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A. D. LE SAGE

2,277,866

HAND OPERATED ELECTRIC LIGHT SIGNAL DEVICE

Filed Aug. 30, 1941

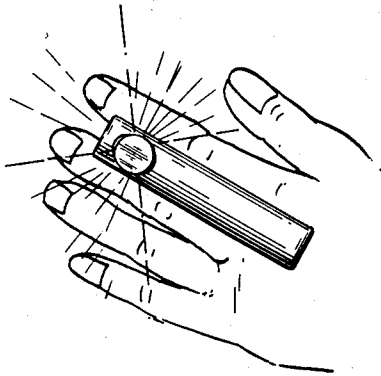


Fig. 1.

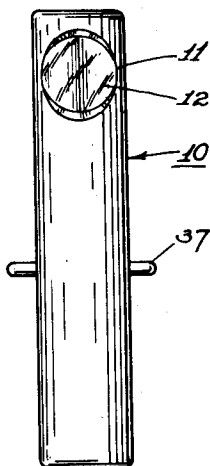


Fig. 2.

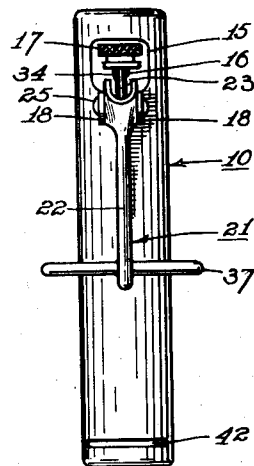


Fig. 3.

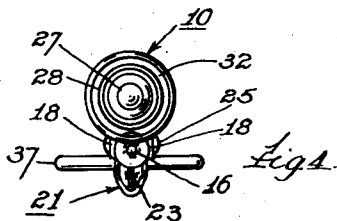


Fig. 4.

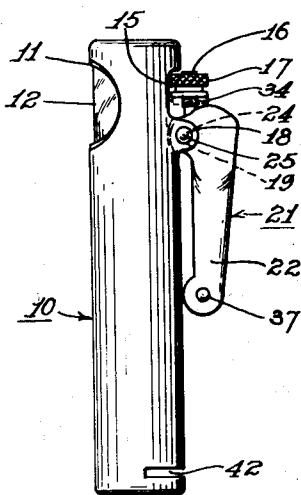


Fig. 5.

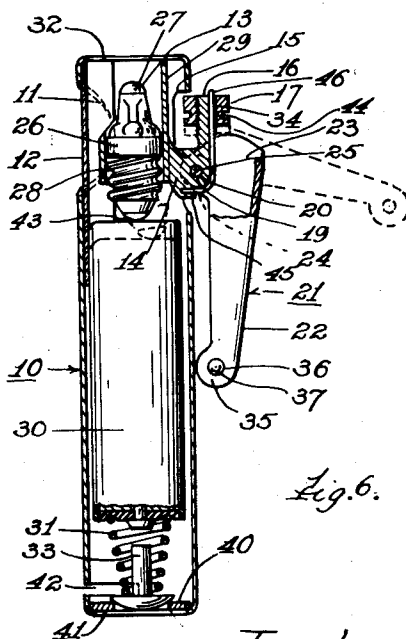


Fig. 6.

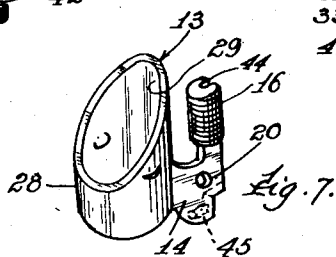


Fig. 7.

Inventor.
Aaron D. Le Sage.
by James R. McKnight.
Attorney.

UNITED STATES PATENT OFFICE

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HAND OPERATED ELECTRIC LIGHT SIGNAL
DEVICE

Aaron D. Le Sage, Manteno, Ill.

Application August 30, 1941, Serial No. 409,075

4 Claims. (Cl. 177—329)

My invention relates to a device for use both as a flash light and as a safety and signal device in driving an automobile at night.

Among the objects of my invention is to provide a device capable of serving both as an ordinary pocket flash light and also capable of operating as a safety signaling device in driving an automobile at night. It is well known that many accidents occur on highways during night time due to the inability of drivers to see the signal of others. My invention provides a device capable of being carried in the pocket by a clip in the manner of an ordinary fountain pen. The clip is also adapted to operate the device as a flashing or steady signal light upon the movement of the driver's hands. My invention also contemplates such other objects, advantages, and capabilities as will later more fully appear and which are inherently possessed by my invention.

While I have shown in the accompanying drawing a preferred embodiment of my invention, yet I wish it understood that the same is susceptible of modification and change without departing from the spirit of my invention.

Referring to the drawing, Fig. 1 is a view showing my device in use; Fig. 2 is a front and Fig. 3 a rear elevational view; Fig. 4 is a top plan view; Fig. 5 is a side elevational view; Fig. 6 is an enlarged side elevational view partly in section; Fig. 7 is an enlarged detailed view of the collar and extension and Fig. 8 is an enlarged detailed view showing the insulation around the battery.

The embodiment selected to illustrate my invention comprises a hollow casing 10. Adjacent its upper end the casing 10 has a cut away portion 11 closed by a window 12. The casing has an open upper end 32.

Within the upper portion of said casing 10 is a collar 13, preferably of metal. An extension 14 has its inner end attached to said collar and extends outwardly through aperture 15 in the casing 10. The aperture 15 is on a side of the casing 10 substantially opposite to the window 12. The extension 14 then continues at right angles with an upstanding portion 16 on which is mounted a knob 17. At either side of aperture 15 the material forming the casing 10 is bent to form spaced ears 18. The ears 18 have holes 19 in line with each other and a hole 20 in extension 14.

A handle 21 is formed with a tongue portion 22 which has a bifurcated inner end 23 with holes 24. The bifurcated inner end 23 straddles the extension 14 and inner end 23 and extension

14 of collar 13 are attached to the ears 18 of casing 10 by being pivoted on stud 25, which passes through holes 19, 20 and 24.

The collar 13 is adapted to receive and hold by a stop member or friction grip the collar 26 of an electric light bulb 27, the bulb extending upwardly beyond the short side 28 of the collar 13 which faces the window 12. The collar 13 has an opposite long side 29 which serves as a reflector.

An electric battery 30 of the miniature type commonly referred to as a pen-cell battery has its bottom end contacting contact point 43 of collar 26 of the electric light bulb 27 within casing 10. Insulation 38 surrounds battery 30 and prevents contact between battery 30 and casing 10. A coiled spring 31 is placed within casing 10 with its upper end contacting the top or insulation of the upper end of battery 30. An electrical contact member 33 is attached to the lower end of the coiled spring 31 by friction grip, and rests on bottom closure member 40, which is held within casing 10 by flange 41 and is removable through slot 42.

The bottom closure member 40 is made of electrically conducting material. Closure member 40 may be removed by moving the same upward and sliding it through slot 42 out of the casing 10. Battery 30 may then be removed through the open bottom end of casing 10.

The upper end of upstanding portion 16 of extension 14 bears screw threads 34 and knob 17 is screw threaded to engage therewith. When knob 17 is tightened to the inner ends of screw threads 34, it contacts the bifurcated inner end 23 of handle 21. This causes the outer end 35 of handle 21 to bear against the casing 10. When knob 17 is thus in tightened position, handle 21 is adapted to serve as a clip to hold device in the pocket of the user. Handle 21 is adapted to fit any size pocket or object because upon its outward movement it bears against knob 17, thus forcing collar 13 to push bulb 27 and battery 30 against the pressure of coiled spring 31. Coiled spring 31 thus serves to give handle 21 the effect of a resilient pocket clip.

In operation as an ordinary flash light, my device may be operated by exerting pressure on knob 17 in a counter-clockwise direction as viewed in Fig. 6. This causes collar 13 to move in the direction of the pressure and also downwardly. The downward movement of collar 13 is followed by a corresponding downward movement of bulb 27 and battery 30 against the pressure of coiled spring 31. When a pressure is suf-

ficient to overcome that of coiled spring 31, the top of battery 30 comes into contact with electrical contact member 33, thus completing the electrical circuit and causing the bulb to light.

When the circuit has been closed, the current flows from the core of battery 30 through electrical contact member 33 and through bottom closure member 40 and then through casing 10 to collar 13. From collar 13, the current flows to the collar 26 of bulb 27 and through the bulb to the battery 30, completing the circuit.

The outer end of handle 21 has a hole 36 which is adapted to receive a cross bar 37. The cross bar 37 may remain extended so as to provide a T-shaped handle, or it may be adapted to fold against the sides of handle 21. In operation as a signaling device for use in night time driving, knob 17 is loosened upon screw threads 34 of extension 14. Handle 21 may then be moved approximately half an inch away from casing 10 before it engages knob 17. The device is fitted over the back of the left hand of the user, with the T-shaped cross bar 37 fitting beneath any two fingers and the casing 10 fitting across the back of the fingers and hand. In this position the device is inoperative while the hand is in relaxed position, but is adapted to light when the fingers and hand are extended in a tensed position.

The tensing of the fingers of the user exerts a pressure in a counter-clockwise direction as viewed in Fig. 6 on the T-shaped cross bar 37 of handle 21. Handle 21 then moves in a counter-clockwise direction as shown in dotted lines in Fig. 6 and exerts pressure on knob 17 to cause the light to operate in the manner described above. The tensing of the hand also results in the back of the hand of the user exerting an upward pressure against casing 10, which cooperates with the pressure from the fingers to cause the pressure of coiled spring 31 to be overcome and the lighting contact to be made.

The device may thus be carried in the pocket of the user by using the handle 21, which cooperates with coiled spring 31 to provide a resilient pocket clip. When it is desired to use the device as a signal light, knob 17 may be loosened so as to allow handle 21 to move away from casing 10. The device is then fitted over the hand of the user and is adapted to light on the tensing of the fingers and hand by the user. The light remains on only as long as the hand is in tensed position, coiled spring 31 normally causing battery 30 to move out of engagement with electrical contact member 33 to break the electrical circuit.

In Fig. 6 the upstanding portion 16 of collar 13 has a groove 44 in its outer wall. An aperture 45 is provided in the lower portion of extension 14. The lower end of resilient wire key 46 is anchored in aperture 45 and said key extends outwardly and then upwardly in groove 44. Groove 44 is sufficiently deep to accommodate key 46 and not interfere with screw threaded knob 17 engaging screw threads 34 of portion 16. When knob 17 is in position on portion 16, key 46 exerts a slight pressure against knob 17, and prevents accidental turning of knob 17.

Having thus described my invention, I claim:

1. In a flash light device, a casing of electrical conducting material, a light holding member of electrical conducting material positioned within said casing, an electrical light positioned within said holding member, said holding member engaging one contact of said electric light,

a battery within said casing insulated from contact with said casing, one end of said battery contacting the other contact of said electric light, the other end of said battery having a contact, a contact member spaced below said battery and in electrically conductive relationship to the casing, said contact member normally spaced from contact with said battery and means for moving said light holding member and battery downwardly so as to cause said contact member to engage the contact in the other end of said battery.

2. A combination flash and signal light comprising a casing of electrical conducting material, said casing having an opening, a holding member of electrical conducting material positioned within said casing adjacent said opening, said holding member adapted to receive and engage one contact of an electric light, a battery positioned within said casing and insulated from contact with said casing, one end of said battery contacting the other contact of said electric light, the other end of said battery having an insulated portion and a contact, an electrical contact member positioned beneath the other end of said battery and in electrically conductive relationship to the casing, means for normally spacing said battery and said contact member, said holding member having an extension extending to the exterior of said casing and an adjustable T shaped bar pivotally attached to said casing, said T shaped bar adapted to fit beneath and between the fingers of the hand of the user and adapted upon tensing of the fingers and hand of the user to move apart from said casing and exert pressure against said extension to move said holding member downwardly so as to cause said contact member to engage the contact in the other end of said battery and establish an electric circuit to light said electric light.

3. A hand operated electric light signal device comprising a hollow casing of electrical conducting material, said casing having an open bottom and a window adjacent its upper end, a collar of electrical conducting material positioned within said casing adjacent said window, said collar adapted to receive and engage one contact of an electric light, a closure of electrical conducting material for the open bottom end of said casing, an electrical contact member having its bottom portion contacting said closure, a coiled spring attached at its lower end to said contact member, an electrical battery insulated from said casing, one end of said battery contacting the other contact of said electric light, the other end of said battery having an insulated portion and a contact, the insulated portion of said end contacting said spring, said casing having a cut out portion adjacent its upper end and substantially opposite to said window, an extension attached on its upper end to said collar, said extension extending outwardly through the cut out portion in said casing and being pivotally attached to said casing, a hand operated member pivotally attached to said casing, a cross bar attached to said hand operated member and a knob attached to the upper portion of said extension, said signal device adapted to be held in the hand of the user, said casing over the back of the hand and said hand operated member placed between the fingers, with said cross bar fitting beneath the fingers, so that tensing of the fingers and hand of the user will cause said casing and said hand oper-

ated member to move in opposite directions, said hand operated member adapted upon movement outwardly from said casing to move said knob inwardly toward said casing so as to move said collar and battery therebelow downwardly, so that said spring is contracted and the contact on the other end of said battery contacts said electrical contact member for completing the circuit and lighting said electric light, said spring adapted upon release of tension on said hand operated member by relaxation of the hand of the user to expand to move the other end of said battery upwardly away from contact with said electrical contact member to break the electrical circuit and extinguish said electric light.

4. In a flash light device, a casing of electrical conducting material, said casing having an open bottom, a light holding member of electrical conducting material positioned within said casing, an electric light positioned within said holding member, said light holding member engaging one contact of said electric light, a battery within said casing, insulated from contact with said

5 casing, one end of said battery contacting the other contact of said electric light, the other end of said battery having an insulated portion and a contact, a coiled spring with its upper end contacting the insulated portion of the other end of said battery, a contact member spaced below said battery and in electrically conductive relationship to the casing, said contact member normally spaced from contact with said battery, means for moving the light holding member and battery downwardly so as to cause the contact member to engage the contact in the other end of the battery, the wall of said casing having an inwardly extending flange at its bottom, a bottom disc of electrical conducting material within said casing below said contact member pressed by the force of said spring against said flange and the wall of said casing also having a slit slightly above said flange, said slit adapted to permit the insertion and removal of said bottom disc.

AARON D. LE SAGE.