H. H. SIDWELL.

OVERBOARD DISCHARGE VALVE FOR SHIPS.

APPLICATION FILED MAY 20, 1919.

1,377,633.

Patented May 10, 1921.

2 SHEETS—SHEET 1.

Fig. 1.

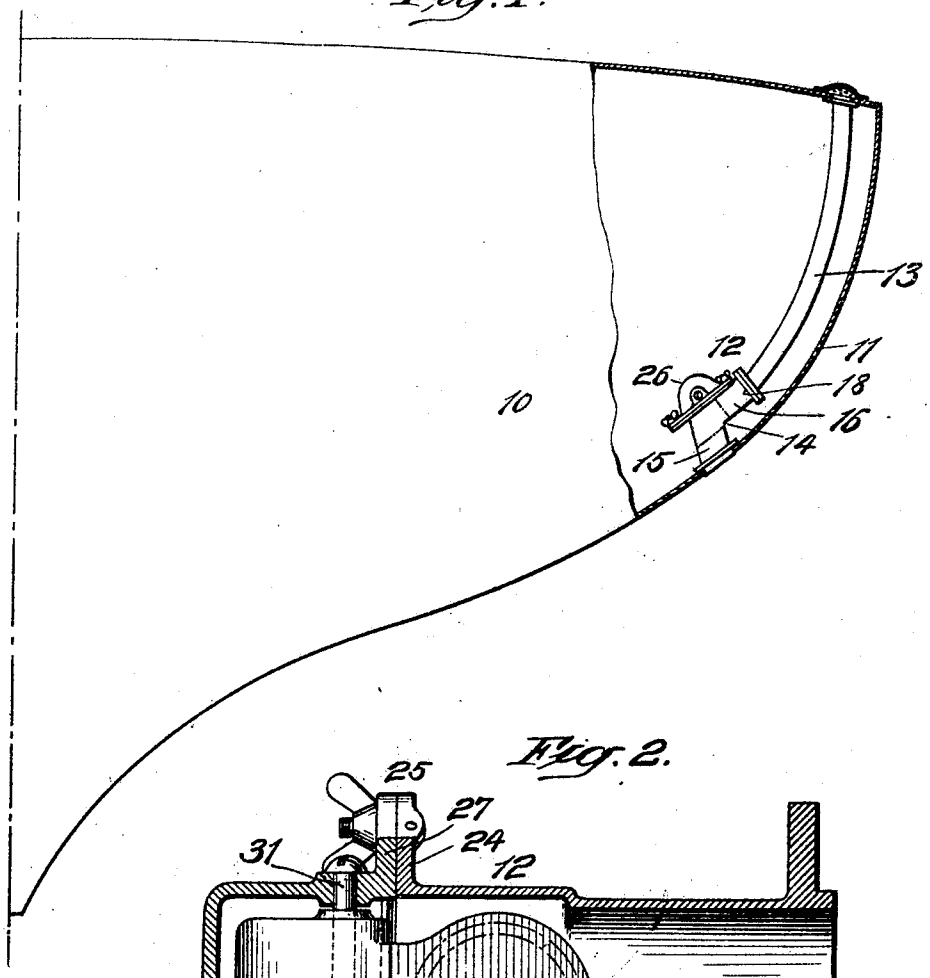
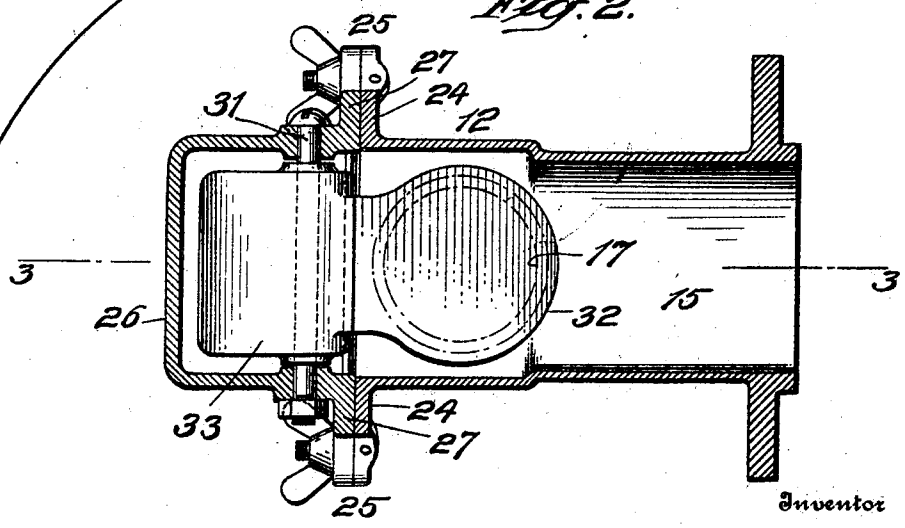


Fig. 2.



Witness.

Inventor

HAROLD H. SIDWELL

By

Attorney

H. H. SIDWELL.

OVERBOARD DISCHARGE VALVE FOR SHIPS.

APPLICATION FILED MAY 20, 1919.

1,377,633. Patented May 10, 1921.

2 SHEETS—SHEET 2.

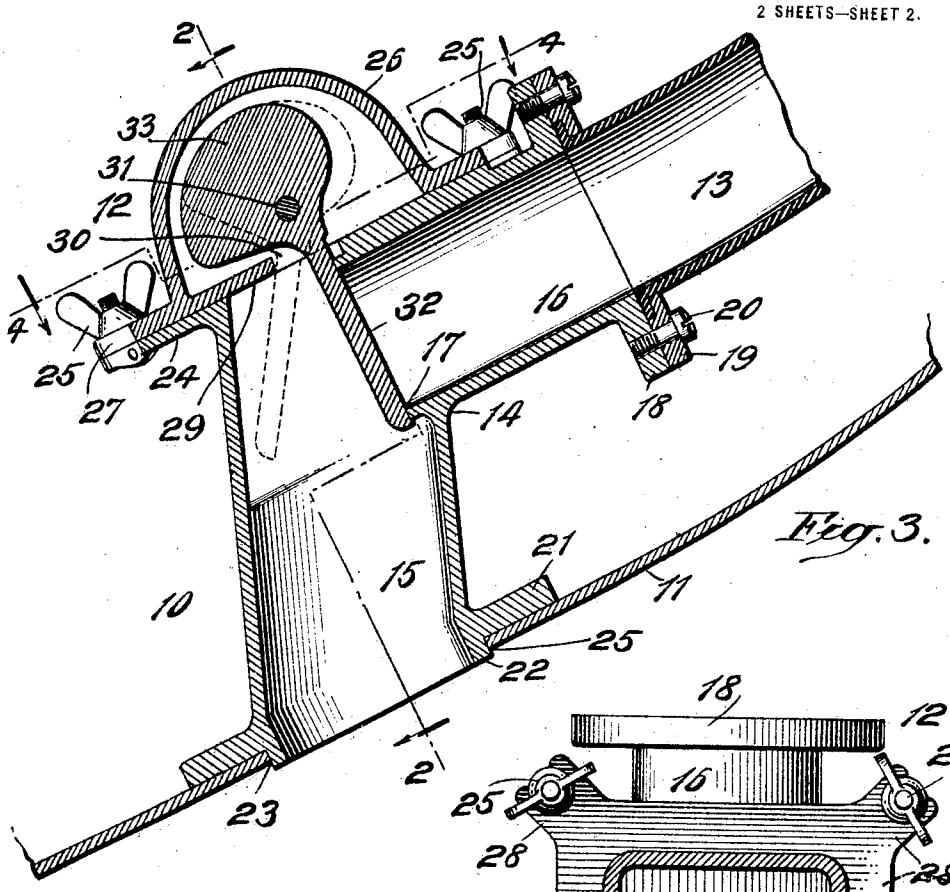


Fig. 3.

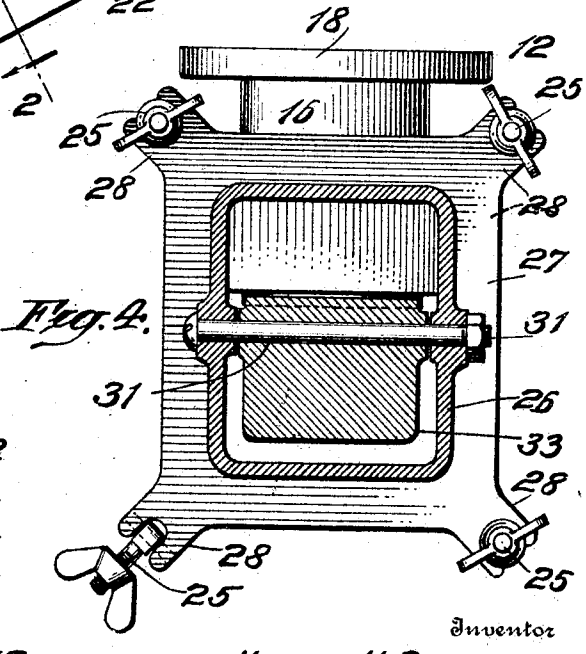


Fig. 4.

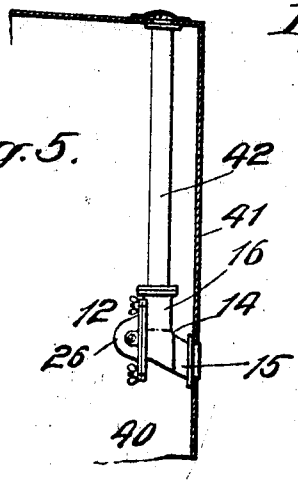


Fig. 5.

Inventor

HAROLD H. SIDWELL

By Chas. C. Gill

Attorney

UNITED STATES PATENT OFFICE.

HAROLD H. SIDWELL, OF BROOKLYN, NEW YORK.

OVERBOARD-DISCHARGE VALVE FOR SHIPS.

1,377,633. Specification of Letters Patent. **Patented May 10, 1921.**

Application filed May 20, 1919. Serial No. 298,493.

To all whom it may concern:

Be it known that I, HAROLD H. SIDWELL, a subject of the King of Great Britain, and a resident of Brooklyn, in the county of Kings and State of New York, have invented certain new and useful Improvements in Overboard-Discharge Valves for Ships, of which the following is a specification.

The valve of my invention constitutes an overboard discharge and a back-water check, the valve proper, in the various angles in which the valve mechanism may be installed, closing the passage through the casing under the pressure which may be exerted against it by the water of the ocean.

The valve casing comprises a body portion having an inclined branch to be secured at its discharge end against the skin of the ship about an opening therein, a branch extending upwardly from the side of the first mentioned branch and adapted at its upper end for convenient connection with a scupper or drain-pipe leading thereto, and a removable hood or bonnet secured upon the body of the casing and opening at its inner side thereinto, the lower end of said upwardly extending branch being formed with a valve-seat. The valve itself is of the clapper type and it is overweighted by a head thereon and pivotally secured by a bolt or the like passing through said head and the sides of said hood or bonnet, the body of the valve being extended into the inclined branch of the valve-casing and adapted to the aforesaid valve-seat.

Among other advantages of my invention, I may mention two, one being the universal applicability of the valve, without change, to the various parts of the hull of a ship, thus rendering it unnecessary to have but this one style of valve on hand, and the other being the ease with which the valve itself or clapper may be removed from the casing and cleansed and then replaced or with which the clapper may be removed and a new clapper substituted for it.

My invention and advantages thereof other than those I have mentioned, will be fully understood from the detailed description hereinafter presented, reference being had to the accompanying drawings, in which:

Figure 1 is an end view, partly in section, diagrammatically illustrating a portion of a ship equipped with the overboard discharge valve mechanism of my invention, a scupper being shown as leading thereto;

Fig. 2 is a sectional view, on a larger scale, through the valve mechanism, the section being on the dotted line 2—2 of Fig. 3;

Fig. 3 is a central section through the same and a portion of the skin of the ship, the section being on the dotted line 3—3 of Fig. 2;

Fig. 4 is a sectional view through a portion of the same taken on the dotted line 4—4 of Fig. 3, and

Fig. 5 is a sectional view through a portion of the skin of a ship and illustrates in side elevation the valve mechanism of my invention applied without any alteration in the construction thereof, to a vertical portion of the skin of the ship, Figs. 1 and 5 serving to indicate the wide range of applicability of my valve mechanism to rakes of vessels differing very greatly in outline and to scuppers differently positioned.

In the drawings, referring to Figs. 1 to 4 inclusive, 10 designates a portion of the hull of a ship, 11 the skin thereon, 12 the valve mechanism of my invention and 13 a scupper to lead thereto from the deck, engine room or other part of a ship requiring an overboard discharge.

The valve casing is numbered as a whole 14 and comprises, in one casting, an inclined branch 15 and an upwardly extended branch 16 having at its end which merges into the branch 15 a valve seat 17 and at its inlet end a flange 18 to which, by means of a collar 19 and screws 20, the lower flanged end of the scupper pipe 13 may be secured. The branch 15 has at its outlet end a flange 21 to engage the inner surface of the skin of the ship, and an end portion 22 which snugly fits within the hole or opening 23 formed in said skin, as shown in Fig. 3. At its inner end the valve casing 14 is formed with a flat flange 24 upon which is secured by swivel screws and nuts 25 the hood or bonnet 26 having a flat flange 27 which lies flat upon the flange 24 of the valve casing and has bifurcated ears 28 at its corner portions, as shown in Fig. 4, to receive the screws and nuts 25 which are of known construction and utility, the screws being pivotally secured to the flange 24 of the valve casing and adapted to be swung into the slots of said ears 28. The bonnet 26 is formed with a flange 29 which extends partly over an opening 30 at the inner end of the branch 15 of the valve casing. The chamber of the bonnet 26 is closed, except at the opening 30, by means of the flange 29

and the inner wall of the branch 16, as shown more particularly in Fig. 3.

Within the bonnet 26 I provide a transverse bolt 31 which extends through the sides of said bonnet, as shown in Fig. 4, and pivotally supports the clapper valve 32 which is adapted to the valve seat 17 and has an overweighted head portion 33 within the chamber of the hood or bonnet 26. The body of the valve 32 extends through the opening 30, and said opening is wide enough to permit the valve to oscillate from closed position, shown by solid lines in Fig. 3, to its open position, shown by dotted lines in Fig. 3 and then back to its closed position. The weight or head 33 has a natural tendency to retain the clapper or valve 32 in its closed position against the seat 17, but under sufficient weight of water or other fluid matter passing within the branch 16 from the scupper 13, said valve will open so as to permit the discharge of said matter into the branch 15 whence it will flow overboard, the valve 32 thereafter closing.

The valve casing 14 is in one integral casting, the hood or bonnet 26 is in one integral casting, and the valve 32, with its head 33, is in one integral casting, and hence it may be seen that the valve mechanism of my invention is inexpensive of manufacture. A further feature of advantage with respect to my invention is that the valve 32 is pivotally supported or suspended from within the chamber of the hood or bonnet 26, which, as will be readily understood, may be loosened from the valve casing proper and elevated therefrom carrying the valve 32 with it, said valve then passing outwardly through the opening 30. Upon the removal of the hood or bonnet 26 no difficulty will be experienced in cleaning the valve 32 or the valve casing or in replacing the valve to position, and this is quite an important feature in overboard discharge valves many of which require skilled labor to remove and clean the valve and others of which not only also require skilled labor for removing and cleaning the valve, but also necessitate the separation of the scupper from the valve casing. The ease with which the clapper valve 32, with the hood or bonnet 26, may be removed from the valve casing, is one of the important objects accomplished by my construction.

A further important object accomplished by my invention is that the valve mechanism, without change, is adaptable to the various angles or forms of the hull of a ship, as I illustrate in Figs. 1 and 5, Fig. 1 showing the mechanism as applied to a curved skin and Fig. 5 illustrating the same mechanism as applied to a vertical skin. The valve mechanism shown in Fig. 5 is identical with that shown in Figs. 1 to 4 inclusive, and therefore so far as necessary I apply the same reference numerals to such mechanism as have been applied to Figs. 1 to 4 inclusive. In Fig. 5 40 denotes a portion of the hull of a ship, 41 the skin or sheathing thereon, and 42 a vertical scupper or drain-pipe, while the valve mechanism as a whole is indicated by the numeral 12. The clapper valve 32 operates perfectly in all the various positions in which it would be desirable to apply the valve mechanism, and this is a very important feature, since it renders the mechanism universally applicable to ships and avoids any necessity for carrying more than one style of valve in stock.

What I claim as my invention and desire to secure by Letters Patent, is:

1. An overboard-discharge and backwater check valve mechanism for ships comprising a main valve casing having an inlet-branch to receive the end of a drain pipe and an outlet branch extending outwardly therefrom, said inlet branch being extended into said outlet branch and affording at its end within said outlet branch a valve seat which stands at substantially a right angle to the longitudinal line of said inlet branch and at an oblique angle to the longitudinal axis of said outlet branch, and said casing at its outer side at the junction of said branches having an opening and being formed with a surrounding seat-flange, a hood seated on and detachably secured to said flange and opening at its inner side into the said opening in said main casing, and a clapper-valve having an overweighted head pivotally mounted within the chamber of said hood and extending thence through said openings into said outlet branch to automatically close against said seat.

2. An overboard-discharge and backwater check valve mechanism for ships comprising a main valve casing having an inlet-branch to receive the end of a drain pipe and an outlet branch extending outwardly therefrom, said inlet branch being extended into said outlet branch and affording at its end within said outlet branch a valve seat which stands at substantially a right angle to the longitudinal line of said inlet branch and at an oblique angle to the longitudinal axis of said outlet branch, and said casing at its outer side at the junction of said branches having an opening and being formed with a surrounding seat-flange, a hood seated on and detachably secured to said flange and opening at its inner side into the said opening in said main casing, and a clapper-valve having an overweighted head pivotally mounted within the chamber of said hood and extending thence through said openings into said outlet branch to automatically close against said seat, and said hood having as a part thereof a plate which extends partly over the said opening in said main casing and leaves a slot between its inner

edge and the adjacent edge of said valve seat within which the clapper valve has its movements defined, said plate also partly closing the inner side of the chamber of said hood from said outlet branch.

3. An overboard-discharge and back-water check valve mechanism for ships comprising a main valve casing having an inlet-branch to receive the end of a drain pipe and an outlet branch extending outwardly and downwardly therefrom and at an obtuse angle thereto, said inlet branch at the junction of said branches affording at its end a valve seat which stands at substantially a right angle to the longitudinal line of said inlet branch and at an oblique angle to the longitudinal axis of said outlet branch, and said casing at its outer side at the junction of said branches having an opening and being formed with a surrounding seat-flange, a hood seated on and detachably secured to said flange and opening at its inner side into the said opening in said main casing, and a clapper-valve having an overweighted head pivotally mounted within the chamber of said hood and extending thence through said openings into said outlet branch to automatically close against said seat.

Signed at New York city, in the county of New York and State of New York, this 17th day of May, A. D. 1919.

HAROLD H. SIDWELL.

Witnesses:
ARTHUR MARION,
CHAS. C. GILL.