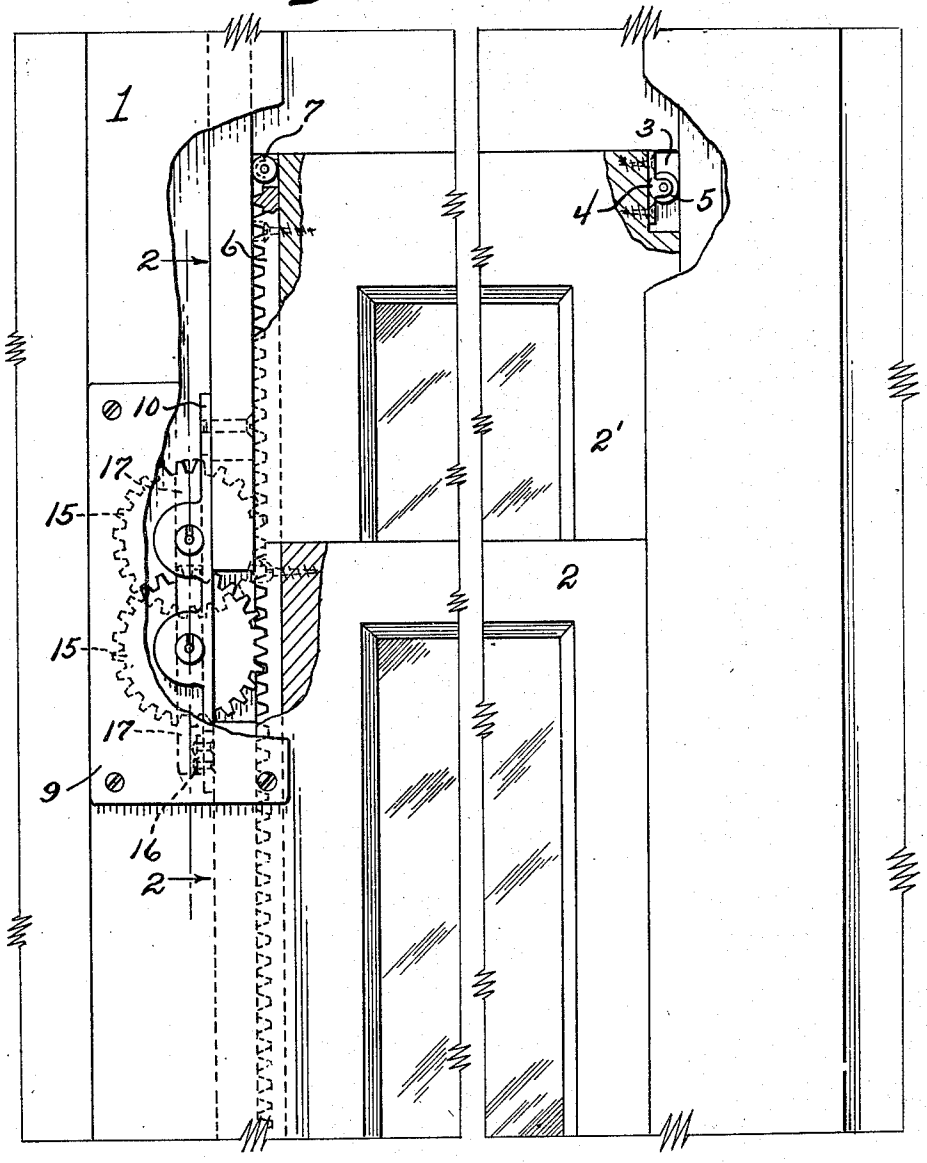
Nov. 1, 1927. 1,647,901

W. A. CARVER

WINDOW SASH OPERATOR AND LOCK

Filed Feb. 14, 1927 2 Sheets-Sheet 1

Fig. 1.



Wilfred A. Carver
INVENTOR

BY Victor J. Evans
ATTORNEY

WITNESS: John Donovan

Nov. 1, 1927. 1,647,901

W. A. CARVER

WINDOW SASH OPERATOR AND LOCK

Filed Feb. 14, 1927 2 Sheets-Sheet 2

Fig. 2.

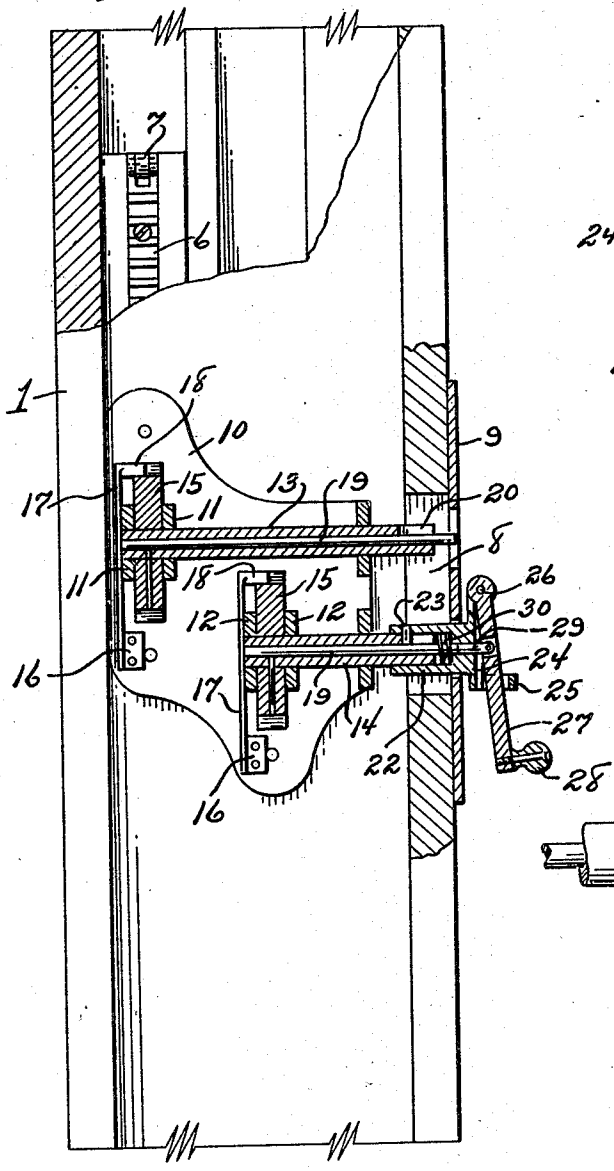


Fig. 3.

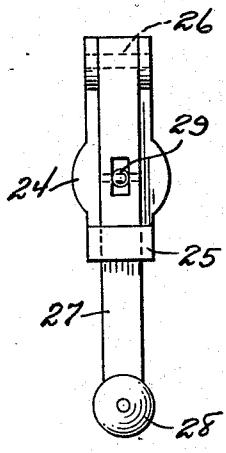
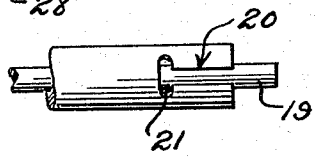


Fig. 4.



Wilfred A. Carver
INVENTOR

BY Victor J. Evans
ATTORNEY

WITNESS Jas Donovan

Patented Nov. 1, 1927. 1,647,901

UNITED STATES PATENT OFFICE.

WILFRED A. CARVER, OF ORLANDO, FLORIDA.

WINDOW-SASH OPERATOR AND LOCK.

Application filed February 14, 1927. Serial No. 168,115.

My present invention has reference to improvements in window constructions and is primarily directed to means for actuating the sliding sashes in window casings and for locking such sashes against movement when closed or partly opened, so that a room may be properly ventilated without danger of outside intrusion.

A further object is the provision of a means for this purpose in which the sashes are raised and lowered through the instrumentality of a removable handle which, when positioned and turned first releases means that normally lock toothed wheels that engage with the teeth of racks on the sashes, and whereby it is absolutely necessary that the handle be positioned before the sashes can be moved in either direction.

A still further object is the provision of a means for actuating the sliding sashes in window casings which will obviate the employment of ropes and counter-balances for the window sashes but which will permit of the sashes freely sliding in the casing without liability of binding with the walls of the casing or the canting of the said sashes and which also will hold the sashes locked when either raised or lowered.

A still further object is the provision of a means for this purpose which shall be of a simple construction and which may be readily arranged upon a window casing and the slidable sashes in the said casing.

To the attainment of the above broadly stated objects and many others which will present themselves as the nature of the invention is better understood, the improvement also resides in certain other novel features of construction, combination and operative association of parts, a satisfactory embodiment of which is disclosed by the accompanying drawings.

In the drawings:

Figure 1 is a side elevation of a window casing having sliding sashes therein and illustrating the application of my improvement, parts being broken away and parts being in section.

Figure 2 is a sectional view approximately on the line 2—2 of Figure 1, but also showing the handle positioned to revolve one of the toothed wheels that engages the rack of one of the sashes and to likewise release the holding or locking means for the said toothed wheel.

Figure 3 is a front elevation of the handle.

Figure 4 is a detail plan view of the hollow shaft for one of the toothed wheels and the slidable latch releasing rod and said shaft.

In the drawings, the window casing of the ordinary construction, is indicated by the numeral 1 and the slidable sashes in said casing by the numerals 2 and 2′, respectively. The sashes are, of course, received between the beads at the sides of the casing, and each sash has let in one of its edges, adjacent to its top and lower rail pockets 3 for the mounts 4 of rollers 5. The rollers engage with the sides of the casing.

Each sash 2 and 2′ on the edge thereof opposite that provided by the rollers 5 is centrally and longitudinally grooved and let in and secured in each of these grooves there is a rack bar 6. The ends of the rack bar are bifurcated and received in these bifurcations there are rollers 7 that are mounted on suitable shafts journaled in the rack bar and these rollers contact with the sides of the casing opposite those contacted by the rollers 5. In this manner it will be seen that the sashes 2 and 2′ may freely slide in the casing without liability of canting or sticking.

In one side of the casing there is provided a pocket 8, the outer face of the said pocket being closed by a cover plate 9. In the pocket there is secured bracket members or plates 10. The brackets 10 are provided with aligning spaced series of bearings 11 and 12, respectively. Journaled in the bearings 11 and 12 there are cross sectionally rounded hollow shafts 13 and 14, respectively. Fixed on each shaft, and disposed between two of the bearings 11 and 12, there is a toothed wheel 15. The periphery of the wheels 15 pass through openings in the bracket 10 and, as disclosed by Figure 1 of the drawings, engage with the teeth of the respective racks 6.

Having one end fixed, as at 16, in the bracket 10, there are flat springs 17, the free end of each of these springs being provided with an offset or finger 18 received between the teeth of the respective wheels 15. By this arrangement it will be seen that the wheels 15 are held from free or accidental turning and the springs 17 being of a width approximately equaling the width of the side plates of the bracket 10 and slightly contacting with such plates are relieved from undue strain.

Preferably loosely secured to each spring

17 and passing through the hollow shafts 13 and 14 there are rod members 19. The parts of the hollow shafts that project through their bearings and are received in the outer opening of the pocket 8 have their upper portions slotted longitudinally, as at 20, and the end wall provided by these slots preferably has lateral notches 21.

The operating element for the shafts 13 and 14 includes a socket member 22 whose bore is of a size to freely receive the outer ends of the hollow shafts therein. The socket member has a pin 23 that enters its bore and the said pin is designed to be received in the slot 20 of either of the hollow shafts 13 and 14 and to rest against the walls provided by the notches 21. The outer and closed end of the socket 22 has a headed portion 24, one end of which being formed with an outstanding yoke 25. Pivoted, as at 26, to the opposite end of the head 24 there is an arm 27, the said arm passing through the yoke 25 and having on its free end an outstanding knob 28. Pivotally secured to the arm 27 and received through an opening in the head 24 there is a pin 29 which communicates with the bore of the socket 22. In the bore of the socket and preferably fixed to the rear wall thereof there is a helical spring 30. When the operating device is arranged on one of the shafts, as disclosed by Figure 2 of the drawings, the handle part thereof is turned to bring the pin into one of the notches 21. The handle proper is then swung in the direction of the head of the socket member to bring the pin 29 against the outer end of one of the rods 19, and thereby move the rod longitudinally to influence the spring 17 to bring its finger 18 from between the teeth of the wheel engaged thereby. The handle is now turned, causing the socket member 22 to likewise turn the hollow shaft and the toothed wheel thereon. The turning of the wheel will, of course, influence one of the sashes in either an upward or downward direction. By slightly turning the handle in an opposite direction the pin will be brought into the wider passage of the substantially T-shaped slot provided by the passages 20 and 21 in the hollow shafts so that the spring 30 will move the socket member 22 off of said shaft, or at least a sufficient distance to bring the pin 29 away from the rod 19 a distance sufficient to permit of the spring 17 returning to initial position and bringing its finger 18 to engage between the teeth of the rack operating lever.

The simplicity of my construction and the advantages thereof will, it is thought, be perfectly apparent and appreciated by those skilled in the art to which the invention relates without further detailed description.

While I have illustrated a satisfactory embodiment of my improved device my features of invention are capable of extended application and I do not wish to be restricted to the specific structure shown and described.

Having described the invention, I claim:—

1. The combination with a window casing and sashes slidable in said casing, anti-frictional elements on the sashes engaging with the casing, a rack bar on the side of each sash, a toothed wheel engaging each rack bar, a hollow shaft for each toothed wheel, a spring influenced finger, a flat spring having one end fixed and its other end formed with an offset finger to engage between the teeth of the respective wheels, a rod on each flat spring passing through the respective hollow shafts, a socket member movable over the outer end of each hollow shaft, interengaging means between the socket member and the shafts, a pivoted handle on the socket member and a pin pivoted to the handle and received in the bore of the socket member and in the path of contact with the rod for the spring influenced finger.

2. The combination with a window casing and slidable sashes in said casing, anti-frictional elements carried by the sashes and contacting with one side of the casing, a rack bar let in the second side of each sash, anti-frictional elements journaled in the ends of the rack bar and contacting the second side of the casing, said casing having a pocket therein, a bracket in the pocket, a removable closure plate for the pocket, hollow shafts journaled in the bracket, a toothed wheel on each shaft having its periphery projecting through the bracket and engaging the respective rack bars, a flat spring member having one end fixed in the bracket and having an offset finger on its free end to be received between the teeth of the wheels, each of said hollow shafts having an outer T-shaped groove therein, a pin in each hollow shaft engaging the flat springs and projecting through said shafts, a removable operating member including a socket having a pin to be received in the T-shaped slot of either of the hollow shafts, a handle member pivoted to the outer and closed end of the socket, a guide yoke on the socket for the handle member, a pin pivoted to the handle member and guided into the bore of the socket member to arrange the same in a line with either of the said rods, and a helical spring fixed in the bore of the socket member.

In testimony whereof I affix my signature.

WILFRED A. CARVER.