

T. J. BURKE.
OPERATING MECHANISM FOR CUT-OFF OR CONTROLLING DEVICES.
APPLICATION FILED SEPT. 11, 1908.

929,385.

Patented July 27, 1909.

2 SHEETS—SHEET 1.

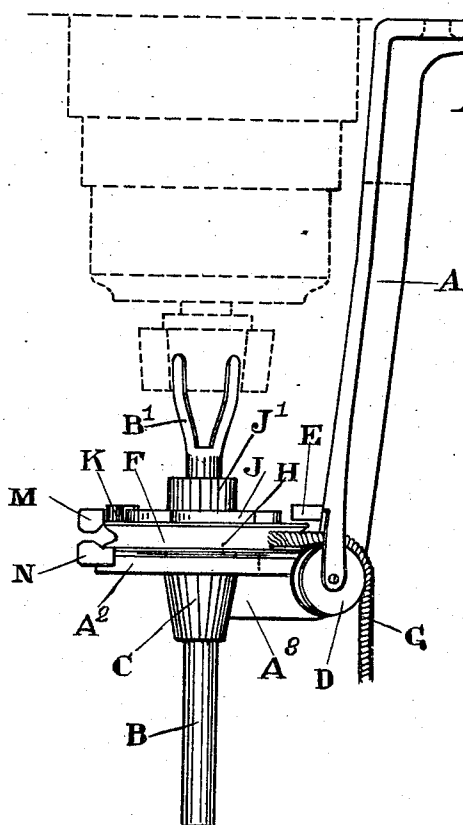


Fig. 1

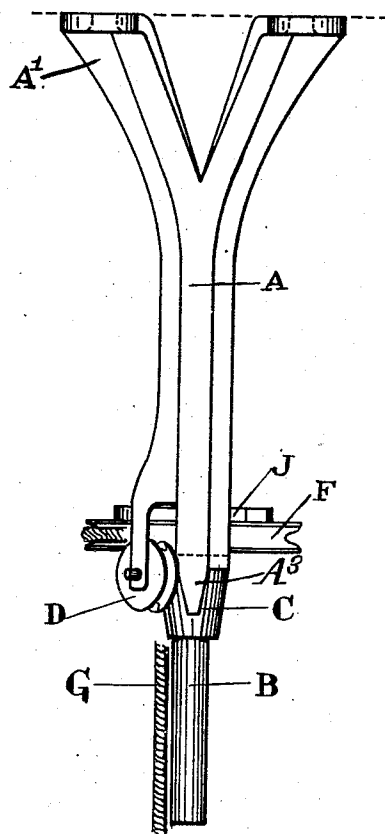


Fig. 2

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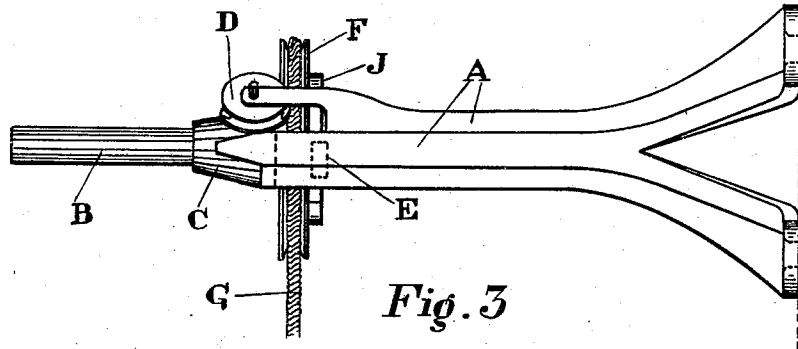


Fig. 3

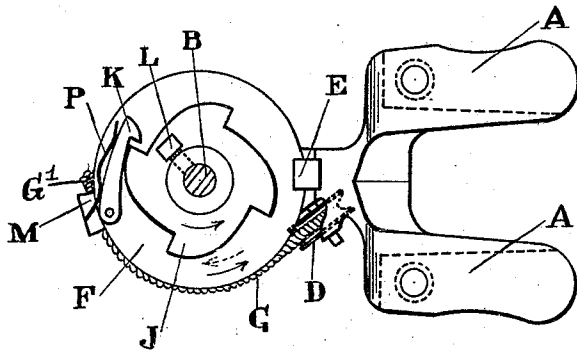


Fig. 4

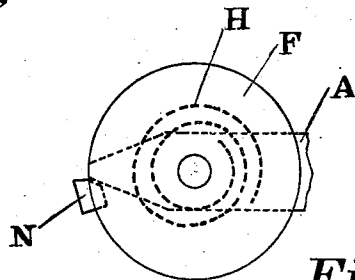


Fig. 5

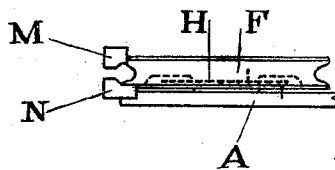


Fig. 6

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UNITED STATES PATENT OFFICE.

THOMAS JOS. BURKE, OF NEW ORLEANS, LOUISIANA.

OPERATING MECHANISM FOR CUT-OFF OR CONTROLLING DEVICES.

No. 929,385.

Specification of Letters Patent.

Patented July 27, 1909.

Application filed September 11, 1908. Serial No. 452,559.

To all whom it may concern:

Be it known that I, THOMAS J. BURKE, a citizen of the United States, residing at New Orleans, in the parish of Orleans and State of Louisiana, have invented new and useful Improvements in Operating Mechanism for Cut-Off or Controlling Devices, of which the following is a specification.

This invention relates to mechanism for operating electric switches, gas cocks and other cut-off or controlling devices, and it has for its object primarily to provide a simple and improved mechanism of this character which is particularly adapted for use in connection with electric switches, gas cocks and other cut-off or controlling devices which cannot be reached conveniently, such for instance as those arranged on a ceiling or wall, the improved mechanism being so constructed that it is capable of being readily applied to any ordinary electric switch, gas cock or other cut-off or controlling device involving a turnable or otherwise movable handle or part, and the improved mechanism is also easily and readily operable.

To these and other ends, the invention consists in certain improvements, and combinations and arrangements of parts, all as will be hereinafter more fully described, the novel features being pointed out particularly in the claims at the end of the specification.

In the drawings: Figure 1 is a side elevation of one form of the mechanism shown applied, as an example, in a vertical position and to an ordinary switch button. Fig. 2 is an elevation of the mechanism as viewed from the right in Fig. 1, and showing the pull cord or analogous device broken away to particularly illustrate the guide sheave. Fig. 3 is an elevation of the mechanism shown applied in horizontal position. Fig. 4 is a plan view of the mechanism as shown arranged by Fig. 1. Fig. 5 is a plan view of the main spring actuated rotatable element and particularly showing the stop lug and the spring in dotted lines. Fig. 6 is an edge elevation of the devices shown by Fig. 5.

Similar characters of reference are employed to indicate corresponding parts in the several views.

The letter A represents a hanger provided with securing arms A¹ at one extremity and an angular extension A² at the opposite extremity, the said extension being

provided with a bearing boss C in which is adjustably fitted a key-turning or button-engaging shaft B having a fork B¹ at one extremity to receive the button or operating part of an electric switch, gas cock or other device. A rib A³ forms a part of the extension A² and serves as a reinforcing or strengthening means for the boss as well as said extension in order to provide a stable support for the operating devices which will be presently explained.

Movably mounted against or adjacent to the extension A² is a rotatable element or switch-shaft-actuating pulley F which carries a pawl K inwardly pressed by a spring P preferably held by a lug M. The rotatable element or pulley F does not complete a full rotation in its operation and moves in one direction against the resistance of a spring H having one terminal engaging the said element and the opposite terminal secured to the extension A², as clearly shown by Figs. 1 and 6, the said spring, when the element or pulley is released, returning the latter to normal position. On the element or pulley F or held against the face thereof opposite that engaged by the spring H is a ratchet wheel J having a central collar J¹ in alinement with the boss C and through which the shaft B extends, the said collar J and its ratchet wheel being fixed to the said shaft by a set-screw L so that as the ratchet wheel J is actuated by the pawl K through the operation of the element or pulley F the shaft B will be rotated to cause the fork B¹ thereof to turn the button or analogous device of the electric switch engaged by said fork.

The lug M is carried by the element or pulley F and in juxtaposition thereto is another lug N, the two lugs being spaced sufficiently to permit a pull-cord G to pass between them over the adjacent portion of the element or pulley F, but acting as an engaging means for the knotted terminal G¹ of the said pull-cord and thereby holding the cord in operative relation to the element or pulley F.

The hanger A is equipped with two devices for guiding the pull-cord G when the mechanism is disposed in different positions or when the hanger is disposed vertically or horizontally. When the bracket is arranged in vertical position, as shown by Figs. 1 and 2, the pull-cord is caused to engage a guide sheave D held in the lower extremity

of the bracket close to the element or pulley F, the said guide sheave being disposed at a slight obliquity with relation to the bracket to accommodate the direction of movement of the pull-cord. A guide lug E also projects from the lower portion of the bracket inwardly over the element or pulley F, and operates to reduce the space between the same and the element or pulley F to such an extent as to prevent the disengagement of the pull-cord from the element or pulley when the bracket is disposed horizontally, as shown by Fig. 3, and under which conditions the pull-cord is disengaged from the guide sheave D, as clearly illustrated by Fig. 3.

The shaft B is adjustable to project the fork B¹ various distances from the element or pulley F and ratchet wheel J to accommodate switches having variations as to projection from a ceiling or wall, such adjustment of the shaft being accomplished through the medium of releasing the set-screw L and afterward securing the latter.

The return or back movement of the element or pulley F is limited by the stop N coming in contact with the free end of the extension A², the said end of the extension being reduced as shown by Fig. 5 and the stop or lug N correspondingly shaped to abut squarely thereagainst. By this means the pawl K is always positioned in coöperative relation to the teeth of the ratchet wheel J, the latter preferably having four teeth as shown by Fig. 4 and the pawl in the return movement of the element or pulley F riding over the surfaces between the teeth and forced inwardly far enough by the spring P to engage successive teeth.

In the operation of the mechanism in either of its positions a movement or reciprocation of the element or pulley F through the downward drawing of the pull-cord G causes the pawl K to engage the adjacent tooth of the ratchet wheel J and pull the latter around and rotate the shaft B, thus turning the button of the switch, the handle or stem of a gas or other cock or the operating part of any other controlling or cut-off device through the medium of the fork B¹, an electric switch being shown in the present instance as an example, in which case the electric switch is operated to disconnect lamps or other electrical devices from their source. A second operation of the mechanism will turn the button or analogous device whereby the flow of electricity or of a fluid, as the case may be, is re-established, and after each operation of the element or pulley F, a release of the pulling strain on the cord G will result in a return of the said element or pulley to normal position and which is due to the expansion of the spring H.

I have shown and described in the present

instance one embodiment of the operating mechanism as applied to an ordinary snap switch having a rotatable button or operating part. It will be understood, however, that I have so shown and described the invention as one example only and that the operating mechanism is independent of the part to be operated, and I contemplate applying the operating mechanism not only to electric switches, but also to gas or other fluid cocks and to cut-off and controlling devices of various kinds, the position of which devices renders them inaccessible for operation conveniently by hand, and it will be found that the operating mechanism is capable of being readily applied and adjusted to such devices with facility.

Having thus described the invention, what is claimed as new, is:

1. Operating mechanism of the class specified, comprising a rotary and longitudinally adjustable shaft having a forked extremity, an oscillating element through which the shaft loosely extends and provided with engaging means which is moved simultaneously therewith, a pull-cord peripherally co-operating with said element, and a device connected to the shaft and structurally independent of the said element and operative by the engaging means to rotate the shaft.

2. Operating mechanism of the class specified, comprising a hanger or bracket, a rotary and longitudinally adjustable shaft loosely movable through a portion of the bracket and having terminal means to engage a part of the device to be operated, an oscillating element supported by a portion of the bracket and also having the shaft loosely extending therethrough, a dog carried by and movable with the said element, a pull-cord peripherally coöperating with the element, and a toothed device fixed to the shaft and operated by the dog to rotate the shaft, the oscillating element being disposed between the toothed device and the portion of the bracket supporting the same.

3. Operating mechanism of the character specified, comprising a hanger, an oscillating pulley carried by a portion of the hanger and having a dog thereon, a rotary and axially adjustable shaft having means at one extremity to relatively coöperate with the device to be operated, the said shaft loosely extending through the pulley and the portion of the hanger supporting the latter, a ratchet wheel secured to the shaft and engaged by said dog, a pull-cord connected to and peripherally engaging the pulley to rotate said pulley in one direction, and means for returning the pulley to normal position when the pull-cord is released.

4. Operating mechanism of the character specified, comprising a hanger adapted to be disposed either in a vertical or horizontal position, an oscillating pulley supported by

a portion of the hanger and carrying a dog, a rotary and axially adjustable shaft loosely extending through the pulley and the portion of the hanger supporting said pulley, the said shaft having a forked extremity, a ratchet wheel secured to the shaft for engagement by said pawl, a pull-cord peripherally engaging and connected to the pulley for actuating the latter and rotating the shaft through the dog and ratchet wheel, and means for guiding the pull-cord in relation to the pulley and carried by the hanger.

5. Operating mechanism for devices of the class specified, comprising a hanger adapted to be disposed either vertically or horizontally and provided with a guide sheave and a guide lug in different positions, an oscillating pulley supported by a portion of the hanger and provided with an actuating spring, a dog mounted on and movable with the pulley, a rotary and axially adjustable shaft loosely extending through the pulley and the portion of the hanger supporting the latter and having engaging means at one extremity, a ratchet wheel secured to the shaft for engagement by the dog, and a pull-cord peripherally engaging and connected to the pulley and also engaging the sheave when the hanger is disposed vertically and separated from the sheave and cooperating with the lug when the hanger is disposed horizontally.

6. Operating mechanism of the class specified, comprising a hanger disposable in either a vertical or horizontal position, an oscillat-

ing spring-actuated pulley supported by a portion of the hanger and provided with a pawl which is movable therewith and also having peripheral lugs with a reduced space between them, a rotary and axially adjustable shaft loosely extending through the pulley and the portion of the hanger supporting the latter, a ratchet wheel secured to the shaft and engaged by said pawl, and pull means peripherally engaging the pulley and terminally held between the said lugs.

7. Operating mechanism of the character described comprising a hanger or bracket disposable in either a vertical or horizontal position, a spring-actuated reversely movable pulley supported by the hanger or bracket and provided with a pawl and opposing lugs, a toothed device arranged close to the pulley, a rotary and adjustable shaft extending through the pulley and toothed device and secured to the latter, and a pull-means connected to the pulley between the lugs, one of the lugs acting as a stop means and engaging a part of the hanger or bracket to prevent the pulley from moving out of operative position when returned to normal position.

In testimony whereof I have hereunto set my hand in presence of two subscribing witnesses:

THOMAS JOS. BURKE.

Witnesses:

FREDK. P. BERMES,
A. J. HARRIS.