S. E. CIBULAS.

WINDOW OPERATING MECHANISM.

APPLICATION FILED NOV. 18, 1918.

1,292,706. Patented Jan. 28, 1919.

Fig. 1

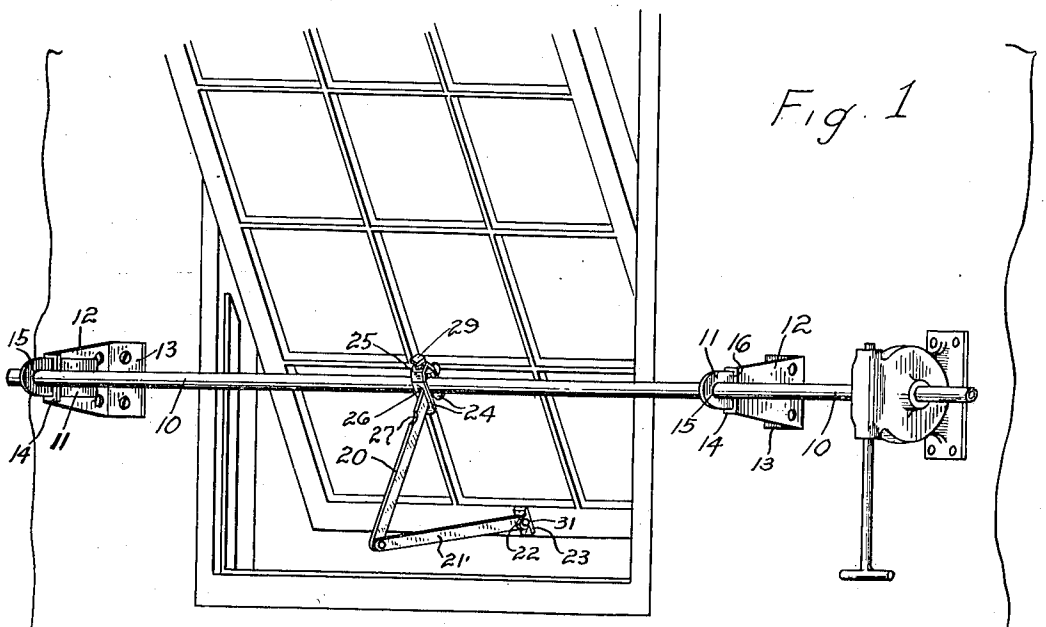


Fig. 3

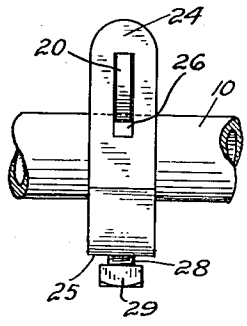


Fig. 2

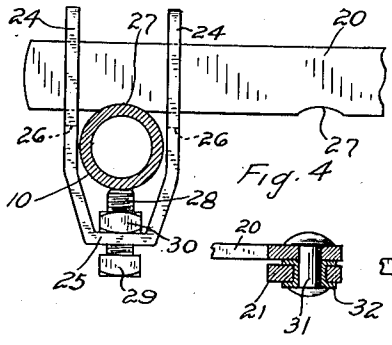


Fig. 4

Fig. 5

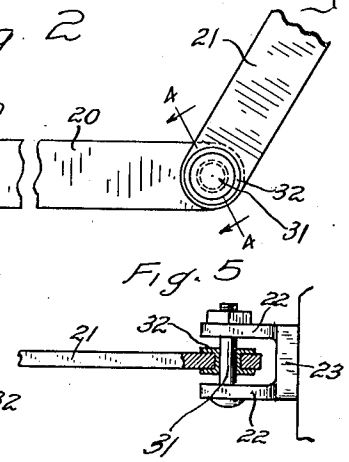


Fig. 6

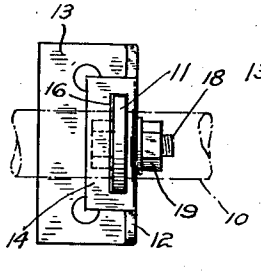
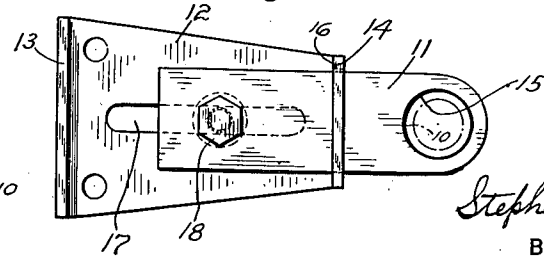


Fig. 7



INVENTOR

Stephen E. Cibulas

BY

A. M. Wooster

ATTORNEY

UNITED STATES PATENT OFFICE.

STEPHEN E. CIBULAS, OF BRIDGEPORT, CONNECTICUT.

WINDOW-OPERATING MECHANISM.

1,292,706. Specification of Letters Patent. Patented Jan. 28, 1919.

Application filed November 18, 1918. Serial No. 262,959.

To all whom it may concern:

Be it known that I, STEPHEN E. CIBULAS, a citizen of the United States, residing at Bridgeport, county of Fairfield, State of Connecticut, have invented an Improvement in Window-Operating Mechanism, of which the following is a specification.

This invention has for its object to simplify and cheapen the construction of mechanism for operating windows, as in factories and halls where a number of swinging windows are required to be operated simultaneously, the special object of the present invention being to produce mechanism of this character which shall be strong and durable, so simple in construction as to be practically fool proof, and in which the cost of construction shall be reduced appreciably below that of any similar mechanism of which I am aware. This I accomplish by reducing the number of parts to the minimum and using only parts that can be produced at a minimum expense from sheet metal.

With these objects in view I have devised the novel window operating mechanism of which the following description in connection with the accompanying drawing is a specification, reference characters being used to indicate the several parts.

Figure 1 is a perspective view illustrating the construction and operation of my novel mechanism;

Fig. 2 a detail view on an enlarged scale, illustrating the connection of the operating arm to the operating shaft;

Fig. 3 an elevation, as seen from the left in Fig. 2;

Fig. 4 a section on the line 4—4 in Fig. 2, looking in the direction of the arrows;

Fig. 5 a detail view partly in section, illustrating the connection of the link to the window sash;

Fig. 6 a plan view of one of the brackets, and

Fig. 7 is an elevation as seen from the left in Fig. 6.

10 denotes the operating shaft which is adapted to oscillate in brackets secured to the wall of the building, the windows being shown as pivoted to swing on central pivots. It will of course be understood, however, that so far as the principle of the invention is concerned it is immaterial whether the windows are pivoted to swing from the top, or the bottom or on intermediate pivots, or whether they swing in the vertical or the horizontal plane. Any number of windows within reasonable limits may be operated simultaneously from the same shaft.

As different adjustments of the shaft relatively to the face of the wall and the windows are required, I provide two part brackets for the shaft, each comprising a carrying plate 11 and a body 12, both formed from sheet metal. Each body is provided with flanges 13 and 14. Flange 13 is an attaching flange and is provided with holes to receive screws, other screw holes being provided in the body near the the flange to provide for side instead of base attachment, if more convenient, as in attaching to a post. Each carrying plate is provided with a hole 15, which receives the shaft freely, and is itself adapted to slide in a slot 16 in the flange 14 of the corresponding body. Each body is also provided with a longitudinal slot 17, and a bolt 18 seated in the carrying plate, is adapted to slide in said slot and is provided with a nut 19 by which the carrying plate and with it the shaft is locked at the required adjustment. It will of course be understood that in adjusting the shaft, the carrying plates are all loosened, then the shaft is properly positioned relatively to the face of the wall and the windows, and then the nuts are tightened up to lock the carrying plates tightly to the bodies.

20 denotes the operating arm and 21 a link pivoted to the operating arm and to ears 22 on a plate 23 which is secured to the window sash. The operating arm is secured to the operating shaft by means of a clamp comprising arms 24 connected at one end by a cross piece 25. The arms of the clamp are provided with slots 26 through which the operating arm passes loosely and the underside of the operating arm is provided with recesses 27 either of which is adapted to receive the shaft. 28 denotes a bolt having threaded engagement with the cross piece, the tip of which is adapted to bear against the operating shaft, and which is provided with a head 29 lying outside the cross piece and a nut 30 adapted to engage the inner side of the cross piece. In assembling the nut is turned toward the tip of the bolt and the bolt turned outward, the arms of the clamp are placed astride the operating shaft and the operating arm is passed through the slots in the arms of the clamp, after which the bolt is turned inward to clamp the operating shaft between the tip of the bolt

and the operating arm, and the operating arm between the operating shaft and the ends of the slots in the arms of the clamp. As the operating shaft lies in one of the recesses in the underside of the operating arm the parts are thus securely clamped together and are locked in that position by turning the nut down against the inner side of the cross piece. The operating arm, the clamp and the link are simply strips of sheet metal, which enables me to reduce the cost of production to the minimum. In order to reduce friction to the minimum and to prevent oxidation at the pivotal points I provide the pivots 31 at the ends of the link with brass bushings 32, which are simply pieces of tubing, the ends of which are flanged over on the outer sides of the links and form anti-friction side bearings as well as pivot bearings for the links. The special means for producing oscillatory movement of the operating shaft to open and close the window, or series of windows, is unimportant as far as the present invention is concerned. In Fig. 1 I have shown in elevation a common form of mechanism for this purpose. The hand shaft carries a worm which engages a worm wheel on the operating shaft. I have not illustrated the operating gearing as it is in common use and specifically forms no part of the present invention.

Having thus described my invention, I claim:

1. Mechanism of the character described comprising an operating arm, a link pivoted thereto, and a clamp for attaching the operating arm to a shaft consisting of arms adapted to straddle the shaft and having slots through which the operating arm passes, and a bolt in the clamp adapted to bear against the shaft to clamp the shaft between the tip of the bolt and the operating arm and to clamp the operating arm between the shaft and the ends of the slots in the arms of the clamp.

2. Mechanism of the character described comprising an operating arm, a link pivoted thereto, and a clamp for attaching the operating arm to an operating shaft, said clamp consisting of arms which straddle the shaft and a cross piece connecting the ends of the arms, said arms being provided with slots through which the operating arm passes, and the cross piece carrying a bolt, the tip of which is adapted to bear against the shaft to clamp the parts together, and a nut engaging the cross piece to lock the parts in place.

3. In combination an oscillatory shaft, an operating arm having a recess to receive the shaft, a link pivoted to said arm, and a clamp consisting of arms which straddle the shaft and a cross piece connecting the ends of the arms, said arms being provided with slots through which the operating arm passes, and the cross piece being provided with a bolt by which the parts are locked together.

4. In combination an oscillatory shaft, an operating arm carried by the shaft, a link pivoted to said arm, and brackets by which the shaft is carried, each bracket consisting of a body adapted for attachment to a wall and having a slot and a slotted flange, a carrying plate having a hole through which the shaft passes and itself passing through the slot in the flange, and a bolt in the plate which passes through the slot in the body to lock the carrying plate at any required adjustment.

5. In combination an oscillatory shaft, adjustable two part brackets by which the shaft is carried, an operating arm, a clamp comprising arms which straddle the shaft and are provided with slots through which the operating arm passes, and a cross piece, a bolt in the cross piece by which the parts are locked together, and a link pivoted to the operating arm.

6. In combination an oscillatory shaft, an operating arm, a clamp comprising arms which straddle the shaft and are provided with slots through which the operating arm passes, a bolt in the clamp by which the parts are locked together and a link pivoted to the operating arm.

In testimony whereof I affix signature.

STEPHEN E. CIBULAS.