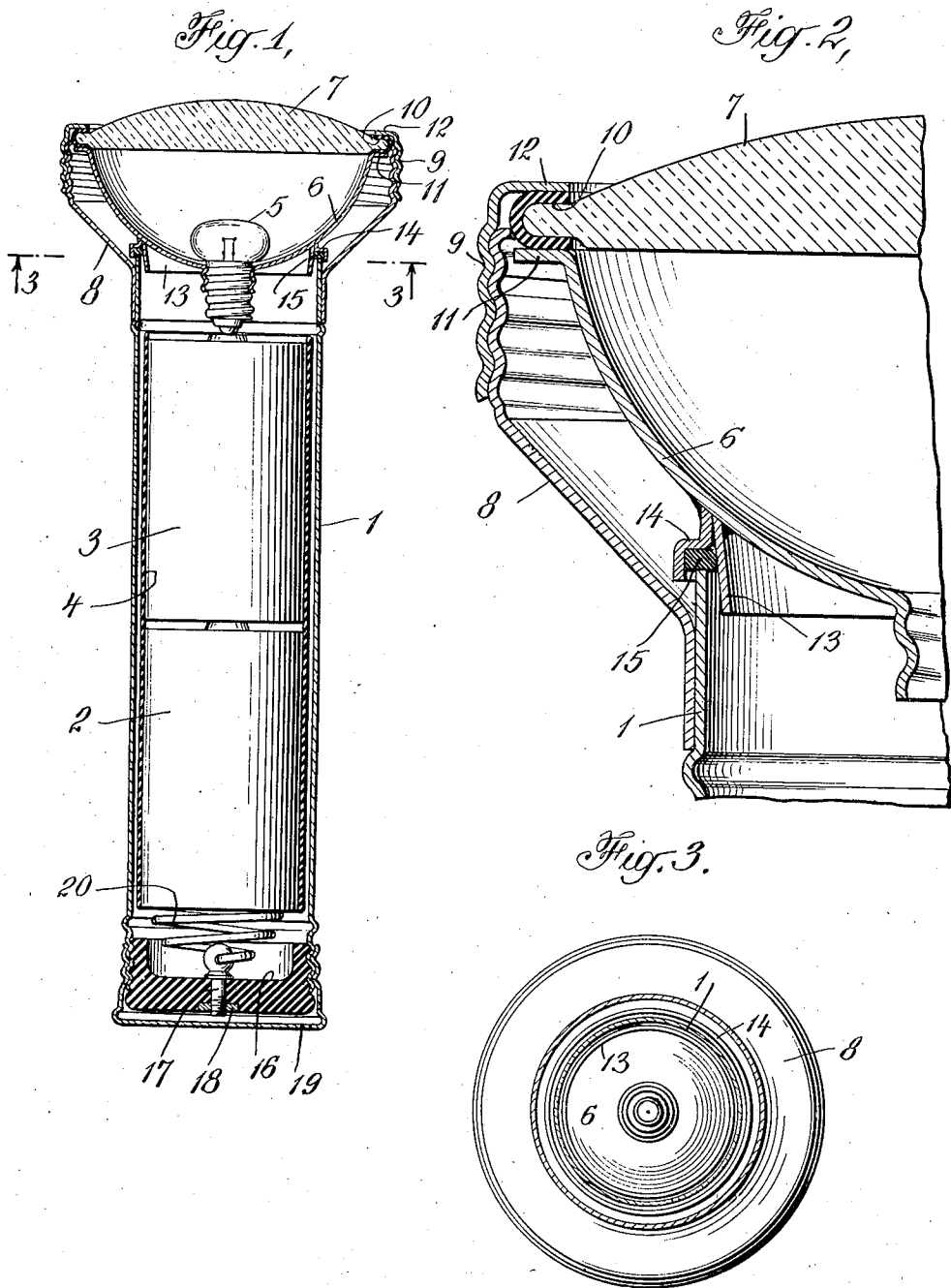


T. J. MADIGAN.
BATTERY HAND LAMP.
APPLICATION FILED AUG. 27, 1919.

1,340,550.

Patented May 18, 1920.



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UNITED STATES PATENT OFFICE.

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BATTERY HAND-LAMP.

1,340,550.

Specification of Letters Patent.

Patented May 18, 1920.

Application filed August 27, 1919. Serial No. 320,160.

To all whom it may concern:

Be it known that I, THOMAS J. MADIGAN, a citizen of the United States, residing at Brooklyn, in the county of Kings, State of New York, have invented certain new and useful Improvements in Battery Hand-Lamps; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

It is an object of the present invention to provide a hand lamp suited to the needs of firemen and fire salvage men who often must go into wet places and need a hand lamp unaffected by dripping water.

It is a further object to provide a structure simple in its details and reliable in its action, and well suited to the rough handling to which such devices are often subjected.

Other objects and advantages will become clear from the following detailed description, which is to be taken in conjunction with the accompanying drawings, wherein—

Figure 1 is a sectional elevation of an approved embodiment; Fig. 2 is an enlarged detail, and Fig. 3 is a transverse section on the line 3—3 of Fig. 1.

In the embodiment illustrated, the hand lamp comprises an imperforate tube 1, preferably of metal, in which is housed a battery of usual form, comprising a plurality of cells 2 and 3, arranged end to end in series connection, and enveloped by a pasteboard tube 4.

At the top end of tube 1 is a lamp 5, a reflector 6, a lens 7, and means for holding these parts in rigid relation and in such a way as to form a water-tight closure for the top end of the tube. For instance, there may be provided a flaring head 8 slipped over and soldered to the top end of tube 1 and threaded to receive the lens-holding ring 9. A ring of rubber 10 encircles the edge of the lens and so forms a water-tight joint both between the lens and flange 11 of the reflector, and between the lens and the inward flange 12 of ring 9. Soldered to the reflector is a flaring ring 13, and outside of that, and also soldered to the reflector, is a fitting 14, bent to form an annular recess within which fits a gasket 15 of soft material, such as lead. This gasket rests on the upper edge of tube 1 and forms a water-tight joint therewith.

The bottom end of tube 1 is provided with a water-tight closure, preferably in the form of an insulating plug 16 of rubber, wood, or the like, having threaded or other suitable engagement with the inside surface of threads pressed into the lower portion of tube 1, and making a water-tight joint thereat. This plug is traversed by a conductor which may be in the form of a post 17 carrying a helically coiled spring 20, which contacts with the lower, naked bottom of the lowermost dry cell, post 17 having a retaining nut 18 and projecting somewhat below the lower face of plug 16. Then, when the usual metal bottom cap 19 is screwed on over the threaded end of tube 1, it can be used as a switch element to make or break contact with the lower end of post 17 and thereby make or break the battery connection through lamp 5.

A structure constructed as above described can be operated in wet places and can even be submerged in water without putting out the light. This is of importance to firemen and others who must at times work in wet places, and need a lamp trustworthy under all conditions. The simplicity of the device contributes to a low initial cost, and to easy maintenance.

I claim:

1. A battery hand lamp comprising a waterproof tube of conducting material tightly closed at one end and adapted to contain a battery, a waterproof closure at the other end of the tube, a conductor fixed within the closure and adapted to engage one end of the battery, and a cap on the end of the tube for establishing a circuit between the conductor and the tube to light the lamp.
2. In a battery hand lamp, the combination of an imperforate tube, a battery therein, a lamp reflector and lens at the top of said tube, supporting means therefor having water-proof joints, an insulating plug closing the bottom of said tube, a conductor contacting with said battery and extending through and fixed within said plug, and a bottom cap threaded to said tube and movable into and out of contact with said conductor to control the lighting of said lamp.
3. In a battery hand lamp, the combination of a tubular conducting casing, an insulating plug closing the bottom of said casing, a conductor extending through and fixed within said plug and adapted to engage the

bottom of the battery, and a bottom cap threaded to said casing and movable into and out of contact with said conductor to control the flow of current from said battery.

5 4. In a battery hand lamp the combination of a waterproof tube adapted to contain a battery, a lamp reflector, a member attached to the outer surface of the reflector and provided with an annular recess adapted to fit

10 over the end of the tube, a gasket within the recess, a lens mounted on the reflector, a ring of waterproof material surrounding the edge of the lens, a head attached to the end of the tube, means associated with the head for clamping the lens upon the reflector and the reflector upon the end of the tube to cause the ring and gasket to form water-tight joints, and means associated with the other end of the tube for completing the circuit of the battery.

15 20

In testimony whereof I affix my signature.
THOMAS J. MADIGAN.