Jan. 2, 1923.

1,440,758.

R. B. WORTHINGTON.

CASEMENT WINDOW OPERATING DEVICE.

FILED NOV. 23, 1921.

2 SHEETS—SHEET 1.

FIG. 1.

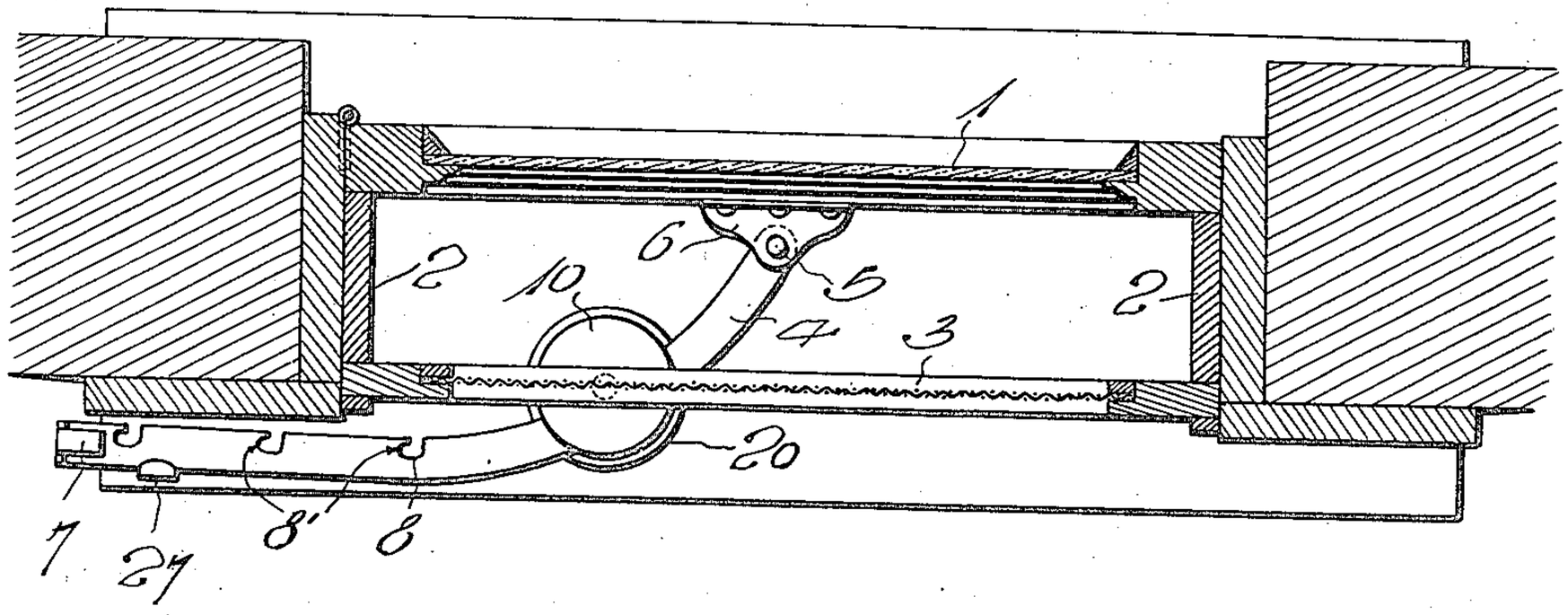
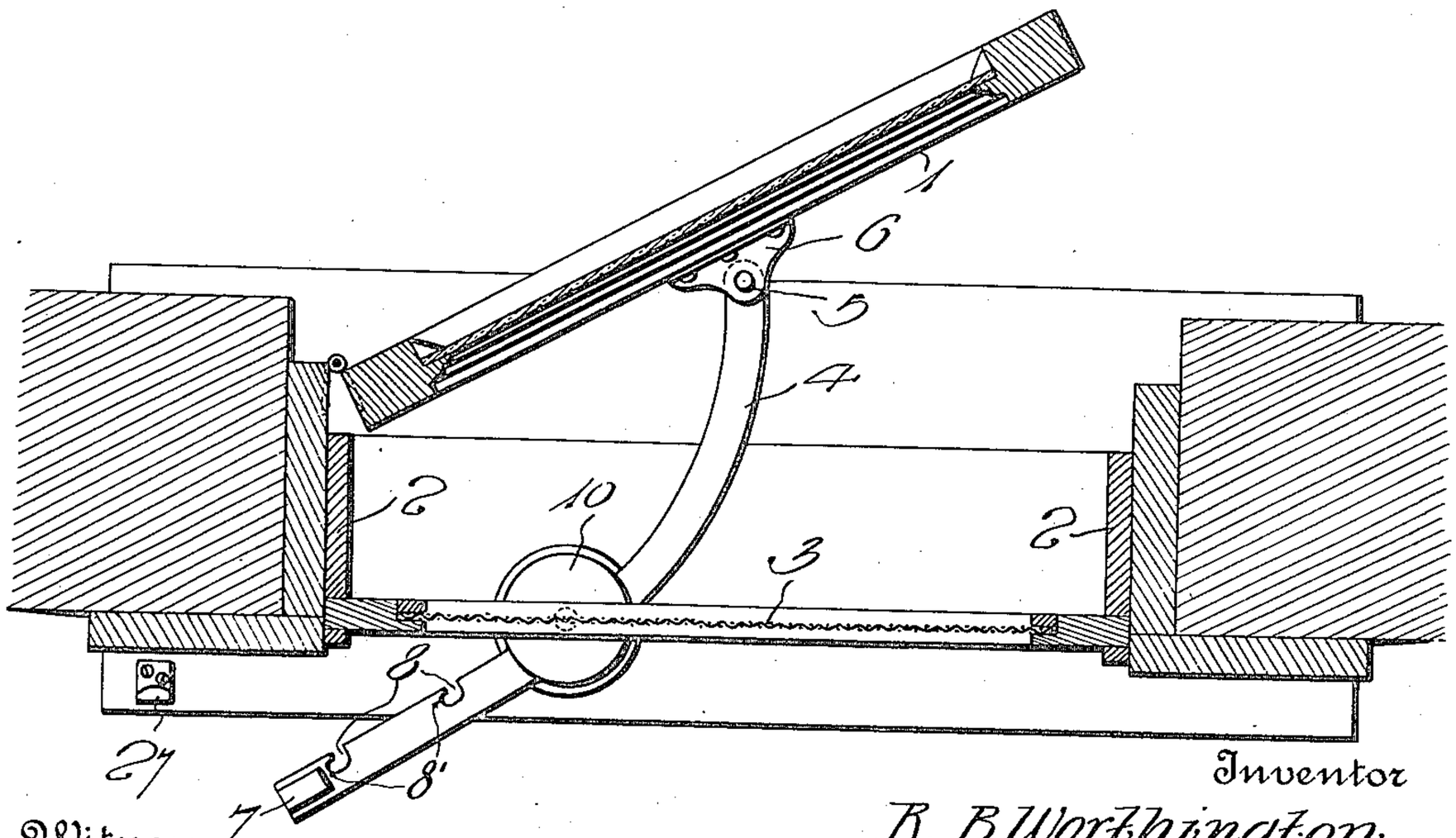


FIG. 2.



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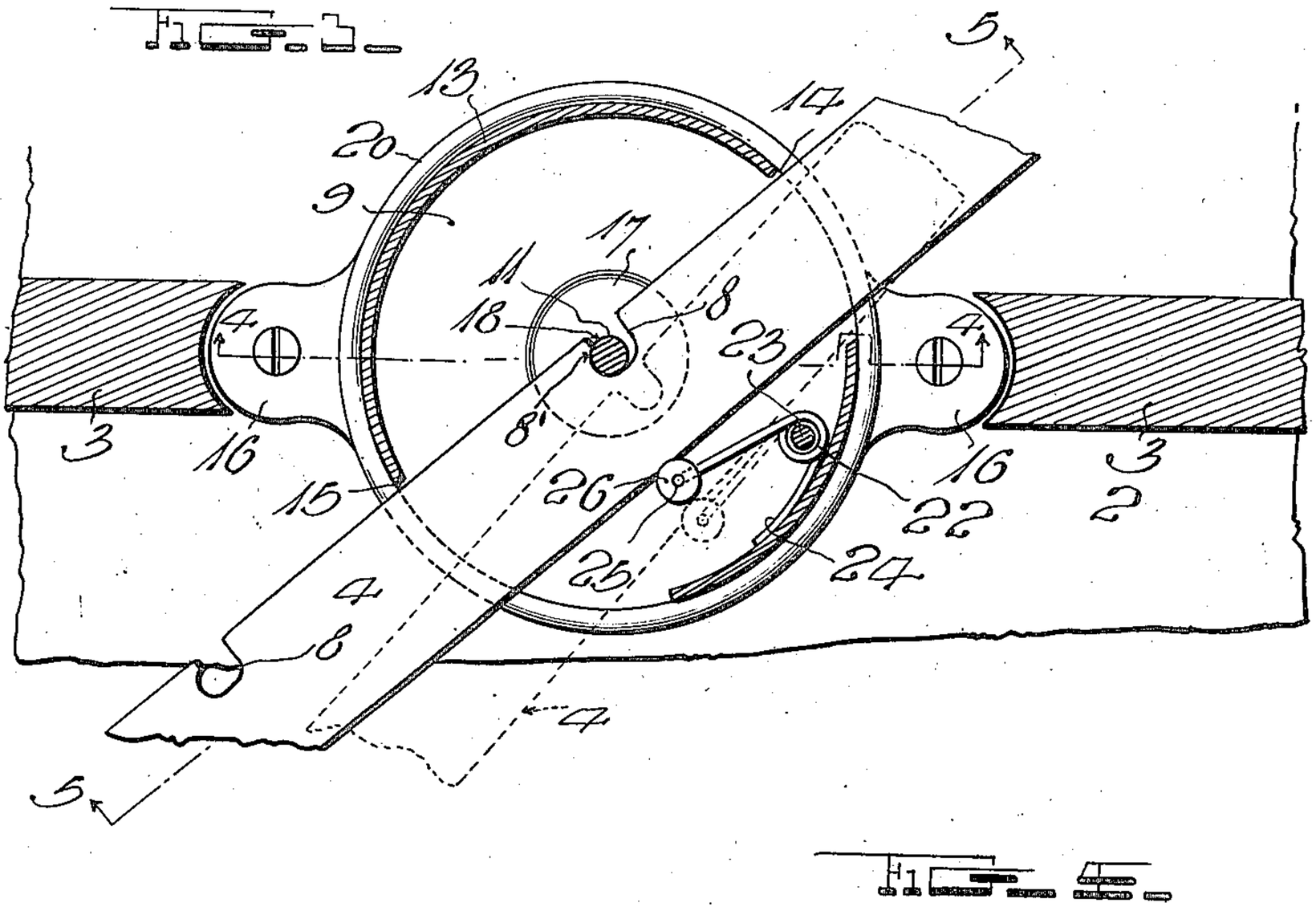


FIG. 3.

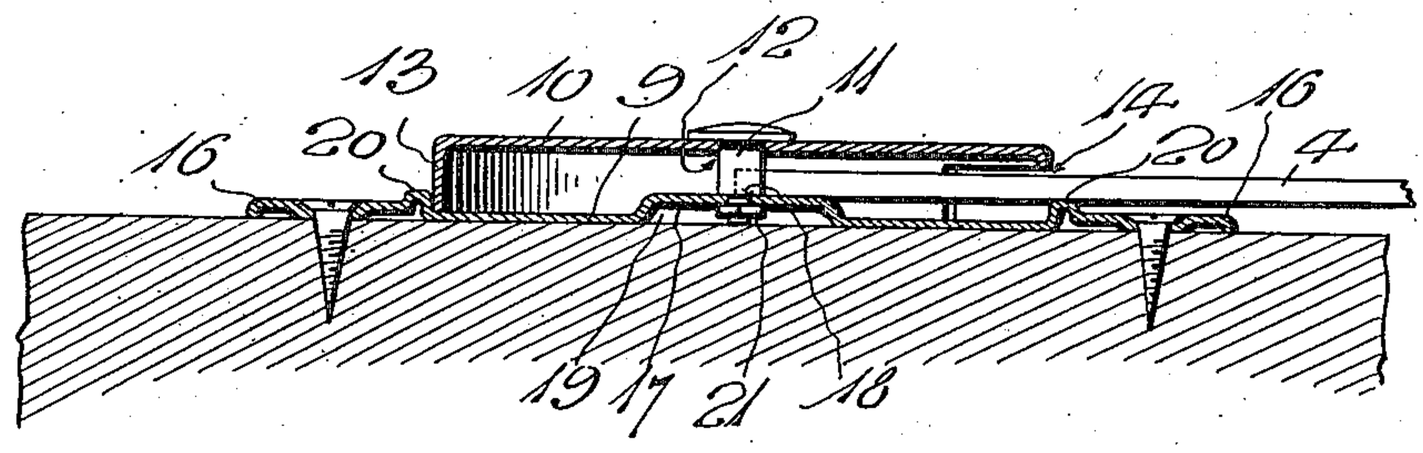
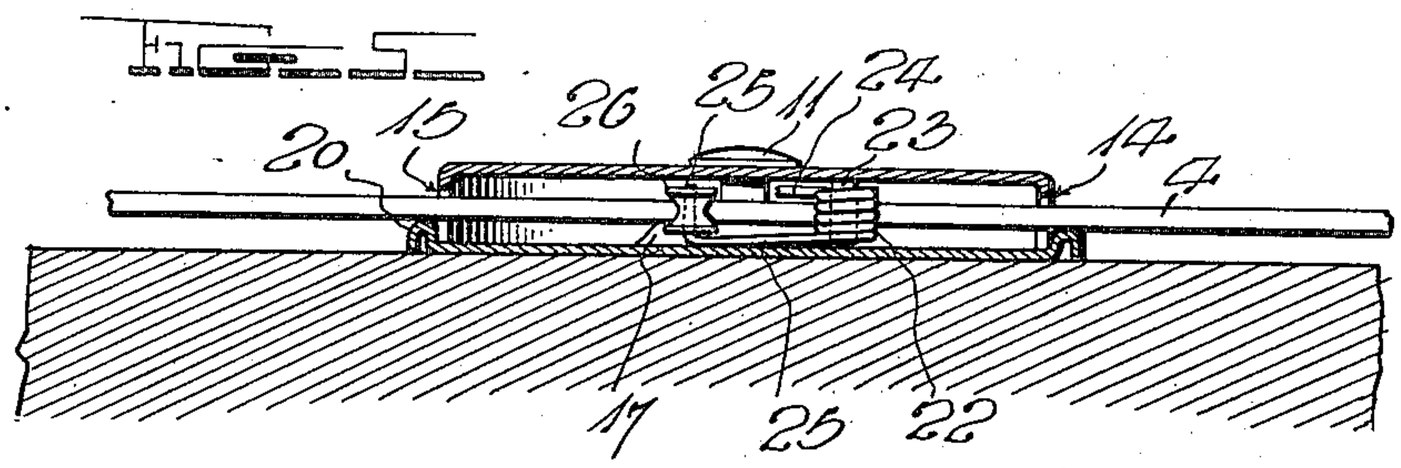


FIG. 5.



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UNITED STATES PATENT OFFICE.

ROLAND B. WORTHINGTON, OF JACKSONVILLE, FLORIDA, ASSIGNOR TO MIAMI MANUFACTURING COMPANY, OF MIAMI, FLORIDA, A CORPORATION OF FLORIDA.

CASEMENT-WINDOW-OPERATING DEVICE.

Application filed November 23, 1921. Serial No. 517,393.

To all whom it may concern:

Be it known that I, ROLAND B. WORTHINGTON, a citizen of the United States, residing at Jacksonville, in the county of Duval and State of Florida, have invented certain new and useful Improvements in Casement-Window-Operating Devices; and I do declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains, to make and use the same.

This invention relates to operating and securing devices for casement windows and the like.

In one type of prior devices of this character the casement window can be unlatched and adjusted without moving the fly screen by manipulating a single curved arm or lever with one hand, a lateral movement of the lever against the tension of a spring causing it to be disengaged from a locking detent so that when the lever is pushed or pulled longitudinally, the window may be swung to any desired adjustment to be automatically held in such position by spring tension or the engagement of the notches in the lever with the locking detent. In these devices the screws which fastened the casings to the window sills also served to hold the parts within the casing assembled and the devices therefor had to be sold disassembled to be put together by the carpenter in attaching the devices. Furthermore, the strain due to the manipulation of the levers caused the wood screws to pull loose and the two parts of the casing to shift. The object of this invention is therefore to overcome the foregoing objectionable features and to simplify the construction, reduce the cost of manufacture and provide a strong and durable device which may be readily applied by unskilled persons.

The above and other objects are attained by the construction illustrated in the accompanying drawings, in which:

Figure 1 is a horizontal section through a window showing the invention applied and holding the window in closed position.

Figure 2 is a similar view showing the window fastened in a partially open position.

Figure 3 is an enlarged horizontal section through the casing of the device and a portion of the bottom of the fly screen, a portion of the lever being also shown.

Figures 4 and 5 are vertical sections taken respectively on lines 4—4 and 5—5 in Fig. 3.

In the drawings, 1 denotes a casement window or similar swinging member, 2 the frame to which it is hinged and 3 the usual sliding fly screen beneath which the window operating and holding device is arranged.

The device includes a lever 4 in the form of a flat bar having a straight inner end to lie normally over the window sill when the window is closed and thus be out of the way. The outer end of the lever is curved and connected by a rivet 5 or other suitable pivot to an angle bracket 6 which is secured preferably to the center of the lower part of the window to provide sufficient leverage to enable the lever to easily move the sash. At the free end of the lever may be provided a suitable handle 7 and along one edge of its straight portion may be provided a series of notches 8.

The lever slides through a casing secured to the sill or frame and composed of a base plate 9 and a rotary housing 10 mounted thereon by means of a pivot bolt 11. The housing is circular in shape having a central pivot opening 12 and a surrounding depending wall 13 formed with slots or openings 14, 15 for the passage of the lever 4. The base plate 9 is also preferably circular in shape and may be fastened to the window sill by screws passed through apertured attaching flanges or ears 16. The latter are shown in Fig. 3 arranged beneath the bottom bar of the screen 3 which is of course recessed to fit over the top of the casing and prevent the entrance of flies and insects under the screen and around the device. At the central portion of the base plate there it struck up a raised portion 17 having a central pivot opening 18 and providing a recess 19 on the bottom of the plate. Also struck up from the base plate, preferably around its edge, is an upstanding circular rib 20 of a size to receive within it the depending wall 13 of the rotary housing and to provide a bearing for the rotary housing. The top of the bearing rib 20 is in the same plane as the top of the raised portion 17 and the bottom of the lever 4 is adapted to

slide on these parts to reduce the friction. The headed bolt 11 extends through the pivot openings 12 and 18, as shown in Fig. 4, and its reduced threaded end enters the recess 19 and receives a nut 21. The intermediate portion of this pivoting and securing bolt 11 is adapted to be engaged by the notches 8 in the lever so that it also serves as a locking detent for the lever. The notched edge of the lever is forced toward this detent 11 by a suitable spring 22 which preferably consists of a coil arranged on a stud or post 23 depending from the underface of the rotary housing. One end 24 of the spring is anchored against the inner face of the wall 13 and the other end 25 of the spring is preferably bent at right angles and carries a grooved roller 26 to engage the edge of the lever opposite to the one which is notched. The spring thus keeps the lever constantly under tension and coacts with the notches 8 and the detent in locking it in adjusted position. In order to prevent the pressure of the wind from forcing the notches 8 off of the bolt 11, the notches are formed at one side with undercut portions or seats 8′ which insure a secure grip of the lever on the bolt.

As the lever is moved laterally against the tension of the spring to free it from the detent, it will be seen that the housing 10 will rotate on the detent or pivot since the outer slot 14 is just slightly larger than the lever and causes the housing to shift as the lever is moved. The inner slot or opening 15 in the wall of the housing is made sufficiently large to take care of the curvature and swing of the lever so that the window may be opened to a ninety degree angle.

On the window sill may be provided a catch 27 to be engaged by the free end of the lever when the sash is closed to hold the latter in that position.

In applying the device it is simply necessary to fasten the bracket 6 to the sash, to position the lever on the sill as shown in Fig. 1 when the sash is closed, to arrange the casing beneath the screen and recess the latter and to then fasten the casing and catch on the sill.

In operation, it is only necessary to grasp the lever with one hand and move it laterally against the tension of the spring arm 25 to cause its notched edge to clear the detent 11 and to then push or pull the lever longitudinally to swing the sash to the desired position. When the lever is released, the tension of the spring is exerted automatically to hold the lever in any desired adjustment but should the wind be stronger than the tension of the spring and thus swing the sash in either direction, one of the notches in the lever will drop over the detent and thus lock the sash against further movement.

It will be seen that the device is of simple, strong and durable construction, may be made at a minimum of cost, may be readily applied by unskilled persons and may be easily operated with one hand and without moving the fly screen. In the movement of the lever in adjusting the sash and by the force of the wind on the sash considerable strain is placed on the pivot bolt and detent but by constructing the base plate as set forth, a strong structure is provided since the strain on the bolt is taken up by the bearing of the depending wall of the housing on the circular rib on the base plate. The parts are thus securely fastened together and prevented from shifting and having lost motion or rattling and at the same time the rotary housing may turn easily as the lever shifts.

I claim:

1. A casement window operating device comprising a lever having a curved end for attachment to a swinging window, a casing including an attaching base plate and a rotary housing thereon, the housing being of circular shape and having a surrounding depending wall formed with openings to receive the lever, the base plate having an upstanding circular rib to receive within it the depending wall of the housing and form a bearing therefor, a spring within the casing acting on the lever, and a pivot uniting the housing to the base plate and holding the parts assembled when the device is not applied.

2. A casement window operating device comprising a lever having a curved end for attachment to a swinging window, a casing including an attaching base plate and a rotary housing thereon, the housing being circular and formed with a pivot opening at its center and with a surrounding depending wall formed with openings to receive the lever, the base plate being formed with an upstanding circular rib to receive within it the depending wall of the housing and form a bearing therefor, the base plate being also formed with a central raised portion having a pivot opening and having its upper surface in the plane of the top of said rib whereby the lever may slide on said portion and rib, a headed pivot bolt passed through the said pivot openings and having a threaded end in the recess formed by the raised central portion of the base plate, a nut in said recess engaged with the bolt to hold the parts assembled, and spring means in the casing acting on the lever.

In testimony whereof I have hereunto set my hand.

ROLAND B. WORTHINGTON.