

R. D. EVANS & W. M. WOOD.  
Signal Lantern.

No. 198,011.

Patented Dec. 11, 1877.

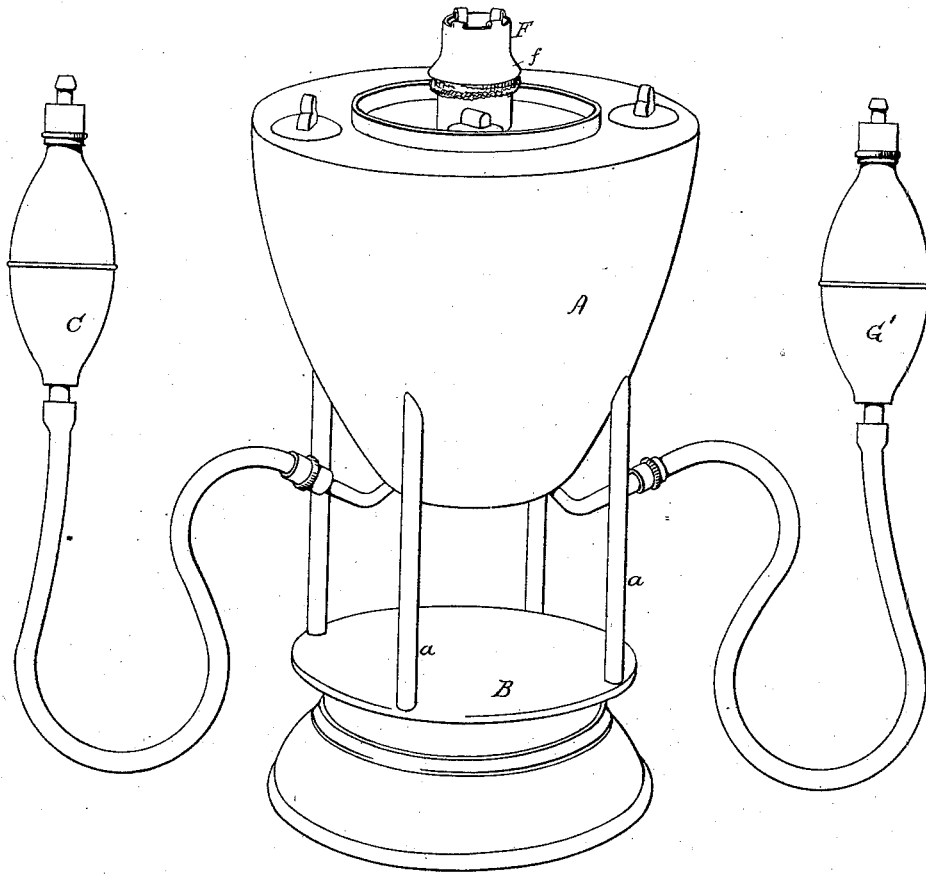


Fig. 1.

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Jos. H. Evans

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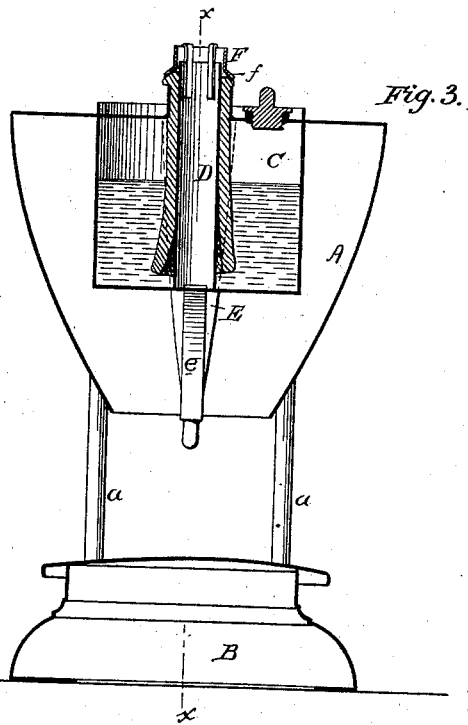
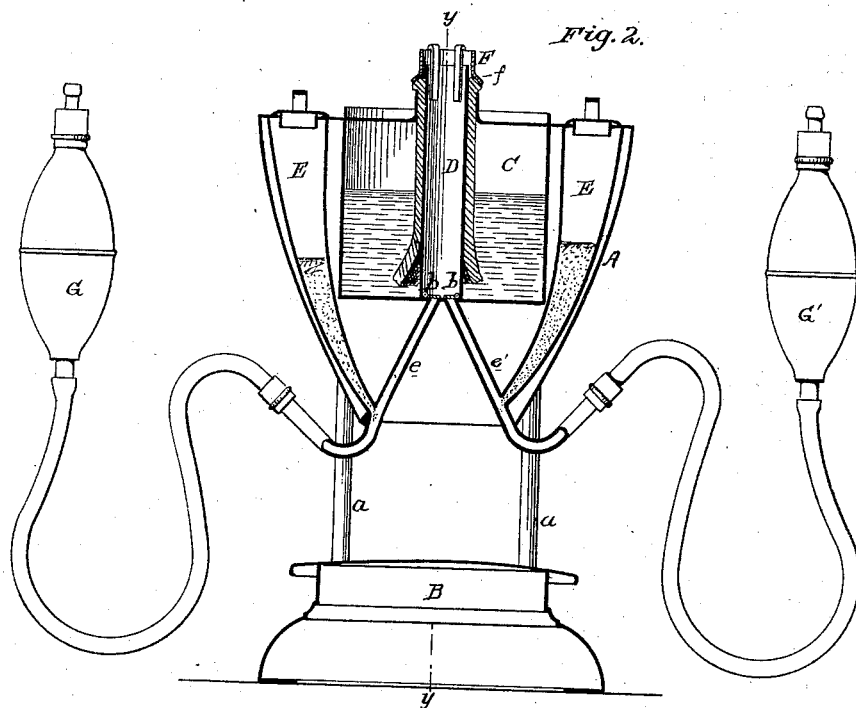
William M. Wood

per Atty's A. H. Evans & Co.

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# UNITED STATES PATENT OFFICE.

ROBLEY D. EVANS AND WILLIAM M. WOOD, OF UNITED STATES NAVY.

## IMPROVEMENT IN SIGNAL-LANTERNS.

Specification forming part of Letters Patent No. **198,011**, dated December 11, 1877; application filed November 15, 1877.

*To all whom it may concern:*

Be it known that we, Lieutenant-Commander ROBLEY D. EVANS and Master WILLIAM M. WOOD, both of the United States Navy, have invented certain new and useful Improvements in Signal-Lanterns, of which the following is a clear, full, and exact description, reference being had to the accompanying drawings, making a part of this specification, in which—

Figure 1 is a perspective view of a signal-lantern with our improvements attached. Fig. 2 is a vertical section through *x x*. Fig. 3 is a vertical section through *y y*.

Our invention relates to that class of signals in which the signals are given by brilliant flashes of lights of different colors; and it consists in the combination and arrangement of devices, as hereinafter described and claimed.

To enable others skilled in the art to make and use our invention, we will proceed to describe the exact manner in which we have carried it out.

In the drawings, A represents the body or shell of the lantern, supported on a base, B, by the vertical posts *a a*. Within the shell A is formed an ordinary oil or alcohol chamber, C, with which connects the tubular wick-holder D, containing the wick, to produce an annular flame. In the lamp A are also formed one or more chambers, E E, for holding the coloring material of the signals, which chambers taper at the bottom, as shown in Fig. 2, and connect with small tubes *e e'*, passing from the outside of the shell A up to and communicating with the tubular wick-holder D. To the outer end of the tubes *e* we attach a rubber or other tube and bulb, G G', or other air-compressor, such as are used for atomizing purposes.

On the top of the inner wall of the wick-holder, and just above the upper edge of the wick, we attach a cap, F, provided with a flange, *f*, to extend over and protect the wick from the falling ashes, which might otherwise clog it and interfere with the certainty of the signal.

In the tops of small tubes which feed the

material are placed small valves, *b*, to prevent the burnt material from falling into them. Around the wick of the lamp may be arranged wire-gauze, to protect the flame from disturbance by the wind, and to prevent rain and wind from putting out the flame.

The operation of our signal-lantern is as follows: The oil or alcohol being supplied to the wick, and the chambers E being filled with magnesium or other coloring material, the lamp is lighted. Then, by pressure upon the bulb G, the air is forced through the tube *e*, and in its passage upward it carries a portion of the coloring material—for instance, the red, which, being consumed by the surrounding flame, produces the red light; then, by pressing the bulb G', a corresponding portion is blown up from the other chamber, producing a white or any other desired light.

It is evident that by this arrangement any number of colors can be readily combined in a signal code, or a simple color in a combination of flashes, while the duration of the burning of any particular color is perfectly under the control of the operator.

It is also evident that, by lengthening the rubber tubes, the lantern may be raised to any height in a ship's rigging or on a staff ashore, and be as readily operated as on the ship's deck or on the ground.

By having the tubes communicating directly with the wick-tube, the coloring material is forced directly up through the surrounding flame of the lamp, thus producing much better and more uniform flash-lights.

We are aware that a torch-lamp having a single tube passing up through the lamp, for discharging material for producing flash-lights to the side of the flame of the torch, is old, and such we do not claim, broadly, as our invention; but

Having thus explained our invention, what we claim as new, and desire to secure by Letters Patent, is—

1. The combination, with the lamp A, provided with an oil or alcohol chamber and wick-tube, of the chambers E and tubes *e*, communicating directly with the wick-tube, substantially as and for the purpose specified.

2. The combination, with the lamp A, provided with an oil or alcohol chamber and wick-tube, of the chambers E, tubes *e*, and mechanism, substantially as described, for forcing air through said tubes, substantially as and for the purpose specified.

3. The combination, with the tubes *e* and wick-tube, of the valves *b*, substantially as

and for the purpose herein shown and described.

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Witnesses:

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