July 7, 1942. W. R. KOPP 2,288,808

HAND LAMP SWITCH

Filed Nov. 7, 1940

Fig. 1,

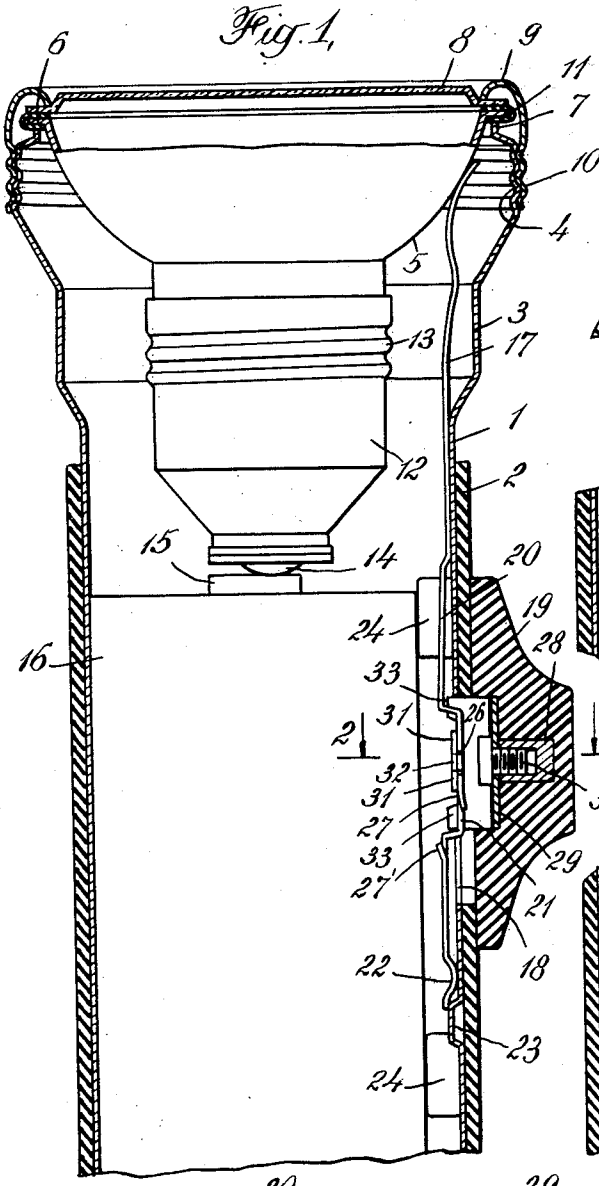


Fig. 2

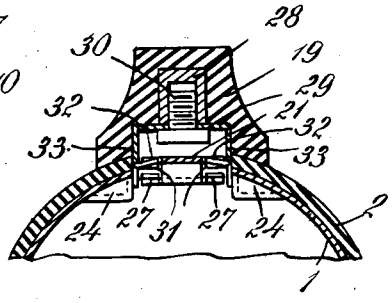


Fig. 3,

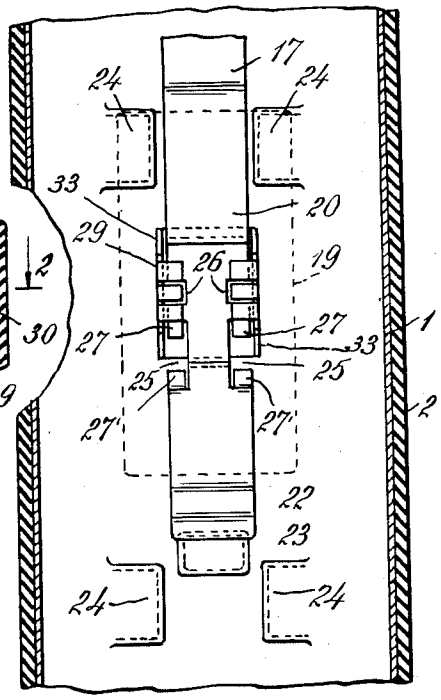


Fig. 4,

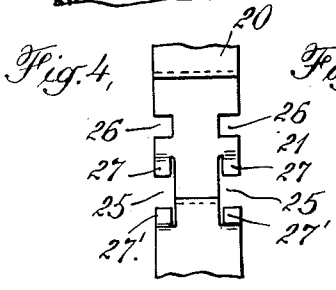
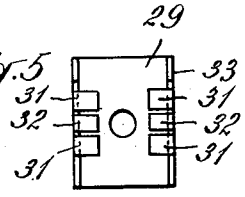


Fig. 5



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HAND LAMP SWITCH

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6 Claims. (Cl. 200—60)

This invention relates to hand lamp switches, and more particularly to a hand lamp switch that can be readily disassembled.

Hand lamp switches generally consist of a contact strip on the inside of the casing and a slide arranged on the outside of the casing. The slide extends through an opening in the casing and is permanently connected to the contact strip. As a result the switch cannot be disassembled and any injury to it or its component parts prevents further use of the hand lamp.

Frequently the contact strip becomes eroded by material escaping from the cells of the battery when used cells are not promptly removed from the casing. In other instances the switch slide projecting from the side of the casing is broken due to rough handling and the lamp becomes useless.

In the present invention I provide a take-down switch which may be readily assembled or disassembled to permit replacement of a damaged part. In constructing the switch I provide an opening in the casing and I further provide a contact strip having an offset portion arranged opposite the opening which is provided with means for interlocking engagement with the switch slide arranged on the exterior of the casing. The contact strip is so shaped that pressure on a portion of it will permit the switch slide member to be separated from the contact strip and the switch assembly thus disassembled.

In the accompanying drawing I have shown one embodiment of the invention. In this showing:

Fig. 1 is a vertical, sectional view of a portion of a hand lamp showing the invention applied;

Fig. 2 is a transverse, sectional view on line 2—2 of Fig. 1;

Fig. 3 is a detailed view of a portion of the interior of the hand lamp casing showing the invention applied;

Fig. 4 is an elevation of a portion of the contact strip; and

Fig. 5 is a similar view of a lock or engaging member which is carried by the switch slide.

Referring to the drawing the reference numeral 1 designates a hand lamp casing formed of metal, such as brass, or other suitable conducting material and provided with a fiber covering 2 throughout a portion of its length. The upper end of the casing may be flared as at 3 and is provided with an externally threaded portion 4. A reflector 5 preferably formed of metal is arranged within the casing and this reflector is provided with a flange 6 adapted to rest upon an inwardly extending portion 7 of the end of the casing beyond the threaded portion 4. A lens 8 is arranged over the reflector and the lens and reflector are retained in position by an end ring 9 which is provided with an internally threaded flange 10 which engages the threads 4 on the end of the casing. The reflector is insulated from the casing by a gasket 11 of rubber or other suitable insulating material which surrounds the flange 6. A lamp bulb (not shown) preferably of the prefocused type, is retained therein by a lamp holder 12 which has a threaded connection, as indicated at 13, with a cylindrical extension on the base of the reflector. This lamp holder is provided with a contact member 14 which is adapted to contact with the central terminal 15 of the upper cell 16 of the battery arranged within the casing.

The parts heretofore described are of conventional construction and are for the purpose of illustration only. The take-down switch forming the subject matter of the present invention includes a contact strip 17 which, when in closed position as illustrated in Fig. 1 of the drawing, engages the exterior of the reflector. As is well known to those skilled in the art, the contact strip is adapted to be moved downwardly to break the connection between it and the reflector and thus open the circuit when desired. The casing is provided with an opening 18 and a switch slide 19 is arranged on the exterior of the casing over this opening and is provided with an engaging member extending through the opening and connecting it to the contact strip 17.

To permit disassembly of the contact strip 17 and the slide 19 so that the parts can be removed, I provide a contact strip having a portion above the opening 18 which is offset as indicated at 20 and which in normal position is slightly spaced from the interior of the casing as illustrated in Fig. 1. Beyond this portion of the contact strip I provide a portion 21 offset in the opposite direction. This portion of the contact strip forms the interlocking portion which engages the switch slide engaging member and is normally positioned just within the opening 18 as shown. Beyond the interlocking portion of the contact strip and adjacent its end I provide a bulge 22 which is adapted to engage a boss 23 on the interior of the casing to retain the offset portion 21 under proper tension. The interior of the casing may be provided with pairs of bosses 24 above and below the opening 18 and arranged on each side of the contact strip to form a guide-way for the contact strip as shown in Fig. 3.

Referring to Fig. 4 of the drawing the interlocking portion 21 of the contact strip is provided

with a pair of spaced cut-out portions 25 and 26 on each side and between these cut-out portions the material of the contact strip is bent outwardly as at 27 to form a pair of outwardly extending ramps. A pair of inwardly extending ramps 27' are arranged at the outer ends of the cut-out portions 25.

Referring to Fig. 2 of the drawing the switch slide 19 may be formed of a molded material or in any other suitable manner and is recessed to receive a bushing 28, the slide preferably being molded around the bushing. An engaging member 29 is secured in the recess in the slide by means of a lock screw 30 which passes through an opening in the engaging member and is received in the bushing 28. The engaging member is substantially U-shaped in cross section as shown and intermediate its ends the sides are extended inwardly as at 31. As shown in Fig. 5 the intermediate portions of the inwardly extending portions 31 are further depressed as at 32 and these depressed portions 32 are received in the notches or cut-out portions 26 of the contact strip when the parts are assembled. The ends 33 of the sides of the engaging member extend inwardly beyond the offset intermediate portion 31, as shown in Fig. 1 and thus engage the ends of the opening 18 when the switch slide 19 is moved, in normal operation to prevent accidental removal of the switch slide and accidental separation of the switch slide and the contact strip.

The operation of the device will be apparent from the foregoing description. To assemble the switch, the ring or end cap 9 is unscrewed and the reflector and bulb removed from the casing. The contact strip is placed in position within the casing and by pressing the offset portion 20 toward the side wall of the casing the interlocking portion 21 is forced outwardly through the opening 18. The engaging member 29 is then entered into the rear end of the opening 18 in the casing and slid forward under the offset portion 21. The ramps 27 and 27' guide the offset intermediate portion 31 of the engaging member into position on the inner side of the contact strip and the depressions 32 enter the notch or cut-out portions 26 of the contact strip to hold the parts assembled. When pressure is released from the offset portion 20 of the contact strip, the parts assume the position shown in Fig. 1 and the switch slide may then be moved over the opening 18 from the on to the off position, the depending ends 33 of the engaging member preventing the parts from becoming accidentally disassembled. To disassemble the switch mechanism the switch slide 19 is moved to the forward end of the opening 18 as shown in Fig. 1 and pressure exerted on the offset portion 20 of the contact strip. This moves the interlocking portion 21 of the contact strip further into the opening 18 disengaging the depressions 32 of the engaging member 29 from the cut-out portions 26 of the contact strip so that when the slide 19 is moved rearwardly with the parts in this position the ramps 27 guide the interlocking portion 31 of the engaging member outwardly and permit removal of the switch slide. The engaging member is made reversible so that it can be assembled with either of the ends of the offset intermediate portions 31 toward the head of the lamp.

I claim:

1. In combination with a hand lamp casing having an opening therein, a take-down switch comprising a contact strip arranged in the casing and having an offset interlocking portion normally disposed in the opening in the casing, a switch slide arranged on the exterior of the casing, and an engaging member carried by the slide and engaging the interlocking portion of the contact strip, the contact strip having an offset portion adjacent the interlocking portion which is normally spaced from the interior of the casing to permit displacement of the interlocking portion outwardly through the opening for removal of the switch slide.

2. In combination with a hand lamp casing having an opening therein, a take-down switch comprising a contact strip arranged in the casing and having an offset interlocking portion normally disposed in the opening in the casing, the interlocking portion being provided with a cut-out portion at each side, a switch slide arranged on the exterior of the casing, and an engaging member carried by the slide and entering said cut-out portions to secure the switch slide to the contact strip, the contact strip having an offset portion adjacent the interlocking portion which is normally spaced from the interior of the casing to permit displacement of the interlocking portion outwardly through the opening for removal of the switch slide.

3. In combination with a hand lamp casing having an opening therein, a take-down switch comprising a contact strip arranged in the casing and having an offset interlocking portion normally disposed in the opening in the casing, the interlocking portion being provided with a cut-out portion at each side, a switch slide arranged on the exterior of the casing, and an engaging member carried by the slide, the engaging member having a pair of lateral extensions which enter the cut-out portions of the interlocking portion of the contact strip and assume a position on the inner side of the contact strip to secure the contact strip to the switch slide, the contact strip having an offset portion adjacent the interlocking portion which is normally spaced from the interior of the casing to permit displacement of the interlocking portion outwardly through the opening for removal of the switch slide.

4. In combination with a hand lamp casing having an opening therein, a take-down switch comprising a contact strip arranged in the casing and having an offset interlocking portion normally disposed in the opening in the casing, the interlocking portion being provided with a cut-out portion at each side, and being further provided with ramps adjacent said cut-out portions, a switch slide arranged on the exterior of the casing, and an engaging member carried by the slide and having a pair of lateral extensions adapted to enter said cut-out portions and to be guided by said ramps to a position on the inner side of the contact strip, the contact strip having an offset portion adjacent the interlocking portion which is normally spaced from the interior of the casing to permit displacement of the interlocking portion outwardly through the opening for removal of the switch slide.

5. In combination with a hand lamp casing having an opening therein, a take-down switch comprising a contact strip arranged in the casing and having an offset interlocking portion normally disposed in the opening in the casing, the interlocking portion being provided with a cut-out portion at each side adjacent its rear

end, and with a second cut-out portion at each side intermediate its ends, the interlocking portion being further provided with ramps adjacent said first mentioned cut-out portions, a switch slide arranged on the exterior of the casing, and an engaging member carried by the slide, the engaging member having a pair of lateral extensions and having indentations formed on said lateral extensions, the lateral extensions being adapted to enter the first mentioned cut-out portions of the contact strip and assume a position on the inner side of the contact strip with the indentations arranged in the second set of cut-out portions, the contact strip having an offset portion adjacent the interlocking portion which is normally spaced from the interior of the casing to permit displacement of the interlocking portion outwardly through the opening for removal of the switch slide.

6. In combination with a hand lamp casing having an opening therein, a take-down switch comprising a contact strip arranged in the casing and having an offset interlocking portion normally disposed in the opening in the casing, the interlocking portion being provided with a cut-out portion at each side, a switch slide arranged on the exterior of the casing, and an engaging member carried by the slide and entering said cut-out portions to secure the switch slide to the contact strip, the contact strip being displaceable to permit movement of the interlocking portion outwardly through the opening for removal of the switch slide.

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