

July 27, 1943.

W. E. LAGING

2,325,253

PERISCOPE

Filed Nov. 17, 1942

2 Sheets-Sheet 1

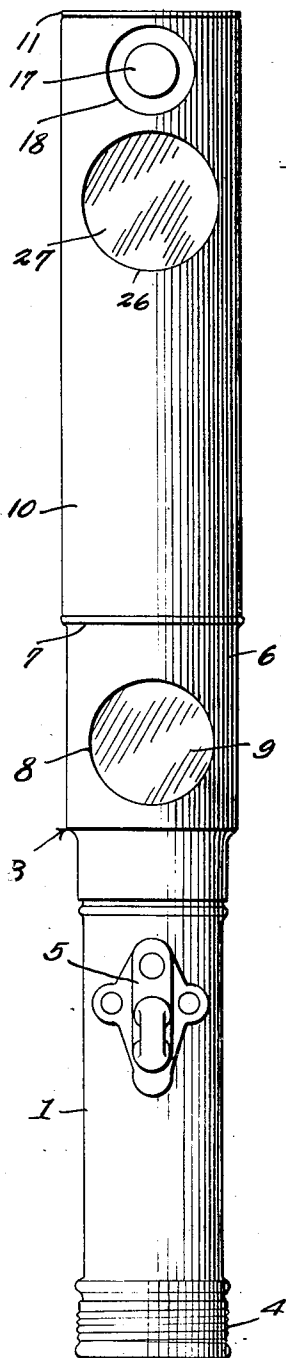


Fig. 1.

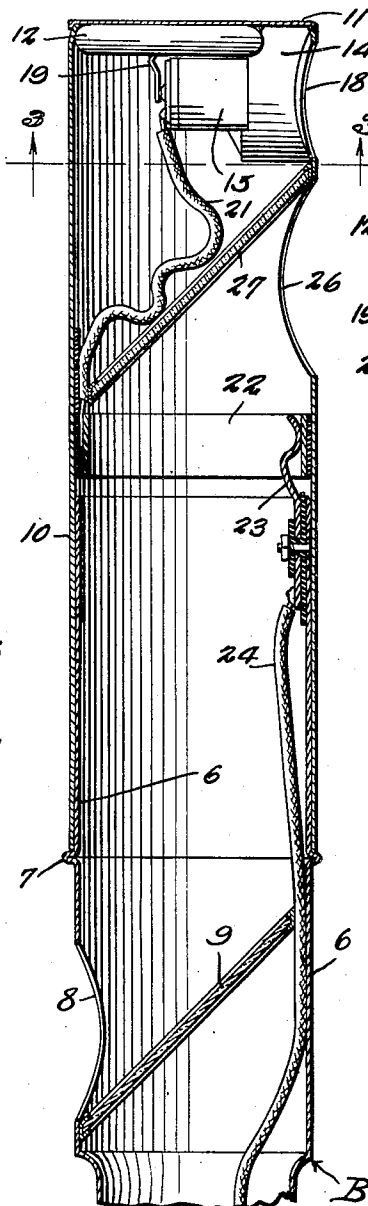


Fig. 2.

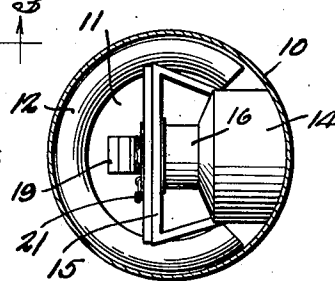


Fig. 3.

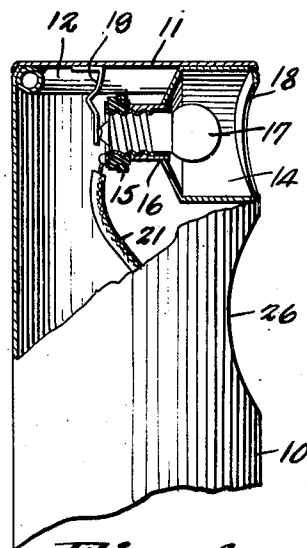


Fig. 4.

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2 Sheets-Sheet 2

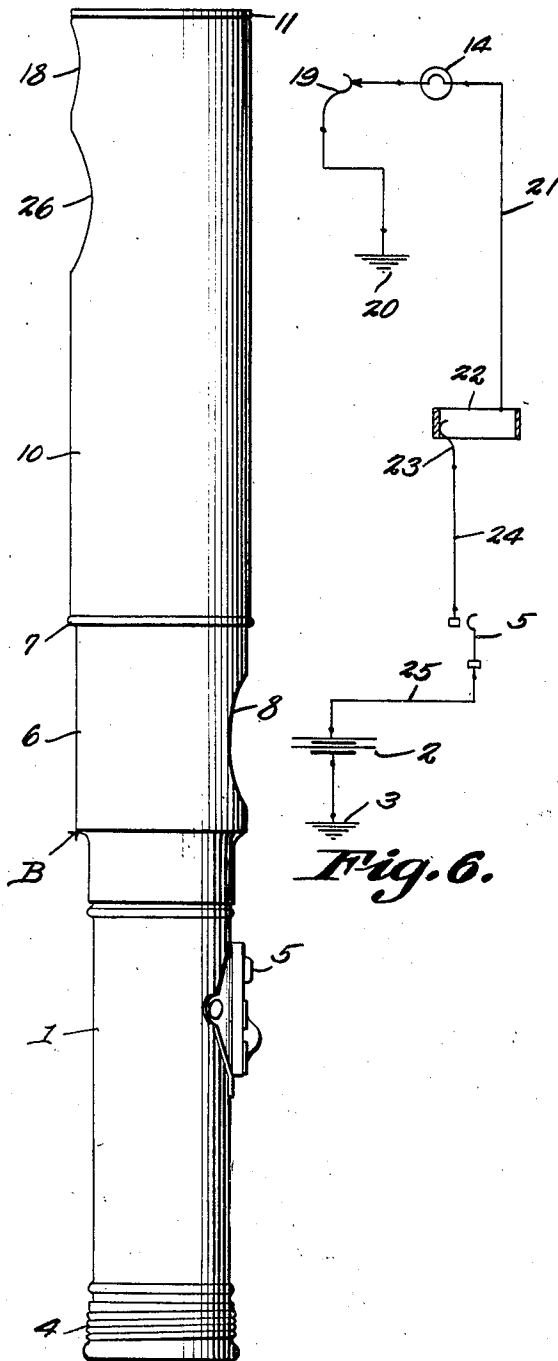


Fig. 6.

Fig. 5.

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UNITED STATES PATENT OFFICE

2,325,253

PERISCOPE

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Application November 17, 1942, Serial No. 465,890

1 Claim. (Cl. 88-71)

The device forming the subject matter of this application is a periscope, and one object of the invention is to provide novel means whereby an operator, without changing his position, can see reflections of objects, one at a time, when the objects are spaced apart. The invention aims to provide a novel means whereby proper reflection may be secured, to carry out the end above referred to.

It is within the province of the disclosure to improve generally and to enhance the utility of devices of that type to which the present invention appertains.

With the above and other objects in view, which will appear as the description proceeds, the invention resides in the combination and arrangement of parts and in the details of construction hereinafter described and claimed, it being understood that changes in the precise embodiment of the invention herein disclosed, may be made within the scope of what is claimed, without departing from the spirit of the invention.

In the accompanying drawings:

Fig. 1 shows in elevation, a device constructed in accordance with the invention;

Fig. 2 is an enlarged longitudinal section, parts being broken away;

Fig. 3 is a cross section on the line 3-3 of Fig. 2;

Fig. 4 is a fragmental side elevation wherein parts have been broken away, other parts being in section;

Fig. 5 is a side elevation wherein the device is viewed differently from the disclosure of Fig. 1;

Fig. 6 is a circuit diagram.

The device forming the subject matter of this application comprises a body B, including a tubular handle 1 containing a battery 2, grounded on one side, as indicated at 3, to the handle, the handle being provided at one end with a removable butt 4, and the handle carrying a switch 5. The details above referred to are common flashlight structure.

The handle 1 is provided with a tubular neck 6 having a circumscribing stop bead 7, the neck being supplied with a lateral peep hole 8 behind which is located a first reflector 9, fixed in the neck 6, at a forty-five degree angle to the axis of the body B.

A tubular cap 10 is mounted on the neck 6, for rotation at the will of an operator, and finds abutment against the bead 7 of the neck 6. The cap 10 is supplied with an outer end closure 11 carrying a resilient, arcuate grip 12, which, en-

gaging within the upper part of the cap 10, holds the end closure 11 in place.

A transverse and laterally open lamp housing 14 is secured to the closure 11 and carries a frame 15 provided with a socket 16, in which is mounted an electric lamp 17, adapted to shed its rays through a lateral opening 18 disposed in the cap 10, near to the closure 11. A spring tongue or brush 19 is secured to the closure 11 and makes end contact with the lamp 17. The tongue or brush 19 is grounded on the cap 10, and therefore on the body B, as indicated at 20 in Fig. 6.

Side contact with the lamp 17 is made by means of a conductor 21 having electrical connection with the socket 16, the conductor 21 being joined to a collector ring 22 secured in a cap 10, but insulated therefrom. The collector ring 22 is engaged internally by a spring tongue or brush 23, secured to the neck 6 of the handle 1, but insulated therefrom. From the brush 23, a conductor 24 leads to one side of the switch 5, and the opposite side of the switch is connected to the battery 2 by a conductor 25.

Near to the illumination aperture 18, the cap 10 is provided with an opening 26, behind which is disposed a second reflector 27 arranged at an angle of forty-five degrees to the axis of the body B and parallel to the reflector 9, the reflecting surfaces of the members 27 and 9 facing each other. The reflector 27 forms a closed chamber in the outer end of the cap 10. The conductor 21 is slack enough to permit the closure 11 to be removed for the renewal of the lamp 17, and the reflector 27 prevents the conductor from sagging into the line of sight through the objective opening 26.

If an object to be examined is at the right hand side of the body B in Fig. 2, the object is illuminated by the lamp 17 through the opening 18. The image of the object is received on the reflector 27 and is projected downwardly upon the reflector 9, where the object can be seen by a person looking through the peep hole 8.

If the object is at the left hand side of the body B, in Fig. 2, the cap 10 can be rotated on the neck 6 of the body B, and inspection may proceed, as before.

The article is of peculiar utility when used in a horizontal position, to inspect hydrants, and to look either up or down, inside of walls, to determine whether or not there are fire stops or other obstacles which will prevent the running of wires, pipes, flues and the like, between the upper and lower floors of a finished building, or a building in which sight is obstructed.

The device hereinbefore described affords a convenient means for making inspection in places where inspection otherwise would be difficult.

What is claimed is:

A periscope comprising a handle, a cap mounted to rotate on the handle, about the longitudinal axis of the handle, the handle having lateral peep means, the cap having a lateral objective opening and an illuminating aperture disposed adjacent to the objective opening and close to the outer end of the cap; a first reflector carried by the handle, at the peep means, a second reflector carried by the cap, at the objective opening, the reflectors being disposed at an angle of forty-five degrees to the longitudinal axis of the handle, the second reflector forming a closed chamber in the

cap, at the outer end thereof, a closure removably mounted on the outer end of the cap, a transverse and laterally open lamp housing in the chamber and carried by the closure, the housing being in communication with the illuminating aperture and having a socket at its inner end, means carried by the closure for making electrical end contact with a lamp in the socket, and means for making electrical side contact with a lamp in the socket, the last-specified means comprising a flexible conductor extended through the chamber and slack enough to permit the closure to be removed, the second reflector being interposed between the conduit and the objective opening.

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