June 14, 1938. W. M. DAVANT 2,120,858

BILGE WATER DISCHARGE

Filed Jan. 26, 1937

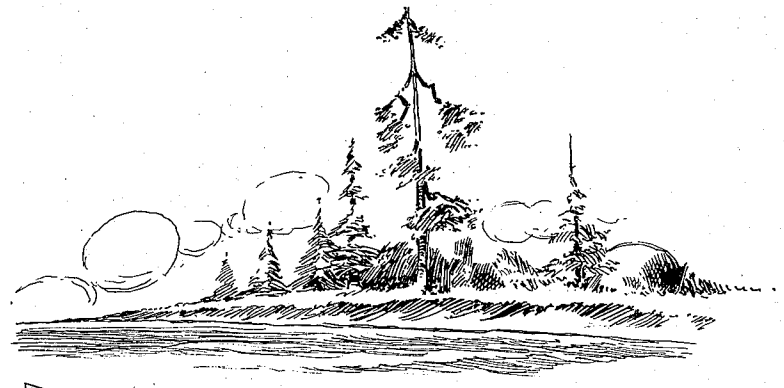


Fig. 1.

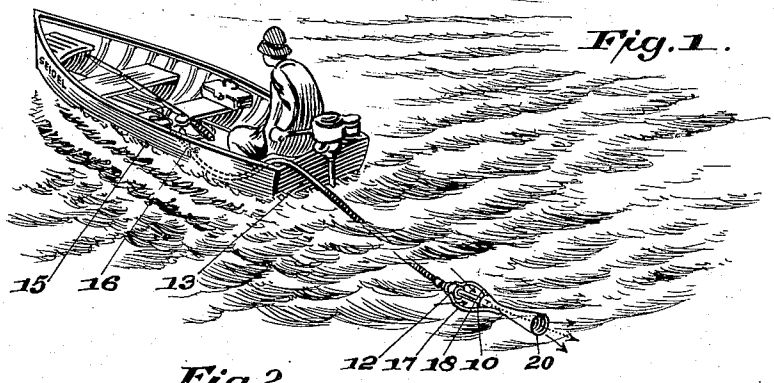


Fig. 2.

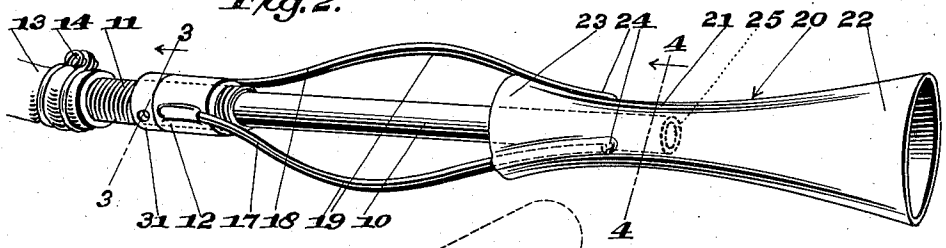


Fig. 3.

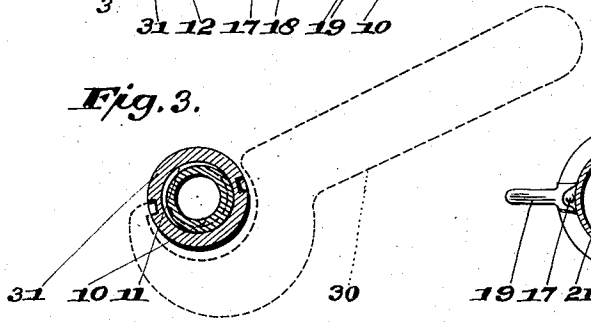
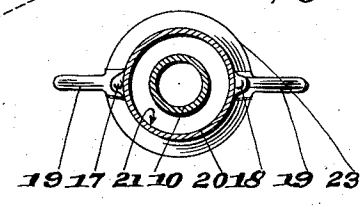


Fig. 4.



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BILGE WATER DISCHARGE

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2 Claims. (Cl. 114—185)

This invention relates to a bilge-water discharge.

It has been proposed to use flared tubes of various configurations at the end of a pipe with the tubes being disposed in the water while the opposite end of the pipe is fastened or secured in any approved manner to a point adjacent the bottom of the boat or where the bilge-water occurs in an attempt to create a suction in the pipe for withdrawing the water from the boat. Devices of this kind are so constructed that they form a part of the boat but are ineffective for the withdrawal of the bilge-water unless the boat is being driven at extremely high speeds and in that event such devices only feebly suck out the water.

An object of the invention is the provision of a bilge-water discharge for boats in which a Venturi tube is provided having its opposite ends flared and supported by arms on a pipe located axially of the tube with the free end of the pipe being disposed in the most effective area of the Venturi section of the tube, the opposite flared end of the tube being free to the atmosphere so that when the tube is withdrawn through the water at a reasonable rate of speed an intense suction action will be created in the tube and at the free end of the pipe for rapidly withdrawing water from the interior of the boat, the device being so constructed that it may be readily detached or attached to the boat.

A further object of the invention is the provision of a bilge-water discharge for boats in which a suction pipe has its free end disposed in a Venturi section of a tube having its opposite ends flared, said tube being adjustably mounted on the pipe so that the tube may be moved concentrically with respect to the pipe for properly adjusting the free end of the pipe in the most effective position within the Venturi section of the tube, said pipe having an extension adapted to be placed within the boat and inserted within the bilge-water located in said boat.

This invention will be best understood from a consideration of the following detailed description, in view of the accompanying drawing forming a part of the specification; nevertheless, it is to be understood that the invention is not confined to the disclosure, being susceptible of such changes and modifications as define no material departure from the salient features of the invention as expressed in the appended claims.

In the drawing:

Figure 1 is a view in perspective of a boat showing my bilge-water discharge applied thereto,

Figure 2 is an enlarged perspective view of the bilge-water discharge,

Figure 3 is a transverse vertical section taken along the line 3—3 of Figure 2 showing a wrench applied to an adjustable nut, and

Figure 4 is a transverse vertical section taken along the line 4—4 of Figure 2.

Referring more particularly to the drawing, 10 designates a suction pipe which is threaded at 11 to receive a nut 12. On the inner end of the pipe is secured in any approved manner a flexible hose 13 which is clamped at 14 to the threaded end 11 of the pipe 10 and this hose extends over the top of the boat 15 and the free end 16 of said hose is adapted to be placed into any water which has collected in the bottom of the boat.

Extending outwardly from the nut 12 is a pair of arms 17 and 18 and these arms are bowed outwardly intermediate their ends, as shown at 19, and in spaced relation with the pipe 10.

A Venturi tube, generally designated by the numeral 20, has a portion 21 which is reduced in cross sectional area to provide a Venturi section. The opposite ends of the tube are tapered or flared outwardly to provide expanded ends 22 and 23. The outer free ends of the arms 17 and 18 are secured at 24 to the outer surface of the flared end 23 of the tube 20.

The outer free end of the pipe 10, as shown at 25 is disposed within the Venturi section 21 of the tube and the external diameter of the free end of the pipe 10 is less than the internal diameter of the Venturi section 21 in order to provide an annular space between the free ends of the pipe 10 and the internal surface of the Venturi section 21.

A jamb nut 31 may be revolved in any approved manner by a suitable tool such as a spanner wrench, indicated in dotted lines at 30 in Fig. 3. However, the nut may have any suitable configuration for the application of any of the well known forms of wrenches. Said nut is adapted to retain the nut 12 in its adjusted position.

It will be appreciated that the present device is so constructed as it merely forms an attachment for boats and may be removed readily when not desired so that it does not form a permanent fixture of the boat. The inner end 16 of the flexible pipe 13, as has been previously stated, is directed into the water to be removed and any suitable clamping means may be employed for retaining said free end in position.

The nut 12 is revolved until the free end 25 of the suction pipe 10 is located in approximate-

ly the most effective area of the venturi 21 and the tube 20 is then dropped overboard and will lie below the surface of the water through which the boat is moving.

As the boat is propelled through the water, water will enter the open free end 23 of the tube 20, and pass through the venturi 21 of said tube and past the outer free end 25 of the suction pipe 10. This water will then expand in the flared portion 22 of the tube 20 and create a suction on the free end 25 of the pipe 10 with sufficient force to readily cause the bilge-water in the boat to be withdrawn therefrom.

It may be found that the water is not being discharged with sufficient rapidity. The nut 31 is released and the nut 12 is then rotated so that the Venturi section 21 will be properly positioned with respect to the free end 25 of the tube 10 for increasing the suction in the pipe 10 and thereby provide for a speedier withdrawal of the water from the boat. The nut 31 is drawn up tight against the cut 12 after the adjustment.

It will be seen by this construction that a great deal of water will enter the flared end 23 of the tube 20 and this water when it passes a restricted area of the Venturi section will be under pressure so that when it passes the free end of the pipe 10 and enters the flared outer discharge end 22 of the tube 20 the speed of the water in the flared end 22 will be increased for creating sufficient suction in the pipe 10 to remove the bilge-water at a reasonable speed of the boat 15.

I claim:

1. A bilge-water discharge comprising a pressure tube having the opposite ends thereof tapered to a reduced intermediate portion, said intermediate portion forming a Venturi section, a pipe of lesser external diameter than the interior cross-sectional area of the Venturi section of the tube and having a free end disposed in said section, arms connected to one end of the tube, a nut secured to the arms and threaded on the other end of the pipe so that the Venturi section may be adjusted relative to the free end of the pipe and fixed in a predetermined position, and a flexible hose connected to the pipe and supporting the tube and pipe.

2. A bilge-water discharge comprising a pressure tube having an intermediate portion reduced in cross-sectional area to provide a Venturi section, the outer ends being expanded, said tube being tapered progressively inwardly from the outer expanded ends thereof to the reduced portion, a pipe located axially of the tube and having the free outer end terminating in the reduced portion, a sleeve threaded onto the inner end of the pipe, arms connected between the inner end of the pressure tube and the sleeve and being bowed outwardly from the pipe, rotation of the sleeve causing the outer end of the pipe to be adjusted relative to the reduced section of the venturi, the opposite ends of the tube being open to the atmosphere, the other end of the pipe being extended for insertion into bilge-water in a boat.

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