Jan. 8, 1929. 1,697,980

C. R. KRONE

SWITCH

Filed Aug. 23, 1926

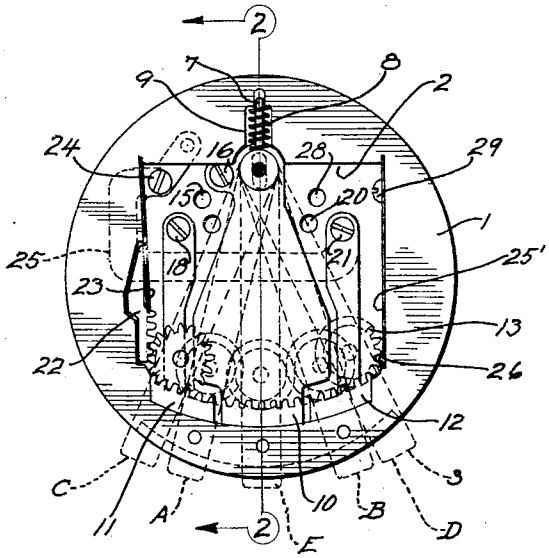


Fig. 1.

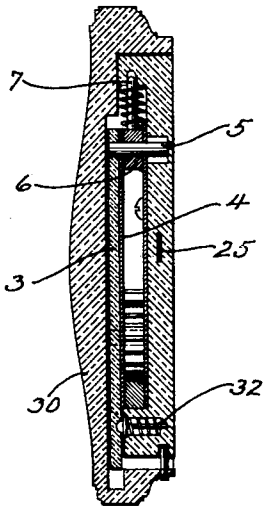


Fig. 2.

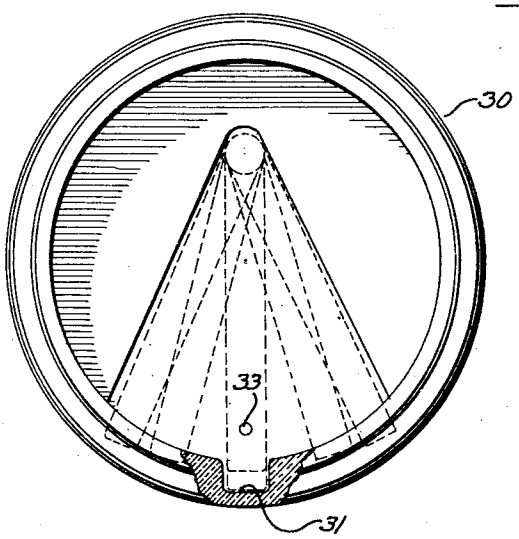


Fig. 3.

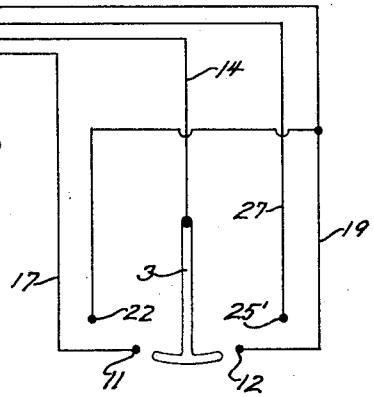


Fig. 4.

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UNITED STATES PATENT OFFICE.

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SWITCH.

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My invention relates to improvements in switches and it consists in the combinations, constructions and arrangements hereinafter described and claimed.

An object of my invention is to provide a switch which is adapted to close a number of different circuits, the operating member of the switch preferably being made circular in shape so that the same may be swung into various positions without arousing suspicion.

A further object of my invention is to provide a device of the type described in which certain of the contact terminals are the means for locking the movable contact terminal thereto.

A further object of my invention is to provide a device of the type described which is extremely simple in construction, and which is especially constructed for use in banks where it is necessary to employ a switch which can close a burglar alarm circuit without arousing suspicion.

Other objects and advantages will appear in the following specification, and the novel features of the invention will be particularly pointed out in the appended claims.

My invention is illustrated in the accompanying drawing forming a part of this application in which—

Figure 1 is a plan view of the device with the cover removed,

Figure 2 is a section along the line 2—2 of Figure 1,

Figure 3 is a plan view of the inside of the cover, and

Figure 4 is a wiring diagram.

In carrying out my invention I provide a switch casing 1, preferably made from an insulating material. This casing has a recess 2 therein in which the stationary contact and the movable contact are disposed.

The movable contact comprises an arm 3, preferably made of insulating material and reinforced by a conducting member 4. The arm 3 is pivotally mounted upon a pin 5, and the pin in turn is journaled in a bearing 6. The bearing 6 carries an integral pin 7, around which a spring 8 is disposed. The pin 7 and the spring 8 are mounted in a recess 9, and the spring bears against one wall of the recess for forcing the movable contact member 3 into engagement with the stationary contact now to be described.

In the recess 2 I dispose arcuate-shaped segments 10, 11 and 12, these segments having teeth on their inner edges. A pinion 13 is carried by the arm 3, and is adapted to contact with the segments 10, 11 and 12. Movement of the arm 3 into any one of the dotted line positions shown in Figure 1 will cause the pinion 13 to rotate upon the segments.

A wire 14, (see Figure 4), leading from a source of current, is adapted to be passed through an opening 15 in the casing 1, (see Figure 1), and to be secured to a terminal 16, this terminal being in electrical connection with the arm 3. When the arm 3 is swung to the left into the position A, it connects between the wire 14 and a wire 17 which is connected to the terminal 18, the terminal in turn being in electrical connection with the segment 11. When the arm 3 is swung to the right into the position B, it will close a circuit between the wire 14 and a wire 19, this wire being passed through an opening 20 in the casing 1 and being secured to a terminal 21, the terminal in turn being in electrical connection with the segment 12. If desired, the wire 17 may be connected to a battery of lights, and the wire 19 connected to a second battery of lights.

Figure 1 clearly shows how the arm 3 may be swung into the position C and D if desired. When the arm is in the position C, the pinion 13 contacts with the segment 11 and with another segment 22. The segment 22 is carried by a spring 23 and is so positioned with respect to the segment 11, that the teeth of the segment 22 will engage with the teeth of the pinion 13 to lock the pinion 13 against accidental movement. It will be noted from Figure 1 that the spring 8 exerts a force against the pinion 13 to keep the same in contact with the segment 11, while the spring 23 exerts a force to keep the segment 22 in contact with the pinion 13 when the arm 3 is moved into the position C. A movement of the arm 3 away from the segment 22 will cause the pinion 13 to move in a clockwise direction, and this movement is temporarily prevented by means of the segment 22 engaging with the pinion. It is in this way that the arm 3 is locked in the position C.

In Figures 1 and 4 I further show how the spring 23 is connected to a terminal 24 and how the terminal 24 is connected to the terminal 21 by means of a conducting strip 25. The strip 25 is imbedded in the casing 1 as shown in Figure 2. When, therefore, the arm 3 is swung into the position C, current

will flow in through the wire 14 and out through both of the wires 17 and 19. When the arm 3 is swung into the position D, the pinion 13 will contact with the segment 12 and with a spring terminal 25′. The terminal 25′ has a tooth-shaped end 26 for locking the pinion 13 against movement in the same manner as the segment 22. A wire 27 is passed through an opening 28 in the casing 1 and is connected to a binding post 29 carried by the terminal 25′. The wire 27 is connected to a burglar alarm system.

A cover 30 for the casing 1 is provided, and this cover has a recess 31 therein for receiving the free end of the arm 3. It will be seen from this construction that when the cover 30 is rotated upon the casing 1, the arm 3 will be swung into its various positions without the cover disclosing what position the arm 3 is in. If desired, a spring pressed lock pin 32 may be provided for neutral position E, and positions A and B. The arm 3 is provided with a recess 33 for yieldingly receiving the pins 32. With this construction the operator knows when the arm 3 is in any one of the positions A, B, or E.

From the foregoing description of the various parts of the device, the operation thereof may be readily understood.

When the arm 3 is in the position E, the switch is opened. I have already described how the switch closes one circuit when in the position A and closes a second circuit when in the position B. I have further described how the switch when in the position C connects the circuits A and B together.

It should be noted at this point that when the arm 3 is swung from the position B into the position D, the circuit B will not be affected and, therefore, an intruder will not be warned that the burglar alarm has been sounded. This is in the event that the alarm is sounded at a police station and not in the building itself. If desired, the cover 30 may be provided with a mirror in order to camouflage the switch.

I claim:—

1. A switch comprising a casing, terminals carried by said casing, a switch arm, rotatable means on said switch arm to be movable into contact with said terminals, means for yieldingly holding said switch arm in contact with said terminals, and auxiliary spring pressed terminals for locking said rotatable means against rotation when said switch has been moved into operative engagement therewith.

2. A switch comprising a casing, contacts carried by said casing, and being each electrically connected to a different circuit, and an auxiliary contact for electrically connecting both of said first named contacts together, and a switch for closing said contacts for simultaneously completing the electric circuits, said auxiliary contact locking said switch member against accidental movement.

3. A switch comprising a casing, contacts carried by said casing, a cover rotatable on the casing, a switch arm pivoted in said casing and movable with the cover, means rotatably secured to said arm and adapted to engage said contacts, and means attached to said contacts to lock said rotatable means against accidental movement.

4. A switch comprising a casing, contacts having gear teeth thereon secured to the casing, a cover rotatable on the casing, a switch arm pivoted in said casing and rotatable with said cover, a pinion rotatably secured to the end of said switch arm, and adapted to be in mesh with the gear teeth on said contacts, and to travel thereon, and means on the contacts to lock said pinion against accidental movement on said gear teeth.

In testimony whereof I affix my signature.

CARL RUDOLPH KRONE.