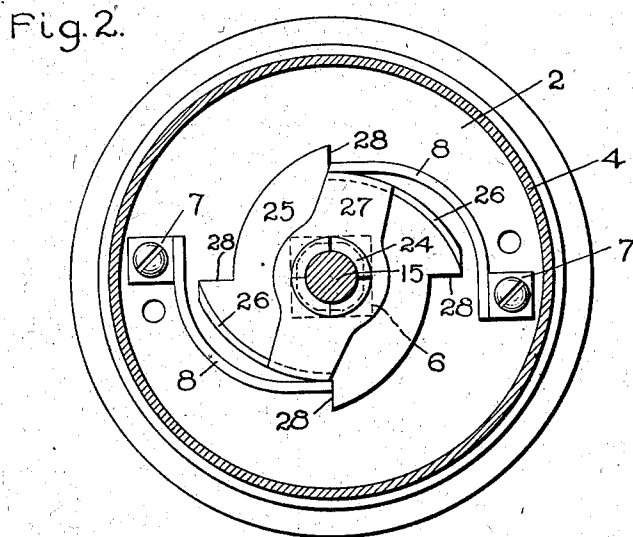
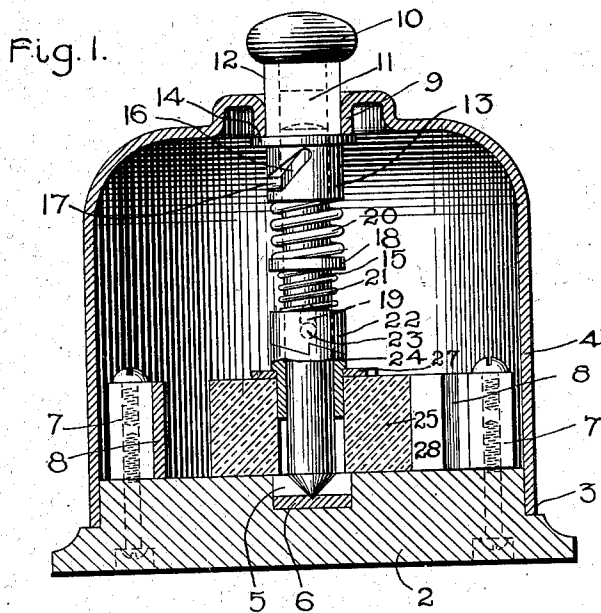


No. 729,772.

PATENTED JUNE 2, 1903.

E. G. KASTENHUBER.
PUSH BUTTON SWITCH.
APPLICATION FILED MAR. 3, 1902.

NO MODEL.



Witnesses.

Ewing R. Roney.
Helen Orford.

Inventor:
Edwin G. Kastenhuber
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Atty.

UNITED STATES PATENT OFFICE.

EDWIN G. KASTENHUBER, OF SCHENECTADY, NEW YORK, ASSIGNOR TO
GENERAL ELECTRIC COMPANY, A CORPORATION OF NEW YORK.

PUSH-BUTTON SWITCH.

SPECIFICATION forming part of Letters Patent No. 729,772, dated June 2, 1903.

Application filed March 3, 1902. Serial No. 96,377. (No model.)

To all whom it may concern:

Be it known that I, EDWIN G. KASTENHUBER, a citizen of the United States, residing at Schenectady, county of Schenectady, State of New York, have invented certain new and useful Improvements in Push-Button Switches, of which the following is a specification.

My invention relates to push-button switches, and has for its object to provide a switch which shall operate with a snap to make and break contact, and at the same time be composed of few and easily-constructed parts.

My invention will be more readily understood by reference to the accompanying drawings, in which—

Figure 1 is a central vertical section of a switch embodying my invention; and Fig. 2 is a horizontal section thereof, taken just above the contact-block.

In the embodiment of my invention shown in the drawings the circular base 2 is of wood, porcelain, or other suitable insulating material, having a peripheral rabbet 3, into which the lower edge of the switch-cap 4 seats. At the center of the base is a recess 5, in which the thrust-block 6 is located. Upon opposite sides of the recess 5 binder-posts 7 are secured by means of screws passing up from the under side of the base and engaging tapped holes in said posts. These posts 7 carry at their upper ends the usual binding-screws, and at one side of each of said posts a contact-strip 8 is welded or soldered. The contact-strips 8 are of spring metal and are bent arch-shaped and have their free ends lying nearer the center of the switch than the ends connected to the binder-posts.

The cap 4 is provided with a square hole at the top, having an inturned flange 9 surrounding it. The push-button 10 is mounted upon a shank 11, having a square section 12 loosely fitting in said hole and a turned cam-sleeve section 13 at the inner end and a shouldered projection 14 between the said sections adapted to engage the under side of the inturned flange 9 and limit the outward travel of the button. The shank 11 is cored out for the reception of the upper end of the actuating-spindle 15, and near its inner end is a cam-

slot 16, in which the pin or roller 17, carried by the spindle, operates. The actuating-spindle 15 has a cone-shaped lower end, which makes pivotal connection with thrust-plate 6 and is provided at a point about half-way of its length with a ring projection 18. At a point some distance below said ring projection the spindle is pierced by an elongated hole 19. Between the lower end of shank 11 and the upper shoulder of the ring projection 18 is a helical spring 20, which operates to force the push-button 10 and its shank 11 outward. Below the ring projection 18 is a second and weaker spring 21, thrusting against a ratchet-ring 22, which surrounds the spindle 15 and carries a pin 23, which is free to move up and down in the elongated hole 19. Beneath the ratchet-ring 22 is a sleeve 24, provided with corresponding ratchet-teeth. Fast upon the sleeve 24 is the contact member, consisting of the block 25, carrying contacts 26, and the bridge 27, connecting the contacts 26. The contact-block is of suitable insulating material and has its edges shaped on four eccentric arcs with offsets 28 connecting them. Two of said arcs are bound by the contacts 26 and the remaining arcs are left naked.

When the push-button 10 is pressed, the spindle 15 is given a quarter-turn by the action of the upper wall of the cam-slot 16 acting upon the pin or roller, and by means of the positive connection of the ratchet members 22 and 24 the contact member is also given a quarter-turn, carrying one pair of eccentric arcs past the ends of the contact-strips and permitting them to snap into engagement with the succeeding pair. When the button 10 is released, the spring 20 forces the button and its shank 11 outward and returns the spindle to its original position by the action of the lower wall of cam-slot 16 upon the pin or roller 17; but the contact member remains stationary, being held by the ends of the contact-strips 8 engaging the offsets 28 and by the slipping of the ratchet-ring 22 relatively to the sleeve 24.

I wish it understood that my invention is not restricted to a two-pole switch nor to a switch employing a contact-block, but that any of the well-known contact devices now

in use are adapted for use in connection with my push-button-actuating means.

What I claim as my invention, and desire to secure by Letters Patent, is—

5 1. In an electric switch, the combination of a rotary contact member, a push-button movable parallel to the axis of the contact member, means to transform the rectilinear motion of the button into rotary motion to
10 move said contact member, and a ratchet to permit a return rectilinear movement of the button without causing a corresponding movement of said contact member.

2. In an electric switch, the combination of
15 a rotary contact member, a push-button, means comprising a pin and cam connection whereby said contact member is moved by the rectilinear movement of said button, and a ratchet to permit the return of said button
20 without causing a return movement of said contact member.

3. In an electric switch, the combination of a spindle, a contact member, a push-button, a pin and cam connection between said but-
25 ton and said spindle, and a ratchet to permit return movement of the button without causing return movement of said contact member.

4. In an electric switch, the combination of a spindle, a contact member loosely mounted
30 thereon, a pin carried by the spindle, a push-button, a cam adapted to engage said pin and to be actuated by said push-button, and a ratchet to permit return movement of said button without causing return movement of
35 said contact member.

5. In an electric switch, the combination of a spindle, a contact member loosely mounted thereon, a pin carried by said spindle, a push-
40 button adapted to move longitudinally upon said spindle, a cam adapted to engage said pin and rotate said spindle and to be actuated by said button, a spring to cause a return movement of said button and cam, and a ratchet to permit such return movement with-
45 out causing a return movement of said contact member.

6. In an electric switch, the combination of a spindle, a contact member loosely mounted thereon, a ratchet connection between said
50 contact member and spindle, a push-button, and means whereby the rectilinear motion of

said button produces rotary movement of said spindle.

7. In an electric switch, the combination of a spindle, a contact member loosely mounted
55 thereon, a ratchet connection between said contact member and spindle, a push-button, a pin on said spindle, a cam mounted on said spindle and adapted to engage said pin, and
60 springs to force said button outwardly and said cam and ratchet away from each other.

8. In an electric switch, the combination of a spindle, a contact member loosely mounted
55 thereon, a ratchet connection between said contact member and spindle, a push-button adapted to slide longitudinally on said spin-
dle, a pin fast to said spindle, a cam-sleeve on said spindle, and springs to force said button and cam-sleeve outwardly.

9. In an electric switch, the combination of
70 a spindle, a contact member loosely mounted thereon, a ratchet connection between said contact member and spindle, a push-button, a pin fixed on said spindle, a sleeve provided
75 with a cam to engage said pin, and means to restrain the said sleeve from rotary movement.

10. In an electric switch, the combination of a spindle, a contact member loosely mounted
80 thereon, a ratchet connecting said contact member and spindle, a push-button, a sleeve on said spindle, a pin and cam connection be-
tween said sleeve and spindle, means to re-
strain said sleeve from rotary movement, and a spring to force said button and sleeve out-
85 wardly.

11. In an electric switch, the combination of a spindle, a contact member provided with ratchet-teeth and loosely mounted on said
spindle, a ratchet-ring adapted to slide longi-
tudinally on said spindle, a push-button, a
90 cam-sleeve adapted to move in a longitudinal direction on said spindle, a pin fixed to said spindle and engaged by said cam, and springs normally operating to force said cam-sleeve
95 and ratchet-ring from each other.

In witness whereof I have hereunto set my hand this 28th day of February, 1902.

EDWIN G. KASTENHUBER.

Witnesses:

BENJAMIN B. HULL,
HELEN ORFORD.