W. A. HEYER.

WHISTLE BUOY.

APPLICATION FILED NOV. 3, 1913.

1,176,962. Patented Mar. 28, 1916.

Fig. 1.

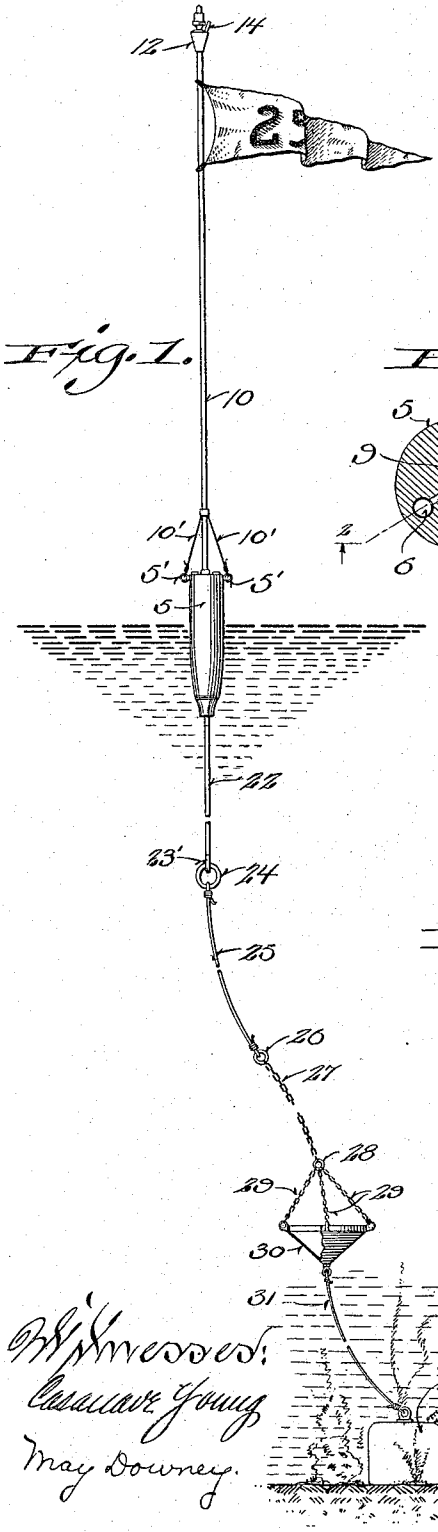


Fig. 3.

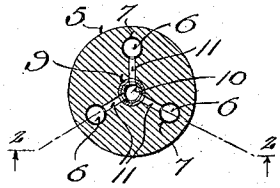


Fig. 4.

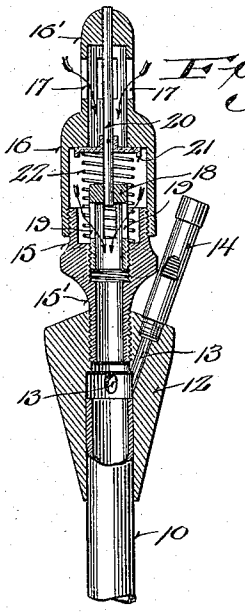
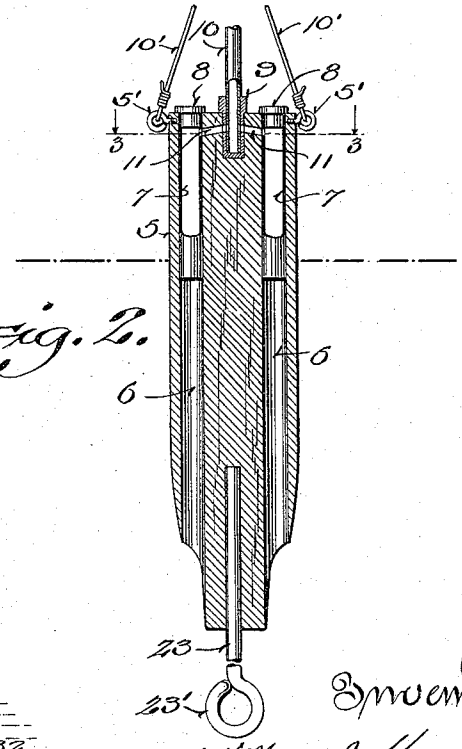


Fig. 2.



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UNITED STATES PATENT OFFICE.

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WHISTLE-BUOY.

1,176,962. Specification of Letters Patent. Patented Mar. 28, 1916.

Application filed November 3, 1913. Serial No. 798,925.

To all whom it may concern:

Be it known that I, WILLIAM A. HEYER, a citizen of the United States, and resident of Milwaukee, in the county of Milwaukee and State of Wisconsin, have invented certain new and useful Improvements in Whistle-Buoys; and I do hereby declare that the following is a full, clear, and exact description thereof.

My invention consists in what is herein particularly set forth with reference to the accompanying drawings and pointed out in the claim of this specification, its object being to provide simple, economical and efficient automatic whistling-buoys especially designed for connection with fish-net anchors to audibly signal the location of the nets in foggy weather, although similarly constructed buoys of suitable dimensions may be employed as channel-indicators or for other maritime purposes.

Figure 1 of the drawings represents a partly sectional elevation of an anchored whistling-buoy and drag-attachment therewith in accordance with my invention; Fig. 2, a sectional view of the float of the buoy indicated by line 2—2 in the next described illustration; Fig. 3, a horizontal sectional view of said float indicated by line 3—3 in Fig. 2, and Fig. 4, a partly sectional view of a preferred form of the whistle and check-valve detail of the buoy.

Referring by numerals to the drawings 5 indicates a float of ordinary dimensions and contour having a plurality of longitudinal bores 6 arranged in a circle whose center is the axis of said float and the upper ends of the bores are suitably stoppered. It is preferable, as herein shown, to provide the float-bores with upper bushings 7 made air-tight at their outer extremities by caps or plugs 8. Set tight in an upper central longitudinal recess of the float is a removable shell 9 that serves as a socket in which to rigidly step a light hollow staff 10 stayed by braces 10′ connecting a collar thereof with eyes 5′ with which the float 5 is provided. Registering openings in the shell and staff register with ports 11 open to the float-bores aforesaid, and in slip-fit on the upper end of said staff is a centrally bored head 12 of preferably conical exterior. Upwardly divergent from the head-bore is a countersunk port 13, and screw-threaded or otherwise fast in the countersink of the port is a whistle 14. Similarly secured in the upper end of the head-bore, open to the port 13, is the shank 15′ of a section 15 of a separable check-valve casing, its other section 16 being provided with a dome-extension 16′ having air-passages 17 therein. A hollow central and upwardly projecting boss 18 fitted in the center of the valve-casing section 15 is provided with air-passages 19, and guided in the head of said boss and the dome of the other valve-casing section 16 is the stem 20 of a disk-valve 21, which valve seats to cut-off said dome. Under compression between the disk valve 21 and the valve-casing section 15 is a spring 22. Hence unseating of said valve is against the resistance of the spring. The shank 15′ of the casing may be open to a plurality of ports 13 in the head 12 as is indicated in Fig. 4, and a whistle may be arranged in communication with each head-port.

The valve-casing, spring-controlled valve proper and its stem above specified combine to form a check-valve construction well adapted to my purpose, but some other construction of check-valve may be found satisfactory, and a flag or pennant may be employed in connection with the aforesaid staff as is herein shown.

Fast in the lower end of the float 5 central of the same is a rod 23 that aids to maintain said float upright in the water, and the lower end of the rod is bent to form an eye 23′ for a ring 24 in connection with a line 25 of any suitable length, this line serving in conjunction with said rod to counterbalance said float with reference to its proper submergence and vertical position. The other end of the line is in connection with a ring 26 that is also connected to a chain 27 of any suitable length leading from another ring 28 coupled to a series of short chains 29 fastened at their lower ends in connection with the rim of a dished conical drag 30, and by means of a line 31 or other suitable flexible device of any suitable length, the drag is connected to an anchor 32 that may also be employed in connection with a fish-net.

In practice, the submergence of the float of the buoy is sufficient to bring the lower ends of the bushings in its bores a predetermined distance below the surface of the water, and in case of the cracking of said float above the water level each of said bushings will serve to prevent an escape of air through an adjacent crack. Coincident with

the wave action there is a rise of water in the float-bores and a compression of confined air in said float and the staff therewith to sound the whistle or whistles of the buoy. Upon recedence of water in the float there is an automatic unseating of the check-valve to permit of a sudden influx of air to the staff and said float. Following a more than ordinary submergence of the float, due to a rise of water therein, there is slack of the connections between said float and the drag, inasmuch as said drag sinks slower than the aforesaid float. Hence when a wave carries the float upward after it has had opportunity to resume its normal position there will be a quick pull of said float against the resistance of the drag to insure a quick unseating of the check-valve against spring-resistance, the expansive force of the spring serving to reseat said valve. Thereafter the float and drag rise together but when opportunity affords, the float falls first, thereby slackening its connections with the drag, and the chains 29 falling into said drag weigh the same to hasten its descent and exert a quick pull upon said float, whereby it is further submerged to effect water displacement of air therein and a consequent sounding of the whistle or whistles. The anchored dished drag and the chains therewith in connection with suspending means in connection with the float are important features of my invention.

I claim:

The combination of a longitudinally bored float closed at its upper end, a hollow staff stepped in the float in communication with the boring of the same, a whistle and check-valve head on the upper end of the staff, the check-valve being inwardly opening to admit air to the staff and float, a conical dished drag, an anchor for the same, a series of chains connected to the rim of the drag, and a flexible device in connection with all the chains and said float.

In testimony that I claim the foregoing I have hereunto set my hand at Milwaukee in the county of Milwaukee and State of Wisconsin in the presence of two witnesses.

WILLIAM A. HEYER.

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