J. W. COOPER, DEC'D.

C. H. COOPER, ADMINISTRATOR.

SASH FASTENER.

APPLICATION FILED AUG. 16, 1912. RENEWED AUG. 16, 1916.

1,220,073. Patented Mar. 20, 1917.

2 SHEETS—SHEET 1.

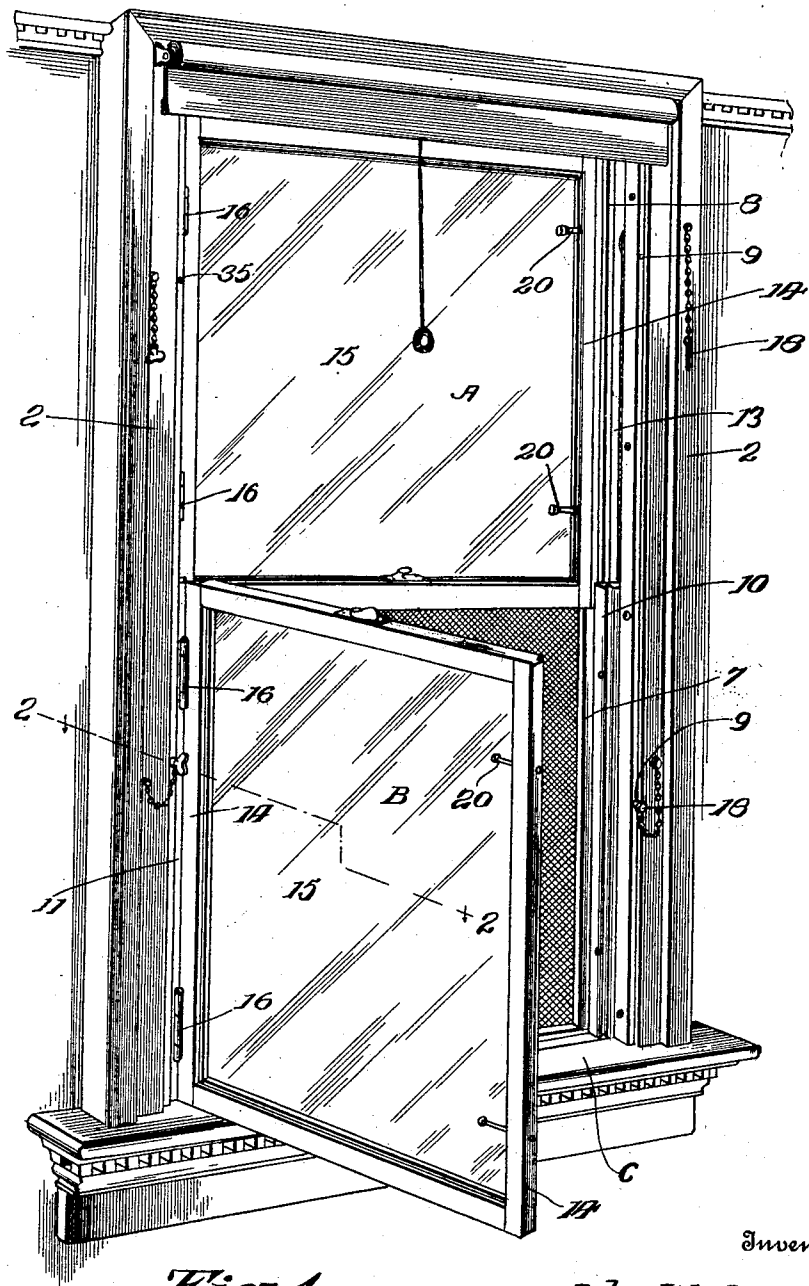


Fig. 1.

Witnesses

Inventor

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2 SHEETS—SHEET 2.

Fig. 2.

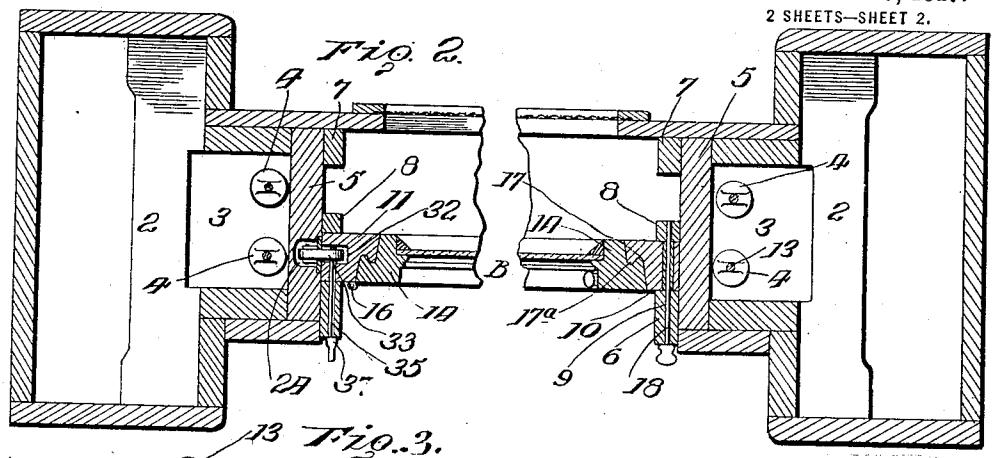


Fig. 3.

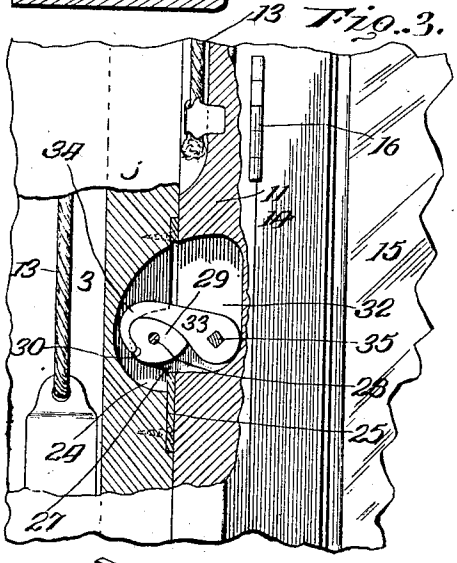
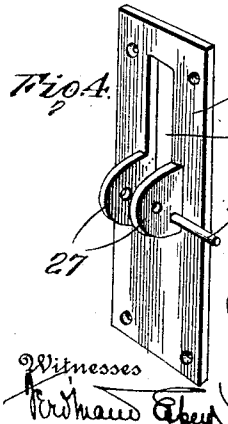


Fig. 4.



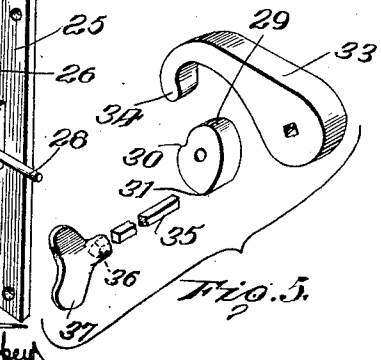


Fig. 5.

Witnesses

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UNITED STATES PATENT OFFICE.

JOHN W. COOPER, OF BUFFALO, NEW YORK; CHARLES H. COOPER, OF BUFFALO, NEW YORK, ADMINISTRATOR OF SAID JOHN W. COOPER, DECEASED.

SASH-FASTENER.

1,220,073. Specification of Letters Patent. Patented Mar. 20, 1917.

Application filed August 16, 1912, Serial No. 715,446. Renewed August 16, 1916. Serial No. 115,329.

To all whom it may concern.

Be it known that I, JOHN W. COOPER, citizen of the United States, residing at Buffalo, in the county of Erie and State of New York, have invented certain new and useful Improvements in Sash-Fasteners, of which the following is a specification.

My invention relates to windows, and particularly to windows of that type wherein the sashes not only slide vertically, but also turn inwardly so that they may be readily cleaned or repaired.

My invention is illustrated in the accompanying drawings, wherein,

Figure 1 is a perspective view of a window constructed in accordance with my invention, the lower sash of the window being shown as opened;

Fig. 2 is a transverse section on the line 2—2 of Fig. 1, but with the sash closed;

Fig. 3 is a fragmentary elevation partly in section of a portion of a window sash, the slide therefor and the window casing, the locking means whereby the slide is held to the window casing being shown in elevation;

Fig. 4 is a perspective view of the face plate within which the cam of the locking device is mounted;

Fig. 5 is a perspective view of the aforesaid cam, the latching hook and the key whereby the latching hook is operated, the several parts being shown as separated from each other.

Referring now to Figs. 1 and 2, 2 designates the window casing which may be formed in any suitable manner and is shown as having the weight compartment 3 containing the weights 4 which counterbalance the upper and lower sashes. This weight compartment is closed by the jamb 5. The jambs 5 define the sides of the window opening, and each jamb is provided with front and rear stops 6 and 7 respectively and the parting strip 8. These are formed in precisely the same manner as is usual in window frames, except that the front stop 6 and the parting strip as illustrated in Fig. 2 on one side of the casing are each formed with a horizontally extending pin opening designated 9.

It is to be understood that both of the parting strips 8 and both of the front stops 6 may be provided with this pin opening. The parting strips and the front and rear stops define sash channels for upper and lower sashes, designated respectively A and B. Disposed in each pair of sash channels and movable vertically therein are the slides 10 and 11 shown in section in Fig. 2.

Each slide is of the same length as the window sash and each slide is connected to a corresponding weight 4 by means of the sash cord 13 which extends up and over pulleys in the upper portion of the window frame as is usual in sliding windows.

Hinged to one of the slides, as the slide 11, is the window sash formed by rectangular sash frame 14 and the glass pane 15. As illustrated in Fig. 1 the sash B is provided with hinges 16 whereby it is hinged to the slide 11 so as to rotate in a horizontal plane and open inwardly. Preferably the slides 11 are rabbeted or otherwise formed upon the inner faces to fit corresponding rabbets formed upon the sash frame.

As illustrated in Fig. 2, each slide is formed with a groove 17 and a tongue 17^a, while each of the side bars of the sash frame is also formed with a tongue and a groove mating with the tongue and groove on the slide. The contacting surfaces of the slide and of the sash frame are slightly beveled so as to permit the sash frame to be opened out or moved back into its engagement with the slides, and at the same time to provide a weather-tight joint between the sash and the slides.

With the construction before detailed, if the window sash B, for instance, should be opened, the slide 10 would be over-weighted and would move up to the top of the window frame, the counter-weight for the slide would draw it up so quickly as to cause damage, and even if this were not the case the slide would have to be again pulled down to its proper position when the window sash B was closed. Furthermore, the weight of the opened sash would act to pull the upper portion of the slide 11 out of the window frame and out of its engagement with the proper sash channel, the sash would sag, and great strain be placed upon the sash cord.

To avoid this I provide fastening devices which are adapted to engage the slides firmly with the window casing so that the slide 10 cannot move upward when the sash is disconnected therefrom, and the slide 11 cannot be pulled outward by the weight of the projecting sash.

As illustrated in Figs. 1 and 2, I provide a pin 18 which is insertible through the opening 9 in the front stop 6 and into the opening or perforation in the parting strip 8, and through a vertical slot formed in the slide 10. It will be apparent upon reference to Fig. 1 that the object of this arrangement is to permit the slides of the upper and lower sashes to be adjusted vertically in the window frame so that when it is desired to swing either sash on its hinges, the sash may be moved vertically a sufficient distance to permit its end to clear the adjacent lintel or sill.

Under normal circumstances the pin 18 is, of course, withdrawn entirely from the stop 6 and may be supported by a chain attached to the window jambs as illustrated in Fig. 1.

Some means must, of course, be provided for connecting the sash frame to the slides so as to cause the slides and the sash to move together. I have illustrated for this purpose push pins 20, which pass transversely through the side rail of the sash frame and pass into sockets formed in the slide 10.

For the purpose of holding the slide coacting with the hinged side of the sash, I provide the catch mechanism shown in detail in Figs. 3 and 5.

The jamb 5 is formed with a recess 24, the face of this recess being covered by a plate 25 shown in detail in Fig. 4, this plate being formed with a slot 26 and opposed ears 27. Pivoted between these ears on a pivot pin 28 is a heart-shaped member 29 having a notch 30 defining a projecting tail 31. Normally this member 29 is in a vertical position with the notch 30 upward and the tail 31 on the inside of the member. It will be seen that this member 29 is eccentrically pivoted so that it will be turned to the position shown in Fig. 5 by its own weight. The slide 11 is recessed as at 32, and mounted in this recess is a hook 33 having a downwardly extending curved bill 34. The butt end of this hook is mounted upon a key spindle 35 which terminates in a many sided shank 36 adapted to be engaged by a key 37. Normally the hook is in a vertical position and entirely inclosed within the recess 32 and normally, as above stated, the member 29 is in the position shown in Fig. 5. When it is desired to lock the slide to the window jamb so as to prevent movement of the slide and hold it firmly in engagement with the window jamb the key 37 is applied to the shank 36 and the spindle rotated to cause the hook to turn down to an approximately horizontal position. The bill 34 of the hook will then engage with the tail 31 and the downward movement of the bill will turn the member 29 from its position shown in Fig. 5 to the position shown in Fig. 3. When fully turned it will be seen that the bill of the hook is below the axial center of the member 29, the axial centers of the members 29 and 33 being horizontal.

In this position the slide will be locked to the jamb, for the reason that the curved bill will engage around the protuberant portion of the member 29 above the notch 30, and movement of the slide will simply cause the bill to press against the tail 31 and hold the member 29 in positive engagement with the hook.

If the bill 34 of the hook were not reentrantly curved there would be danger of the hook sliding over the part which is engaged, and thus disengage the slide from the jamb.

The peculiar form of hook when used in conjunction with the peculiar form of the member 29 positively locks the two parts together and prevents disengagement of the hook and member 29 until the hook is positively turned upward by means of the key.

Furthermore, this peculiar construction tends as the hook is depressed, to draw the slide into firm engagement with the jamb. The member 29 has a cam action, and the greater the pull upon this member 29, exerted by the bill 34 of the hook, the greater the reverse pull of the member 29 upon the hook.

By providing the slot in the slide 10 I provide means whereby the window may be limited in its upward movement, and thus do away with the necessity of raising the window by guess so far as will permit the hook 33 to engage over the member 29.

The operator does not have to manipulate the window until he gets the sash in proper position, so that the recess 32 will register with the recess 24, but merely inserts the pin 18 and shifts the window upward to the full extent of the movement permitted by the slot in the slide, and this will bring the hook 33 opposite member 29. The member 33 being key-actuated prevents any mischievous or thoughtless person from disengaging the slide 11 from the window jamb while the window is opened. The disengagement of the slide 10 does not matter so much and simply means the upward movement of the slide to its upper position from which it can be readily drawn down again to its proper position when it is desired to close the window. The disengagement of the slide 11, however, from the window jamb would be liable to cause disastrous consequences and probably breakage of the window.

One of the important advantages incident to the construction described is that the sash may be entirely withdrawn from the window if desired so as to apply new sash cords or reattach the old ones without the necessity of removing the inner stops 6. It is only necessary to turn the window upon its hinge and then withdraw the slide from its engagement with the sash channel. It is, of

course, obvious that the opposite slide may be also withdrawn from the sash channel for the purpose of readily repairing the window cord or its attachment to the slide.

I, of course, do not limit myself to the exact illustrated details of my construction as it is obvious that many different forms of windows might be used in conjunction with the locking devices herein described, and that these locking devices might be varied in many different ways without departing from the spirit of the invention as the same is defined in the following claims.

Having described my invention, what I claim is:

1. The combination with relatively movable members having registering recesses formed in their meeting faces, of a locking device, said locking device including a bracket plate secured to the inner face of the first member and forming a cover for the recess thereof, said plate having a longitudinal slot and parallel apertured ears extending from the edge portions of the slot into the said recess, a cam-shaped disk, a pivot pin extending between the said ears and receiving the disk member, whereby the disk is revolubly mounted interiorly of the recess of the first-mentioned member, and a hook member having its one terminal pivoted in the recess of the second mentioned member and of such length that its terminal may be projected through the slot of the plate and into engagement with the cam disk.

2. The combination with relatively movable members having registering recesses formed in their meeting faces, of a locking device including a rotatable cam-shaped disk having a notch formed in its periphery, said disk being mounted in the recess of the first-mentioned movable member, and a hook member having its one terminal pivoted in the recess of the second-mentioned movable member, said hook member being of such length that its free terminal may be projected into the recess of the first-mentioned movable member and into engagement with the said disk, the extreme terminal of the bill of said hook being adapted to engage in the notch of the disk when the disk and hook are in locking relation.

In testimony whereof I affix my signature in presence of two witnesses.

JOHN W. COOPER. [L. S.]

Witnesses:

FREDERIC B. WRIGHT,

J. D. YOAKLEY.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."