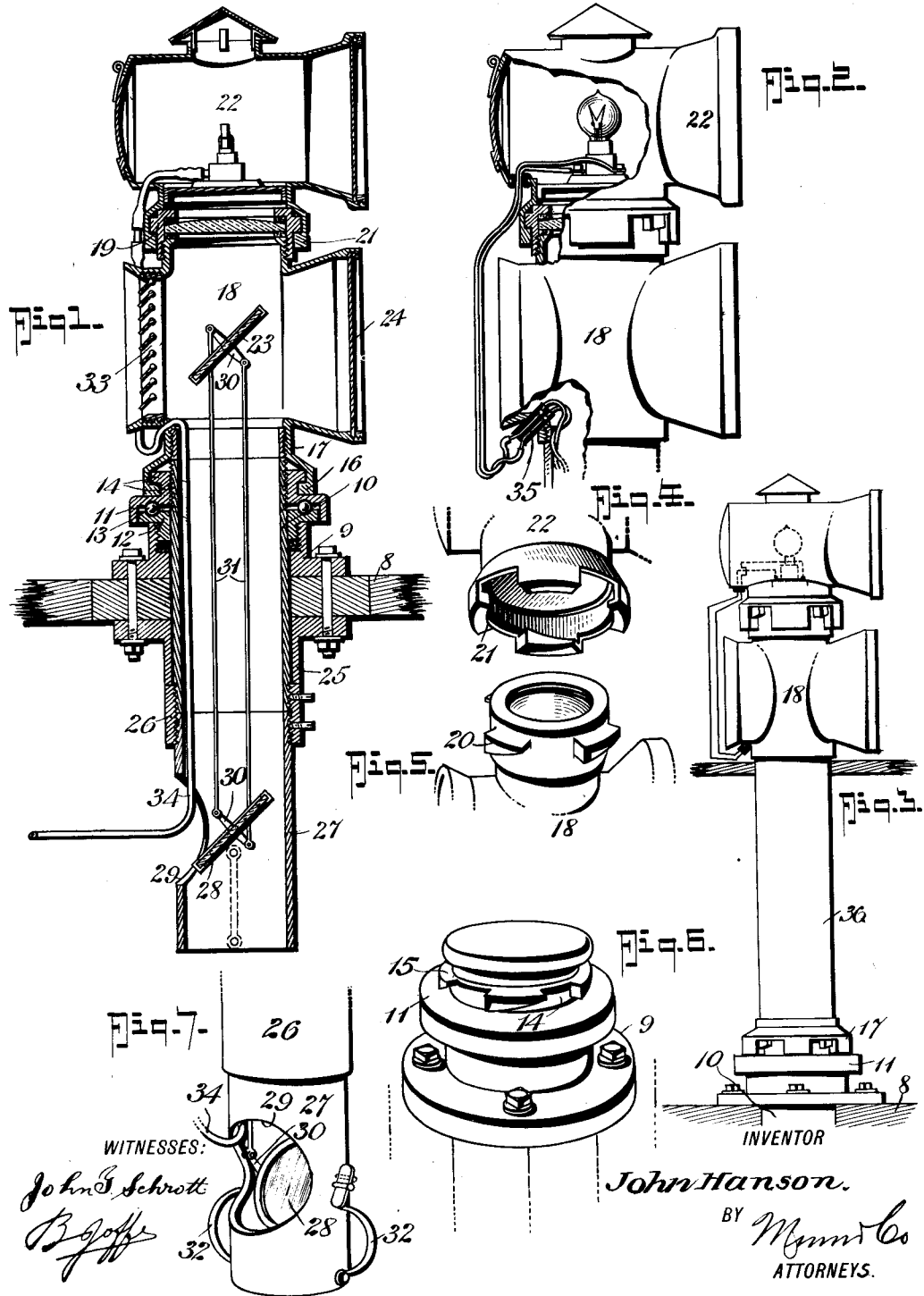


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 PERISCOPE.
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JOHN HANSON, OF NAAS HARBOR, BRITISH COLUMBIA, CANADA.

PERISCOPE.

1,102,046.

Specification of Letters Patent.

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To all whom it may concern:

Be it known that I, JOHN HANSON, a subject of the King of Great Britain, and a resident of Naas Harbor, in the Province of British Columbia and Dominion of Canada, have invented a new and Improved Periscope, of which the following is a full, clear, and exact description.

My invention relates to devices whereby the course of a boat can be viewed from its lower deck, and wherefrom the course can be controlled.

The object of my invention is to provide a simple, strong and inexpensive periscope which forms, also, a ventilator and a skylight and is adapted to carry a projecting lamp coacting with the periscope.

I obtain the above object by providing a rotatable turret having therein a pair of co-acting, turnable, reflecting mirrors forming the periscope, said turret forming a ventilator, and also having a lens at the top thereof forming the skylight, and a projecting lamp adapted to engage the turret above said lamp and coacting with the mirrors.

The invention consists of the construction and combination of parts to be more fully described hereinafter and fully set forth in the claims.

Reference is to be had to the accompanying drawings forming a part of this specification, in which like characters indicate corresponding parts in all the views and in which:

Figure 1 is a vertical, axial section through an embodiment of my invention; Fig. 2 shows a different form of projecting lamp; Fig. 3 shows the periscope positioned above the pilot house, that is, the turret being provided with an extension from the main deck so as to pass through said floor; Figs. 4 and 5 show the connecting means for the parts of the periscope; Fig. 6 is a perspective view of the turret with its bearing; and Fig. 7 is a perspective view showing the bottom of the turret.

Referring to the drawings, 8 represents the main deck of the boat whereon is provided a tubular support 9 forming a stuffing-box for the tubular member 10. The tubular member 10 carries adjustably thereon a crown 11 having a ball race registering with a ball race provided in the member 12, which, with the support 9, forms the stuffing-box. Positioned between the ball race of the crown 11 and the member 12 balls

13 are provided and thereby form a ball bearing for the tubular member 10. The crown 11 is also provided with an extension 14 having teeth 15 on its lateral surface adapted to be engaged by similar teeth 16 carried by an extension 17 of a cross 18.

The cross 18, at the end opposite where the extension 17 is provided, is threaded to receive a lens frame 19 forming a light inlet for the cross 18 and, therefore, the tubular member 10. The said frame 19 is provided on its lateral surface with teeth 20 similar to the teeth 15 and adapted to be engaged by teeth 21, similar to teeth 16, said teeth 21 being formed on an extension of a projecting lantern 22 and, therefore, the said lens frame 19 forms a support for the projecting lens, which projecting lens is intended to be used at night to illuminate the course of the boat, so that the reflected light of said lamp can be received by the mirror 23 mounted to rotate in the cross 18, and to face the glass screen opening 24 of the cross 18.

The tubular member 10 extending below the deck 8 engages a guide 25 secured to the underside of the deck, and bearing against the edge of said support is a union 26 connecting a tubular extension 27 to the tubular member 10. In said tubular extension 27 a mirror 28 is mounted to rotate, said mirror being similar to the mirror 23 and facing the same, so as to reflect the rays coming through the screen opening 24 to the mirror 23 into the opening 29 provided in said tubular extension. The trunnions of the mirrors 23 and 28 are provided with arms 30, the free ends of which are interconnected by parallel rods 31, whereby by moving the lower mirror 28, the upper mirror 23 is moved correspondingly within the turret formed by the tubular members and the cross. The turret proper can be rotated on its ball bearings 13 by applying an effort to handles 32 provided on the tubular extension 27, whereby the course of the boat and the surroundings can be seen.

The cross 18 at the end opposite the glass screen opening 24 is provided with a member 33 forming the ventilator for the turret, so that while the opening 24 admits the rays to the mirrors, the opposite end of the cross admits air through the turret into the engine room from where the course of the vessel is controlled by inspecting the said course through the opening 29. Further-

more, the turret serves as a skylight for the said room, the light being admitted through the lens at the top of the cross 18 which remains uncovered during the day, lamp 22 being used only during the night. The light in the projecting lamp 22, as shown in Fig. 1, is produced by acetylene or gas, which is supplied through a flexible tube 34, which will not interfere with the rotation of the turret and, therefore, the lamp therewith. As shown in Fig. 2, the light used with the projecting lamp 22 is an electric lamp, in which case the wires leading to the lamp and from the source are connected to each other at a plug switch 35 formed in the cross 18.

In Fig. 3 the turret proper is elongated by inserting an additional tubular member 36 between the cross 18 and the crown 11, in which case the cross 18 is not provided with the extension 17 but the extension 17 is mounted on the tubular member 36.

Fig. 6 shows the tubular member 10 when the cross and mirrors are removed, that is, when the periscope is not in use. The lamp 22 is so mounted on the cross 18 that its longitudinal axis is in the same plane with the axis of the screen opening 24 of the cross, which opening faces the mirror 23, so that when the turret is rotated, the light from the projecting lamp 22 will illuminate objects adapted to be reflected by the mirror 23.

Having thus described my invention, I claim as new and desire to secure by Letters Patent:

1. In combination, a periscope with a projecting lamp, said lamp being adapted to move with the periscope and illuminate the field embraced by said periscope.

2. In a periscope, a turret having a cross member at the top thereof; reflecting mirrors in said turret, said cross member having an air and light admission through said turret; and a light inlet to said mirrors.

3. In a periscope, a turret having a cross

member at the top thereof; a bearing for said turret on which the same can be rotated; coacting reflecting mirrors in said turret, said cross having a light inlet to said mirrors, said cross having also a light inlet forming a skylight for the turret and an air inlet forming a ventilator for the same.

4. In a periscope, a tubular member; a cross at the top of said member; means for removably connecting said cross to said tubular member; a bearing for said tubular member whereon the same can be rotated; a mirror in said cross; a mirror in said tubular member; means connecting said mirrors whereby the same can be operated in unison, said cross having a light inlet to the mirror therein, a second light inlet in alinement with said tubular member forming a skylight therefor and an air inlet for ventilating said cross and tubular member.

5. In a periscope, a tubular member; a ball bearing for said member whereon the same can be rotated; a cross positioned at the top of said tubular member; means for removably connecting said cross and said tubular member; a mirror rotatably mounted in said cross; a second mirror rotatably mounted in said member adjacent the bottom thereof; means connecting said mirrors whereby the same can be moved in unison, the cross having a screened light inlet for the mirror therein; an air inlet in alinement with said light inlet; a frame carrying a glass associated with said cross in alinement with said tubular member and forming therefor a skylight; and a projecting lens removably associated with said lens frame, substantially as and for the purpose set forth.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

JOHN HANSON.

Witnesses:

ROBERT I. B. WARTON,
WILLIAM EDWARD FISHER.