July 15, 1952 J. R. PETREE 2,603,734

SWITCH OPERATING MECHANISM

Filed Feb. 7, 1950 2 SHEETS—SHEET 1

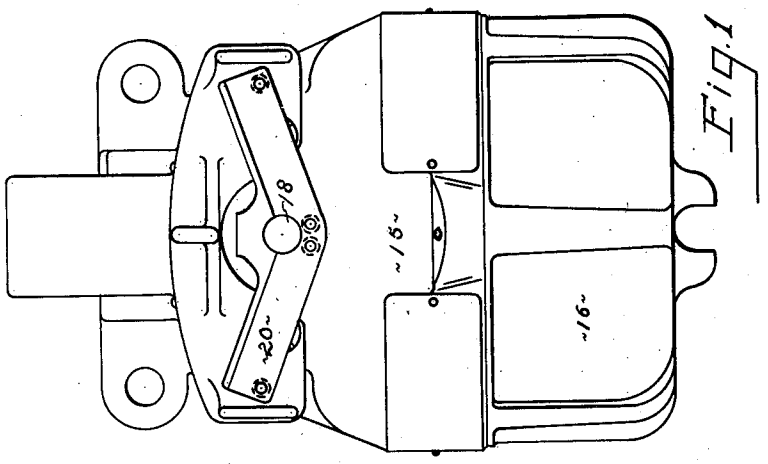

Fig. 1

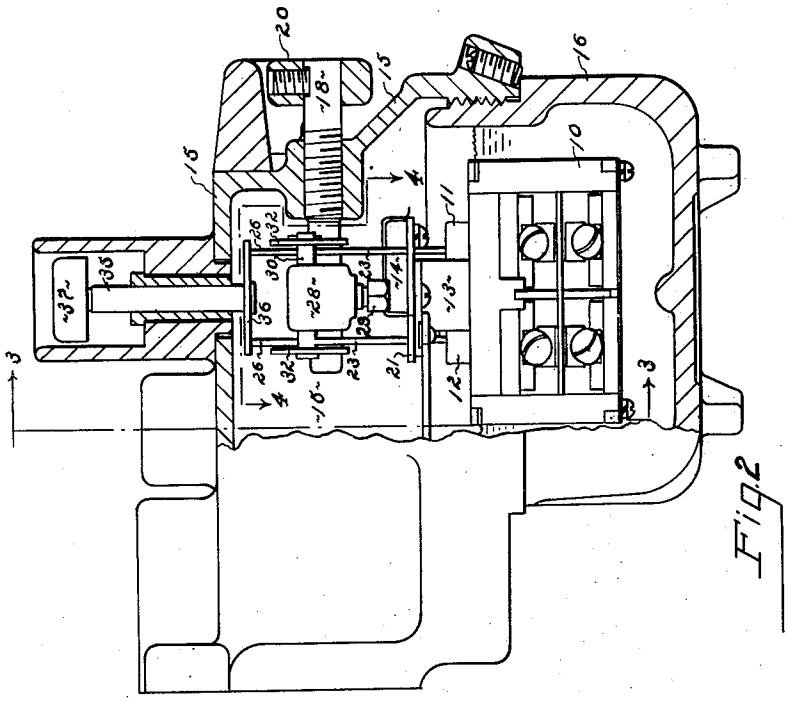

Fig. 2

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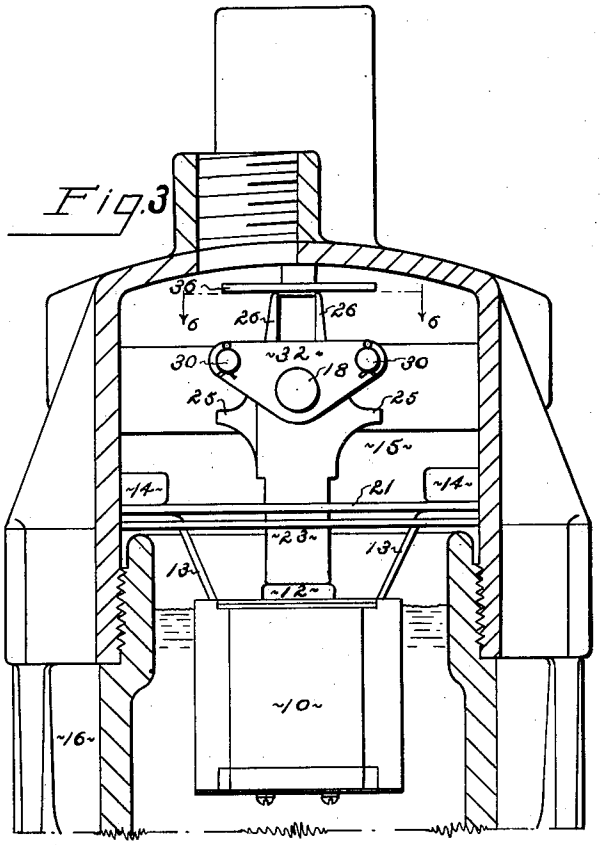
Fig. 3



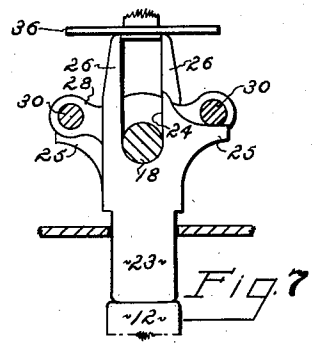


Fig. 7

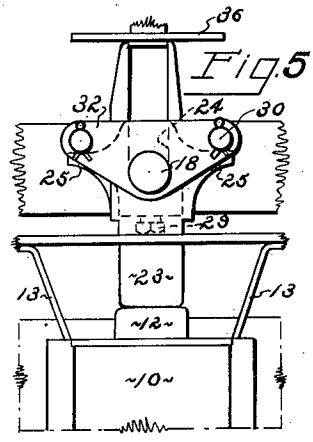


Fig. 5

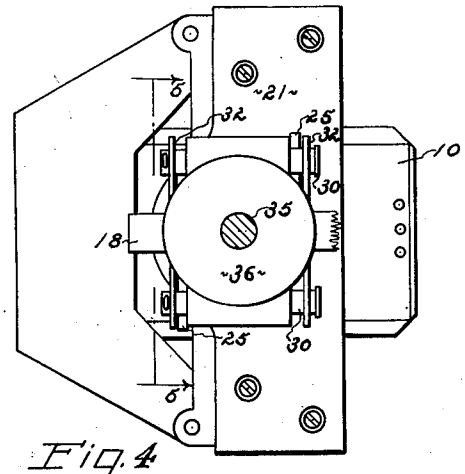


Fig. 4

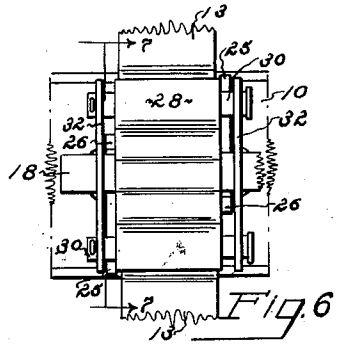


Fig. 6

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UNITED STATES PATENT OFFICE

2,603,734

SWITCH OPERATING MECHANISM

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Application February 7, 1950, Serial No. 142,829

2 Claims. (Cl. 200—172)

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This invention relates to operating mechanism for electrical switches, and more particularly to such a mechanism wherein the switch proper is of the two push button type enclosed in a suitable housing.

The invention has as an object a particularly simple and efficient operating mechanism embodying a structure whereby the push buttons of the switch may be operated alternately, or both buttons may be operated simultaneously.

The invention consists in the novel features in the combinations and constructions hereinafter set forth and claimed.

In describing this invention, reference is had to the accompanying drawings in which like characters designate corresponding parts in all the views.

Figure 1 is a front elevational view of a switch mechanism embodying my invention.

Figure 2 is a side elevational view with a portion of the housing broken away and parts shown in section.

Figure 3 is a view taken on line 3—3, Figure 2, showing both push buttons operated.

Figure 4 is a view taken on line 4—4, Figure 2.

Figure 5 is a fragmentary view taken on line 5—5, Figure 4.

Figure 6 is a view taken on line 6—6, Figure 3.

Figure 7 is a view taken on line 7—7, Figure 6.

10 designates a push button switch having a rectangular body in which a pair of push buttons 11, 12, are mounted for axial movement, the contacts within the body being operated upon inward movement of the push buttons 11, 12. A switch of this type is disclosed in Patent No. 2,113,756, issued to Carl H. Bissell, April 12, 1938. The switch is supported on a bracket 13, the ends of which are secured to bosses 14 extending inwardly from the wall of a housing 15 which is formed with an enlarged opening in the bottom wall closed by a cup-shaped member 16 threaded into the opening, and forming a well which may be filled with oil, or other insulating material to enclose the switch 10.

A rock shaft 18 is journalled in the housing with one end portion extending externally of the housing and provided with an operating handle 20 by means of which the shaft 18 may be rocked or oscillated about its axis. The opposite end of the shaft extends inwardly over the push buttons 11, 12.

A plate 21 is attached to the bosses 14 extending transversely of the housing between the push buttons and the shaft 18, and is slotted to slidably receive button actuating members 23. These

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members are slotted, as at 24, to slidably receive the shaft 18 with the lower ends of the members positioned against the upper ends of the push buttons 11, 12, respectively. Each of the members 23 is formed with a projection 25 extending laterally from the shaft 18, the members being arranged so that the projection 25 on one member extends laterally from one side of the shaft, and the projection 25 of the other member extends from the opposite side of the shaft, and each of the members 23 is formed with an upwardly extending projection 26.

A yoke member 28 is affixed to the shaft, as by means of a set screw 29, and is positioned intermediate the button actuating members 23. The ends of the member 28 are apertured to receive pins 30 extending parallel with the shaft 18 and spaced therefrom so as to engage the projections 25 on the button actuators. A link 32 is mounted upon the shaft 18 and the ends of the pins 30.

With this arrangement, when the shaft 18 is rocked in one direction, one of the pins 30 will engage the projection 25 on one of the button actuators, causing it to move downwardly, thus operating that push button. When the shaft is rotated in the opposite direction, the other pin 30 will engage the projection 25 on the other actuator, thereby operating the other push button. In other words, upon oscillation of the shaft, the push buttons are operated alternately.

A stem or shaft 35 is slidably mounted in the top wall of the housing and is provided at its lower end with a disk 36 arranged to engage the upwardly extending projections 26 of the actuating members 23. The outer end of the stem 35 is provided with a knob 37. Upon inward movement of the stem 35, both of the members 23 are simultaneously moved axially effecting simultaneous operation of both push buttons.

It will be apparent that the mechanism described permits selective operation of the push buttons by the manual 20, or simultaneous operation by the knob 37.

What I claim is:

1. Switch operating mechanism for a two-push button switch mounted in a housing, comprising a shaft journalled in the housing above said push buttons and extending on an axis perpendicular thereto, a button actuator engaging each of said buttons being mounted in the housing for sliding movement parallel to the buttons, a yoke on said shaft cooperable upon oscillation of the shaft to move said actuators alternately to effect operation of said buttons, a stem mounted in the housing for sliding movement parallel to said actu-

ators and buttons and being cooperable upon inward movement to effect sliding movement of both of said actuators simultaneously.

2. Switch operating mechanism for a two-push button switch mounted in a housing, comprising a shaft journalled in the housing above the push buttons, a plate arranged between said shaft and buttons, a pair of button actuators slidably mounted in the plate, like ends of said actuators engaging said buttons respectively, the opposite ends of said actuators being slotted to slidably engage said shaft upon movement axially of said push buttons, and said opposite ends having projections extending above said shaft, one of said actuators having a projection extending laterally from one side of the shaft, and the other actuator having a projection extending laterally from the opposite side of said shaft, a yoke mounted on the shaft and being operable upon oscillation of said shaft to engage the lateral

projections of said actuators alternately to effect axial movement of said push buttons, a stem slidably mounted in the housing and being operable upon axial movement to effect movement of said actuators simultaneously into engagement with said push buttons.

JAY R. PETREE.

REFERENCES CITED

The following references are of record in the file of this patent:

UNITED STATES PATENTS

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