No. 886,658. PATENTED MAY 5, 1908.

R. C. SPENCER, Jr.

SHUTTER OPERATOR.

APPLICATION FILED APR. 30, 1907.

Fig 1.

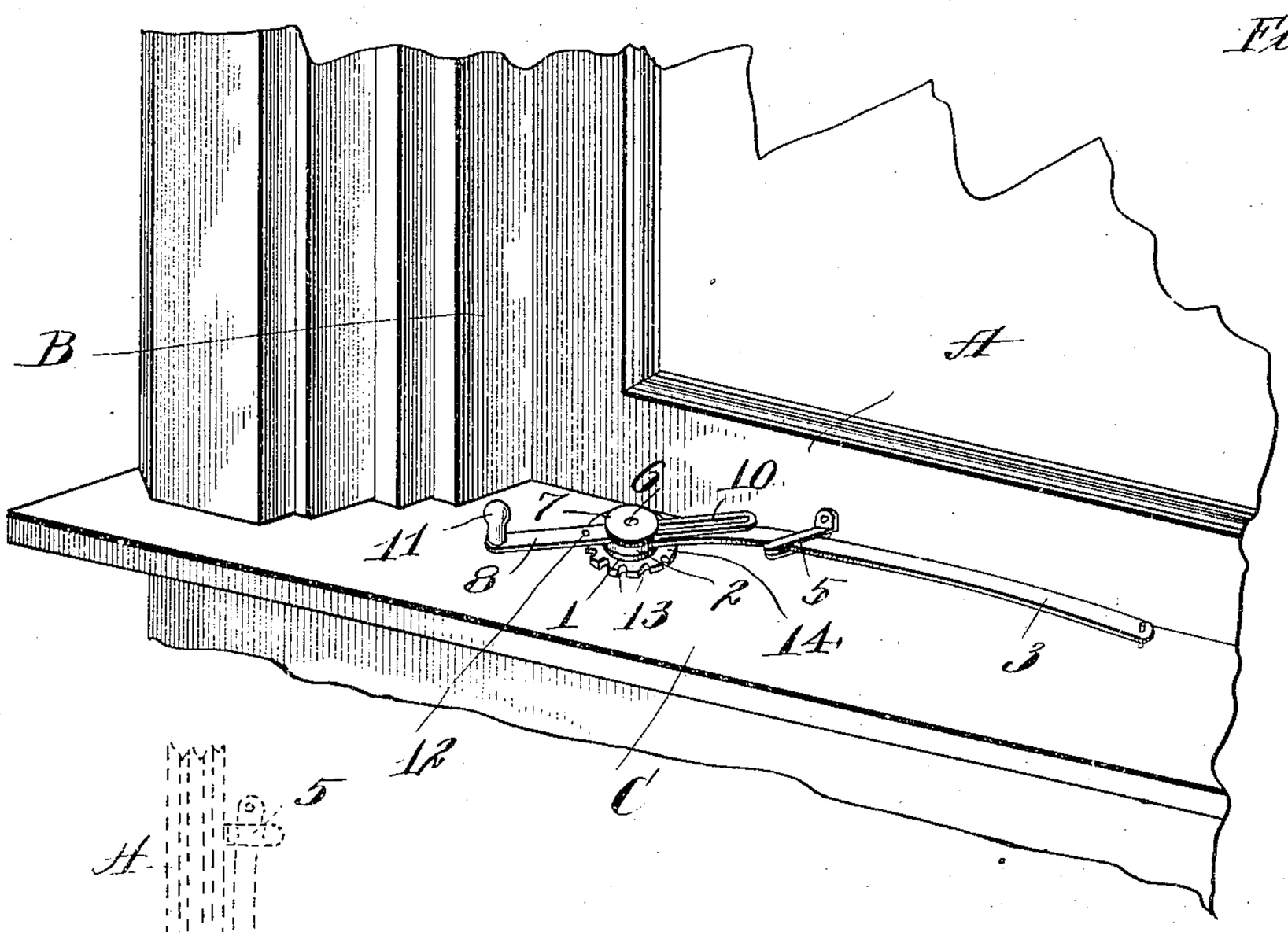


Fig. 2.

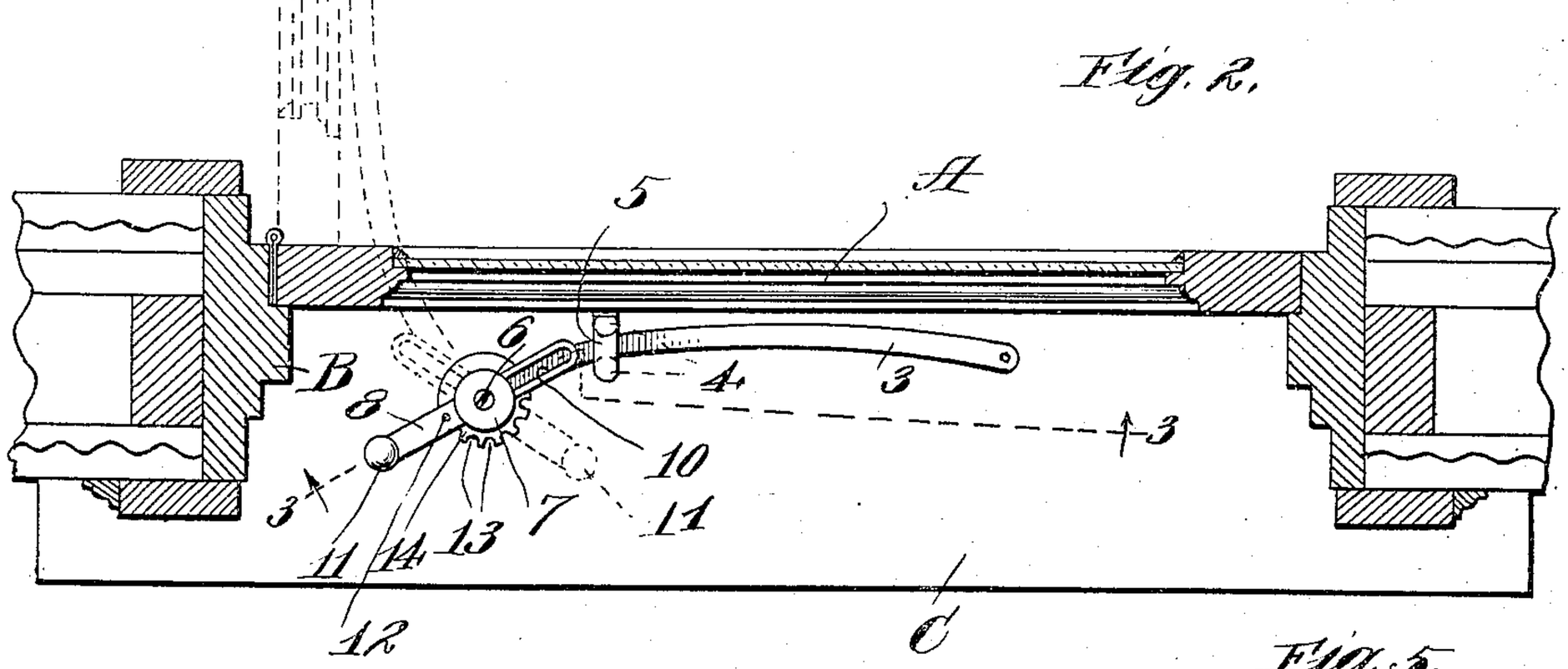


Fig. 5.

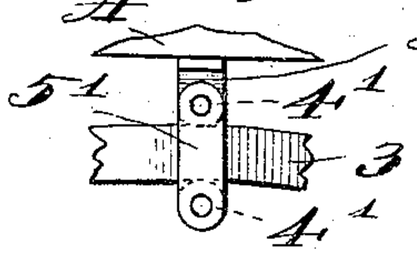


Fig. 3.

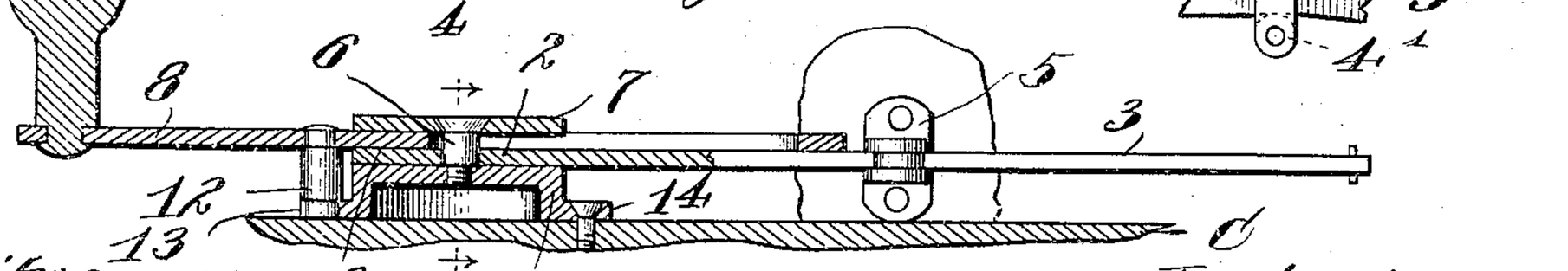
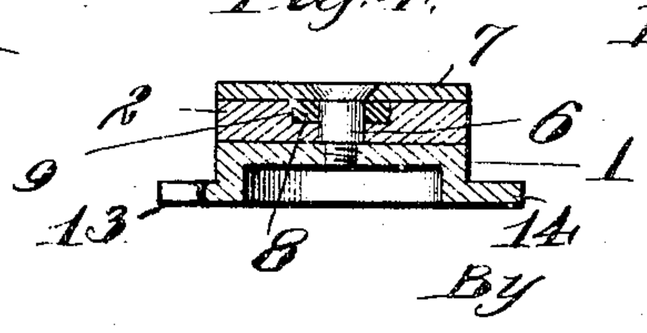


Fig. 4.



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By
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UNITED STATES PATENT OFFICE.

ROBERT C. SPENCER, JR., OF RIVER FOREST, ILLINOIS.

SHUTTER-OPERATOR.

No. 886,658. Specification of Letters Patent. Patented May 5, 1908.

Application filed April 30, 1907. Serial No. 371,032.

To all whom it may concern:

Be it known that I, ROBERT C. SPENCER, Jr., a citizen of the United States, and a resident of River Forest, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in Shutter-Operators, of which the following is a specification.

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

The object of the invention is to provide a device for this purpose, which will be simple, strong and durable, and adapted for a wide range of application.

To this end the device of my invention consists of the various features, combinations of features and details of construction hereinafter described and claimed.

In the accompanying drawings, in which a device of my invention is fully illustrated, Figure 1 is a perspective interior view of a casement window, showing my improved device applied thereto for operating the same. Fig. 2 is a sectional view thereof showing a top plan view of my improved device. Fig. 3 is an enlarged plan section of my improved device on the line 3—3 of Fig. 2. Fig. 4 is a sectional view on the line 4—4 of Fig. 3; and Fig. 5 is a view showing a modified form of slide for connecting the operating device to the window sash.

For purposes of illustration I have, in the drawing, shown a device of my invention applied for operating a casement window.

Referring now to the drawings, A designates the sash of a casement window, and B the stile and C the stool of said window frame. All of the foregoing parts are old and well known in the art and may be of any desired or approved construction.

My improved device for operating the window is as follows: Secured to the stool C of the window frame, in fixed position, is a base or pedestal 1 rotatably mounted on which is a head 2, an arm 3 on which is slidably connected to the window sash A. While my invention contemplates any desired or approved form of connection, I prefer that shown in the drawings, in which said arm 3 consists of a bar the lateral edges of which are substantially parallel with each other and which passes between and is closely embraced by rigid projections on the sash A, as shown, antifriction wheels 4 rotatably mounted in a bracket 5 secured to said window sash. Said bracket 5 preferably consists of upper and lower members, which operate both to provide a strong and rigid support for said antifriction wheels and also provide a guide to retain the arm 3 in engagement with said wheels. The arm 3 is curved in such manner, as best shown in Fig. 2, that the window sash will always extend substantially parallel to a line tangent to the convexly curved side of the arm 3 at the point where it engages said antifriction wheels 4. With this relation it is obvious that said arm 3 will play freely through the bracket 5 in all positions of the window sash.

The bracket 5 and antifriction wheels 4 form, in effect, a slide and while, as shown in Figs. 1 to 3, said slide is secured to the window sash A in rigid adjustment, my invention contemplates equally the use of a pivoted slide, as shown in Fig. 5, consisting of antifriction wheels 4^1 revolubly mounted between plates 5^1 pivoted at one end to a bracket 5^2 secured in fixed adjustment to the window sash A. Obviously with this latter construction, much less exactness will be required in the conformation of the arm 3, as said slide will be free to accommodate itself to varying positions of said arm, thus preventing binding, as would occur with a fixed slide in case said arm were not of the proper curve.

As shown, the head 2 is rotatably mounted on the base or pedestal 1 by means of a stud screw 6, which engages a suitable bearing in said head and the lower end of which is threaded into the base or pedestal 1. The head 2 is held in engagement with the stud 6 by a cap 7 provided with a hole or opening through which said stud passes and which is held in position by the head of said stud. Obviously, however, if for any reason desired, the cap 7 may form the head of said stud.

Rotation, to open and close the window sash A, is adapted to be imparted to the head 2 and thus to the arm 3 by means of an oper-

ating lever 8, slidably connected to said head. As shown, the operating lever 8 consists of a flat parallel sided bar slidably fitted to a groove 9 formed in the outer surface of said head 2. Said operating lever 8 is secured in the groove 9 by means of the cap 7 and the pivot stud 6, said stud passing through a slot 10 in said operating lever, the ends of which are closed. For convenience in operating the device, the lever 8 is provided with a grip or handle 11.

The window sash A is adapted to be secured in any adjusted position by means of a locking stud 12 on the operating lever 8, which is adapted to engage notches 13 in a suitable fixed plate, consisting, as shown, of a flange 14 on the base or pedestal 1, the edge of which is preferably substantially concentric with the pivot stud 6. When the stud 12 is in engagement with a notch 13, it is obvious that the lever 8, the head 2, and arm 3, and thus the window sash A, will be locked against rotation, thus providing the desired means for securing the sash A in adjusted position. When it is desired to change the adjustment of the sash A, the lever 8 is moved endwise so as to disengage said stud 12 from the notch 13, thus leaving said lever, the head 2 and arm 3 free to rotate to provide for opening and closing the window sash A as desired.

A further advantage of the slidable character of the operating lever 8 is that provision is thus made for providing an operating lever of desired length to afford desired ease of operation, while, at the same time, the locking stud 12 and slot 10 may be so arranged that, when in locked position, said operating lever 8 will not project beyond the stool of the window frame. The operating lever 8 will necessarily be so positioned that, when the window is closed, it will not interfere with necessary movement of said operating lever to effect engagement of the locking stud 12 with the notches 13. Obviously, in other positions of the lever, said window sash A will be open and will, therefore, not interfere with the movement of said lever to engage the stud 12 with a notch 13.

I claim:—

1. The combination with a hinged member, of means for operating the same and for locking the same in adjusted positions, said means comprising a fixed base, a head rotatably mounted on said base, an arm on said head slidably connected to said hinged member, an operating lever slidable in a suitable bearing provided in said head, a fixed plate provided with notches and a locking stud on said operating lever adapted to be engaged with and disengaged from the notches in said plate by endwise movement of said operating lever in opposite directions.

2. The combination with a hinged member, of means for operating the same and for locking the same in adjusted positions, said means comprising a fixed base, a head rotatably mounted on said base, an arm on said head, a slide member on said hinged member which engages said arm, comprising antifriction wheels which embrace said arm, an operating lever slidable in a suitable bearing provided in said head, a fixed plate provided with notches and a locking stud on said operating lever adapted to be engaged with and disengaged from the notches in said plate by endwise movement of said operating lever in opposite directions.

3. The combination with a hinged member, of means for operating the same and for locking the same in adjusted positions, said means comprising a base, a pivot stud thereon, a head pivoted on said stud, an arm on said head silidably connected to said hinged member, an operating lever slidable in a suitable bearing in said head, said operating lever being provided with a slot through which the pivot stud passes, a fixed plate provided with notches and a locking stud on said operating lever adapted for engagement with and disengagement from the notches in said plate by endwise movement of said operating lever.

4. The combination with a hinged member, of means for operating the same and for locking the same in adjusted positions, said means comprising a base, a pivot stud thereon, a head pivoted on said stud, an arm on said head slidably connected to said hinged member, an operating lever slidable in a suitable bearing in said head consisting of a groove formed in the outer surface of said head, a cap on said stud for securing said head and operating lever in position, said operating lever being provided with a slot having closed ends through which the pivot passes, a fixed plate provided with notches and a locking stud on said operating lever adapted for engagement with and disengagement from the notches in said plate by endwise movement of said operating lever.

5. The combination with a window frame and a member hinged thereto, of means for operating the hinged member and for locking the same in its adjusted positions, said means comprising a base mounted on the stool of the window frame, a pivot stud thereon, a head pivoted on said stud, an arm on said head having sliding connection with said hinged member, an operating lever slidable in a suitable bearing in said head consisting of a groove formed in the outer surface of said head, a cap on said stud for securing said head and operating lever in position, said operating lever being provided with a slot having closed ends through which the pivot stud passes, a circular flange on the base of the de-

vice which is concentric with the pivot stud and which is provided with notches in its edge, and a locking stud on said operating lever adapted for engagement with and disengagement from the notches in said flange by endwise movement of said operating lever.

In testimony, that I claim the foregoing as my invention I affix my signature in presence of two subscribing witnesses, this 22nd day of April, A. D. 1907.

ROBERT C. SPENCER, JR.

Witnesses:
K. A. COSTELLO,
M. V. MCGRATH.