

No. 895,355.

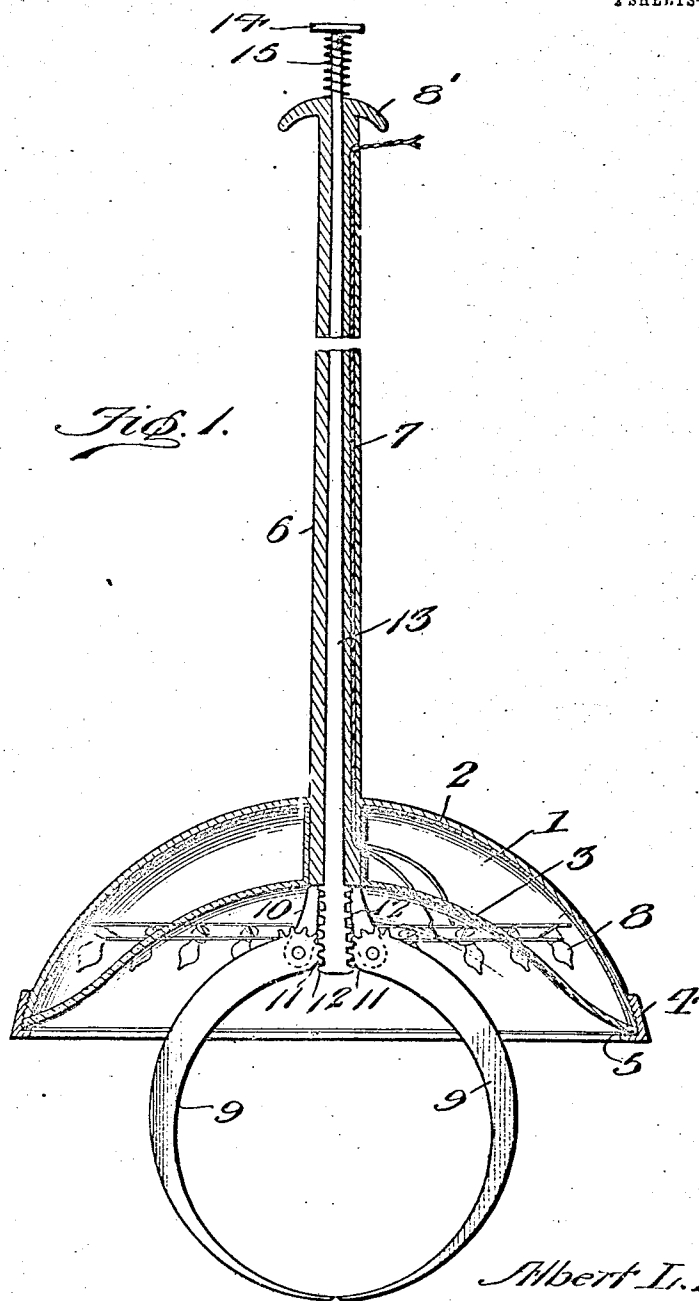
PATENTED AUG. 4, 1908.

A. L. FARR.

SEARCH LIGHT FOR SUBMARINE OBSERVATION.

APPLICATION FILED JUNE 21, 1907.

2 SHEETS--SHEET 1.



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Witnesses

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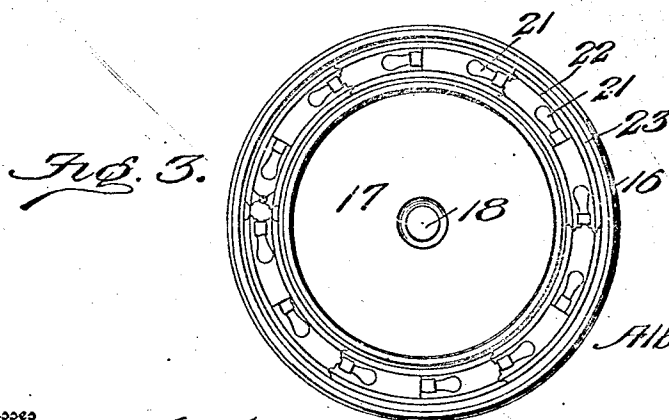
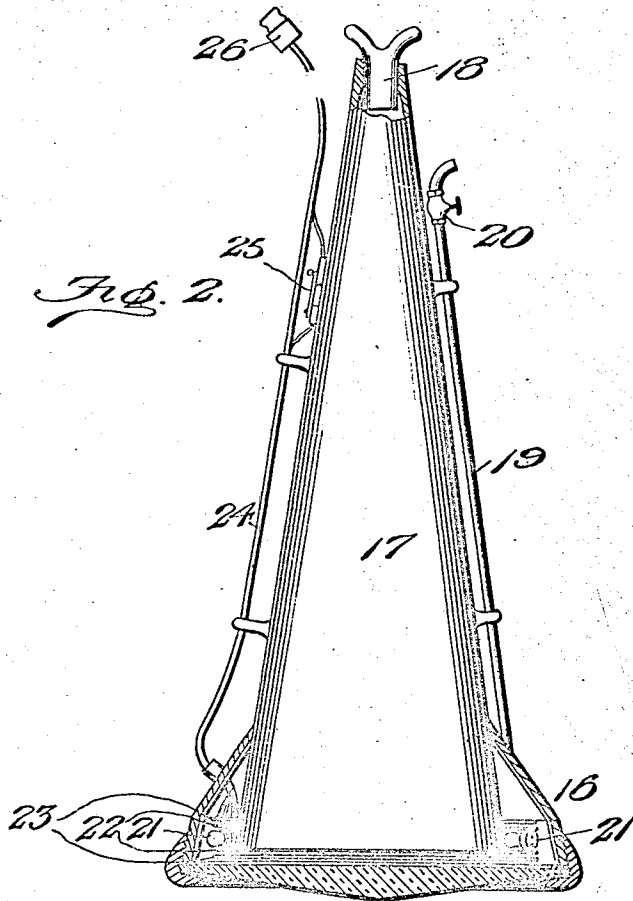
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UNITED STATES PATENT OFFICE.

ALBERT L. FARR, OF STONINGTON, MAINE.

SEARCH-LIGHT FOR SUBMARINE OBSERVATION.

No. 895,355.

Specification of Letters Patent.

Patented Aug. 4, 1908.

Application filed June 21, 1907. Serial No. 330,163.

To all whom it may concern:

Be it known that I, ALBERT L. FARR, a citizen of the United States, residing at Stonington, in the county of Hancock and State of Maine, have invented new and useful Improvements in Search-Lights for Submarine Observation, of which the following is a specification.

This invention relates to a search light that is especially designed for observation under water for the purpose of observing the location of objects, the configuration of the bottom for facilitating the piloting of a vessel in avoiding obstructions, submarine mines, etc., and also facilitating the picking up of any object by a grappling device.

The invention has for one of its objects to improve and simplify the construction and operation of devices of this character so as to be comparatively easy and inexpensive to manufacture, convenient and serviceable in use and having great illuminating power.

A further object of the invention is the provision of a search light that is adapted to be submerged in the water for casting a light whereby objects are readily located, the search light being provided with a plurality of lamps which are so connected in circuit that the intensity of the light emitted can be varied to suit the conditions of the water.

Another object of the invention is to provide a combined search light and grapple constituting a portable device whereby objects at the bottom of the water can be located and conveniently picked up.

With these objects in view and others, as will appear as the description proceeds, the invention comprises the various novel features of construction and arrangement of parts as will be more fully described hereinafter and set forth with particularity in the claims appended hereto.

In the accompanying drawings, which illustrate certain of the embodiments of the invention, Figure 1 is a central longitudinal section of the combined search light and grapple. Fig. 2 is a side elevation partly in section of the combined observation device and search light. Fig. 3 is a bottom plan view of the latter, showing the lamp connections.

Similar reference characters are employed to designate similar parts throughout the several views.

Referring to the drawing, 1 designates a water-tight casing having a concaved reflect-

ing surface 2 that may be enameled or polished for increasing the reflecting power, and over the casing is a glass or other transparent concaved cover 3 through which the light is emitted. On the body of the casing is a removable ring 4 which holds the glass 3 in place, a gasket 5 being employed between the ring and glass to form a water-tight joint. The casing 1 is attached to a central vertically extending stem or shank 6 which serves as a handle, whereby the search light can be conveniently handled and through the handle extends a flexible cord conductor 7 for supplying the lamps 8, suitably arranged in the casing 1. In the present instance, incandescent lamps are shown but it is obvious that any other type may be employed. On the upper end of the stem is a head 8' which serves to prevent the stem from accidentally dropping out of the hands of the user during the manipulation of the search light. The lamps, as well as the cord, are protected from the water so that the light can be lowered to any desired depth, it being understood that the stem 6 is of any suitable length. In a device of this character a convenient illuminating means is provided especially adapted for use on small boats, since it is readily portable and can be conveniently handled.

Since the casing 1 is air-tight, it imparts a certain buoyancy to the device so that the latter will not be heavy to handle while in the water and while lifting an object by means of grappling hooks. It is also to be noted that the glass 3 is bell-shaped so that the air entrapped under the bell also imparts a buoyancy to the device which renders the latter more easily handled and moved about in the water.

In connection with a search light device of the foregoing construction, a grapple can be conveniently used. This grapple comprises a pair of grappling hooks 9 that are pivoted on a head 10 secured to the stem 6 and each provided with teeth 11 at their pivoted ends that engage with racks 12 on the lower end of a reciprocating rod 13 housed in the stem 6. The grappling hooks or arms 9 are thus located below the search-light and in the rays of the lamps so that the gripping of an object by the grappling device can be accomplished with great facility. The upper end of the rod 13 is provided with suitable means for actuating it to move the grapple arms 9 through the medium of the

pinion teeth 11 and racks 12. In the present illustration, the upper end of the rod 13 is provided with a head 14 between which and the head 8 of the stem 6, is a helical compression spring 15 that normally tends to hold the rod 13 raised and the grappling arms closed. By pressing down on the head 14 and holding the same depressed, the grappling arms will be extended so that they can be placed over an object to be gripped, and when so placed, the pressure on the head 14 is released so that the grappling arms or hooks will automatically close and grip the object.

Referring to Figs. 2 and 3, the search light designated generally by 16 is mounted on the lower end of a conical observation tube 17 in such a manner that the rays of light will be reflected directly in front of the observation tube without shining in the eyes of the observer. The upper end of the observation tube is provided with an adjustable eye-piece 18 whereby the device may be adjusted to accommodate the vision of the user. In order to permit the air in the casing of the search light, a vent duct or tube 19 is arranged on the body or observation tube 17 of the device and provided at its upper end with a valve 20 for permitting a free interchange of air between the casing and the atmosphere.

The lamps 21 in the present instance are arranged in groups connected in multiple circuit by conductors 22 and 23 respectively and these conductors are connected with a flexible cord conductor 24 that is provided with a switch 25 whereby one or both groups of lamps can be used at a time, according to the clearness of the water, and on the end of the conductor 25 is a coupling plug 26 of ordinary form. The observation tube 17 may be provided with handles for assisting in conveniently using the device.

Having thus described the invention, what I claim is:—

1. A device of the class described, comprising a handle, grappling members supported on the handle at one end, means operative from the opposite end of the handle for actuating the members, a light fixed on the handle and movable therewith to any desired depth and for throwing the rays of light

in any direction for locating the object to be gripped by the members, and a water-tight casing on the handle and surrounding the light and serving to impart buoyancy to the device.

2. A device of the class described comprising a rod-like handle which is adapted to be lowered into the water to any desired depth, grappling members on the lower end of the handle, means connected with the members and operated at the opposite end of the handle for actuating the members, a submersible light on the handle and movable therewith, and means located on the handle at a point above the light for shading the rays of light from the eyes of the user.

3. A portable device adapted to be lowered into a body of water of any desired depth and to be pointed in any direction in the water, said device comprising a support, a grappling means on the support, a casing fixed on the support and a light in the casing and arranged to throw the rays downwardly for exploring the bottom of the body of water for the object to be picked up by the grappling means.

4. A device of the class described comprising a supporting member, grappling means movable with the member, a source of light arranged in fixed relation to the said means and mounted on and movable with the member, and a water-tight casing mounted on the handle and containing the light, said member being inflexible for permitting it to be moved through a body of water for employing the light for exploring purposes and for lighting the object to be picked up by the grappling means.

5. A device of the class described comprising a handle, a water-tight casing fixed on the handle, lights in the casing, conductors housed in the handle, grappling means on the handle in front of the casing, said casing serving to direct the rays of light toward the said means and for shading the rays from the eyes of the operator.

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

ALBERT L. FARR.

Witnesses:

ETTA S. CARTER,
FLORA E. HOWARD.