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A. EGENES.

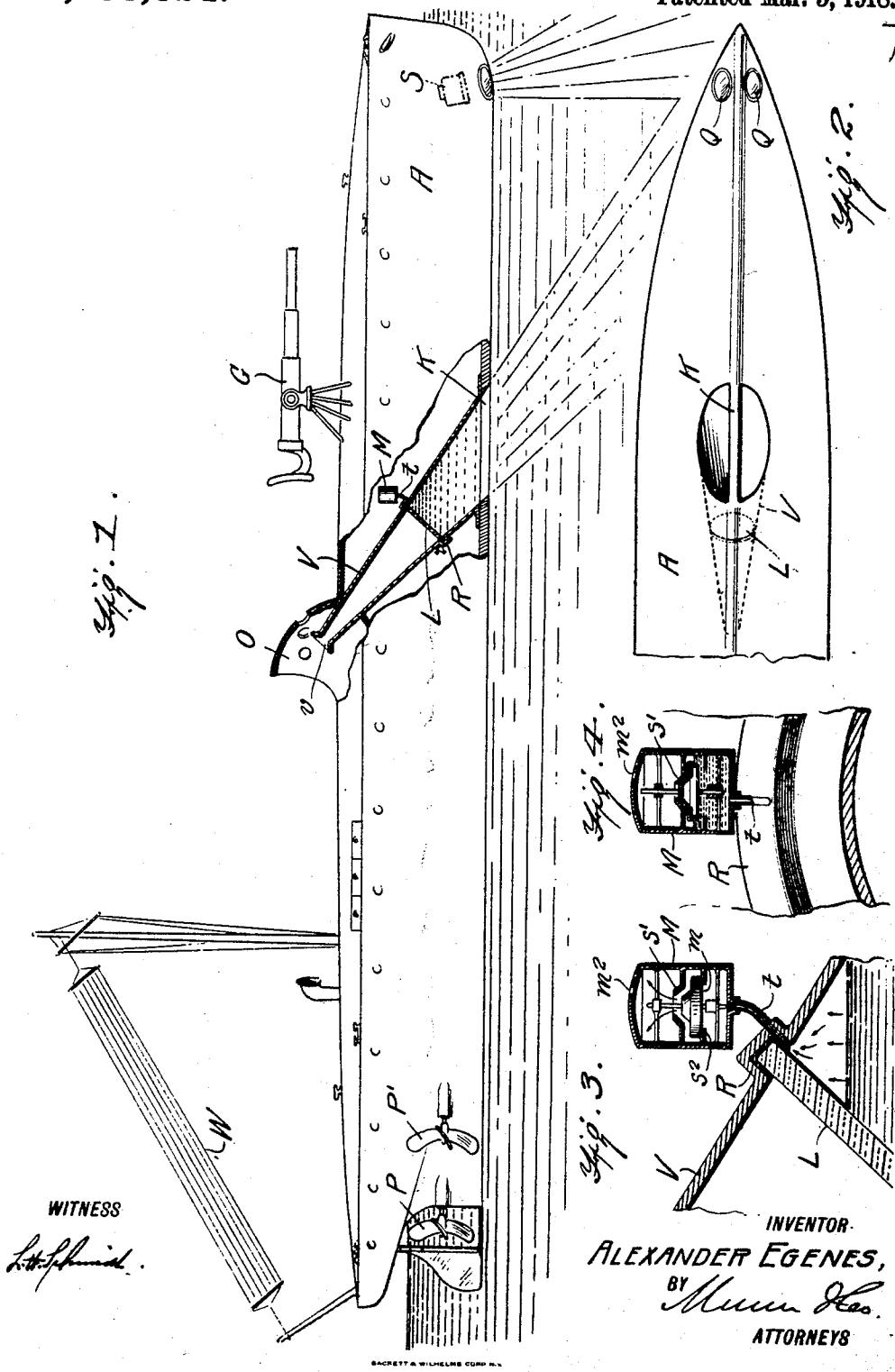
SUBMARINE CHASER.

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WITNESS

L. H. Schmid.

INVENTOR

ALEXANDER EGENES,

BY Munn & Co.

ATTORNEYS

UNITED STATES PATENT OFFICE.

ALEXANDER EGENES, OF LOWER ROCHESTER, NEVADA.

SUBMARINE-CHASER.

1,258,324. Specification of Letters Patent. Patented Mar. 5, 1918.

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To all whom it may concern:

Be it known that I, ALEXANDER EGENES, a citizen of the United States, and a resident of Lower Rochester, in the county of Humboldt and State of Nevada, have invented an Improvement in Submarine-Chasers, of which the following is a specification.

My invention relates to improvements in vessels, particularly in submarine chasers, and it consists in the combinations, constructions and arrangements herein described and claimed.

An object of my invention is to provide a vessel of light draft and great speed which is provided with means for illuminating the water where submarines are liable to be found, and which is also provided with an observation or viewing tube for observing objects underneath the water.

A further object of my invention is to provide a device of the type described having a central observation tube into which the water may enter up to a certain point, with means for withdrawing the air to permit the water to enter, while at the same time preventing the entrance of water into the interior of the boat proper.

A further object of my invention is to provide a boat having a viewing tube which is protected and which is provided with a removable lens or viewing glass.

Other objects and advantages will appear in the following specification and the novel features of the invention will be particularly pointed out in the appended claims.

My invention is illustrated in the accompanying drawings, forming a part of this application, in which—

Figure 1 is a side view of the boat or vessel, a portion of the same being broken away, and the viewing tube being shown in section.

Fig. 2 is a bottom view of a portion of the boat.

Fig. 3 is a detail sectional view through a portion of the viewing tube.

Fig. 4 is a section through the parts shown in Fig. 3 at right angles to the latter.

In carrying out my invention I make use of a vessel of any suitable type, such as that shown at A in the drawings. This vessel is equipped with the usual driving apparatus, such as the propellers P and P', and with guns such as that shown at G, a wireless telegraph outfit, such as that shown at W, and other necessary equipment, which forms no part of the present invention.

At some point, preferably to the rear of the gun G, is located a viewing tube V which extends from an observation post through the vessel and on either side of the keel K, as shown in Fig. 2. This viewing tube is conical in shape and is provided with a viewing orifice v at the upper end. The shape of the tube is elliptical where it intersects the bottom of the boat. A section at right angles to the axis of the tube would be more nearly circular.

Carried by the tube in sidable runners R is a lens or viewing plate L. On one side of the runner is a tube t which leads to a valve chamber M in which there is a valve m. The valve chamber M is covered but has an outlet tube m^2. When the valve is in its upper position against the seat s' water is prevented from entering farther, and when it is in its lower position against the seat s^2 air is prevented from entering through the tube t.

At the bow of the boat is a powerful electric search light S which is immediately behind the lenses Q in the bottom of the boat.

From the foregoing description of the various parts of the device the operation thereof may be readily understood. In operation, the boat is sent out into the region infested by submarines, and the observer stationed at the end of the tube V looks downwardly into the water. If the sun is shining he may see to a considerable depth, but if at night the light S is brought into use, the rays of the light S being focused by the lenses Q upon the spot where the observer is looking as indicated by the lines in Fig. 1.

The water enters the tube V, and in doing so the air confined in the lower part of the tube, that is to say between the lens or viewing plate L and the keel K, will be forced into the valve chamber. It will escape from the valve chamber M through the pipe m^2 until such time as it is all driven out and water has entered the tube t. The valve m being a float valve is then raised and is seated against its seat s', thereby preventing any further entrance of the water, and thus preventing leakage into the interior of the boat.

When the boat is raised out of the water,

as for instance on a wave, the water in the bottom part of the tube V would tend to run out, but air pressing down on the float *m* will cause it to seat against its seat s^2, thereby preventing air from following the water, and thus holding the water in the tube. A drain cock N is provided above the lens plate L for the purpose of draining the tube should "sweating" occur.

The purpose of holding the water in the bottom part of the tube V is to bring it up close to the lens plate L, so as to accentuate the visibility of objects through the tube.

I claim:

1. The combination with a vessel, of a viewing tube extending through the bottom of the vessel, a transparent plate disposed transversely across the interior of said viewing tube, the lower part of the tube being filled with water up to said transparent plate, means for relieving the air in the lower part of the tube to permit the water to enter, said air relieving means comprising a valve chamber having a float valve, and a tube connecting the valve chamber with the lower part of the viewing tube near said transparent plate.

2. The combination with a vessel, of a viewing tube extending through the bottom of the vessel, a transparent plate disposed transversely across the interior of said viewing tube, the lower part of the tube being filled with water up to said transparent plate, means for relieving the air in the lower part of the tube to permit the water to enter, said air relieving means comprising a valve chamber having a float valve, and a tube connecting the valve chamber with the lower part of the viewing tube near said transparent plate, said valve having an upper and a lower seat, the movement of the valve toward its upper seat being effected by the water and the movement of the valve toward its lower seat preventing the entrance of air into the viewing tube and thereby holding the water in the viewing tube close to the transparent plate.

3. The combination with a vessel, of a viewing tube extending through the bottom of the vessel, a transparent plate disposed transversely across the interior of said viewing tube, the lower part of the tube being filled with water up to said transparent plate, means for relieving the air in the lower part of the tube to permit the water to enter, said air relieving means comprising a valve chamber having an automatic valve, and means affording connection between the valve chamber and the lower part of the viewing tube near said transparent plate.

4. The combination with a vessel, of a viewing tube extending through the bottom of the vessel, a transparent plate disposed transversely across the interior of said viewing tube, the lower part of the tube being filled with water up to said transparent plate, means for relieving the air in the lower part of the tube to permit the water to enter, said air relieving means comprising a valve chamber having a float valve, a tube connecting the valve chamber with the lower part of the viewing tube near said transparent plate, and means for illuminating the water in the field of the viewing tube.

ALEXANDER EGENES.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."