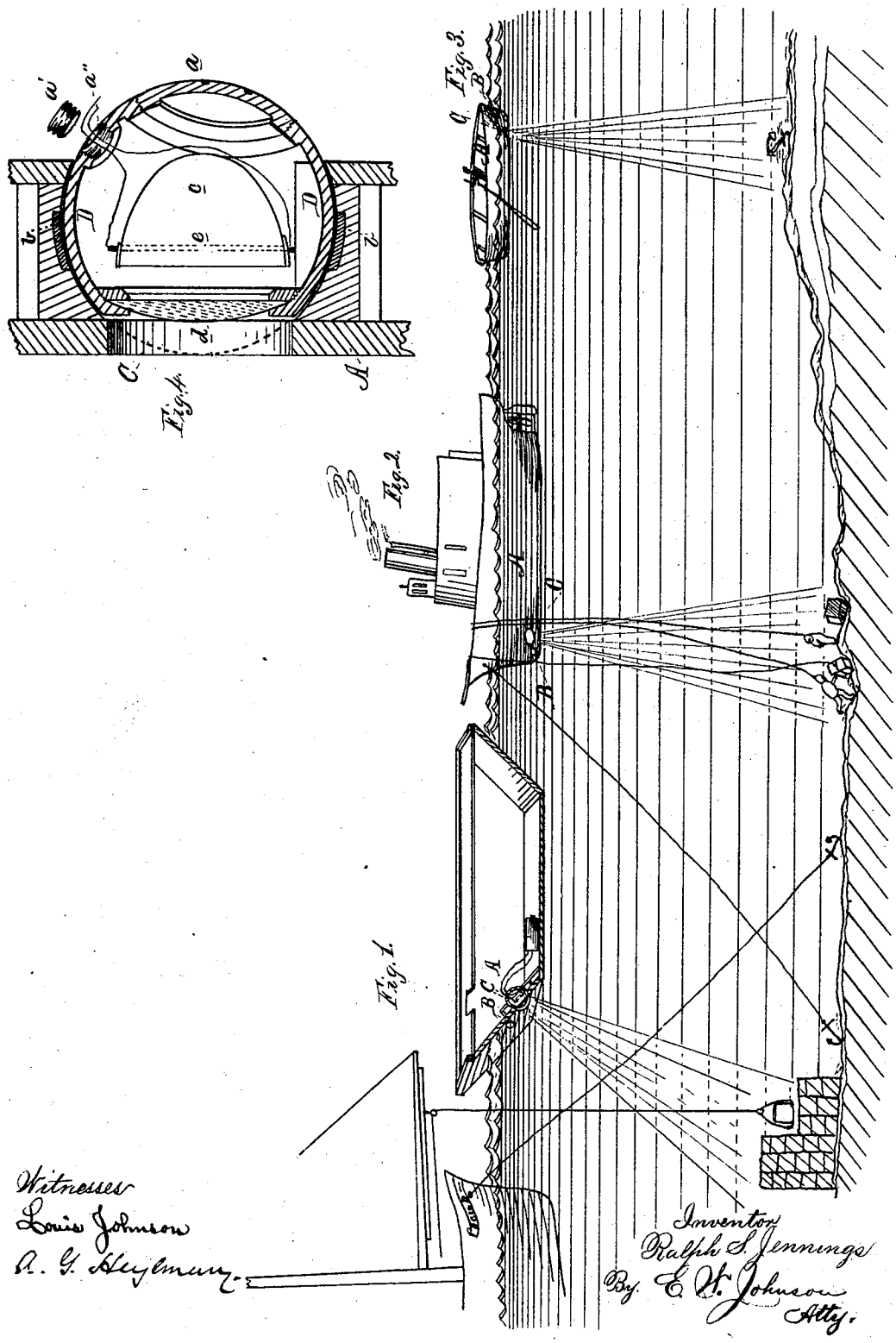
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R. S. JENNINGS.

VESSELS AND ATTACHMENTS THERETO FOR SUBMARINE ILLUMINATION.

No. 243,780. Patented July 5, 1881.



Witnesses
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(No Model.) 2 Sheets—Sheet 2.

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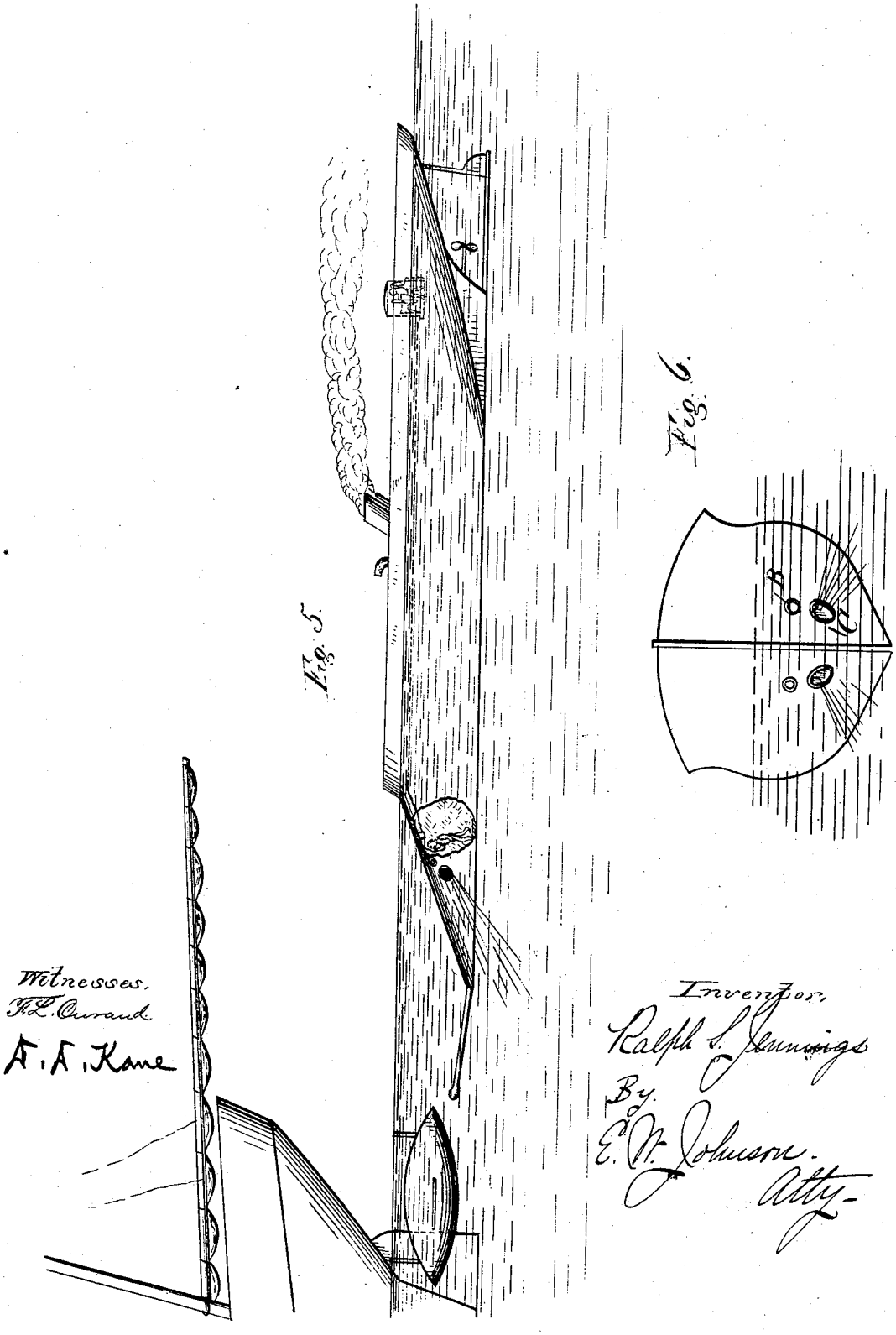


Fig. 5.

Fig. 6.

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UNITED STATES PATENT OFFICE.

RALPH S. JENNINGS, OF BALTIMORE, MARYLAND.

VESSEL AND ATTAGHMENTS THERETO FOR SUBMARINE ILLUMINATION.

SPECIFICATION forming part of Letters Patent No. 243,780, dated July 5, 1881.

Application filed April 16, 1881. (No model.)

To all whom it may concern:

Be it known that I, RALPH S. JENNINGS, a citizen of the United States, residing at Baltimore, in the county of Baltimore and State of Maryland, have invented certain new and useful Improvements in Vessels and Attachments Thereto for Submarine Illumination; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to letters or figures of reference marked thereon, which form a part of this specification.

This invention relates to improvements in means for submarine exploring—for example, in searching for lost cargoes and obstructions—and also building structures under water, and similar purposes.

My improvement consists in a marine structure provided with a transparent port arranged below the water-line, in combination with an illuminating means for the purpose of discovering marine obstructions and lost cargoes.

My improvement also consists in the combination, with a vessel or its equivalent provided with a transparent port below the water-line, of an illuminating means provided with a reflector, whereby the rays of light from the illuminating means are directed through the said port and are concentrated upon the submarine object.

My invention further consists in the novel construction and arrangement of parts, as will be hereinafter more fully set forth and specifically claimed.

To those skilled in the art I will now describe my invention, showing one practical way of carrying out the same.

In the annexed drawings, Figures 1, 2, and 3 represent and illustrate my invention applied to different classes of vessels and to different uses, and Fig. 4 is a sectional view of one of the ports, showing how said port may be arranged within the hull of a vessel. Fig. 5 is a side view of a boat, the relative arrangement of the port, and sight-opening. Fig. 6 is a front view of the same.

The letter A represents the hull of a vessel, which is provided with openings B and C, which are preferably circular in form as far as the sheathing of the vessel. The opening C (see Fig. 4) assumes a spherical or globular shape between the sheathing of the vessel and the inner lining, and between said sheathing and lining is placed a block provided with a packing-ring, *b*, said block being secured to the sheathing and lining by any suitable means.

In proximity to the hereinbefore-described port C is arranged the port B, constructed similar to port C. This port is intended to be used by the observer within the hull of the vessel, and through it the object below the surface of the water can be seen, which object has been illuminated by the light.

Within the opening C is placed a spherical port, D, which is provided with the transparent material *d*, usually a lens, and openings, *a a''*, in which are fitted suitable removable stoppers. The larger opening, *a*, is for the purpose of gaining access to the interior of the sphere D, while the smaller opening, *a''*, is used to carry off the products of combustion when a lamp is used within the sphere D, or for the passage of the wires from a battery when an electrical light is employed.

Immediately in the rear of the light *e*, which may be either a lamp or a calcium or an electric light, is arranged a reflector, *c*, of a suitable construction and size for directing the rays of the light through the transparent port and concentrating the same upon the submarine object.

The spherical port D, when arranged as hereinbefore described, can be turned so that the light can be directed in various angles within the diameter of the port C, and when said spherical port is not in use it can be turned so as to protect the lens or glass.

If desirable, the ports, instead of being constructed as hereinbefore described, may have plain glass windows, provided on the outside of the vessel with shields, which will prevent the glass being broken, and on the interior of the vessel they may be covered by boxes, which are secured over the ports so as to be water-proof. These boxes are easily removable, and are placed over the ports when not in use. These boxes are intended to prevent the water from entering the interior of the vessel should the glasses in the ports happen to be broken.

This invention is useful for an endless variety of purposes, such as illuminating structures which are being built under water, searching for lost marine cargoes, obstructions, torpe-

does, &c. It may also be applied to fishing-vessels, where it will be useful in attracting the fish near the light.

What I claim as new, and desire to secure by Letters Patent, is—

1. A marine structure provided with a transparent port below the water-line of said structure, said port having an illuminating means, substantially for the purpose set forth.

2. In combination with a vessel or its equivalent, provided with a transparent port below the water-line, an illuminating means provided with a reflector which will direct the rays of light through the port and concentrate them upon an object under the water, substantially as described.

3. In a floating structure, two or more openings arranged below the water-line of the vessel, said openings being closed with transparent ports, one or more of said ports having immediately behind it a light arranged so that its rays may be directed upon an object below the surface of the water, and the other port being arranged so that the object illuminated may be seen from the interior of the vessel, substantially as described.

4. The hull of a vessel formed below the water-line with an opening which is closed with a transparent port provided with an illuminating means, said port being arranged movably within the hull of the vessel, so that the rays emanating therefrom can be directed upon an object below the surface of the water.

5. In combination with a vessel having an opening below the water-line, a globular casing, D, provided with transparent port *d*, and adapted to be turned within the vessel when not in use.

6. The spherical casing D, provided with openings *a a''* and transparent port *d*, for the purpose set forth.

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

RALPH S. JENNINGS.

Witnesses:
LOUIS JOHNSON,
F. R. BEECH.