March 21, 1967 S. SCHWARTZ 3,310,668

MINIATURE FLASHLIGHT WITH KEY ATTACHMENT

Filed Oct. 20, 1964

Fig. 1.

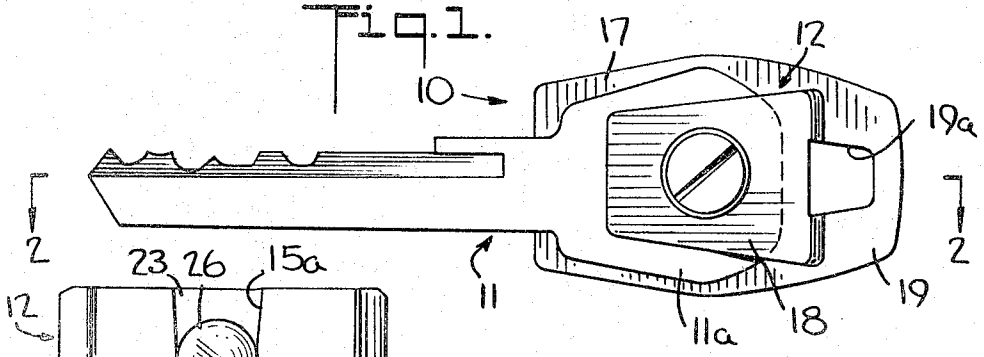


Fig. 3.

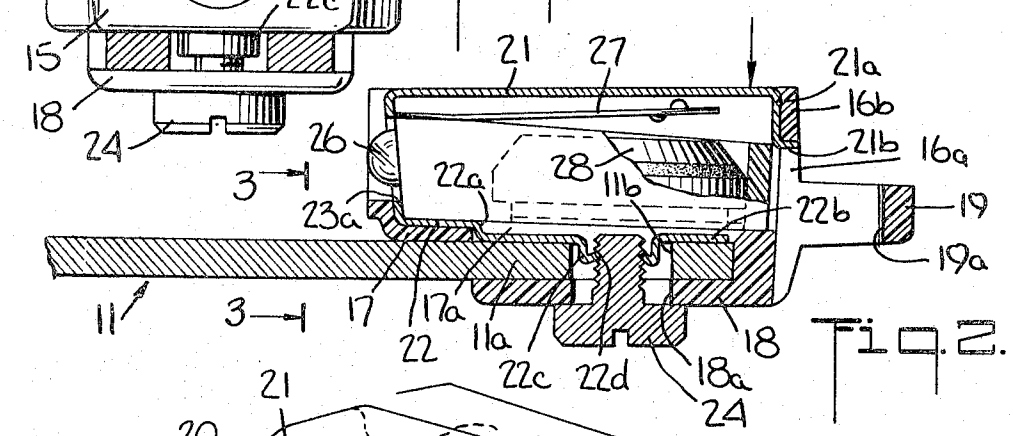


Fig. 2.

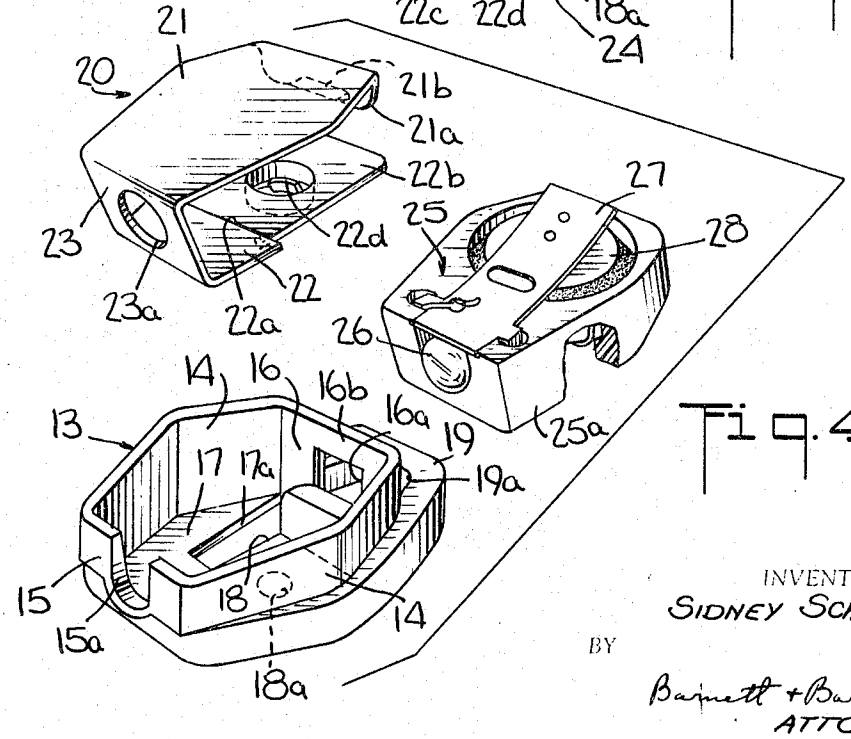


Fig. 4.

INVENTOR.
SIDNEY SCHWARTZ

BY

Barnett + Barnett
ATTORNEYS

United States Patent Office 3,310,668 Patented Mar. 21, 1967

3,310,668

MINIATURE FLASHLIGHT WITH KEY ATTACHMENT

Sidney Schwartz, New York, N.Y., assignor to Bantam-Lite, Inc., New York, N.Y., a corporation of New York

Filed Oct. 20, 1964, Ser. No. 405,119
5 Claims. (Cl. 240—6.4)

This invention relates to miniature flashlights and more particularly is directed to such illuminating devices combined with means for attachment to a key handle.

Among the objects of the invention is to provide an improved miniature flashlight construction of the character described having means for mounting the flashlight on the handle of a key to direct a light beam from its light bulb along the longitudinal axis of the key to illuminate the keyhole and having a finger pressure actuated switch for energizing the bulb located for convenient operation while simultaneously gripping the flashlight and key between thumb and forefinger for keyhole insertion, which flashlight shall comprise few and simple parts that are relatively inexpensive to manufacture and assemble in quantity production, which flashlight shall include a molded plastic case coacting in a novel manner with a spring metal switch plate and key anchor element, which flashlight shall be neat in appearance, rugged in construction, and convenient to mount on the key handle, and which shall be practical and efficient to a high degree in use.

Other objects of the invention will in part be obvious and in part hereinafter pointed out.

The invention accordingly consists of features of construction, combination of elements and arrangement of parts which will be exemplified in the construction hereinafter disclosed, the scope of the application of which will be indicated in the claims following.

In the accompanying drawing in which an illustrative embodiment of the invention is shown:

FIG. 1 is a bottom plan view of the flashlight constructed to embody the invention shown mounted on the handle of a key.

FIG. 2 is a sectional view taken on line 2—2 in FIG. 1 showing details of the interior construction.

FIG. 3 is a front view of the flashlight and key as seen substantially on line 3—3 in FIG. 2, and

FIG. 4 is an exploded view showing the casing, cartridge and switch plate and key anchor element comprising the flashlight shown in FIGS. 1 to 3, inclusive.

Referring in detail to the drawing, 10 denotes a key and miniature flashlight combination wherein key 11 mounts a miniature flashlight 12 on its handle 11*a*. Flashlight 12, constructed to embody the invention, is seen in FIG. 4 to comprise a casing 13, a switch plate and key anchor element 20 and cartridge unit 25.

Casing 13 is here shown as an integral open top box-like structure which may preferably be molded of any suitable plastic resinous material, as for example, polystyrene, and having similar opposite side walls 14, front wall 15, rear wall 16 and bottom wall 17. Front wall 15 has a centralized cutout 15*a* which may extend to the open top of casing 13. Rear wall 16 has a centralized cutout 16*a* spaced from the open top providing a crosspiece 16*b*. Bottom wall 17 has a relatively large opening 17*a* and carries a tab 18 which is attached along the rear thereof to bottom wall 17 and extends forwardly in offset parallel relation to underlie opening 17*a*. Bottom wall 17 and rear wall 16 may also be integrally formed with a rearwardly projecting link 19 having a central opening 19*a* for attachment to a keychain or the like (not shown).

Cartridge unit 25 may be of any suitable construction having a light bulb 26 located in the front surface thereof

and a pressure actuated switch 27 located in the adjacent top surface. As here shown cartridge unit 25 is a battery-bulb-switch unit similar to those shown and described in my copending application Ser. No. 298,210 filed July 29, 1963, and entitled Miniaturized Flashlight With Replacement Cartridge Unit. Cartridge unit 25 is seen to comprise a holder 25*a* of any suitable electrically non-conductive resinous plastic having a cavity sized and shaped to accommodate and securely retain disc shaped miniature battery 28 oriented with its center terminal exposed for contact by switch 27. Light bulb 26 may be of the lens tipped type having a pair of pigtail leads, one of which is suitably electrically connected, as by spot welding, to the leaf spring which comprises switch 27, the other lead being likewise electrically connected to the bottom terminal of battery 28, as is clear from FIG. 4.

Switch plate and key anchor element 20, as seen in FIG. 4, may be made of a suitable leaf spring sheet metal having a corrosion resistant finish, such as brass, chrome or precious metal plating, and is stamped and formed into a substantially U-shaped configuration having a hollow sized for receiving cartridge 25 therein. Element 20 has two opposite walls or plates 21 and 22 interconnected by a substantially right angular intermediate section 23. Plate 21, serving as a top wall closure and depressible switch plate, is contoured to fit into the open top of casing 13 and has a rear end downwardly bent portion 21*a* terminating in a rearwardly projecting tongue 21*b*, the latter being offset from the plane of plate 21 by bent portion 21*a* to extend into rear wall cutout 16*a*. Tongue 21*b* normally abuts crosspiece 16*b* to limit the upward movement of plate 21 to a rest position flush with the top of casing 13. The rear region of plate 21 engages and closes underlying switch 27 when flexed downwardly, that is, inwardly, from the rest position in the direction of the arrow shown in FIG. 3, tongue 21*b* being free to move away from crosspiece 16*b* into cutout 16*a*.

Intermediate section 23 extends between the front of cartridge unit 25 and casing front wall 15 and has an opening 23*a* aligning with cutout 15*a* into which opening and cutout the lens tip of bulb 26 may project.

Plate 22, serving as an anchoring means for retaining the parts of flashlight 12 in assembly as well as for mounting the latter on a key handle 11*a*, may be narrower than plate 21, being shaped and sized to lie along the interior surface of casing bottom wall 17 and having a step 22*a* to position a rear portion 22*b* in bottom wall opening 17*a* spaced from and substantially parallel to tab 18. Plate rear portion 22*b* is formed with a depression 22*c* extending toward tab 18, depression 22*c* being provided with an opening 22*d* having a rim formed to engage the threads of screw 24 which extends through an aligned opening 18*a* in tab 18.

The initial assembly of flashlight 12 is readily accomplished by first sliding cartridge unit 25 into the open side of switch plate and keyholder element 20 so that switch 27 faces plate 21 and light bulb 26 is positioned to extend into opening 23*a*. Element 20 with cartridge 25 so positioned therein is then placed into the open top of casing 13 by first inserting tongue 21*b* into rear wall cutout 16*a* and then dropping intermediate section 23 into place behind casing front wall 15. Screw 24 is then inserted through tab opening 18*a* and threaded into opening 22*d*. Tightening of screw 24 anchors element 20 in position against casing bottom wall 17 retaining all the parts in assembly. Application of pressure to depress the rear region of plate 21 will be seen to also depress switch 27 to make electrical contact with the center terminal of battery 28 to energize bulb 26.

To mount flashlight 12 on the handle 11*a* of key 11, screw 24 is first removed from opening 22*d*. The key handle 11*a* is then inserted in the slot between tab 18

and plate rear portion 22*b*. Since element 20 with cartridge 25 is now loose in casing 13, depression 22*c* may be urged upwardly to clear the key handle 11*a* permitting the handle opening 11*b* to register with tab opening 18*a* and receive depression 22*c* therein. Replacement and tightening of screw 24 completes the assembly of the key and flashlight combination 10.

The improved miniature flashlight with key attachment herein disclosed is seen to achieve the several objects of the invention and to be well adapted to meet conditions of practical use. As various possible embodiments might be made in the above invention, and as various changes might be made in the disclosed construction, it is to be understood that all matters herein set forth or shown in the accompanying drawing are to be interpreted as illustrative and not in a limiting sense.

Having thus described my invention, I claim as new and desire to secure by Letters Patent:

1. A miniature flashlight of the character described comprising a casing formed with an interior chamber and having an open top wall, a partially open opposite bottom wall and a front wall having an aperture communicating with said chamber and being located beneath said open top wall, a tab having an opening therein, said tab being attached to the casing adjacent the rear thereof to extend in spaced parallel relation to the bottom wall overlying said bottom wall partial opening, said bottom wall and tab forming a slot to receive a handle of a key therein with a key handle opening in registered alignment with said tab opening, a battery, electric light bulb and switch for closing a circuit from the battery to the bulb disposed in said interior chamber, the bulb being aligned with said front wall aperture to project a light beam along the length of a key positioned in said slot, said switch being located for finger pressure actuation through said open top wall, a spring closure for said top wall opening adapted to be inwardly deflected for engaging and closing said switch, a plate located within said interior chamber extending across said bottom wall partial opening and being formed with a female threaded portion aligning with said tab and key handle openings, and a removable screw extending through said tab and key handle openings and engaging said female threaded portion to secure said key handle in said slot.

2. A miniature flashlight of the character described comprising an integrally molded casing having an open top wall, a partially open opposite bottom wall, an apertured front wall and a rear wall having a centralized cutout spaced from the open top providing a crosspiece, a tab having an opening therein, said tab being integrally molded with the casing bottom wall adjacent the rear thereof and extending forwardly in spaced parallel relation to the bottom wall and substantially covering said bottom wall partial opening, said bottom wall and tab forming a slot to receive a handle of a key therein with a key handle opening in registered alignment with said tab opening, a battery, electric light bulb switch for closing a circuit from the battery to the bulb disposed within the casing, the bulb being aligned with said front wall aperture to project a light beam along the length of a key positioned in said slot, said switch being located for finger pressure actuation through said open top wall, a spring closure for said top wall opening having a rear end portion extending into said rear wall cutout to engage said crosspiece and limit outward movement of said spring closure to a normal predetermined position in said top wall opening, said spring closure being inwardly deflectible by finger pressure for engaging and closing said switch, a plate extending across said bottom wall partial opening and being formed with a female threaded portion aligning with said tab and key handle openings, and a removable screw extending through said tab and key handle openings and engaging said female threaded portion to secure said key handle in said slot.

3. In a miniature flashlight of the character described, an integrally molded casing having an open top wall, a partially open opposite bottom wall, and an apertured front wall, a tab having an opening therein, said tab being integrally molded with the casing bottom wall adjacent the rear thereof and extending forwardly in spaced parallel relation to the bottom wall and substantially covering said bottom wall partial opening, said bottom wall and tab forming a slot to receive a handle of a key therein with a key handle opening in registered alignment with said tab opening, a switch plate and key anchor element formed of sheet spring material bent into a substantially U-shaped configuration providing a top wall closure plate interconnected by a substantially right angular intermediate section to an opposite key anchoring plate, said top wall closure plate extending across said top wall opening and being inwardly deflectible by finger pressure to actuate an underlying switch, said key anchoring plate extending across said bottom wall partial opening and being formed with a female threaded portion aligning with said tab and key handle openings, and a removable screw extending through said tab and key handle openings and engaging said female threaded portion to simultaneously secure said key handle in said slot and retain said switch plate and key anchor element in position in said casing.

4. In a miniature flashlight of the character described, an integrally molded casing having an open top wall, a partially open opposite bottom wall, an apertured front wall and a rear wall having a centralized cutout spaced from the open top providing a crosspiece, a tab having an opening therein, said tab being integrally molded with the casing bottom wall adjacent the rear thereof and extending forwardly in spaced parallel relation to the bottom wall and substantially covering said bottom wall partial opening, said bottom wall and tab forming a slot to receive a handle of a key therein with a key handle opening in registered alignment with said tab opening, a switch plate and key anchor element formed of sheet spring material bent into a substantially U-shaped configuration providing a top wall closure plate interconnected by a substantially right angular intermediate section to an opposite key anchoring plate, said top wall closure plate extending across said top wall opening and having a rear end portion extending into said rear wall cutout to engage said crosspiece and limit outward movement of said closure plate to a normal predetermined position in said top wall opening, said key anchoring plate extending across said bottom wall partial opening and being formed with a female threaded portion aligning with said tab and key handle openings, and a removable screw extending through said tab and key handle openings and engaging said female threaded portion to secure said key handle in said slot and retain said switch plate and key anchor element in position in said casing.

5. A miniature flashlight of the character described comprising an integrally molded casing having an open top wall, a partially open opposite bottom wall, and an apertured front wall, a tab having an opening therein, said tab being integrally molded with the casing bottom wall adjacent the rear thereof and extending forwardly in spaced parallel relation to the bottom wall and substantially covering said bottom wall partial opening, said bottom wall and tab forming a slot to receive a handle of a key therein with a key handle opening in registered alignment with said tab opening, a battery-light bulb-switch unit having the light bulb positioned in a front wall and a depressible switch located in a top surface thereof, a switch plate and key anchor element formed of sheet spring material bent into a substantially U-shaped configuration providing a top wall closure plate interconnected by a substantially right angular intermediate section to an opposite key anchor plate, said element being positioned in said casing with said top wall closure plate extending across said top wall opening and being resiliently inwardly depressible, said intermediate section facing said casing front wall and having an opening in regis-

ter with said aperture, said unit being positioned between sad closure plate and key anchor plate with the front wall thereof facing said intermediate section to project a light beam from said bulb through said aperture and intermediate section opening and along the length of the key, said depressible switch being located for actuation by said inward depression of said top wall closure plate to close the switch and light the bulb, said key anchoring plate extending across said bottom wall partial opening and being formed with a female threaded portion aligning with said tab and key handle openings, and a removable screw extending through said tab and key handle openings and engaging said female threaded portion to simultaneously secure said key handle in said slot and retain said switch plate and key anchor element and said unit in position in said casing.

References Cited by the Examiner

UNITED STATES PATENTS

1,972,879	9/1934	Flintermann	240—6.4
2,738,668	3/1956	Rock	240—6.4
3,119,564	1/1964	Zalman	240—6.4

NORTON ANSHER, *Primary Examiner.*

C. C. LOGAN, *Assistant Examiner.*