May 31, 1932. R. H. HUMMERT 1,860,418

UNDERSCREEN WINDOW OPERATOR

Filed March 16, 1931

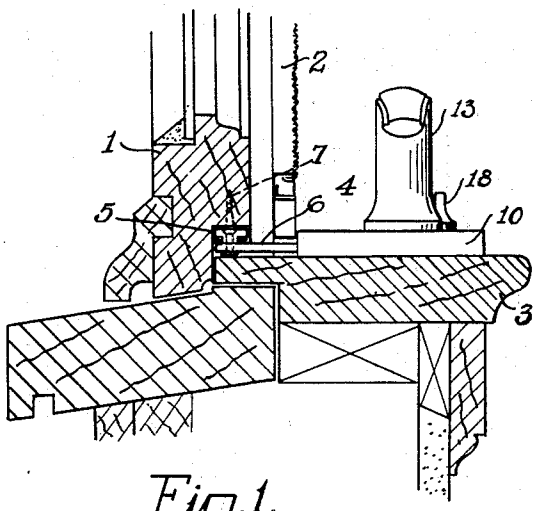


Fig. 1.

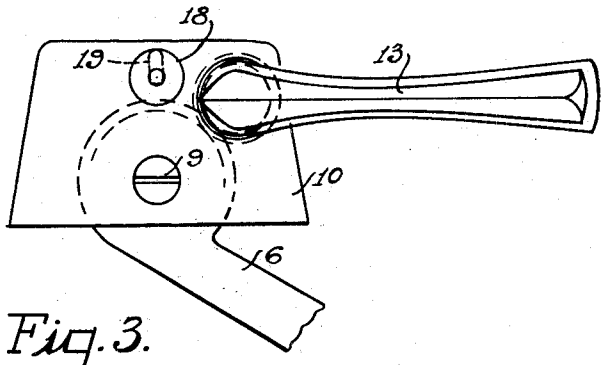


Fig. 3.

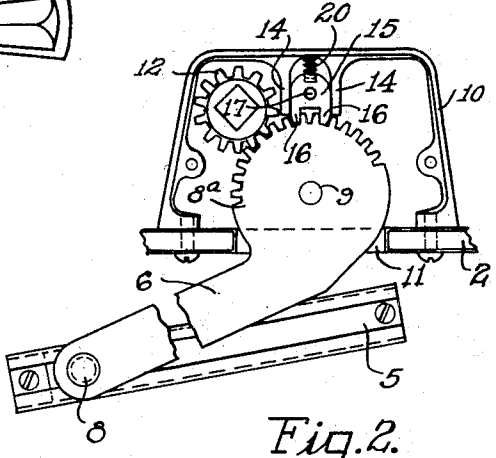


Fig. 2.

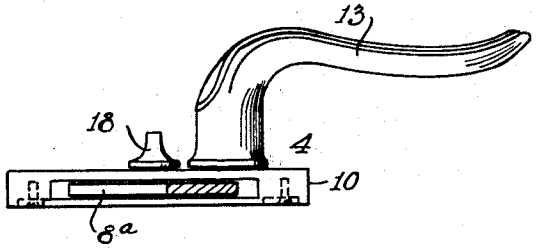


Fig. 4.

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UNITED STATES PATENT OFFICE

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UNDERSCREEN WINDOW OPERATOR

Application filed March 16, 1931. Serial No. 522,856.

This invention relates to new and useful improvements in underscreen window operators.

It is the principal object of my invention to provide for an underscreen window operator, means for firmly holding the window sash in an adjusted position against movement by the wind or other forces. This locking means, which is contained within the operator casing, preferably comprises a pawl with two spaced off center teeth, that is movable through a slot into engagement with the teeth of the operating sector to solidly hold it against rotation in either direction.

In the accompanying drawings illustrating my invention, Figure 1 is a view of a screen and window assembly containing my underscreen adjustably locked window operator. Figure 2 is a bottom view of the window operating and locking mechanism, with the cover plate removed. Figure 3 is a top plan view of the window operator, showing the button for shifting the locking pawl. And Figure 4 is a side view of the same.

Referring to the accompanying drawings for a detailed description of my invention, the numeral 1 designates the bottom rail of a window sash that is hingedly secured for an outward movement in front of a stationary screen 2 mounted on a stool or ledge 3.

The window 2 is swung outwardly and inwardly by an operator 4 secured upon the ledge 3. This operator comprises a channel member 5, a sector arm 6, and handle, gear and pawl mechanism to be described.

The channel member 5 is secured by screws 7 in a rabbet formed within the under surface of the bottom rail 1 of the window sash. Slidingly secured to this channel member 5 by a hinge pin 8 is the outer end of the arm 6. The latter terminates at its inner end in a toothed sector 8^a that is free to turn upon a pivot stud 9 within an operator case 10.

The arm 6 projects out of the operator case 10 through a fly-tight opening 11 provided in the screen 2 above the ledge 3, or it may project through a cut-out portion of the ledge.

The sector 8^a is turned by a gear 12 fast on the squared portion of a handle 13 that projects beyond the case.

It is the particular object of this invention to lock the window 1 in an adjusted position against movement by the wind or other forces. To this end I have formed on the inner surface of the casing at one side of the gear 12, two straight parallel projections 14, 14 that point toward the sector 8^a to provide a longitudinal slot for a pawl 15.

The pawl 15 comprises a slidable member with flat sides that engage the fixed projections 14, 14 for a free longitudinal movement between them. This pawl also has a rounded outer end to enter a semi-circular recess formed at the outer end of the slot, and has two parallel teeth 16, 16 at its inner end.

The pawl 15 is mounted on the shank 17 of an operating button 18 on the exterior of the casing 10. The shank of this button is free to be moved radially outward through a slot 19 in the casing against the pressure of a helical spring 20 disposed between the rear wall of the casing and a recess in the pawl.

The teeth 16, 16 of the pawl are off center and are adapted to be urged inwardly by the spring 20, into engagement with the teeth of the sector 8^a to completely restrain the movement of the arm 6 in either direction when it is desired to hold the window 1 in an adjusted position. When in engagement with the sector 8^a, the two teeth 16, 16 of the pawl straddle two teeth of the sector, to solidly lock the latter against movement in either direction. This is due to the fact that the teeth 16, 16 of the pawl are off center, and it is further restrained from a pivotal movement by the projections 14, 14 which define the slot in which it is longitudinally movable.

A reverse locking thrust will, therefore, be communicated by the pawl teeth 16, 16 to the teeth of the sector when a turning movement of the latter is attempted.

The pawl 15 may be easily shifted out of engagement with the sector by an outward pull upon the button 18 to permit the window to be swung by the handle 13 to a closed position or another desired outward position.

It is thus seen that I have provided an

easily actuated locking pawl for a positive engagement with the sector 8^a to completely lock the window in an adjusted position.

Having described my invention, I claim:

1. In a device of the type described, a casing, an operating arm having a toothed sector portion pivotally secured within the casing, means for turning said sector, a guide on the inner surface of said casing, directed toward the sector, a pawl slidable along said guide, a compression spring between the outer wall of the casing and the outer end of the pawl to press the latter into engagement with the teeth of the sector, said casing formed with a longitudinal slot, and a finger grip member to which the pawl is secured, and movable through said slot, to withdraw the pawl from engagement with the toothed sector.

2. In a device of the type described, a casing, an operating arm having a toothed sector portion pivotally secured within said casing, means for turning said element, two parallel projections on the interior surface of said casing, directed toward the sector, said casing having a longitudinal slot between said projections, a slidable pawl between said projections, two parallel off center teeth on the inner end of said pawl, a compression spring between the outer end of said pawl and the outer wall of the casing between the projections to press said teeth into engagement with the teeth of the sector, and a finger grip element to which the pawl is secured, and movable through said slot, to withdraw the pawl from engagement with the toothed sector.

In witness whereof I have hereunto set my hand this 14th day of March, 1931.

ROBERT H. HUMMERT.