

Sept. 15, 1925.

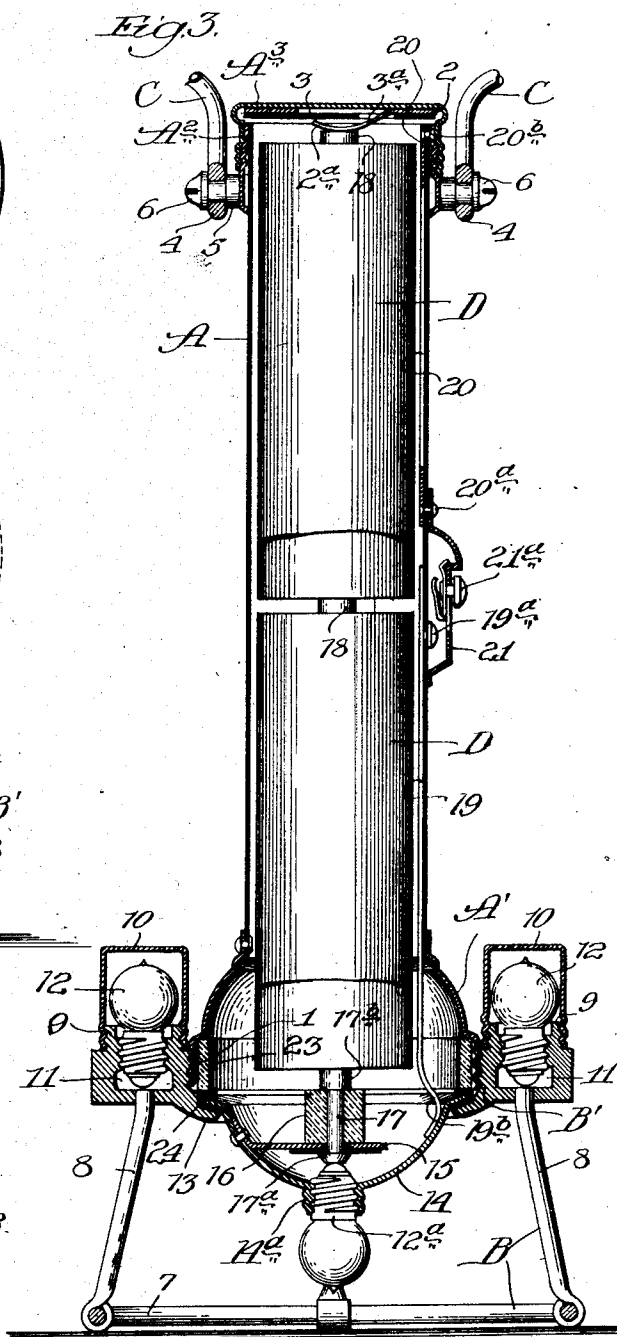
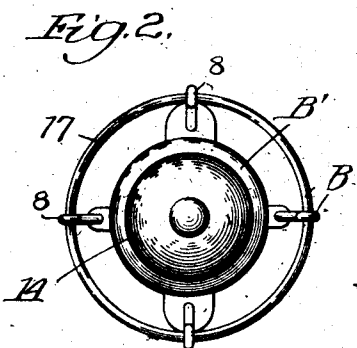
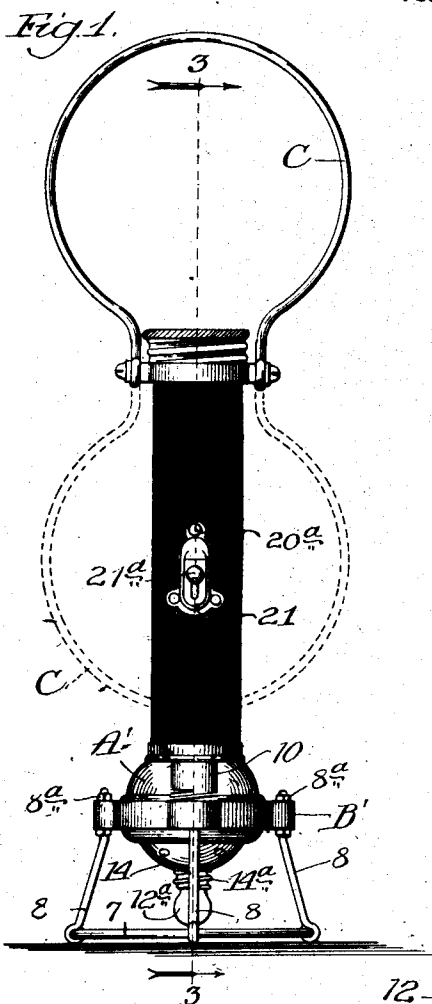
1,553,877

H. A. RING

ELECTRIC LANTERN

Filed Aug. 10, 1921

2 Sheets-Sheet 1



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Fig. 4.

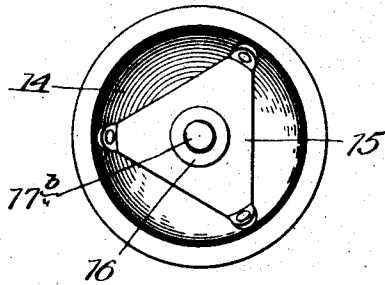


Fig. 5.

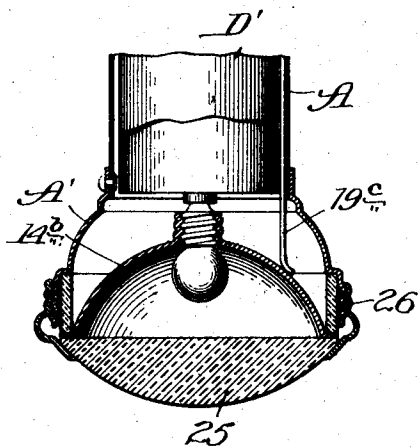


Fig. 6.

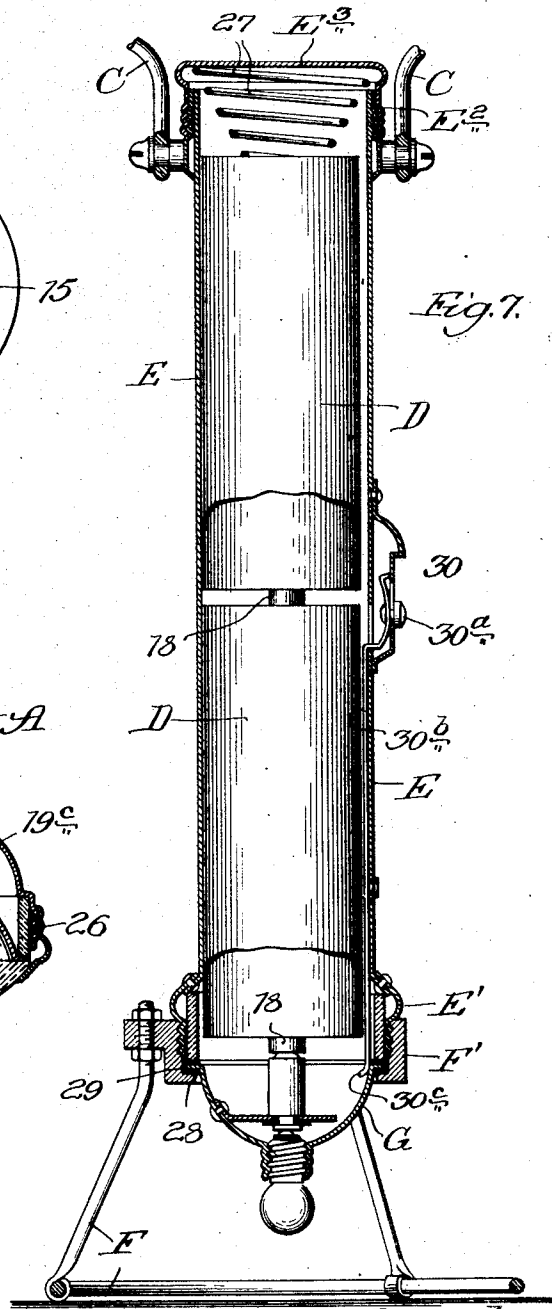
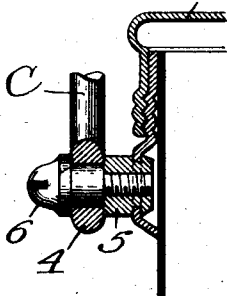


Fig. 7.

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UNITED STATES PATENT OFFICE.

HANS A. RING, OF MADISON, WISCONSIN, ASSIGNOR TO FRENCH BATTERY & CARBON CO., OF MADISON, WISCONSIN, A CORPORATION OF WISCONSIN.

ELECTRIC LANTERN.

Application filed August 10, 1921. Serial No. 491,157.

To all whom it may concern:

Be it known that I, HANS A. RING, a citizen of the United States, residing at Madison, in the county of Dane and State of Wisconsin, have invented a new and useful Improvement in Electric Lanterns, of which the following is a specification.

This invention relates particularly to electric lanterns operated by dry cells; and the primary object is to provide an improved lantern which is adapted to the use of dry cells of the type commonly employed in flash-lights.

The invention is illustrated, in its preferred embodiment, in the accompanying drawings, in which—

Fig. 1 represents an elevational view of the improved lantern; Fig. 2, a bottom plan view of the same; Fig. 3, an enlarged vertical sectional view taken as indicated at line 3 of Fig. 1; Fig. 4, an inner view of the reflector employed; Fig. 5, a broken sectional view showing a modification by which the device is converted into a hand-lamp or flash-light; Fig. 6, a broken detailed sectional view illustrating the manner in which the bail or handle is connected with the tubular standard or casing of the lantern; and Fig. 7, a vertical sectional view of a modification of the construction shown in Fig. 3.

Referring to Figs. 1 to 4, inclusive, and Fig. 6, the construction shown comprises a tubular standard or casing A which is of insulating material, such as hard fiber; a base or spider B upon which the standard A is mounted; a bail or handle C connected with the upper portion of the member A; and dry cells D of the flash-light type confined in the casing A.

The tubular standard or casing A has secured to its lower end an annular bell-shaped member or ring A' which is provided at its lower end with an external thread 1 which screws into an internally threaded ring B' which constitutes a part of the base or spider B. The upper end of the casing A has secured thereon a ring A² which is externally threaded and which has applied thereto a removable cap A³. The cap A³ is made of sheet-metal, and confined therein in contact therewith is a metal disk 2 which is provided with a downwardly struck spring tongue 2^a which affords a contact. An insu-

lation disk 3 is located adjacent the inner surface of the disk 2, and has a slot 3^a thru which the spring contact 2^a extends.

The bail C comprises a wire member which is curved in circular form and provided at its extremities with eyelets or perforations 4. The ring A² has secured thereto lugs 5 (see Fig. 6), which are provided with threaded bores which receive screws 6 which serve to connect the bail C to the lugs 5.

The base or spider B comprises, in addition to the substantial metal ring B', a heavy wire base ring 7 from which rise arms 8 which serve to support the ring B' in an elevated position. Two of the wire arms 8 have threaded extremities which extend thru the ring B', the ring being secured thereon by means of nuts 8^a. The ring B' is equipped above the points of the connections with the other wire arms 8 with externally threaded bosses 9, upon which are secured removable caps 10. The ring B' is recessed at its upper side thru the bosses 9, as indicated at 11, thus providing bores which are internally threaded. The caps 10, together with the recesses 11, afford chambers for extra lamp-bulbs 12, whose shanks are screwed into the threaded bores 11.

The ring B' is threaded as shown to receive the threaded portion 1 of the bell-shaped member or ring B' of the standard A. Below the internally threaded wall of the ring B' is an annular flange or lip 13 which serves to support a concavo-convex metallic reflector 14, whose convex side is turned downwardly. The reflector is provided centrally with a threaded socket 14^a which serves to receive the lamp 12^a.

The reflector is equipped internally with a spider or bracket 15 upon which is mounted an insulation plug 16 thru which extends a central contact stud 17 whose lower end makes contact with the central contact of the lamp-bulb. The upper end of the stud 17 is equipped with a contact 17^b upon which the bottom of the zinc can of the lower cell D rests.

The cells D are provided with the usual carbon poles 18, the carbon pole of the upper cell engaging the spring contact 2^a.

The tubular standard or casing A is equipped interiorly on one side with a lower metal strip or conductor 19 and with an up-

per metal strip or conductor 20. The casing is also equipped at one side with a switch 21 provided with a slide-button 21^a which is adapted to make contact with a contact member 19^a with which the strip 19 is provided at its upper end. The lower end of the strip 19 is extended downwardly so as to project below the ring A' and is so formed as to provide a spring contact 19^b which engages the inner surface of the metallic reflector.

The lower end of the conductor or strip 20 is connected by a rivet 20^a with the frame of the switch 21; and the upper end of the strip 20 is connected by a rivet 20^b with the upper end of the metal ring A².

It will be seen that when the switch-button 21^a is in contact with the contact member 19^a, the circuit will be closed. The circuit passes thru the cells to the contact member 2^a at the upper end of the tubular standard, thence thru the cap A³ to the ring A², thence thru the rivet 20^b, thence thru the strip 20 to the switch, thru the switch to the strip 19, thence to the metallic reflector, thence thru the lamp, and from the central contact of the lamp thru the contact 17 to the bottom of the lowermost cell.

It will be noted that in the construction described, the tubular standard of the lantern forms the housing for dry cells which are series connected by simple contact with each other; also, that the lantern standard is provided with a circuit, or partial circuit, external to the cells, the external partial circuit being equipped with a switch. It will be noted, further, that the lamp bulb is housed or protected by the spider which supports the lamp standard, and that the lower or convex surface of the reflector serves as a reflecting surface which throws the rays from the lamp in every direction. Also, the tubular standard is removable from the base or spider B, and is itself provided with a removable top or cap which is equipped with a contact, which preferably is a spring contact.

The threaded portion of the metal ring or bell A' is shown as having fitted therein a removable insulation ring 23. This may comprise a strip of heavy cardboard bent into annular form. It will be noted that when the ring A' is screwed into the ring B', the end of the ring A' clamps the peripheral portion of the reflector against the annular flange 13. As shown in Fig. 3, the reflector is insulated from the ring B' by means of a thin gasket 24.

In the modification shown in Fig. 5, the tubular member A carries the bell-shaped member or ring A' in the manner already described. The lower cell B', however, does not extend so low as in the above described construction; and a reflector 14^b is mounted in the bell A' in the manner now familiar in flash-light construction. The spring contact

19^c is correspondingly shortened to contact with the convex surface of the reflector. A lens 25 is secured in position by means of a retaining ring 26. In the manufacture of flash-lights and electric lanterns, certain parts may be made interchangeable, as this illustration serves to show. Thus, where a manufacturer is engaged in the manufacture of flash-lights and electric lanterns both, economy in manufacture may be effected by reason of the interchangeability of some of the parts. The construction thus far described is adapted for use in connection with standard flash-light or battery hand-lamp dry cells.

In the modification shown in Fig. 7, provision is made for the use of a dry cell of larger diameter than that employed in the standard construction. Also, the modification shown in Fig. 7 illustrates the reversibility of the dry cells and also the use of a metal tubular standard or casing. In this construction the tubular standard or casing is designated E. It has secured to its lower end an externally threaded ring E' which is only of slightly greater diameter than the casing itself. It has secured to its upper end a metal ring E² with which the bail C is connected. A cap E³ is applied to the threaded ring E². The cells D, D are inverted. The cap E³ is in electrical connection with the zinc can of the upper cell D thru the medium of a conical coil spring 27.

The base or spider is designated F. It has a ring F' into which the ring E' of the standard E is screwed. The reflector G is clamped between the lip 28 of the ring F' and the lower end of the ring E', the reflector being insulated from the ring F' by a gasket 29. The switch 30 is equipped with a sliding button 30^a with which is connected a conducting strip 30^b whose lower end affords a contact 30^c. When the contact 30^c engages the reflector G, the external circuit or partial circuit is completed. The strip 30^b may be retracted, however, to break the circuit.

The improved construction provides a lantern of pleasing design, which can be manufactured at moderate cost. This construction enables dry cells of the flash-light type to be employed, the cells being properly connected in series by simply introducing them into the lantern. The lantern may be handled practically in the same manner as a flash-light, if desired, the tubular standard being of small diameter and serving as a handle, as for example, where it is desired to use the device as an exploring light. Moreover, if desired, the bail may be removed, in which case, the device becomes in effect a battery lamp for exploring purposes, but provided with a cage or protecting guard, this function being served by

the spider-like base. Again, the device may be laid on its side, where circumstances make this desirable, without detriment to the device.

5 The foregoing detailed description has been given for clearness of understanding only, and no unnecessary limitations should be understood therefrom, but the appended claims should be construed as broadly as
10 permissible in view of the prior art.

What I regard as new, and desire to secure by Letters Patent, is—

1. In a device of the character set forth, the combination of a supporting spider
15 equipped with an internally threaded ring and with a retaining flange, a reflector having its base portion confined within said flange, a tubular casing having its lower
20 end equipped with a threaded member secured in said socket, dry cells in said casing, a lamp-bulb mounted in said reflector and having electrical connection with one of
25 said cells, and means for completing the external circuit from the top cell to the lamp-bulb.

2. In a device of the character set forth, the combination of a supporting spider equipped with a ring, a metallic reflector mounted in said ring and equipped with a
30 cell-support, a lamp-bulb mounted in said reflector, a tubular casing detachably mounted in said ring, cells in said casing, the lowermost cell being carried wholly by said cell-support and in electrical connection with the central contact of the lamp-
35 bulb, and means for completing the external circuit from the upper cell to the lamp-bulb, including a contact member serving to engage said reflector.

40 3. In a device of the character set forth, the combination of a spider, a tubular standard rising therefrom and adapted to serve as a handle, a concavo-convex reflector mounted in said spider with its convex side
45 down, a lamp mounted in said reflector, dry cells in vertical column in said casing and unsupported by the lower end thereof, a cell-support carried by said reflector and carrying said cells, the lower one of which
50 is in electrical connection with the central contact of the lamp bulb, and means for completing the external circuit from the upper cell to the lamp-bulb, including a contact member mounted in said tubular
55 casing.

4. In a device of the character set forth, a tubular standard, a spider-like base in which said standard is mounted, a reflector mounted in said base, a lamp-bulb mounted
60 on said reflector, a contact-member mounted in said reflector and engaging said lamp-bulb, dry cells in said casing and carried by said contact-member, the lower cell making electrical contact with said contact member,
65 means for completing the external circuit

from the upper cell to said reflector, and a bail connected with the upper end of said standard.

5. In a device of the character set forth, the combination of a tubular standard
70 adapted to serve as a handle when the device is to be used as an exploring lamp, a spider-like base in which said standard is removably mounted, axially alined dry cells in said tubular standard but unsupported
75 thereby, a lamp-bulb mounted in and guarded by said base, said lamp-bulb being adapted to be automatically connected electrically with the lower cell when the cell is inserted, means for completing the external circuit
80 from the upper cell to the lamp-bulb, and a bail connected with said standard.

6. In a device of the character set forth, the combination of a supporting spider equipped at its upper portion with an internally threaded socket, a casing tube having
85 its lower end provided with a threaded member secured in said socket, a concavo-convex metallic reflector removably mounted in said socket with its convex surface
90 downward, a contact mounted in said reflector, a lamp-bulb disposed below said reflector and having a shank mounted in said reflector and provided with a contact engaging said first named contact, dry cells
95 mounted in said tube, the lowermost cell engaging and wholly supported on said first named contact, and means for completing the circuit from the upper end of the upper cell to said reflector.
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7. In a device of the character set forth, the combination of a supporting spider equipped with an elevated internally threaded socket and below said socket with a retaining flange, a downwardly bowed re-
105 flector having its base portion provided with a flange engaging said retaining flange, a casing tube having a threaded lower end screwed into said socket and clampingly securing the reflector against said retaining
110 flange, a lamp-bulb carried by said reflector, dry cells in said casing tube, the lowermost cell being in electrical connection with the lamp-bulb, a cap removably secured to the upper end of said casing tube, a spring-
115 contact interposed between said cap and the uppermost cell, and means for completing the circuit from said cap to said reflector.

8. In a device of the character set forth, a supporting spider equipped with an elevated socket adapted to receive a casing
120 tube, said socket being provided at its lower portion with a retaining flange, and a downwardly bowed reflector having its base portion insulatingly mounted on said retaining
125 flange.

9. In a device of the character set forth, the combination of a supporting spider equipped with an elevated internally threaded socket provided at its lower portion with
130

- a retaining flange, a downwardly bowed metallic reflector having a peripheral flange mounted in said socket and supported by said retaining flange, and a casing tube for dry cells, said casing tube having an externally threaded lower portion screwed into said socket and clampingly securing the base portion of said reflector against said retaining flange.
- 10 10. In a device of the character set forth, the combination of a supporting spider equipped with a socket and below said socket with a retaining flange, a reflector having its base portion supported by said
- 15 flange, a tubular casing adapted to serve as a handle and having its lower end detachably secured in said socket and serving to secure said reflector in position, and axially aligned dry-cells slidable in said casing and unsupported thereby, a lamp-bulb mounted in said reflector and having electrical connection with the lowermost cell, and means for completing the external circuit from the top cell to the lamp-bulb.
11. In combination, a tubular standard adapted to serve as a handle, a spider-like base equipped with an elevated socket which receives and is detachably connected with the lower end of said standard, a reflector mounted on said socket, a cell-support carried by said reflector and equipped with a contact, a cap for the upper end of said standard equipped with a contact, and a single vertical column of dry cells in said standard, the lowermost cell resting on the contact of said cell-support and the uppermost cell engaging the contact of said cap.

HANS A. RING.