

(No Model.)

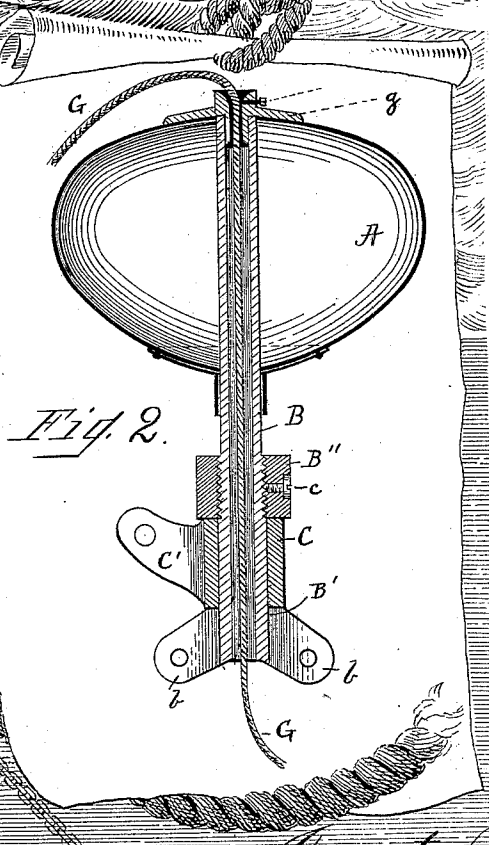
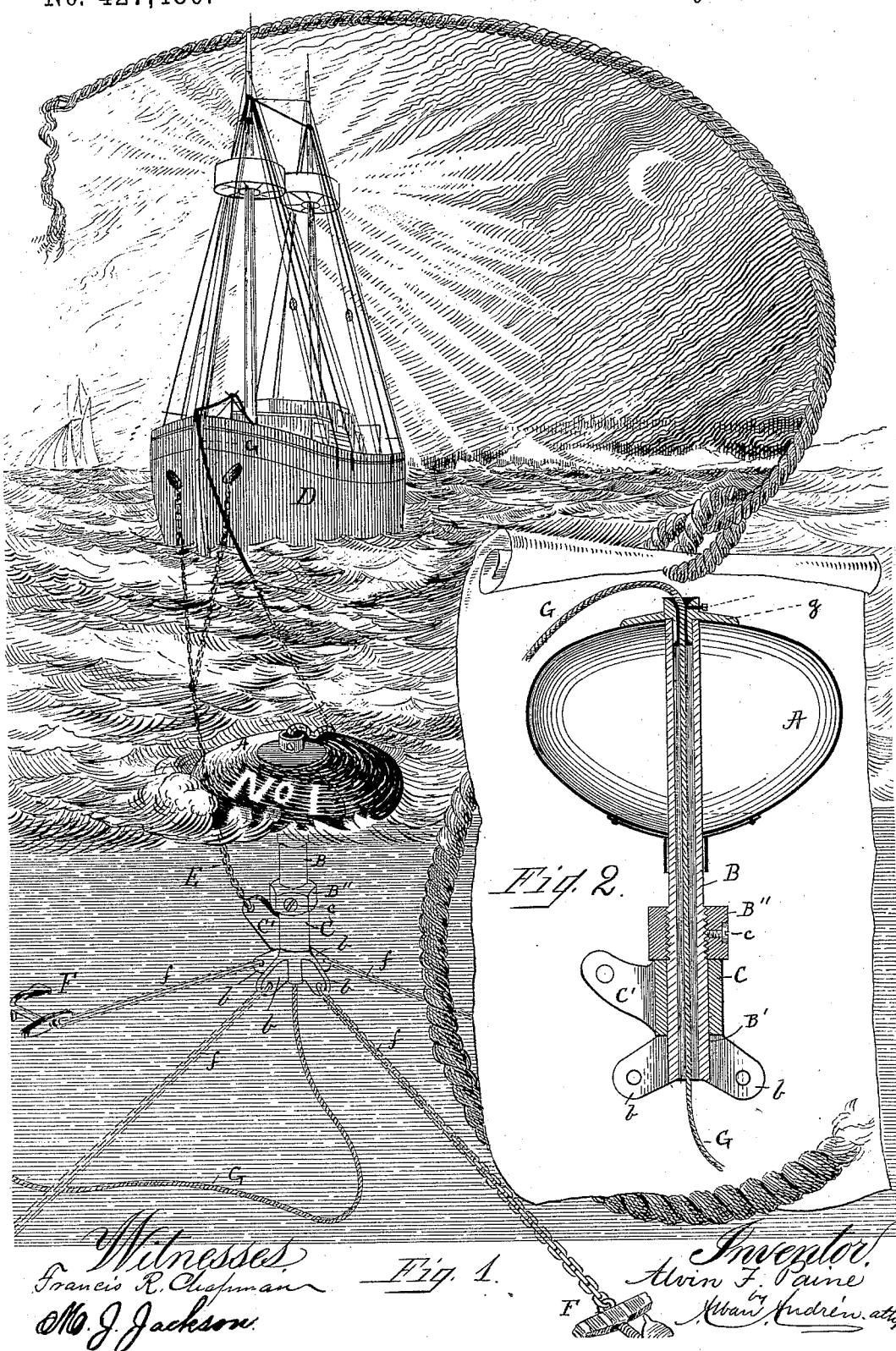
A. F. PAINE, Dec'd.

I. PAINE, Administrator.

OCEAN SIGNAL STATION.

No. 427,480.

Patented May 6, 1890.



Witnesses:
Francis R. Chapman
M. J. Jackson.

Francis R. Chapman

M. J. Jackson.

Inventor!
Alvin F. Paine
by Alvin Andriew. atty.

Alvin F. Paine

John Andrew, atty

UNITED STATES PATENT OFFICE.

ALVIN F. PAINE, OF SOUTH WELFLEET, MASSACHUSETTS; ISAAC PAINE
ADMINISTRATOR OF SAID ALVIN F. PAINE, DECEASED.

OCEAN SIGNAL-STATION.

SPECIFICATION forming part of Letters Patent No. 427,480, dated May 6, 1890.

Application filed January 16, 1890. Serial No. 337,114. (No model.)

To all whom it may concern:

Be it known that I, ALVIN F. PAINE, a citizen of the United States, and a resident of South Welfleet, in the county of Barnstable and State of Massachusetts, have invented new and useful Improvements in Ocean Signal-Stations, of which the following, taken in connection with the accompanying drawings, is a specification.

This invention relates to improvements in ocean signal-stations; and it consists in an improved manner of anchoring light-ships at sea and establishing telegraphic communication between the shore and such ships or between the latter, as will hereinafter be more fully shown and described, reference being had to the accompanying drawings, where—

Figure 1 represents a side elevation of the invention, showing a light-ship anchored by means of my improved device and showing it as connected by means of an electric cable or wire to the shore; and Fig. 2 represents a detail central longitudinal section of the float to which the light-ship is connected.

Similar letters refer to similar parts wherever they occur on the different parts of the drawings.

In carrying out my invention I make use of a hollow float or buoy A, of a spherical or other suitable form, having attached to it in a suitable manner a downwardly-projecting hollow tube or stem B, the upper end of which is secured in an air-tight manner to the top portion of the float A, the lower portion of the said float being also secured in a similar air-tight manner to the hollow stem or tube B, which latter is made to extend below the float at such a distance as may be found most suitable and practical for the purpose of anchoring it to the bottom of the sea and connecting it to the light-ship.

In practice I make at or near the lower end of the hollow stem or tube B an annular flange or shoulder B', between which and an adjustable collar B'' is located a ring C, which is loosely journaled on the stem or tube B, so as to be free to turn completely around the latter, for a purpose as will hereinafter be described.

In one piece with or secured to the ring C is a bracket or eye C', to which the light-ship

or signal-station D is connected by a chain or cable E, as shown in the drawings.

In practice I prefer to make the collar B'' internally screw-threaded and adapted to fit a corresponding external screw-threaded part of the hollow stem B, and secured to the latter by means of one or more set screws or pins c; but I do not wish to confine myself to the exact construction, as it is only necessary that the ring C, to which the light-ship or signal-station is connected, shall be free to turn completely around the stem B and also kept from slipping upward on said stem. If so desired, anti-friction rollers may be arranged between the exterior of the stem B and the interior of the ring C, or between the top and bottom of the same and the shoulder B' and collar B'', to enable the ring to turn around the stem B with a minimum of frictional resistance, such anti-friction devices being, however, not shown in the drawings.

The lower end of the hollow stem B is preferably provided with four ears or projections b b b b, arranged at right angles to each other, and to such ears or projections are connected the anchor chains or cables f f f f, the lower ends of which are connected to anchors F F F F, anchored at the bottom of the sea, as shown in Fig. 1.

In practice I prefer to use four anchors; but I do not wish to confine myself to this precise number, as two or more may be used without departing from the essence of my invention. It will thus be seen that by the arrangement of connecting the light-ship or signal-station D to the stem of the hollow float such light-ship may be swung completely around the float or buoy by the action of the tides, winds, or waves without fouling the anchor-chains or the electric cable or twisting the buoy or float, which latter is supposed to be held stationary or approximately so.

G is a wire or insulated electric cable leading from the light-ship D, through the hollow stem B, to a station on shore or to another light-ship, or to both, as may be desired.

In practice I prefer to secure the telegraph wire or cable G to a collar or flange g, resting loosely on top of the float or buoy A, so as to prevent said cable or wire from sagging down through the tube B, and, if so desired, a uni-

versal or swivel connection may be made at this point to prevent the twisting of the cable or wire G as the light-ship or station D turns or swings around its moorings. The advantages
5 of this arrangement are many, among which may be mentioned: Light-ships or signal-stations may be anchored at suitable places much farther from the shore than is now the case, and electric connections established between each
10 of such light-ships or signal-stations and the shore or between a series of such stations for the purpose of announcing the arrival or passing of vessels in advance of the time now obtained; to telegraph to the main-land or shore
15 when vessels were in distress, and thus procure speedy assistance; for the purpose of signaling or telegraphing to and from the light-ship or signal-station the state of the weather, rain-falls, storms, the velocity of the wind, meteorological observations, &c.; for insuring
20 safety to vessels inward or outward bound, or for any or other similar purposes.

The light-ship or signal-station D is to be provided with a suitable telegraphic instrument and battery connected with the wire or
25 cable G, for the purpose of sending messages over such wire or cable to the shore across the

ocean or to other light-ships or signal-stations, which instrument may be of any well-known form or construction without departing from 30 the essence of my invention.

Having thus fully described the nature, construction, and operation of my invention, I wish to secure by Letters Patent and claim—

A float or buoy having secured to it and 35 passing through the same a hollow stem or tube anchored to the sea-bottom, as described, and having loosely journaled on it a ring connected to the light-ship or signal-station, combined with a telegraph wire or cable passing 40 through said hollow tube and establishing an electrical connection between the light-ship or signal-station and the shore or between similarly-arranged light-ships or signal-stations, substantially as and for the purpose set 45 forth.

In testimony whereof I have signed my name to this specification, in the presence of two subscribing witnesses, on this 21st day of December, A. D. 1889.

ALVIN F. PAINE.

Witnesses:

ALBAN ANDRÉN,

MARTHA J. JACKSON.