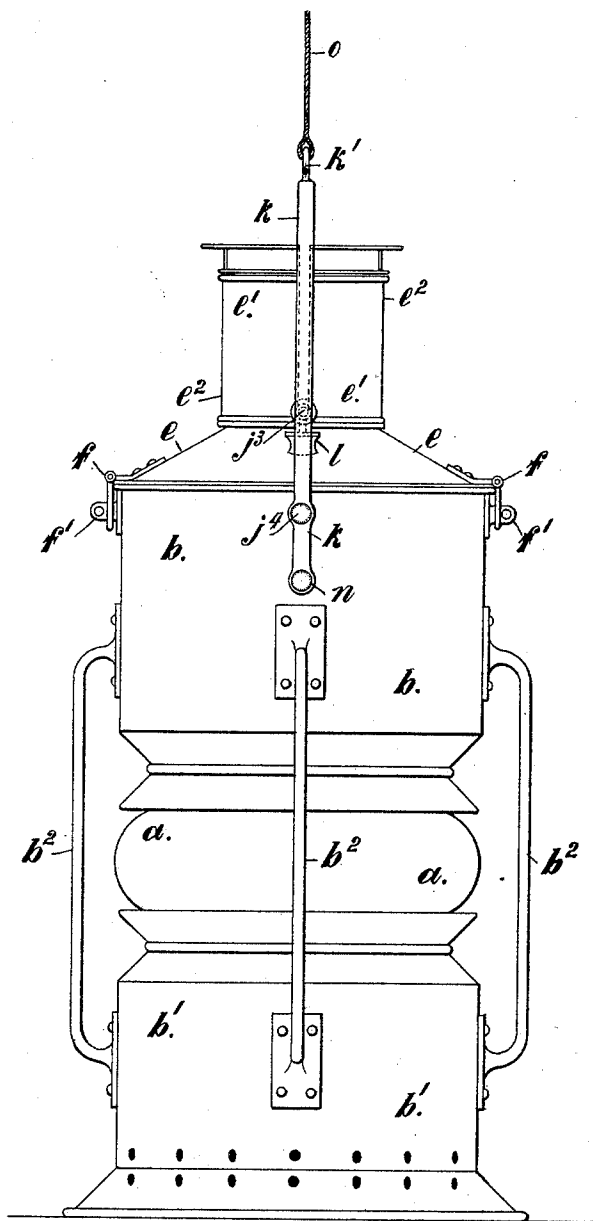


J. WALL.
SIGNAL LANTERN.

No. 485,071.

Patented Oct. 25, 1892.

FIG. 1.



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SIGNAL-LANTERN.

SPECIFICATION forming part of Letters Patent No. 485,071, dated October 25, 1892.

Application filed November 18, 1891. Serial No. 412,295. (No model.)

To all whom it may concern:

Be it known that I, JOSEPH WALL, a citizen of the United States of America, residing at Seaforth, Lancashire, England, have invented new and useful Improvements in Signal-Lanterns; and I do hereby declare that the following is a full, clear, and exact description of the invention, which will enable others skilled in the art to which it appertains to make and use the same.

This invention relates to marine signaling and to a signal-lantern, which I term the "lampograph," adapted for hand-signaling and also for convenient operation when hoisted beyond the reach of the hand, the signals in either case being made by a succession of flashes of varying length and at intervals of varying duration, according to any suitable system. The lantern is also adapted for use as a towing and stern or after light of tow-boats; also, as a mast-head or anchor-light of vessels and as a light for pilot and fishing boats.

A lamp or lantern according to this invention comprises certain features of construction whereby the light can be focused in any desired direction or flashed simultaneously to all parts of the horizon, means of giving access to the interior of the lantern and for adjusting the wick without requiring the use of a door, arrangement of the operating mechanism of the lantern, and means for improving and simplifying the construction and operation of the lantern, as hereinafter set forth.

The lantern has an upper and a lower casing with a cylindrical or all-round lens between and contains an apparatus consisting, mainly, of a lamp, vertical guides, on which slides up and down an opaque screen made in two sections, said screen being made to surround the light of the lamp or to act as a reflector, means of operating the screen from the top of the lantern, means for regulating or controlling the wick of the lamp, and means for feeding oil to the lamp and preventing the oil from freezing.

When the apparatus is placed in the lantern-casing, the light of the lamp is exposed through the lens (either partially or wholly—namely, in one direction or all round) by raising and lowering one section of the screen or the whole screen, as the case may be. Thus

the signaling can be effected by flashes of light in one desired direction or in all directions simultaneously.

The lamp can be used as a towing or like light by keeping one portion of the screen in a raised position.

In the annexed drawings, which illustrate my invention, Figure 1 is an outside elevation of a lantern comprising the improvements according to this invention. Fig. 2 is a sectional elevation of the lantern, showing the interior arrangements. Fig. 3 is a plan of the lamp-screen.

With reference to the drawings, *a* designates the lens of the lantern. The lens *a* is held between an upper casing *b* and a lower casing *b'*, connected by outside stays *b²*.

c is an inner casing made of size to pass through the lens *a*. This casing *c* is connected by vertical stays *d* to the cover *e*, which is made to fit on the top of the casing *b* and carries the chimney *e'*. The cover *e* is provided with hinged clamps *f* to secure it to the casing *b*. The clamps hinge over staples *f'* on the casing *b* and are secured by pins or other suitable means.

g designates the oil-vessel of the lamp, it being carried in the casing *c*. *h* is the burner, which is of tubular form, having a tubular wick placed over a central air-supply tube *h'* and raised and lowered by a pin running in a spiral groove in said tube and actuated by turning the flange *h²* of the burner in the manner known in connection with this type of burner.

i designates the screen for eclipsing and exposing the light. This screen is spherical and is made in two parts, and its back portion is adapted to allow the beam of light issuing through the lens to be equal in radius to twenty points of the horizon. The screen is provided with rings or sleeves *i²*, which run on the stays *d*, which serve as guides for the screen. These may be hollow and adapted to serve as air-tubes for supplying cool air through apertures *d'* therein to the upper portion of the lantern. The screen is worked—that is, raised and lowered—by means of the rods *j j'*, one rod being connected to each section of the screen. These rods *j j'* pass up through the cover *e*, their upper ends being provided with bosses *j²*, by means of which

the parts or sections of the screen may be worked independently.

j^3 is a horizontal rod which is passed through the bosses j^2 of the rods $j j'$ to connect them.

- 5 When it is desired to work the whole screen i —namely, both sections at the same time—a line j^7 is attached to the rod j^3 for working the screen. The chimney e' is divided to allow the rod j^3 to work up and down. The
10 rods $j j'$ work through tubes l , fitted on the cover e . Chains or cords may, if desired, be substituted for the rods or for portions of the rods $j j'$. The handle k is pivoted at n , but is provided with a set-screw j^4 at each side,
15 the inner end of which is adapted to fit into a hole in the case when it is desired to make the handle fixed with respect to the case.

- Rings or eyes k' are provided in the handle for attaching a yoke o for suspending the
20 lamp.

- The lower portion of the lantern-casing b' is provided with holes for supplying air to the burner, and the casing c is also perforated for the same purpose. The casing c rests on
25 a flange round the bottom of the casing b' , being held by lugs b^3 , and the oil-vessel g is held in the casing c by segmental flanges e' .

- From the foregoing description it will be seen that the interior apparatus of the lantern can be removed from the outer casings
30 and lens for removing the lamp, and other purposes; also, that the screen can be worked in sections or as a whole. The inside surface of the screen e is covered with quicksilver or its equivalent, so as to act as a reflector which
35 acts when the screen is worked in sections.

- When using the lantern, signals by flashes of light can be made in one direction by raising and lowering one half or section of the
40 screen i by means of its rod and knob j^2 , or flashes of light can be given in an all-round direction by detaching the rod j^3 , raising and lowering the whole screen i by the rods j^3 and rods $j j'$ together, and signals can be flashed
45 to all points simultaneously. When the lantern is hoisted in a ship's rigging, the screen is worked by the line j^7 , rove through a sheave p and led to the deck. q designates lines which are suitably connected to the ship and
50 a part of the rigging and by which the lamp is guided, said lamp passing through nipples q' on the lamp. When the lantern is held in the hand of the user, the screen is worked by hand.

- 55 The lantern is mainly to be used for signaling at night by flash-signals, any suitable code being used and the code, which may be any known code, may be illustrated on the guard e^2 on the chimney e' . For example, the code
60 may be that set forth in the specification of a former patent granted to me, No. 409,532, the signals being given by long and short flashes of light.

In addition to its use for signaling, the lantern may be used for exhibiting an ordinary fixed light, such as a tow-light or an anchor-light. In the former case one section of the screen is held up by a line while a vessel is in tow and can be eclipsed from the deck without lowering the lantern when the vessel is cast off, and at the same time the lantern is always in position ready to flash signals, if required—for example, when used as a pilot's or fishing boat's mast-head light.

What I claim in respect of the herein-described invention is—

1. In a lantern for signaling, the combination, with an outer casing having a lens, a lamp within said casing, and an opaque exposing and obscuring screen composed of two or more parts, of vertical rods connected with said screen, and a horizontal rod connecting said vertical rods, whereby all the parts of said screen may be raised and lowered simultaneously, substantially as described.

2. In a lantern for signaling, the combination, with an outer casing having a lens, a lamp within said casing, and an opaque exposing and obscuring screen composed of two or more parts, of vertical rods connected with said screen, and a removable horizontal rod connecting said vertical rods, whereby all the parts of said screen may be raised and lowered simultaneously or independently, substantially as described.

3. In a lantern for signaling, the combination, with an outer casing having a lens and a removable cover, of an inner casing, rods d , connecting said inner casing to said removable cover, a lamp within said inner casing, a divided screen for said lamp, vertical rods $j j'$, connected with said divided screen and sliding on the rods d , and a cord or rope connected with the rods $j j'$, substantially as described.

4. The combination, with a casing b , of a removable cover e , and handle k , pivoted at n , and fixing-screws j^4 , substantially as set forth.

5. In a lantern for signaling, the combination of a lamp and an exposing and obscuring screen of spherical form and of two parts, the division of the screen being in the vertical plane and the back screen adapted to allow a beam of light to pass through the lens equal in radius to twenty points of the horizon, substantially as set forth.

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

JOSEPH WALL.

Witnesses:

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Both of 15 Water Street, Liverpool.