of the sides of the sashes as may be seen from Fig. 1. Each roller structure comprises a support bracket 25 which has a bearing portion 26 through which a shaft 27 extends. A pair of rollers 28 are mounted upon this shaft and straddle the rack 23, that is, they engage against the base strips on opposite sides to the racks 23. Thus, the sashes may be moved with comparative ease.

The adjacent ends of the stationary strip structure 15 are at an inclination to each other as clearly shown in Fig. 2, these inclined sides being indicated by the reference numerals 30a and 30b. The purpose of having these sides inclined is to prevent the swivel strip structures from pivoting completely outwards. In other words it serves as a locking arrangement to hold the swivel strip structure in the vertical position. A still further object of having the inclined sides 30a and 30b is to weather-proof the joint between the window sashes.

Both of the window sashes (11 and 12) may be completely raised into the upper stationary strip structure, or both of the sashes may be locked into the lower swivel strip structure or either one of the sashes may assume either position. When the outer sash 12 is moved into the lower strip structure and the inner sash 11 is moved into the upper strip structure, it will be impossible to swivel the swivel strip structure because the inner sash 11 at the bottom portion is extended slightly below the contacting surface 30a and 30b. It is the incline of these surfaces which causes this condition. It is desirable to swivel the swivel strip structure with the outer sash in it, since the sash may then be cleaned on both sides from the interior of the room. For this reason there is a resiliently supported strip 32 at the top of the window frame 10. This strip is supported by a pair of flat springs 33. Thus, the inner window sash may be forced up slightly by forcing and moving the strip 32 against the action of the springs 33, and then the swivel strip structure is free and may be turned open.

When the swivel strip structure 15 is in the position shown in Fig. 2 the sashes therein are free and may be lifted upwards and outwards. Thus, it is possible to very easily replace the sashes. Should the swivel strip structure be pivoted further anti-clockwise and pass the horizontal position, then the sashes would fall as the racks 23 have their teeth directed in one direction only to support the sashes against relative downward movement but not relative upward movement. Consequently, a gravity device is provided which automatically locks the sashes against being accidentally spilled out. These gravity devices consist of small hooks 35 which are pivotally mounted upon studs 36 fastened on the window sashes. The hooks 35 are adapted to engage in openings 37 formed in the sides of the racks 23. A weight 38 is mounted on each of the hooks and is adapted to move the hooks, depending upon their relative positions. The hooks 35 are limited in their motion by a pair of pins 39 projecting from the window sash and arranged on opposite sides of the hooks. Fig. 7 illustrates the position of one of the gravity hooks when the swivel strip structure is in the inclined position shown in Fig. 2. It should be noted that the hook 35 is inoperative and the sash upon which the hooks are mounted may still be lifted upwards out of the strip structure if so desired. But should the strip structure be pivoted further anti-clockwise it will soon reach a position in which the weight 38 will swivel the hook 35 to engage one of the openings 37. The sash is then locked against accidentally falling out.

While I have illustrated and described the preferred embodiment of my invention, it is to be understood that I do not limit myself to the precise construction herein disclosed and the right is reserved to all changes and modifications coming within the scope of the invention as defined in the appended claims.

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

1. In a reversible safety window, a window frame, a swivelled strip structure mounted on opposite sides thereof, guide strips mounted on said strip structure, a sash engaged between said guide strips, racks having upward directed teeth so as to hold the sash against downward motion and mounted on said strip structure and between said guide strips, catches on said sash and engaging said racks to hold said sash in fixed positions, and a gravity device for latching the sash in the swivel strip structure when the top of the said latter device is turned downward.

2. In a reversible safety window, a window frame, a swivelled strip structure mounted on opposite sides thereof, guide strips mounted on said strip structure, a sash engaged between said guide strips, racks having upward directed teeth so as to hold the sash against downward motion and mounted on said strip structure and between said guide strips, and have openings in the sides thereof, catches on said sash and engaging said racks to hold said sash in fixed positions, and a gravity device for latching the sash in the swivel strip structure when the top of the said latter device is turned downward, comprising hooks swivelly mounted on said sash and adapted to engage in said openings in said racks, and weights on said hooks and adapted to move

said hooks to the operative position when the said strip is swivelled.

3. In a reversible safety window, a frame, a stationary strip structure mounted within the top portion of said frame, a swivel strip structure mounted within the bottom portions of said frame, guide strips mounted on said strip structures, an inner and an outer sash adapted to be engaged between said guide strips, racks having upward directed teeth so as to hold the sashes against downward motion and mounted on the said strip structures and between said guide strips, catches on said sashes and engaging said racks to hold said sashes in fixed positions, a gravity device for latching the sashes in the swivel strip structure when the top of the said device is turned downward, and a resilient strip structure mounted in the top of said frame and over said inner sash so that when the inner sash is in the swivel strip structure it is possible to slightly raise the inner sash and swivel said swivel structure.

4. In a reversible safety window, a frame, a stationary strip structure mounted within the top portion of said frame, a swivel strip structure mounted within the bottom portions of said frame, guide strips mounted on said strip structures, an inner and an outer sash adapted to be engaged between said guide strips, racks having upward directed teeth so as to hold the sashes against downward motion and mounted on the said strip structures and between said guide strips, catches on said sashes and engaging said racks to hold said sashes in fixed positions, a gravity device for latching the sashes in the swivel strip structure when the top of the said device is turned downward, and a resilient strip structure mounted in the top of said frame and over said inner sash so that when the inner sash is in the swivel strip structure it is possible to slightly raise the inner sash and swivel said swivel structure, said resilient strip structure comprising a strip, and leaf springs mounted on said frame and supporting said strip above said inner sash.

NICHOLAS GLOWACKY.