Oct. 7, 1958 F. D. BACON 2,855,497

COMBINATION LAMP AND FIRE EXTINGUISHER

Filed March 22, 1957 2 Sheets-Sheet 1

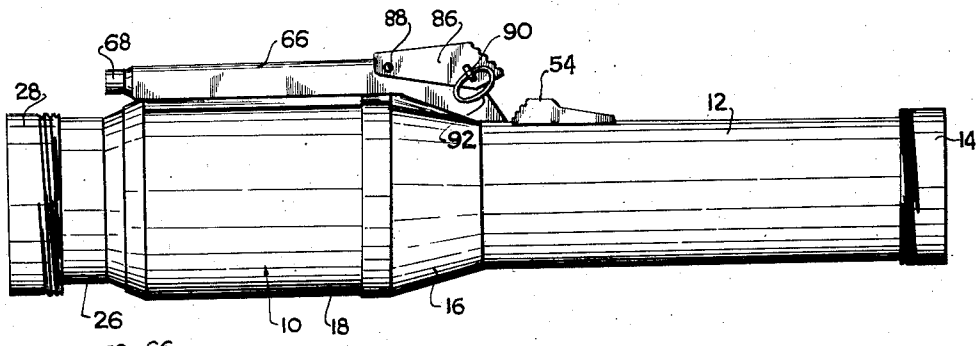


Fig. 1.

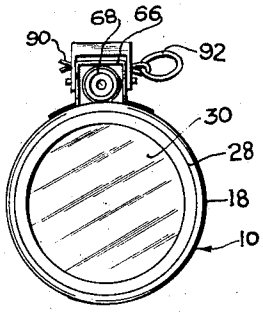


Fig. 4.

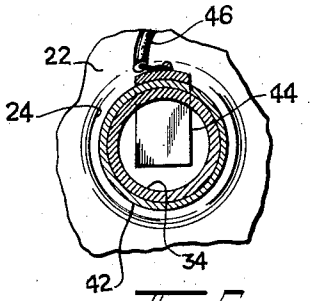


Fig. 5.

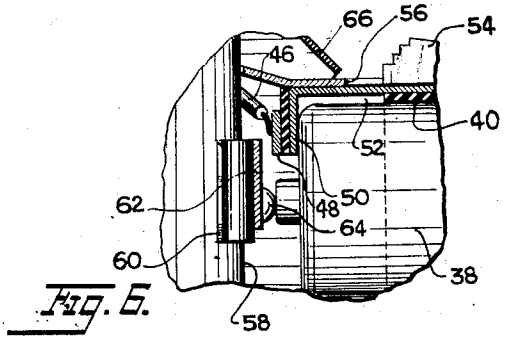


Fig. 6.

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COMBINATION LAMP AND FIRE EXTINGUISHER

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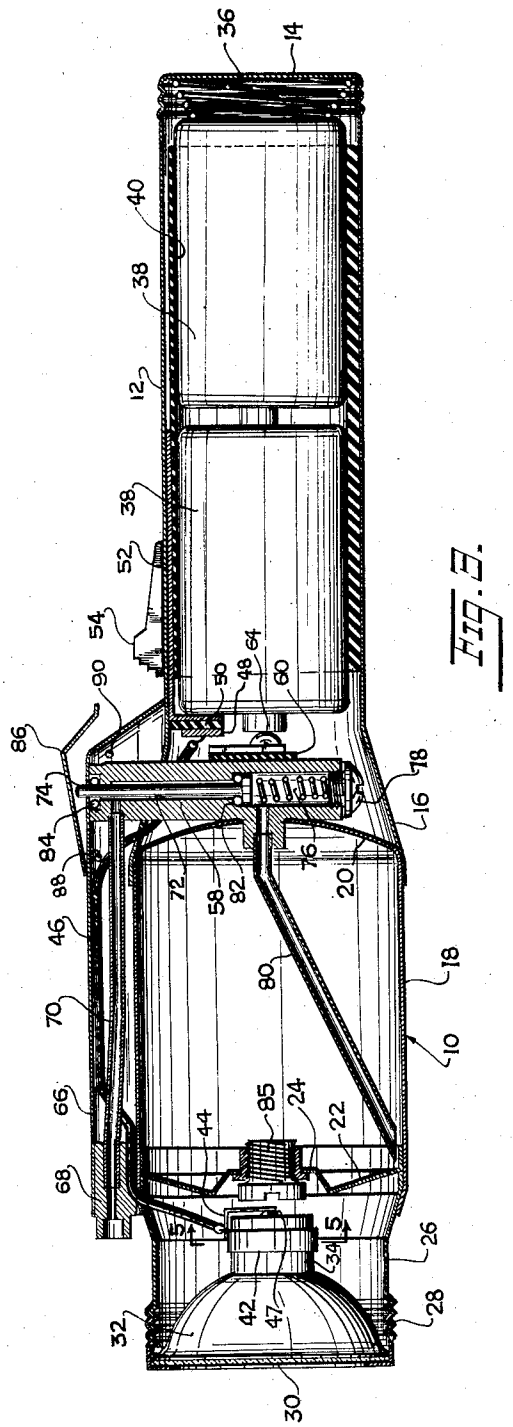


Fig. 3.

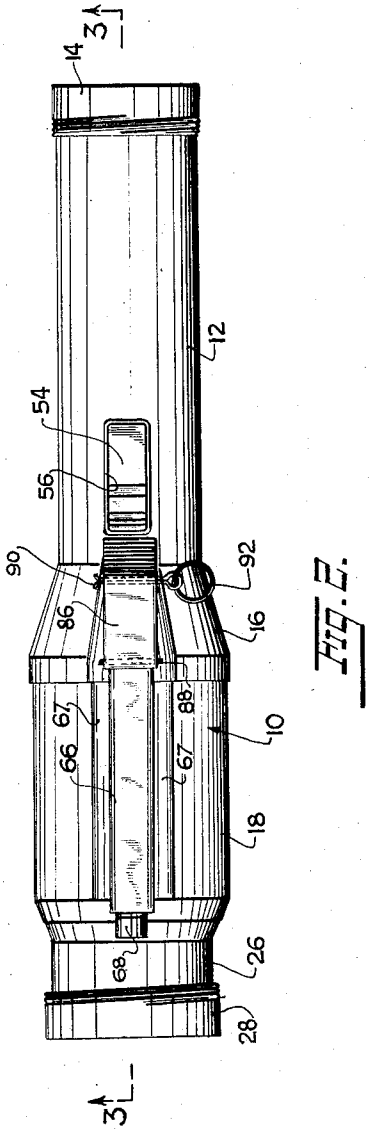


Fig. 2.

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COMBINATION LAMP AND FIRE EXTINGUISHER

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8 Claims. (Cl. 240—6.4)

This invention relates to a combination lamp and fire extinguisher. More particularly, the invention has reference to a lamp which could be either a flashlight or electric lantern, combined with a fire extinguisher.

In many instances, persons occupied in duties involving the use of lamps, flashlights, etc., are often required to extinguish small fires encountered during the performance of their duties. For example, a night watchman generally carries a lamp or flashlight, and in making his rounds, may discover a small fire. In such an instance, valuable time is lost while an ordinary fire extinguisher is being obtained.

Apart from the above, a device of the type described above may be used to advantage by railroad workers who may discover a fire in a piece of railway equipment while making their rounds checking said equipment. Still further, the ordinary householder has use for such a device, since a small fire extinguisher is a highly desirable article for maintenance in the home, the same being true of a flashlight.

The main object of the present invention, accordingly, is to provide a combination device of the character stated which can be used as a flashlight, and can also be used as a fire extinguisher. It is proposed, in this regard, that a coactive relationship be provided between the flashlight or lamp and the extinguisher. To this end, the nozzle of the fire extinguisher is so located as to direct the extinguishing fluid toward a point which will, at the same time, be illuminated by the beams of the flashlight or lamp.

Another object is to form the device in a manner such that its overall size will be little or no greater than that for an ordinary flashlight or lamp.

Yet another object is to design the article in a manner such that the flashlight switch, and also the valve handle of the fire extinguisher, will both be conveniently located to permit use of either instantaneously and with minimum difficulty.

Yet another object is to provide a combination device as stated that will be capable of manufacture at low cost, will facilitate replacement of the flashlight bulb and batteries, and will also facilitate recharging of the container for the extinguishing fluid.

For further comprehension of the invention, and of the objects and advantages thereof, reference will be had to the following description and accompanying drawings, and to the appended claims in which the various novel features of the invention are more particularly set forth.

In the accompanying drawings forming a material part of this disclosure:

Fig. 1 is a side elevational view of a combination flashlight and fire extinguisher according to the present invention.

Fig. 2 is a top plan view thereof.

Fig. 3 is a longitudinal sectional view substantially on line 3—3 of Fig. 2.

Fig. 4 is an end elevational view of the device as seen from the left of Fig. 1.

Fig. 5 is an enlarged, detail sectional view on line 5—5 of Fig. 3 showing one of the electrical connections of the flashlight.

Fig. 6 is a detail sectional view, on an enlarged scale, taken on the same cutting plane as Fig. 3, showing another of the electrical connections.

In Figs. 1–6, the device 10 constituting the present invention includes an elongated casing having a cylindrical rear portion 12 closed at its rear end by a threaded cap 14, and formed at its front end with a flared part 16 receiving the rear end portion of a container 18 for extinguisher fluid having a diameter larger than that of the casing portion 12.

Container 18 has a rear end wall 20, and a front end wall 22 centrally formed with a depression 24. Formed upon container 18 is a forwardly projecting circumferential flange receiving, and brazed or otherwise fixedly secured to, the flared rear end of a head portion 26 of the casing. Head portion 26 is formed open and is threaded at its front end, to receive the threaded skirt of an annular cap 28 which extends about a lens 30 closing the flared forward end of a circumferentially lipped reflector 32 formed at its smaller end with a cylindrical bulb holder 34. The lip of the reflector is clamped between lens 30 and the front end edge of the head portion 26, this arrangement being, per se, conventional in flashlight construction.

Seated in the rear end cap 14 is a spiral spring 36 held under compression between cap 14 and the rear end of a battery 38 the center post of which is engaged against the casing of a forward battery 38. The batteries are conventional flashlight batteries, and as usual are enclosed in a cylindrical battery holder 40 of fiber or other electrically insulative material.

Since the container 18 is disposed between the bulb and the flashlight batteries, and since it is desirable to include a switch arrangement for controlling illumination of the bulb, there is provided (see Figs. 3 and 5) an endless ring 42 of electrically insulative material, extending about and cemented or otherwise secured to the bulb holder 34. An L-shaped contact strip 44 of springable, electrically conductive material has one leg secured to the outer surface of the ring 42, and soldered or otherwise fixedly attached to this leg is one end of an insulated lead 46. The other leg of the strip 44 extends across and is spaced from the rear end of the holder 34, in position to engage the center terminal of a lamp bulb 47 engaged in the holder.

The lead 46 extends along the outer surface of the container 18, as shown in Fig. 3, within a nozzle cover to be described hereinafter. At its other end, lead 46 is fixedly secured to a contact strip 48 cemented to an insulating piece 50 which in turn is secured to a lateral extension provided upon one end of an elongated slide 52, that is secured to a switch button 54 shiftable longitudinally of the casing within a guide slot 56 (see Fig. 2).

When the switch button is retracted, the contact 48 is disposed in the Fig. 3 position thereof. Spaced forwardly a short distance from the contact 48 (see Figs. 3 and 6) is an elongated, cylindrical valve housing 58 extending diametrically of and within the casing. An arcuately shaped spacer 60 of electrical insulation is secured to the surface of the valve housing 58, and mounted upon the spacer 60 is an electrically conductive bridging strip 62 having a terminal 64 constantly engaged against the center post of the forward battery.

When switch button 54 is shifted forwardly from its Fig. 6 position, the contact strip 48 is engaged against strip 62. As a result, a circuit will be closed from the center post of the forward battery through strip 62, contact 48, lead 46, the center terminal of bulb 47, the con-

ductive side wall of the base of the bulb, reflector **32**, the casing of the device (which casing is of electrically conductive material), spring **36**, and through the batteries back to the terminal **64**.

The nozzle cover has been designated at **66**, and as shown in Figs. 1 and 2 includes outwardly extending longitudinal flanges **67** brazed or otherwise fixedly secured to the outer surface of the casing. The nozzle cover is formed open at its front end, and fixedly engaged in the front end of the nozzle cover is a nozzle **68**, so shaped as to cause the ejection of a high pressure stream of extinguishing fluid. The extinguishing fluid can be of any of various well-known types of fluid used for fire extinguishing purposes.

Connected in communication with nozzle **68** is an elongated tube **70**, extending within cover **66** and connected at its rear end in communication with a radial passage formed in the exteriorly projecting portion of the valve housing **58** (see Fig. 3). The branch passage is in communication with one end of an axial passage **72** in which is loosely fitted a plunger **74** extending into a counterbore of the passage **72**, which counterbore is closed by a threaded plug **78**. A compression spring **76** is engaged between plug **78** and a head formed upon plunger **74**, and opening into the counterbore below the head is a branch passage connected to an inlet tube **80**, the outer end of which is beveled and is disposed close to the bottom of the casing as best shown in Fig. 3. O-rings **82**, **84** are circumposed about the plunger to prevent leakage of fluid thereabout.

The container **18** may be filled with a suitable quantity of fluid, after which the container is charged with a suitable propellant. The container is filled through a filler opening formed centrally in a threaded boss mounted in a center opening of depression **24**, with a plug **85** normally closing said threaded opening.

So far as the propellant is concerned, this can be ordinary compressed air, and the outer end of nozzle **68** can be so shaped as to receive one end of an air supply hose, such as is normally provided on air tanks that are conventional equipment in automobile service stations. Thus, the air can be forced into the container through the nozzle, with the plunger **74** held in compressed position, by depression of a channeled handle **86** pivotally mounted at **88** upon the rear portion of cover **66** and normally held in its inoperative, upper position by a lock pin **90**. Lock pin **90** may be a conventional cotter key, which as shown in Figs. 1 and 2, can be pulled out through the medium of a ring **92** connected thereto.

In any event, assuming that the container **18** has been suitably charged with extinguishing fluid and with a propellant, the escape of the fluid will be normally prevented, the parts at this time being in their Fig. 3 position. However, when it is desired to discharge the extinguishing fluid, one pulls the lock pin. Then, handle **86** is depressed to lower the plunger **74**. The head of the plunger, to which the O-ring **82** is cemented or otherwise fixedly secured, moves downwardly in the counterbore, below the inlet branch passage. The fluid now moves through tube **80**, and passes about the plunger within the axial bore **72**. The fluid then travels through the outlet branch passage and tube **70** for discharge through nozzle **68**.

A characteristic of the device resides in the fact that the extinguisher fluid is discharged in a path such as to travel toward a point illuminated by the light beams of the flashlight or lamp. The device can thus be trained upon the trouble spot, while the fire extinguisher is in operation, with full illumination of the area in which the fire has occurred. This is of importance in view of the fact that many fires, in their earliest stages, show no signs of the flame, but show only smoke. Hence, the arrangement wherein the illumination of the trouble area occurs while extinguishing fluid is discharged against said area, is of considerable value.

The invention may have other embodiments, but in every instance there is the common, basic characteristic wherein a flashlight or lamp is used in combination with a fire extinguisher, in a single, compact casing so designed as to provide ready access to both of these component assemblies.

It is to be understood that in the fire extinguisher, any suitable fluid, dry chemical powder, inert gas or other fire extinguishing media may be used.

While I have illustrated and described the preferred embodiment of my invention, it is to be understood that I do not limit myself to the precise construction herein disclosed and that various changes and modifications may be made within the scope of the invention as defined in the appended claims.

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

1. A combination electric lamp and fire extinguisher comprising a casing, a lamp assembly therein including a bulb, battery means, and a switch all in circuit, said switch controlling closing of the circuit; and a fire extinguisher assembly in the casing, between the bulb and battery means, including a container for an extinguisher fluid, nozzle means extending from said container, and valve means for controlling the flow of fluid from the container to the nozzle means, the nozzle means and bulb being arranged to effect discharge of the fluid along a path illuminated by the bulb, said bulb being disposed forwardly of the nozzle.

2. A combination electric lamp and fire extinguisher comprising a casing, a lamp assembly therein including a bulb, battery means, and a switch all in circuit, said switch controlling closing of the circuit; and a fire extinguisher assembly in the casing including a container for an extinguisher fluid, nozzle means extending from said container, and valve means for controlling the flow of fluid from the container to the nozzle means, said casing being of elongated formation and including a rear end portion adapted to contain the battery means, an intermediate portion carrying the container, and a front portion in which the bulb is mounted.

3. A combination electric lamp and fire extinguisher comprising a casing, a lamp assembly therein including a bulb, battery means, and a switch all in circuit, said switch controlling closing of the circuit; and a fire extinguisher assembly in the casing including a container for an extinguisher fluid, nozzle means extending from said container, and valve means for controlling the flow of fluid from the container to the nozzle means, said casing being of elongated formation and including a rear end portion adapted to contain the battery means, an intermediate portion carrying the container, and a front portion in which the bulb is mounted, the nozzle means including a cover disposed exteriorly of and fixedly secured to the casing, and a nozzle engaged in said cover, said lamp assembly further including a connecting lead electrically connected at one end to the lamp terminal, said lead extending through the nozzle cover to the switch.

4. A combination electric lamp and fire extinguisher comprising a casing, a lamp assembly therein including a bulb, battery means, and a switch all in circuit, said switch controlling closing of the circuit; and a fire extinguisher assembly in the casing including a container for an extinguisher fluid, nozzle means extending from said container, and valve means for controlling the flow of fluid from the container to the nozzle means, said casing being of elongated formation and including a rear end portion adapted to contain the battery means, an intermediate portion carrying the container, and a front portion in which the bulb is mounted, the nozzle means including a cover disposed exteriorly of and fixedly secured to the casing, and a nozzle engaged in said cover, said lamp assembly further including a connecting lead electrically connected at one end to the lamp terminal, said lead extending through the nozzle cover to the switch,

said switch including a slide movably mounted on the casing, and a contact carried by said slide to which the lead is electrically connected.

5. A combination electric lamp and fire extinguisher comprising a casing, a lamp assembly therein including a bulb, battery means, and a switch all in circuit, said switch controlling closing of the circuit; and a fire extinguisher assembly in the casing including a container for an extinguisher fluid, nozzle means extending from said container, and valve means for controlling the flow of fluid from the container to the nozzle means, said casing being of elongated formation and including a rear end portion adapted to contain the battery means, an intermediate portion carrying the container, and a front portion in which the bulb is mounted, the nozzle means including a cover disposed exteriorly of and fixedly secured to the casing, and a nozzle engaged in said cover, said lamp assembly further including a connecting lead electrically connected at one end to the lamp terminal, said lead extending through the nozzle cover to the switch, said switch including a slide movably mounted on the casing, and a contact carried by said slide to which the lead is electrically connected, the valve means including a valve casing, said lamp assembly further including a bridging contact mounted upon the valve casing in engagement with the battery means, said bridging contact being exposed for engagement by the contact of the slide on operation of the switch in one direction.

6. A combination electric lamp and fire extinguisher comprising a casing, a lamp assembly therein including a bulb, battery means, and a switch all in circuit, said switch controlling closing of the circuit; and a fire extinguisher assembly in the casing including a container for an extinguisher fluid, nozzle means extending from said container, and valve means for controlling the flow of fluid from the container to the nozzle means, said valve means including a valve casing, a plunger stem axially shiftable within the valve casing and formed with a valve at one end thereof, the valve casing being in communication with the container, the nozzle means further including a nozzle and a nozzle cover in which the nozzle is seated, said valve casing being connected in communication with the nozzle with the plunger stem being normally disposed to prevent passage of fluid through the valve casing between the container and nozzle.

7. A combination electric lamp and fire extinguisher

comprising a casing, a lamp assembly therein including a bulb, battery means, and a switch all in circuit, said switch controlling closing of the circuit; and a fire extinguisher assembly in the casing including a container for an extinguisher fluid, nozzle means extending from said container, and valve means for controlling the flow of fluid from the container to the nozzle means, said valve means including a valve casing, a plunger stem axially shiftable within the valve casing and formed with a valve at one end thereof, the valve casing being in communication with the container, the nozzle means further including a nozzle and a nozzle cover in which the nozzle is seated, said valve casing being connected in communication with the nozzle with the plunger stem being normally disposed to prevent passage of fluid through the valve casing between the container and nozzle, the connection between the valve casing and the nozzle comprising a tube extending longitudinally of and within the nozzle cover.

8. A combination electric lamp and fire extinguisher comprising a casing, a lamp assembly therein including a bulb, battery means, and a switch all in circuit, said switch controlling closing of the circuit; and a fire extinguisher assembly in the casing including a container for an extinguisher fluid, nozzle means extending from said container, and valve means for controlling the flow of fluid from the container to the nozzle means, said valve means including a valve casing, a plunger stem axially shiftable within the valve casing and formed with a valve at one end thereof, the valve casing being in communication with the container, the nozzle means further including a nozzle and a nozzle cover in which the nozzle is seated, said valve casing being connected in communication with the nozzle with the plunger stem being normally disposed to prevent passage of fluid through the valve casing between the container and nozzle, the connection between the valve casing and the nozzle comprising a tube extending longitudinally of and within the nozzle cover, said plunger stem being under spring bias effective to normally dispose the same in position to prevent said communication between the container and nozzle.

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