Oct. 24, 1933. J. F. MORAN 1,932,352

FLASH LIGHT SWITCH

Filed March 6, 1931

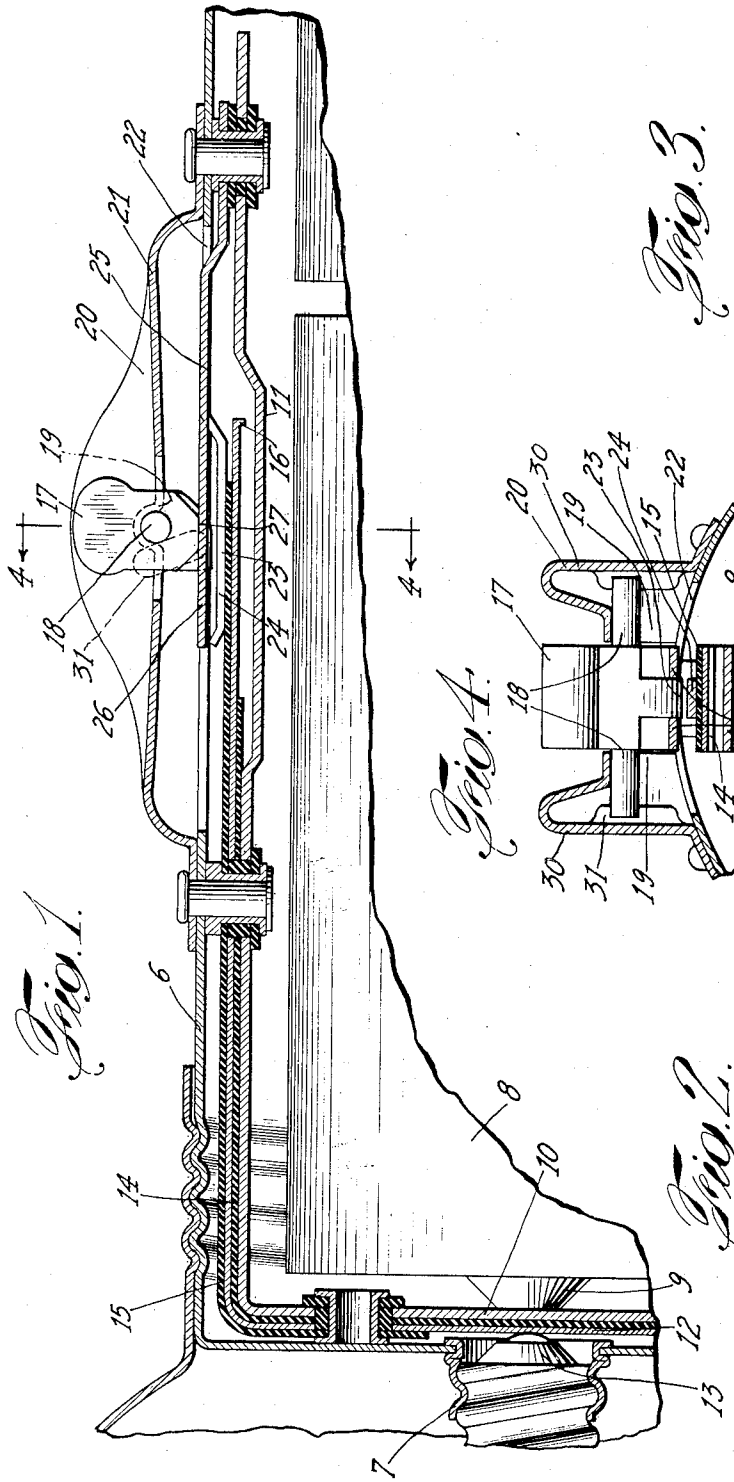


Fig. 1.

Fig. 4.

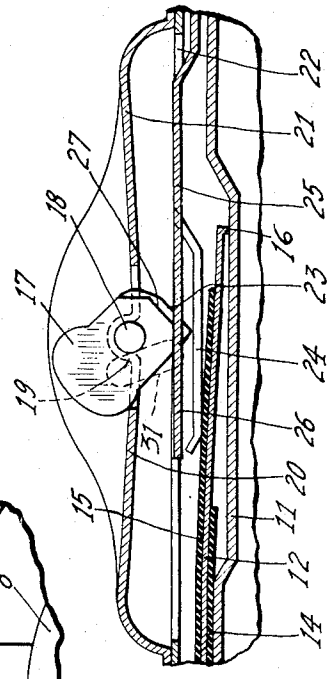


Fig. 3.

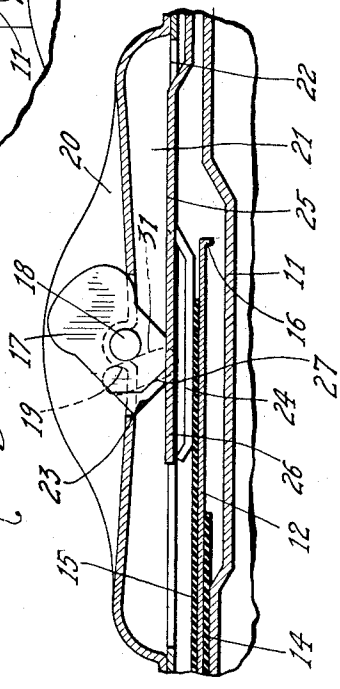


Fig. 2.

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Patented Oct. 24, 1933

1,932,352

UNITED STATES PATENT OFFICE

1,932,352

FLASHLIGHT SWITCH

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Application March 6, 1931. Serial No. 520,546

6 Claims. (Cl. 200—60)

This invention relates to flashlights and more particularly to a current controlling switch especially adapted for flashlight use.

An object of this invention is to provide an improved form of three-position switch for flashlight use of such construction that when in one position the lamp circuit is open and the switch held against accidental movement, when in another position the lamp circuit is closed, while in a third position the switch can be operated as a push button in the well known way.

This and other objects which will be apparent to those skilled in this particular art are accomplished by means of the invention illustrated in the accompanying drawing in which,

Fig. 1 is a transverse sectional view through a part of the flashlight casing showing a switch constructed in accordance with one embodiment of this invention;

Figs. 2 and 3 are similar views showing different positions of the switch operating member; and

Fig. 4 is a transverse sectional view on the line 4—4 of Fig. 1.

As illustrated, the present invention provides a flashlight switch having an operating member rotatable to any of three separate positions. When in one extreme position the switch is inoperative and the lamp circuit is open, when in the other extreme position the switch is operative, the light circuit is maintained closed without requiring any pressure on the switch by the operator, while in an intermediate position the operating member can be operated as a push button in the usual way.

In the drawing, the invention is shown applied to a flashlight having a casing 6 provided with a lamp socket 7 mounted on one end thereof and adapted to contain the usual batteries 8, one terminal of which is connected directly to the casing. The other battery terminal 9 engages a conductor strip 10 secured along the inside of the casing and provided with an offset portion 11. A conductor strip 12 engages the base 13 of the lamp mounted in the socket, and a strip 14 of insulating material separates the two conductor strips, the insulation terminating short of the end of the conductor strip 12 so that the two strips have uninsulated portions adjacent to but spaced slightly from each other. A second insulating strip 15 is interposed between the conductor strip 12 and the casing. A lip 16 is formed on the end of the conductor strip 12 adjacent the offset portion 11 of the battery engaging strip and it will be apparent that a slight movement of the former will cause the two strips to engage and close the circuit between the lamp base 13 and the battery terminal 9.

The mechanism for controlling the lamp circuit includes a thumb member 17 having arms 18 positioned in slots 19 formed in the spaced re-entrant walls 20 of a cupped supporting or guard member 21 secured to the casing 6 over an opening 22 formed therein above the uninsulated portions of the conductor strips. The thumb member 17 has a nose 23 positioned above the center depressed portion 24 of a spring plate 25 having bifurcated arms 26 co-operating with laterally spaced cam shaped shoulders or operating engaging surfaces 27 formed on the thumb member at each side of the nose 23. The shoulders are angularly arranged for holding the thumb member yieldingly in any of the three positions which it is adapted to assume. The central depressed portion 24 of the spring plate 25 engages the insulating strip 15 for pressing the conductor strip 12 into engagement with the offset portion of strip 10 when the spring plate 25 is depressed by the thumb member 17.

In each outer wall 30 of the supporting member is an elongated indentation or nib 31 engaging the side face of the associated pin 18 and so positioned as to extend across the path of movement of the thumb member and pins when such member is in safety or open circuit position, see Fig. 1, to prevent accidental operation of the switch or closing of the lamp circuit.

It will be apparent that the thumb member 17 can be swung about the axis of the pins 18 by the thumb of the operator so that it will assume the safety or inoperative position indicated in Fig. 2 in which the spring plate 25 and central portion 24 are raised and the lip 16 of the contact strip 12 is spaced from the offset portion 11 of the battery engaging contact strip 10. The nibs 31 prevent accidental operation of the switch when in this position. The thumb member can be rotated to the position indicated in Fig. 3 in which the spring plate is depressed and the center portion 24 has pressed the conductor 12 downwardly and caused the lip 16 to engage the conductor strip 10, thus closing the lamp circuit. The arms 26 of the spring plate 25 co-operates with the angular surfaces 27 on the operating member to yieldingly hold it in either of the two extreme positions shown in Figs. 2 and 3. When it is desired to operate the switch in the manner usual with flashlights, as a push button, the thumb member is moved to the intermediate position illustrated in Fig. 1 in which the spring plate 25

normally forces the member upwardly with the pins 18 in the upper ends of the associated slots 19, in which position the conductor strips are not in contact. Obviously, the conductor strips can then be moved into contact to close the circuit merely by pressing the member downwardly in the slots 19 in the manner of a push button and that as soon as the member is released the spring plate will return it to the position indicated and separate the conductor strips.

The member 17 can be instantly shifted to place it in the desired position and the arms 26 of the spring plate co-operates with the holding surfaces 27 to yieldingly hold it in whatever position it is placed.

I claim as my invention:—

1. A switch mechanism for flashlights comprising a pair of conductors, means including a rotatable thumb member for moving one of said conductors into engagement with the other, a slotted support for said member, pins on said member positioned in the slots of said support, means for holding said member in place to permit rotation of said member about said pins to operative position in which said conductors are in contact, or to inoperative position in which said conductors are separated, or to a neutral position in which said conductors are normally separated, and for supporting said member in neutral position for movement longitudinally in said slots as a push button for moving said conductors into engagement.

2. A switch mechanism for flashlights comprising a pair of conductors, means including a rotatable thumb member for moving one of said conductors into engagement with the other, said member having shoulders formed thereon, a slotted support for said member, pins on said member positioned in the slots of said support, spring means for yieldingly engaging said shoulders for holding said member in place to permit rotation of said member about said pins to operative position in which said conductors are in contact, or to inoperative position in which said conductors are separated, or to a neutral position in which said conductors are normally separated, and for supporting said member in neutral position for movement longitudinally in said slots as a push button for moving said conductors into engagement.

3. A switch mechanism for flashlights comprising a pair of conductors, means including a rotatable thumb member for moving one of said conductors into engagement with the other, said member having shoulders formed thereon, a slotted support for said member, pins on said member positioned in the slots of said support, spring means for yieldingly engaging said shoulders for holding said member in place to permit rotation of said member about said pins to operative position in which said conductors are in contact, or to inoperative position in which said conductors are separated, or to a neutral position in which said conductors are normally separated, and for supporting said member in neutral position for movement longitudinally in said slots as a push button for moving said conductors into engagement and means for locking said member against operation as a push button when in inoperative position.

4. A switch mechanism for flashlights comprising separate conductors, a switch for connecting said conductors including a rotatably mounted thumb member, means for supporting said member for rotation to inoperative position in which said conductors are disconnected, to operative position in which said member holds said conductors in contact, or to a neutral position in which said conductors are normally separated, and for supporting said member for sliding movement as a push button in neutral position to press said conductors together.

5. A switch comprising a movable contact and a push button, said push button being slidable to depress said movable contact, and rotatable, around an axis crossing the line in which the push button is slidable, to a position to hold said contact in depressed position.

6. A switch comprising a movable contact and a push button, said push button being slidable to depress said movable contact, and rotatable, around an axis crossing the line in which the push button is slidable, to a position to hold said contact in depressed position, and resilient means normally reacting on said push button to return it in its sliding movement to initial position when pressure of the finger thereon is released.

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