July 3, 1945. S. D. SULLAM 2,379,603

ELECTRIC BATTERY TORCH LAMP AND THE LIKE

Filed June 29, 1943

Fig. 1

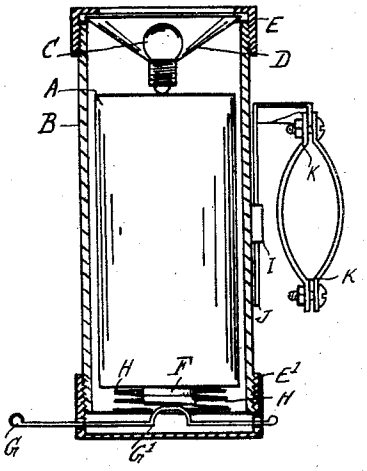


Fig. 2

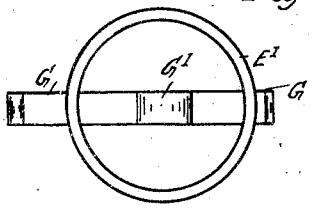
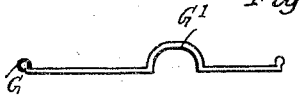


Fig. 3



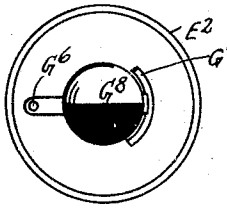


Fig. 10

Fig. 4

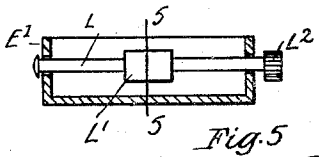


Fig. 5



Fig. 6

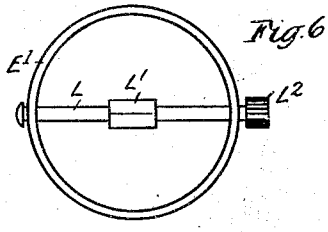


Fig. 7

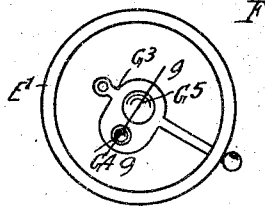




Fig. 8

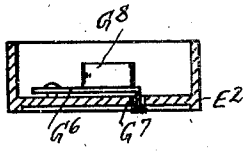


Fig. 9

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ELECTRIC BATTERY TORCH LAMP AND THE LIKE

Samuel Daniel Sullam, London, England

Application June 29, 1943, Serial No. 492,760
In Great Britain January 18, 1943

1 Claim. (Cl. 240—10.68)

This invention relates to electric battery torch lamps and the like primarily, although not solely, intended for use as a rear lamp for bicycles and like purposes, its object being to provide an improved construction with switch mechanism which can be cheaply and rapidly manufactured.

A primary feature of the present invention is to provide a construction which will avoid the tendency of the positive pole of the battery from coming out of contact with the centre contact of the bulb which often occurs through vibration whilst in addition the present construction eliminates the need of insulating washers which are a source of annoyance because they become lost or damaged.

To carry the invention into effect the battery is inverted in the torch casing that is to say the zinc body of the battery is caused to bear against the centre contact of the lamp whilst the carbon anode contacts with switch mechanism in the closing cap of the torch casing, replacing the usual sliding system in the side of the torch casing. Due to the enlarged surface of the zinc, there is no tendency whatsoever and no risk of a break in circuit between the centre contact of the bulb and its seat against the zinc.

The switch mechanism may be formed in several simple ways. For instance the closing cap for the end of the torch remote from the bulb, may be provided with diametral perforations or slots through which can pass an arm, blade or the like having a protuberance, contact or the like on its surface which can be brought into contact with the anode of the battery by being slid in one direction to close the circuit to the bulb, whilst movement in the opposite direction interrupts the circuit. The arm or blade may consist simply of a flat strip of metal which, appropriately, along its length is bent into an inverted U which can be made to engage or not with the anode. The movement of the arm or blade can be limited by end stops or otherwise.

The battery is, if desired, pressed against the bulb by a spring or otherwise.

In an alternative construction the switch may be in the form of a rotatable rod having a contact on one half of its circumference and an insulating portion at the other whereby the spring supporting the battery can be eliminated. The rod can be rotated by an external head.

In still another construction the switch consists of a pivoted arm carrying a contact, part of which is insulated and part metal, or two separate contacts could be so mounted. These contacts could furthermore be spring-pressed to always ensure contact with the anode.

A similar arrangement could be provided wherein the switch arm passes down through a slot in the bottom of casing cap instead of through a side aperture.

The invention will be shown by way of simple application in the accompanying drawing, in which:

Figure 1 is a vertical section of a complete torch; Fig. 2 is a plan of the lower closing cap with the switch mechanism; Fig. 3 is an edge view of the switch arm shown in Figs. 1 and 2; Fig. 4 shows a vertical section of a rotary switch; Fig. 5 is a section on line 5—5 of Fig. 4; Fig. 6 is a plan view of Fig. 4; Fig. 7 shows a pivoted type of switch arm; Fig. 8 shows a section on line 9—9 of Fig. 8; Fig. 9 shows a vertical section of another type of pivoted switch and Fig. 10 is a corresponding plan view.

As will be seen from Fig. 1 of the drawing, the battery A, contrary to usual practice, is inverted in the casing B (which is made of metal) so that the zinc is in contact with the centre contact of the bulb C carried in the usual reflector D, held in place by the screw cap E although it is possible to make the cap E a fixture and simply push in the reflector and its bulb from the other end of the casing.

The carbon anode F rests in contact with a switch mechanism G carried in the bottom cap E^1 which is transversely slotted as shown for the passage of the switch arm or blade, so that movement in one direction will bring the contact G^1 into contact with the anode F to complete the circuit and illuminate the bulb or out of contact therewith as desired. The battery is advantageously pressed against the bulb by the usual or any other type of spring H. Since the torch is especially suitable for use on cycles, motorcycles and like vehicles where trepidations frequently occur, it may be provided with a lug or projection I recessed or slotted to receive an arm J having at its extremity a suitable clip member K.

The switch arm G in its simplest construction consists of a strip of metal (Figs. 2 and 3) bent at or near the centre to form a contacting surface G^1, the ends of the strip of metal being bent over to serve as operating knobs.

In Figs. 4 to 6 is shown a rotary type of switch located in the bottom cap of the torch casing comprising a rod L with a more or less central portion L^1 of which one half is of conducting material and one half of insulating material as

shown by the section Fig. 5 and an external operating knob L^2.

The switch may however consist of a pivoted arm G^3 as in Figs. 7 and 8 which passes through a lateral slot in the cap and has an enlarged surface provided with contacts G^4 and G^5 either one of which can be brought into contact with the anode F and the one G^5 being of conducting material so as to complete the electric circuit whilst the other G^4 is of insulating material. Obviously G^2 and G^5 could be combined into one piece of which half is live and half insulated.

Figs. 9 and 10 also show a pivoted type of switch but in which the operating arm G^6 passes through a slot G^7 in the bottom surface of the cap E^2. The arm G^6 carries a combined contact G^8. It is to be understood that any of these contacts G^4, G^5, G^8 could be spring pressed so as to cause the battery to be always pressed against the bulb and thus eliminate the spring H. It will also be seen that no insulating washer is necessary between the reflector and the casing as is usual, there being no flow of current until the metal contact G^1 or the equivalent thereof shown in the other figures, is brought into contact with the anode F.

I claim:

A battery torch lamp comprising in combination a metal casing, a reflector and centre contact bulb fitted at one end thereof, an invertedly disposed battery in said casing with its zinc electrode in contact with the centre contact aforesaid, a closing cap for the torch casing, switch mechanism located in said closing cap for making contact with the positive pole of the battery to complete and disrupt the electric circuit, said switch mechanism comprising an arm pivoted to the cap to make or break contact with the positive pole of said battery, the switch mechanism comprising a single piece switch arm pivoted within the cap, an arcuate slot in the cap, an operating knob carried by the switch arm and protruding externally of the cap and means carried by the switch arm to avoid movement of battery during the operation of the switch mechanism, said means comprising a rigid member projecting upwardly from the arm and engaging the positive pole of the battery; part of said member being of insulating material and part being of electric conducting material.

SAMUEL DANIEL SULLAM.