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2,260,639

FLASHLIGHT BILLY

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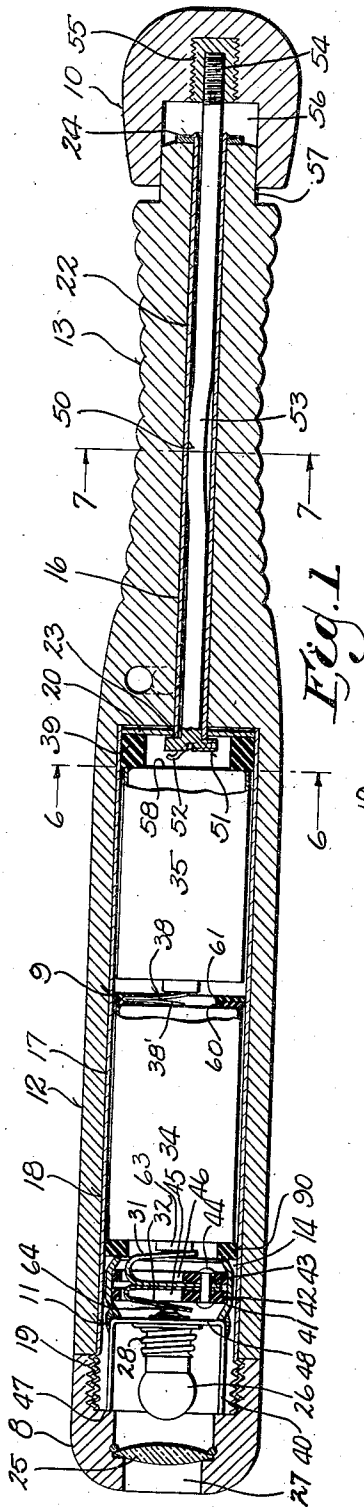


Fig. 1

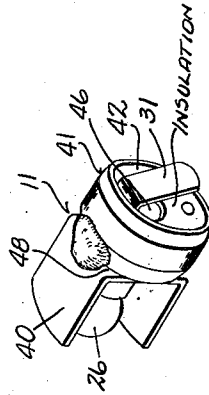


Fig. 4

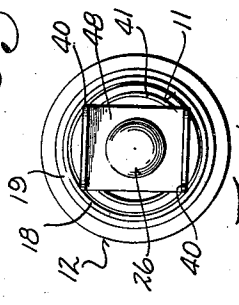


Fig. 3

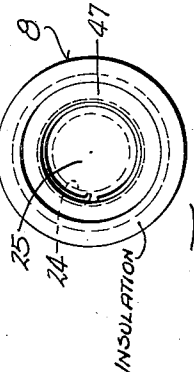


Fig. 2

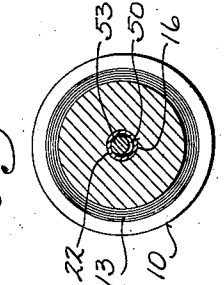


Fig. 7

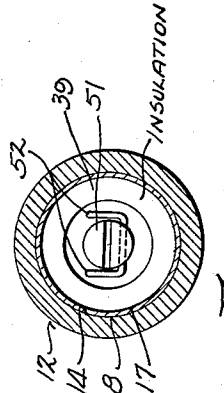


Fig. 6

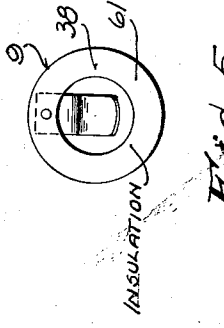


Fig. 5

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FLASHLIGHT BILLY

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4 Claims. (Cl. 240—6.42)

This invention relates to billy clubs in general and more specifically to a billy club or night stick into which is built a flashlight unit.

My primary object is to provide a billy club containing therein a dry battery operated flashlight unit which is so mounted in the club as to be fully protected against damage while the club withstands rough treatment, as when it is dropped or thrown against a hard surface or when used as a weapon.

Another object of my invention is to provide in a club of this type a control switch so constructed and positioned that although it can be quickly operated by a user when once set in a given position, it is not apt to change that position accidentally.

A further object of my invention is to provide a flashlight billy club which can be manufactured at relatively low cost and which possesses substantially the strength of an ordinary club of this type not containing a flashlight unit.

Further objects of my invention will become apparent as the description of the same progresses.

In the drawing:

Fig. 1 is an axial cross section showing the construction of my improved billy club.

Fig. 2 is a view showing the inner end of the cup-shaped cap element.

Fig. 3 is an end view of the barrel end of the club with the cap removed to show the bulb 8 and its positioning bracket.

Fig. 4 is a perspective view of the bulb retaining and shock absorber assembly.

Fig. 5 is a plan view of the shock absorbing unit.

Fig. 6 is a cross section taken along line 6—6 of Fig. 1.

Fig. 7 is a cross section taken along line 7—7 of Fig. 1.

Like parts are identified by the same reference characters throughout the drawing.

While I do not claim to be the first to combine a flashlight and a billy club, I do claim to be the first to produce a club of this type that will consistently function after being subjected to the rough treatment such a club is apt to be given.

The club proper may be of regulation size, design and material and includes a cylindrical club-like barrel portion 12 to which is screwed a cap 3, a handle 13 which may be integral with the barrel portion 12 and a cap 10 which is slidably mounted on handle 13. Cylindrical portion 12 is provided with a central chamber 14 which extends through the barrel to handle 13 where

it leads into a center bore 16 which extends through handle 13. Housing element 18 is comprised of a cylindrical portion 17, an integral threaded end portion 19, and a plugged end 20 with a small center opening, said housing being held in bore 14 by means of a pressed fit as well as by other means which will be subsequently described.

Tube 22 is circular in cross section and has one end flanged at 23. The opposite end is projected through the center bore in end 20 in housing 18 and through bore 16 until its flanged end 23 contacts end 20 of element 18 to prohibit further axial movement in that direction. Washer 24 is applied over tube 22 adjacent the end of handle 13 where the tube is riveted over the washer, thereby securing tube 22 in bore 16. This method of construction affords additional means to aid in securing housing 18 in bore 14.

Flashlight cells 34 and 35 are disposed within housing 18 where they are held in pressure engagement between di-electric washer 39 and bulb assembly unit 11 by the tension of springs 31, 32 and 38. Bulb assembly 11 is comprised of a U-shaped bracket 40 to which is secured a drum shaped housing 41 which floatably retains two di-electric disks 42 and 43 between which are secured termini of springs 31 and 32 by means of rivet 44. Disks 42 and 43 are provided with apertures 45 and 46, respectively, through which springs 32 and 31 arcuately project in a V-shape to contact terminal 64 of bulb 26 and terminal 63 of cell 34, respectively.

As shown in Fig. 3, bracket 40 of assembly 11 fits securely within the threaded end of tube 18 by reason of a close fit plus spring tension which is introduced between said bracket 40 and the inner periphery of housing 18 by reason of the arms of said bracket being normally divergent from its base 48. When the unit is assembled as shown in Fig. 1, movement of the bulb assembly 11 is restricted in a direction toward lense 25 by reason of bracket 40 abutting annular shoulder 47 of cap 8.

Bolt 50 extends through handle bore tube 22 and is provided at the housing end with screw head 51 to which is secured contact spring 52 and at the opposite end with threaded section 54. The intermediate section 53 of bolt 50 is arcuately curved to frictionally contact tube 22 whereby to prohibit axial movement until pressure is applied to control knob 10, said control knob being secured by means of threaded insert 55 to threaded section 54 of bolt 50. The control knob 10 is provided with a cylindrical socket 56

in which is slidably disposed the companion bearing section 57 of handle 13.

The operation of the device is as follows: When control knob 10 is sufficiently pressed in toward handle 13, spring 52 contacts terminal 58 of cell 35 and an electric circuit is closed through curved section 53 of bolt 50, sleeve 22, housing 18, bracket 11, socket 28, bulb 26, springs 32 and 31, cell 34, springs 38' and 38, and back to cell 35, thus lighting bulb 26. Lense 25 focuses the light rays emitted by bulb 26 and passes them divergently through circular opening 27. To extinguish the light, the user pulls outwardly on knob 10 thereby pulling spring 52 out of contact with cell 35.

A battery cushioning device 9, Figs. 1 and 5, comprising di-electric disks 60 and 61 between which are fastened springs 38 and 38', absorbs shock between the cells and prevents the center terminal of cell 35 from denting in the adjacent end wall of cell 34. As in the ordinary flashlight, rough usage of the club will force the relatively heavy cells axially as radial movement is restricted by their retaining housing. Movement of cells in a flashlight often causes breakage of the bulb, the bulb socket, reflector, or shock spring device. In the present device, I overcome any possibility of such damage by provision of a shock absorbing mechanism of sufficient strength to readily absorb all axial battery movement without damage to any of the parts. For this reason, I prefer to construct bracket 40 and drum 41 of bulb assembly 11 out of heavy brass or the like. Floating springs 32 and 31 will absorb all ordinary shocks without damage to bulb 26, but if a very severe shock causes an extraordinary depression of said floating springs, the front end wall of cell 34 will contact the adjacent end of drum 41 where cell 34 will come to rest before damage can be done to bulb 26 or to bracket 40. Movement of the cells in an opposite direction is restricted by di-electric washer 39. Hence, jamming of contact spring 52 by cell 35 cannot occur.

A user may, by recessing the control knob in the palm of the hand and grasping the handle with the fingers, operate the control knob switch without the use of the other hand. This particular feature is highly desirable as there are apt to be times when a user such as a police officer or a night watchman might wish to operate the flashlight without using both hands, as, for example, during a tussle or while he is riding on the runningboard of an automobile. Mere pressure of the butt of the handle against any part of the body will close the switch.

In addition to the cushion member 9, I provide a spacer cushion 90 between the margins of battery 34 and the edges of the drum 41 thus absorbing the longitudinal thrust in the line of cylindrical members best able to resist the thrust.

Most regulation billy clubs are made of relatively heavy material such as hickory wood, and I have found that my flashlight unit weighs about as much as the material removed from the club for the installation of the unit, therefore, little or no weight is added, and the user is thus relieved of the weight of an additional flashlight as well as the inconvenience of carrying a relatively bulky item.

I claim:

1. A club comprising a barrel-like portion provided with a central chamber and a handle portion provided with a center bore leading to said central chamber, the terminus of the handle provided with an annular bearing portion, a metallic sleeve disposed within said center bore, a distorted rod projecting through said sleeve and in frictional engagement with the walls thereof, a cap carried by the rod and provided with a cylindrical chamber for slidable mounting on the handle bearing terminus, a flashlight unit contained within said chamber, said unit including a dry cell, a bulb, and spring means for connecting the bulb with the cell, contact means disposed within the chamber secured to the chamber terminus of said rod element in slidable relation to a contact terminal of said dry cell whereby to permit axial movement of the cap along a portion of the handle bearing to provide means available to a user for opening and closing the cell and bulb circuit.

2. In a device of the type described, a bulb mounting and shock absorber assembly comprising a U-shaped bracket, the base of which is secured to one side of a drum-like housing and the bracket arms projecting from the housing in substantially an axial direction but diverging slightly from the base, a bulb socket mounted centrally on said base and projecting between said arms axially with respect to said drum and adapted to receive a bulb, the base terminal of which projects through an opening provided in said bracket base and two di-electric washers provided with apertures and disposed to float within said drum, said washers having secured between them termini of two U-shaped springs, said springs projecting in opposite directions through said apertures.

3. As an article of manufacture, a flashlight bulb mounting assembly including a metallic housing having a drum-like portion and a U-shaped bracket provided with a centrally apertured bottom wall, said wall spanning one end of the drum and rigidly connected thereto, the bracket side walls extending axially from the drum, a bulb socket mounted between the side walls concentrically of the drum and the bracket aperture, shock absorbing and circuit maintaining means disposed within the drum to float therein, and a bulb mounted in the socket and having an electric contact portion projecting through the aperture in contact with the circuit maintaining means.

4. A bulb mounting assembly including a housing having a drum portion and spaced arms secured to extend axially from the drum, a bulb socket mounted centrally of said spaced arms and concentrically with the drum, shock absorbing, circuit maintaining means floatably disposed substantially within the drum and including at least one apertured washer carrying a compression spring which normally spans the space between the bulb socket and the open end of the drum, one end of said spring extending outwardly from said open drum end.

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