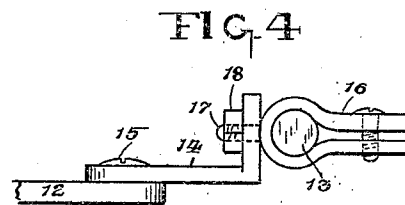
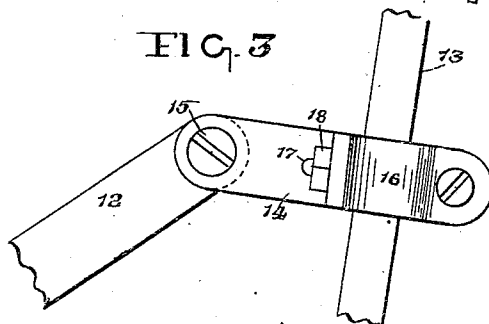
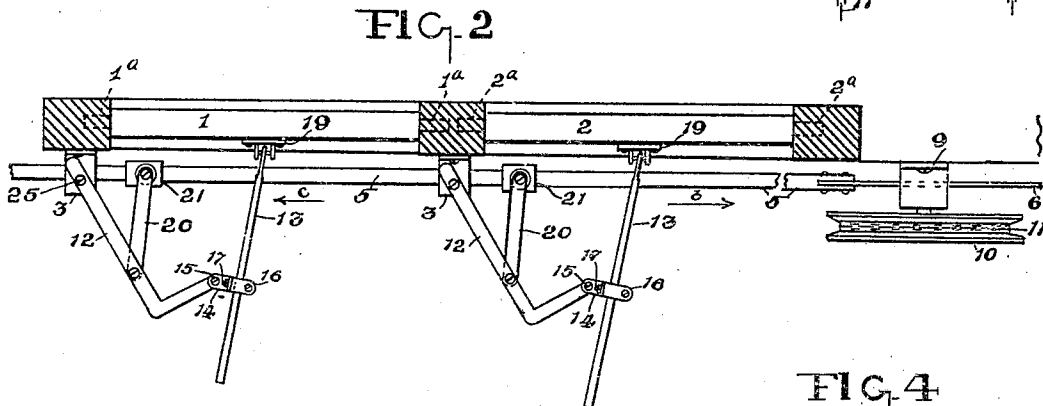
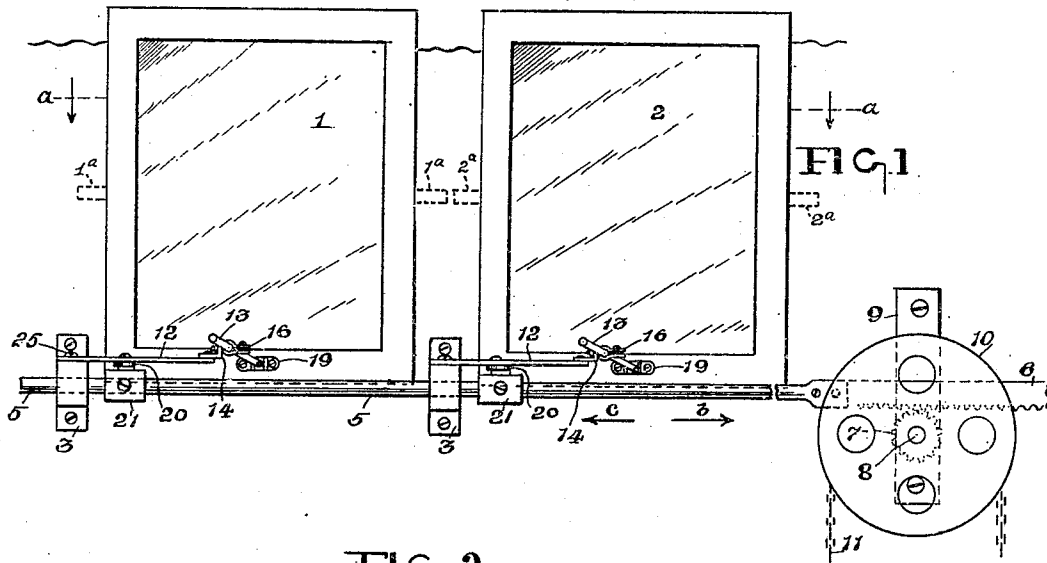


S. E. CIBULAS.
WINDOW OPERATING DEVICE.
APPLICATION FILED JULY 17, 1909.

954,851.

Patented Apr. 12, 1910.

2 SHEETS—SHEET 1.



WITNESSES

George M. Finn
J. H. Beckwith

INVENTOR

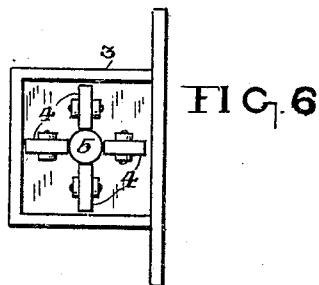
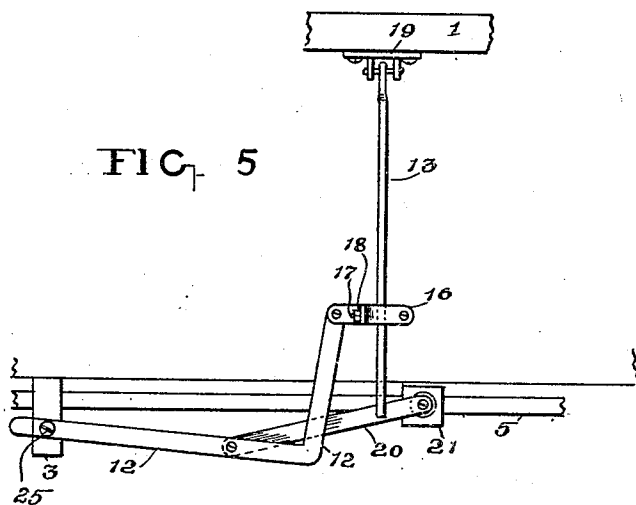
Stephen E. Cibulas
BY *Geo. D. Phillips*
his ATTORNEY

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WITNESSES

George W. Finn
F. H. Beckwith

INVENTOR
Stephen E. Cibulas
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ATTORNEY

UNITED STATES PATENT OFFICE.

STEPHEN E. CIBULAS, OF BRIDGEPORT, CONNECTICUT, ASSIGNOR TO THE G. DROUVE COMPANY, OF BRIDGEPORT, CONNECTICUT.

WINDOW-OPERATING DEVICE.

954,851.

Specification of Letters Patent.

Patented Apr. 12, 1910.

Application filed July 17, 1909. Serial No. 508,238.

To all whom it may concern:

Be it known that I, STEPHEN E. CIBULAS, a citizen of the United States, and a resident of Bridgeport, in the county of Fairfield and State of Connecticut, have invented a certain new and useful Improved Window-Operating Device, of which the following is a specification.

My invention relates to an improvement in window operating devices adapted to operate a series of windows and shutters, and particularly to that class having two parallel operating rods located in front of the windows or shutters with links and levers connecting the rods with the windows so that the windows are actuated by the longitudinal movement of the rods.

The object of my invention is to simplify the construction by dispensing with one of the rods and so arranging the intermediate mechanism between the single operating rod and windows that less power is required to operate the windows than where two rods are used, and, further, to thoroughly brace the windows when closed.

To enable others to understand my invention, reference is had to the accompanying drawings, in which—

Figure 1 represents a front elevation of two closed windows of a series adapted to swing on a horizontal axis, and a broken view of the building wall and operating rod; Fig. 2 is a sectional view on line *a a* of Fig. 1; Fig. 3 is an enlarged view of an arm of the mechanism and window link, and swivel connecting the arm and link; Fig. 4 is a side elevation of Fig. 3; Fig. 5 is a plan view of the mechanism shown at Figs. 1 and 2, and the position it occupies when the window is open; and Fig. 6 is an enlarged detail view of one of the rod supporting brackets, and end view of the rod.

The windows 1 and 2 (Figs. 1 and 2) have the side pintles 1^a and 2^a pivotally supported so as to swing on substantially horizontal axis.

3 are brackets, provided (see also Fig. 6) with the usual antifriction rolls 4 for supporting the single operating rod 5. This rod carries the rack 6 at its outer end adapted to mesh with the pinion 7 on the short shaft 8 journaled in the bracket 9. This shaft carries the grooved pulley 10 for actuating the operating rod in the direction

of arrows *b c* through the medium of the chain 11.

12 are arms pivotally supported by one end to the brackets 3, while the opposite ends actuate the window links 13 through the medium of a compound swivel connection comprising (see also Fig. 4) the knee 14 which is pivoted on the screw 15 in the end of arm 12, and the clamp 16 is swiveled to the knee through the medium of the pin or stud 17 projecting from said clamp, which clamp is pivotally held against said knee by the nut 18. The inner end of the window link is pivotally attached to the window bracket 19, while its outer end is adjustably supported in the before mentioned clamp.

Referring to Fig. 2, 20 are links pivotally supported to the arms 12 and the collars 21, which collars are adjustably supported on the operating rod. When, therefore, the operating rod 5 is actuated in the direction of arrow *b*, the mechanism will assume the position shown at Fig. 5, with the bottom of the window carried out, and when said rod is moved in the direction indicated by arrow *c*, the windows will be closed and the mechanism connected therewith will assume the position shown at Fig. 2. When the windows are closed, the links 20 will stand practically at right angles to the operating rod 5 and thus act as a brace to effectually resist any outward pressure brought against the bottom of the windows. This bracing feature will also keep the windows from rattling.

The ends of the arms 12 project rearwardly beyond their pivotal points or screws 25, so that said projecting ends will bear on the brackets 3 to counteract any lifting tendency of the link mechanism when the operating rod is actuated.

While I show well known mechanism for longitudinally actuating the window operating rod, it will be understood that any other cheap and simple device that would answer the purpose could be substituted therefor.

Having thus described my invention, what I claim is:—

In a window operating device having a single round operating rod adapted to open and close a series of horizontally arranged windows and a series of rod supporting brackets, of a series of arms pivotally sup-

ported on said brackets, said arms project-
ing rearwardly beyond their pivotal point
to maintain said arms in a horizontal posi-
tion, a swivel at the outer end of each arm, a
5 window link adjustably connected to each
swivel, and a series of links 20 pivotally con-
necting the operating rod with the arms
and located intermediate of the ends of said
arms so that, when the windows are closed,

said links will serve to maintain the windows 10
in such closed position.

Signed at Bridgeport in the county of
Fairfield and State of Connecticut this 16
day of July A. D. 1909.

STEPHEN E. CIBULAS.

Witnesses:

JAMES FEELEY,
GEO. D. PHILLIPS.