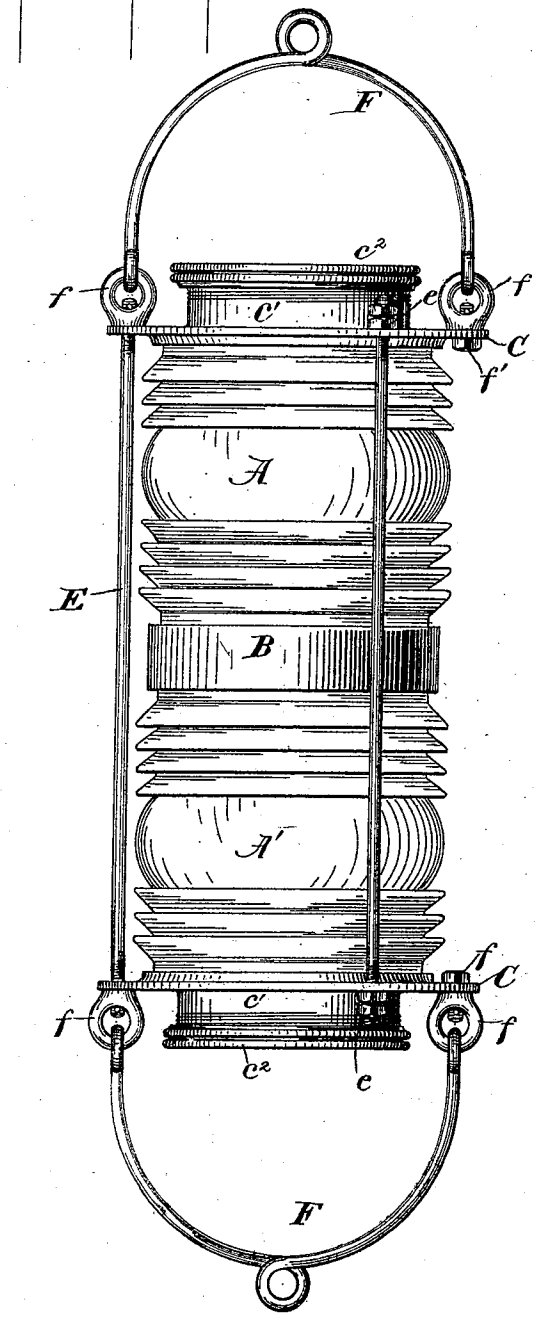
(No Model.)

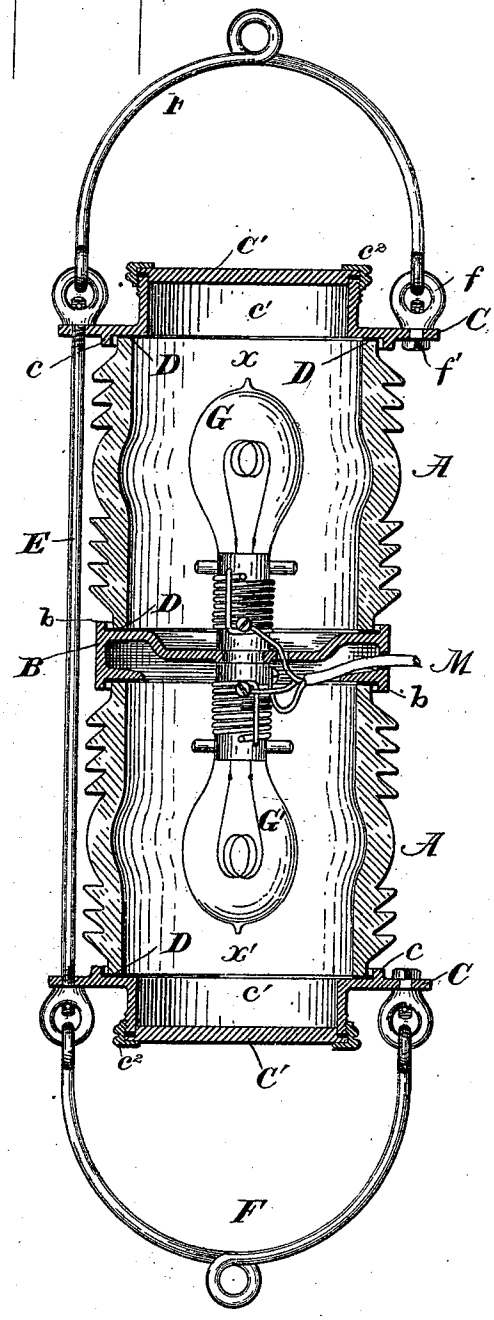
2 Sheets—Sheet 1

E. R. KNOWLES.

ELECTRIC SIGNAL LANTERN.

No. 516,824. Patented Mar. 20, 1894.





Witnesses:

Walter W. Longfellow.

L. A. Connell Jr.

Inventor:

Edward R. Knowles,

By Bentley & Bloodgett,

Attys.

THE NATIONAL LITHOGRAPHING COMPANY.
WASHINGTON, D. C.

(No Model.) 2 Sheets—Sheet 2.

E. R. KNOWLES.

ELECTRIC SIGNAL LANTERN.

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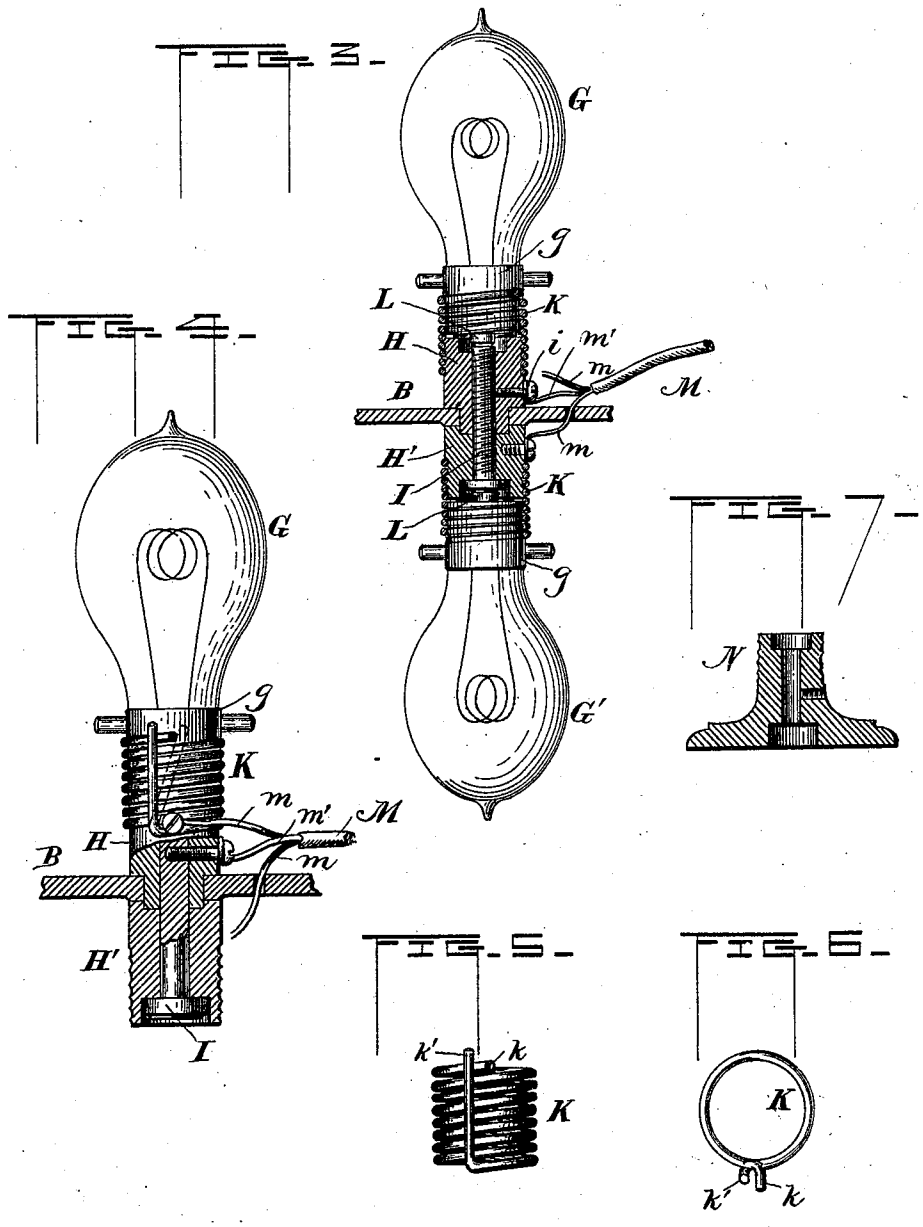

Witnesses:
Walter W. Longmore.
L. N. Comer Jr.

Inventor:
Edward R. Knowles,
By Bentley & Blodgett,
Attys.

THE NATIONAL LITHOGRAPHING COMPANY,
WASHINGTON, D. C.

UNITED STATES PATENT OFFICE.

EDWARD R. KNOWLES, OF MIDDLETOWN, CONNECTICUT, ASSIGNOR TO THE SCHUYLER ELECTRIC COMPANY, OF CONNECTICUT.

ELECTRIC SIGNAL-LANTERN.

SPECIFICATION forming part of Letters Patent No. 516,824, dated March 20, 1894.

Application filed April 17, 1893. Serial No. 470,693. (No model.)

To all whom it may concern:

Be it known that I, EDWARD R. KNOWLES, a citizen of the United States, residing at Middletown, in the county of Middlesex and State of Connecticut, have invented certain new and useful Improvements in Electric Signal-Lanterns, of which the following is a specification.

My invention relates especially to electric lanterns for signaling at sea but it is not confined to such use, being available in many different applications of electric lamps.

It consists in a lantern, constructed as hereinafter set forth, and provided with one or more sockets composed of a coil of wire constituting a female screw into which the neck of the lamp is screwed.

The invention also consists in certain details of construction as hereinafter set forth.

In the drawings, Figure 1 is an elevation of a double signal lantern. Fig. 2 is a longitudinal section of the same. Fig. 3 is a sectional elevation of the lamps. Fig. 4 is an elevation of one of the lamps. Figs. 5 and 6 show the wire coil, and Fig. 7 shows a base for holding a single lamp.

The lantern shown, is especially intended for use with the hanger described and shown in my application Serial No. 492,864. It consists of two cylindrical glass lenses A A′ placed end to end and separated by a metallic diaphragm B. An annular head C is placed at each end, and the diaphragm and heads have flanges *b c* within which are held the ends of the lenses, which are cushioned by elastic gaskets D. Each head has a wide mouthed neck *c′*, upon which is secured a lid C′ preferably by means of a flanged screw ring c^2. The lid is preferably packed, as shown, so that the two chambers *x x′* of the lantern are water tight. The lenses, diaphragm and heads are all clamped tightly together by screw threaded rods E, whose ends pass through the heads and are provided with nuts *e*. A bail F is hinged to each head, by means of eyes *f*, one of which may take the place of the nuts *e* on one of the rods E; the other eye *f* being fastened to the head by a screw *f′*. To the diaphragm B are secured the electric lamps G G′, one on each side, in its respective chamber *x x′*. To the center of the diaphragm are fastened the bases H H′, consisting of blocks of insulating material having an external screw thread cut upon their outer ends. It is preferred to fasten them to the diaphragm by forming a neck on one block to pass through a hole in the diaphragm and enter slightly into the other block. A screw I runs axially through both blocks and clamps them and the diaphragm firmly together. A wire coil or helix K is screwed upon each base, for about half its length, and into the projecting portion of the coil is screwed the threaded metallic neck of the lamp, one terminal of which is connected with the neck, while the other connects with a central contact L, which abuts against the screw I when the lamp is screwed home. Each coil K is in circuit with a separate insulated conductor *m*, while the screw I is connected with a common return conductor *m*, by means of the screw *i* which is tapped into one of the bases and abuts against the screw I. The conductors are twisted into a cable M which passes out through a packed opening in the side of the diaphragm B, and runs to any convenient source of electric energy. The outer end of each coil K has a short radially bent finger *k*, and the inner end is carried back over the coil in a straight arm *k′* to a point just behind the finger *k*. The coil is of such a diameter as to fit snugly upon the neck of the lamp, and when it is attempted to unscrew the lamp, the coil is liable to hug the neck so tightly as to prevent its removal. To overcome this tendency of the coil to wrap on the lamp neck too tightly, the arm *k′* can be sprung around in front of the finger *k* as shown in dotted lines in Fig. 4, which tends to force back the finger and thus slightly open the coil, thereby facilitating the removal of the lamp. This wire coil socket affords a very handy means for cheap or temporary installments, since it can be quickly attached to a suitable support, such for instance as the wooden base N shown in Fig. 7.

The wide mouthed necks *c′* permit the lamps to be readily inserted and removed by merely taking off the lids C′.

Having thus described my invention, what I claim is—

1. An electric signal lantern, comprising two cylindrical lenses, a diaphragm between them,

electric lamps supported on opposite sides of said diaphragm, two heads, and means for clamping the parts together, substantially as described.

2. An electric lantern, comprising two cylindrical lenses, a diaphragm between them, electric lamps supported on opposite sides of said diaphragm, two annular heads provided with wide-mouthed necks and lids, and means for clamping the parts together, substantially as described.

3. An electric signal lantern, comprising two cylindrical lenses, a diaphragm between them, two annular heads having flanges *c* and necks *c'*, lids C', and clamping rods E passing through said heads, substantially as described.

4. An electric signal lantern, having a diaphragm dividing it into two chambers, a lamp in each chamber, a screw-threaded base on each side of said diaphragm, and an axial screw uniting said bases to the diaphragm, and forming a central contact for both lamps, substantially as described.

5. The combination with a screw-threaded base, of a wire coil engaging therewith, having at its outer end a finger, and having its inner end terminating in an arm adjacent to said finger, substantially as described.

6. In an electric signal lantern, the combination with a diaphragm B, of two screw-threaded bases H H' one on each side thereof, a screw I uniting said bases, a screw *i* tapped into one of said bases, wire coils K engaging with said bases, conductors *m* connected with said coils, and a conductor *m'* connected with the screw *i*, substantially as described.

In testimony whereof I affix my signature in presence of two witnesses.

EDWARD R. KNOWLES.

Witnesses:

DANIEL J. GLAZIER,

JOS. T. ELLIOTT.