

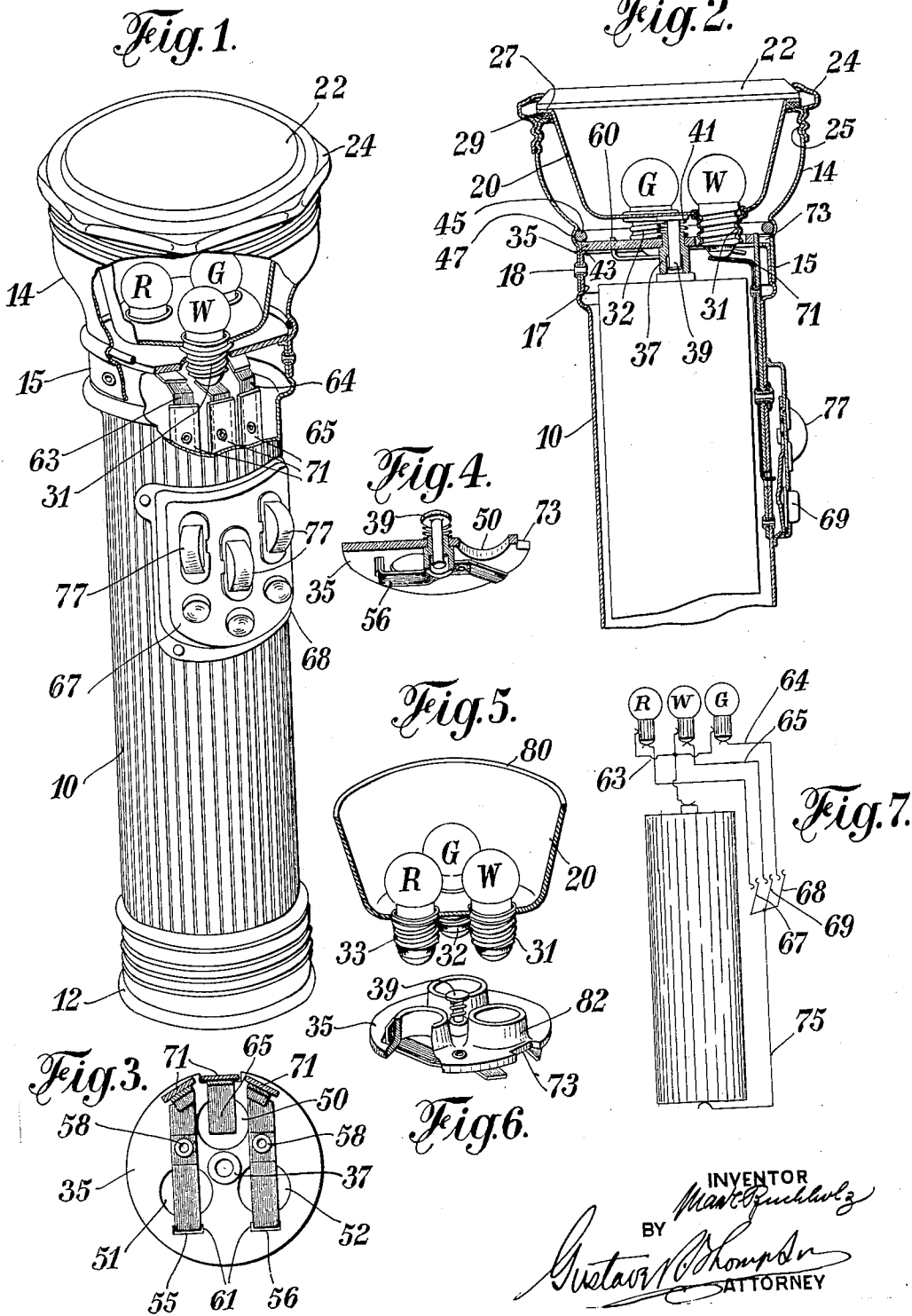
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FLASH LIGHT

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FLASH LIGHT

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3 Claims. (Cl. 240—10.66)

This invention relates to flashlights and provides improvements therein, and is a division of my application Serial No. 345,753, filed March 9, 1929.

5 In my application for patent, Serial No. 335,-
168, filed January 26, 1929, and Serial No. 335,-
774, filed January 29, 1929, I have described and
claimed flashlights having a plurality of lamps,
10 in which the lamps may be of different colors,
and be illuminated singly or together, and be
used for signaling and other purposes. This and
my other said inventions provide a multiple lamp
flashlight of improved construction in respect to
15 its compactness, ease and facility of assembly,
convenience of replacing batteries and lamps,
simplicity and general excellence of construction
and performance.

The present invention provides a compact and
simple arrangement of a plurality of lamp sockets
20 in combination with a head having a cupped re-
flector, and providing simple and effective pro-
tection against grounds. In the present embodi-
ment the said reflector forms the support for the
lamp-sockets.

25 The invention further provides improved means
for connecting the sockets to switch leads, and
for making connection between the lamp ter-
minals which connect with the carbon pole of the
battery.

30 Other features of improvement will be pointed
out in connection with the detailed description
which follows.

An embodiment of the invention is illustrated
in the accompanying drawing, wherein:—

35 Figure 1 is a perspective view, with parts broken
away, of one embodiment of my invention.

Fig. 2 is a vertical sectional view of the con-
struction shown in Fig. 1.

40 Fig. 3 is a bottom plan view of the disk car-
rying the contacts for making connection with
terminal contacts on the lamps.

Fig. 4 is a sectional perspective view of the
parts shown in Fig. 3.

45 Fig. 5 is a detailed view, showing in section and
perspective the reflector having the lamp-sock-
ets connected thereto.

Fig. 6 is a perspective view (with parts broken
away) of a slight modification of the parts shown
in Fig. 3.

50 Fig. 7 is a diagrammatic view showing the cir-
cuit connections.

Referring to said drawing, numeral 10 desig-
nates the body or casing for holding the battery,
and usually of elongated cylindrical shape. The
55 bottom may be closed by the usual screw cap 12

provided with a spring contact, or any other suit-
able cap.

Numeral 14 designates the head, which is se-
cured to the casing in any suitable way. As
shown in Figs. 1 and 2, the head is provided with 60
a neck 15 which telescopes the end portion 17 of
the casing, and may be fastened thereto by rivets
18.

The head 14 contains a plurality of lamps R,
G, W, preferably of different colors, as for ex- 65
ample, red, green and white, adapting the de-
vice for signalling, as hereinafter more fully ex-
plained.

Numeral 20 designates a cupped reflector
adapted to project condensed light from one or 70
all of the said lamps R, G, W. Numeral 22 des-
ignates a glass cover plate in front of the re-
flector, and the plate 22 is conveniently held in
place by a threaded ring 24 engaging correspond-
ing threads 25 on the head. 75

As shown in Fig. 2, the reflector 20 may be
provided with a flange 27, which flange 27 may
be pressed down against the head by the cover
plate 22, and thereby hold the reflector in place.
80 Insulation 29 may be provided between the flange
27 and the said head, and insulate said reflector
from the head, where the head is of metal, as
is usual.

Numerals 31, 32, 33 designate the lamp-sock-
ets which are secured to the reflector, and are 85
electrically grounded thereon.

Behind the reflector is a disk 35, convenient-
ly of insulating material, having thereon a stud
or the like 37 adapted to make contact with
the carbon pole of the battery. The stud 37 90
has in sliding contact therewith a pin 39, which
extends through the said disk 35, and is adapted
to bear resiliently against the said reflector 24,
so as to distribute current through the said re-
flector and sockets 31, 32, 33, to the threaded 95
terminals of the lamps. A spring 41 serves for
pressing the said pin 39 against the reflector.

The said plate 35 also sustains the upward
thrust of the said battery, and for this pur-
pose it is securely fastened in the upper end 100
of the said casing 10. For securing the said
plate 35 in the end portion 17, the said end
portion may have an inturred flange 43 on which
the said disk 35 rests, and above the said disk
35 there is preferably arranged a split resilient 105
ring 45 adapted to extend into a groove 47, here
shown as in the neck portion 15 of the said head.
The spring 45 bears against the upper side of
said disk or plate 35 and holds it securely against
upward displacement, and thereby relieves the 110

lamps and lamp-sockets and reflector from the upward thrust of the said battery.

The said disk 35 is preferably provided with openings 50, 51, 52 corresponding to the position of the sockets 31, 32, 33, through which, moreover, the said sockets are adapted to pass, so as to properly position and hold the said sockets against angular displacement. The underside of the disk 35 is also preferably provided with contact strips 55, 56 passing across the said openings 51, 52, and adapted to provide a resilient spring contact for the center terminal contact of the lamps. The strips 55, 56 are conveniently fastened to the disk 35 by means of rivets 58, and conveniently have upturned ends 60 (Fig. 2) which project through slots 61 in the said disk 35. The said slots 61 permit movement of the ends 60 therein, and at the same time prevent lateral displacement of the said strips 55, 56. The contact strips 55, 56 are connected with conducting strips 63, 64 leading to the switches 67, 68, the ends of said strips 63, 64 being conveniently bent over in such manner as to bear resiliently against the underside of the said strips 55, 56 on the said disk 35. The center contact of the lamp which projects through the opening 50 may bear directly against the resilient end 65 of a conducting strip leading to the switch 69. Where the casing 10 is of metal, insulating strips 71 may be provided between the strips 63, 64, 65 and the said casing 10. One of the conducting strips 71 may extend upwardly through a notch 73 in said disk 35, and thereby provide a guide for correctly positioning said disk 35 in the casing, in assembling.

The switches 67, 68, 69 are connected to the zinc pole of the battery through a suitable lead 75 or may be grounded on the casing 10, and through the said cap 12 make contact with the bottom of a cell in well known manner.

To illuminate one or another of the bulbs R, G, W, the switches 67, 68 or 69 are pressed. If steady lighting of one or more of these lamps R, G, W is desired, the slides 77 may be pressed over the switch buttons 67, 68, 69 and hold these permanently in position to close the circuit.

Referring to the modification shown in Figs. 5 and 6, the flange 27 on the reflector may be omitted, the reflector being held in place by the bearing of its edge 80 against the underside of the glass cover plate 22, the reflector being pressed against said plate by the spring-pressed pin 39 bearing against the underside of the reflector.

Furthermore, the disk 35 may be provided with collars 82 around each of the openings 50, 51, 52, into which collars 82 the said sockets 31, 32, 33 fit snugly, and thereby act to hold the reflector upright and prevent the said reflector from tilting sidewise into contact with the head 25. The said reflector at its edge 80 is of smaller diameter than the inner walls of the head, so that there is an air space between the reflector and the head. The reflector will therefore be insulated from the head by the air space or clearance between its edge and the sides of the reflector, and by the glass plate 22 against which the reflector bears.

From the foregoing description, it will be seen that a flashlight having a multiple-lamp head is provided, which is so small and compact that it can be readily carried around by a person in his pocket and which avoids the bulkiness and inconvenience of construction of prior flashlights having multiple lamps. Moreover, the entire construction is such as to be adaptable for simple and expeditious manufacture and assembly.

The invention may receive other embodiments than that herein specifically illustrated and described.

What is claimed is:—

1. A flashlight comprising a body or casing, a head on said casing, a single cupped reflector in said head, a plurality of sockets attached to said reflector, means for connecting said sockets with one pole of a flashlight cell, an insulating disk in said casing behind said reflector, openings in said disks for said sockets, and terminal connections on the underside of said disk extending crosswise of the openings in the disk and adapted to make contact with the center terminals of lamps in said sockets, said terminal connections on the underside of said disk comprising short strips, and conducting strips carried by the casing, adapted to make contact with said short strips, a notch in said disk, and a projection in line with one of the conducting strips on the casing adapted to project through said notch, and position the disk and terminal strips thereon in predetermined contact relation to said strips on the casing.

2. A flashlight comprising a casing having a head, a reflector insulatingly supported in said head, a plurality of sockets attached to said reflector and in electrical contact therewith, an insulating disk supported by said casing and having apertures through which said sockets extend, contact members insulatingly fixed to said casing and having portions extending under the apertures in said disk to engage the center contacts of bulbs arranged in said sockets, a resilient telescoping contact carried by said disk and having one end engaging said reflector and having its other end engageable with a battery arranged in said casing, and switches individual to said contact members for selectively lighting said bulbs.

3. A flashlight comprising a casing having a head, a reflector insulatingly supported in said head, a plurality of sockets attached to said reflector and in electrical contact therewith, an insulating disk supported by said casing and having apertures through which said sockets extend, contact members insulatingly fixed to said casing and having portions extending under the apertures in said disk to engage the center contacts of bulbs arranged in said sockets, cooperating means on said disk and one of said contact members for registering the apertures in said disk with said sockets, a resilient telescoping contact carried by said disk and having one end engaging said reflector and having its other end engageable with a battery arranged in said casing, and switches individual to said contact members for selectively lighting said bulbs.

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