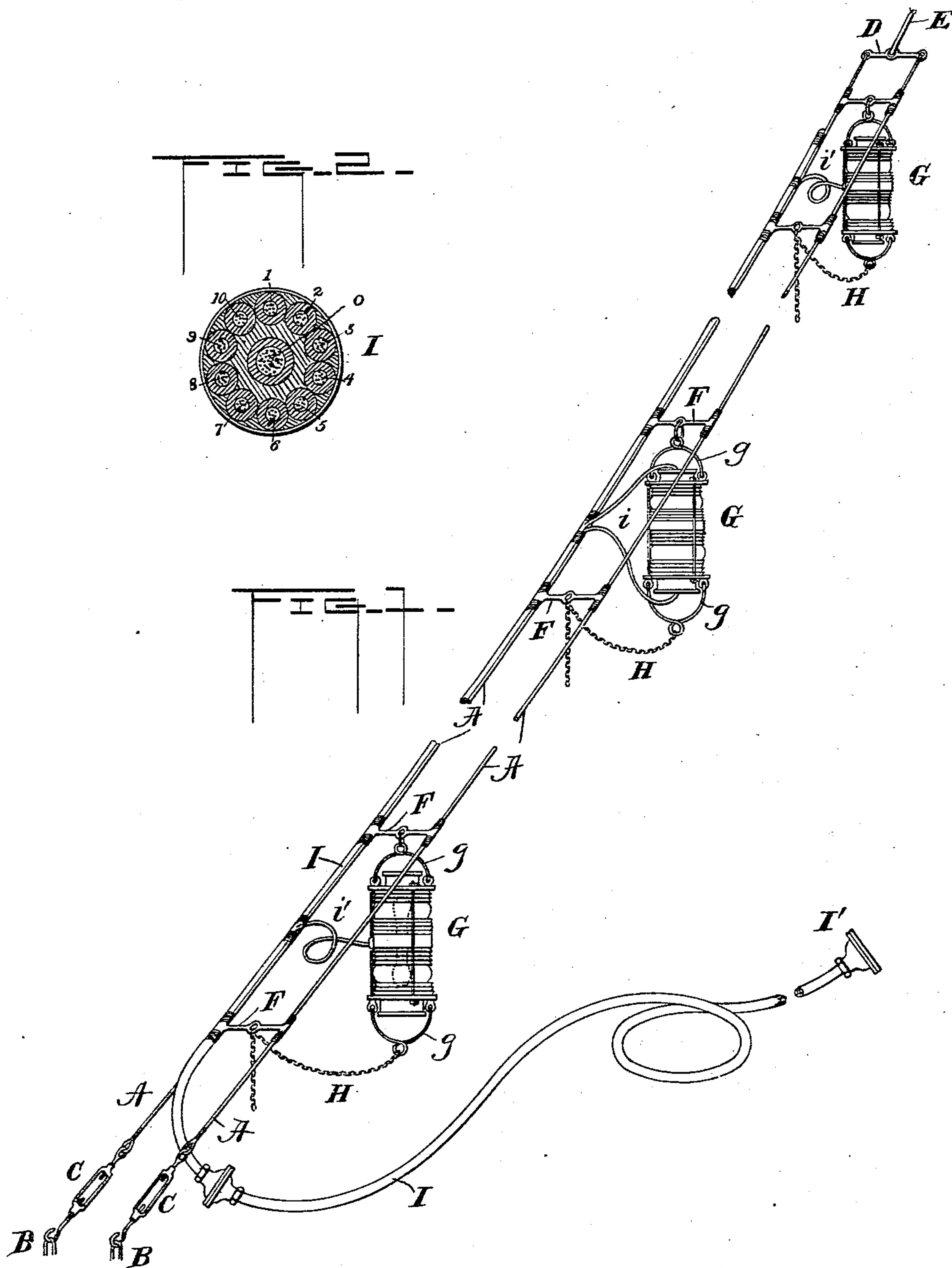


(No Model.)

E. R. KNOWLES.
HANGER FOR SIGNAL LANTERNS.

No. 555,320.

Patented Feb. 25, 1896.



Witnesses:

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UNITED STATES PATENT OFFICE.

EDWARD R. KNOWLES, OF MIDDLETOWN, CONNECTICUT, ASSIGNOR TO
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HANGER FOR SIGNAL-LANTERNS.

SPECIFICATION forming part of Letters Patent No. 555,320, dated February 25, 1896.

Application filed December 5, 1893. Serial No. 492,864. (No model.)

To all whom it may concern:

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

My invention relates to systems of signaling by means of lanterns, more especially used on shipboard, though equally well adapted for similar work on shore. In the system which I shall hereinafter describe ten electric lamps are arranged in a row, alternating red and white. By means of a suitable switch apparatus—such, for instance, as is described in application Serial No. 468,489—any one or more of these lamps is brought into circuit, and by means of an arbitrary code the various combinations of red and white lights are used to convey intelligence to a distant ship or other point.

My invention aims to improve the mode of suspending the lights, so that the lanterns may always hang vertically, and so that there may be no danger of the string of lanterns becoming twisted or otherwise fouled.

In the drawings, Figure 1 is a perspective view of my improved hanger, broken in order to show both ends of it. Fig. 2 is a cross-section of the conducting cable, on an enlarged scale.

The lanterns are attached to two parallel lines A, preferably small iron ropes, the lower ends of which are connected with separate fixed eyes or staples B by means of turnbuckles C. The upper ends of the ropes are fastened to the ends of a yoke D, to the middle of which is secured a stay E which runs to a yard-arm or other suitable point of support. By fastening the lower ends of the ropes A to separate eyes they are held parallel at all times and prevented from twisting one upon the other.

At the points where the lanterns are to be attached a cross-bar or "scotchman" F is lashed to the ropes. The scotchman has an eye in the middle and a T-head at each end, the arms of the T lying parallel with the rope

A and being fastened thereto by a lashing of cord or wire.

The lanterns G are preferably made to hold two incandescent lamps, one above the other, so that five lanterns are required. They have a bail g at top and bottom, the upper bail being connected with the eye of the scotchman. To the lower bail is attached one end of a chain or other suitable connection H which runs to another scotchman and can be readily lengthened or shortened, whereby the lantern can be adjusted to hang vertically whatever may be the inclination at which the ropes A are stretched. This construction keeps the lanterns always in the middle of the space between the two ropes. They cannot slide about or work to one end or the other of the scotchman, but being held at the middle point are kept all in line. There is also less danger of their fouling the ropes or kinking the branch conductors. A cable I is lashed to one of the ropes A, containing ten insulated conductors 1 2 3, &c., and a common return-wire O. Each conductor runs to its own lamp, two conductors and a branch return-wire being taken off at each lantern. These may enter the lantern at each end, as shown at i, but are preferably connected at the middle of the lantern, as shown at i'.

The cable runs to any suitable part of the ship, where it is connected by means of a contact-box I' with a suitable circuit-controlling switch in circuit with a source of electric energy.

Having thus described my invention, what I claim is—

In a signaling system, a hanger for the signal-lanterns, composed of two parallel ropes, turnbuckles connecting the lower ends of said ropes to separate fixed supports, a yoke secured to the upper ends of said ropes, and a series of scotchmen secured to said ropes, each scotchman having a T-head at each end, and an eye at the middle, in combination with a series of lanterns containing electric lights, each lantern having a bail at the upper end for hanging it to the eye in a scotchman, and a chain or other adjustable connection at the

lower end running to the eye in an adjacent
lower scotchman, and a cable containing in-
sulated electric conductors fastened to one
of the hanger-ropes, said conductors being
5 successively led out to the lanterns between
the scotchmen supporting the same, substan-
tially as described.

In witness whereof I hereto affix my signa-
ture in presence of two witnesses.

EDWARD R. KNOWLES.

Witnesses:

D. J. GLAZIER,
JOS. T. ELLIOTT.