March 30, 1926. 1,578,621

G. A. WOOD

AUTOMATIC BAILER

Filed Oct. 4, 1924

Fig. 1.

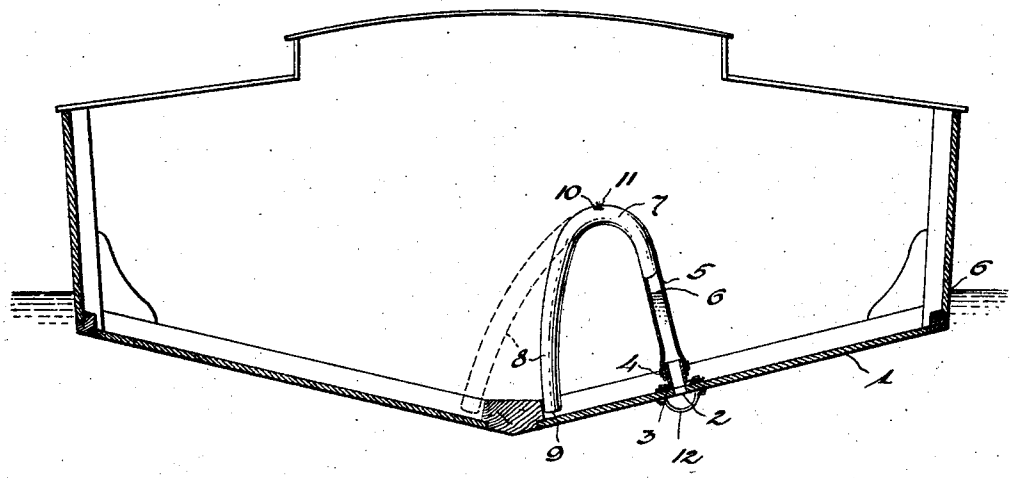
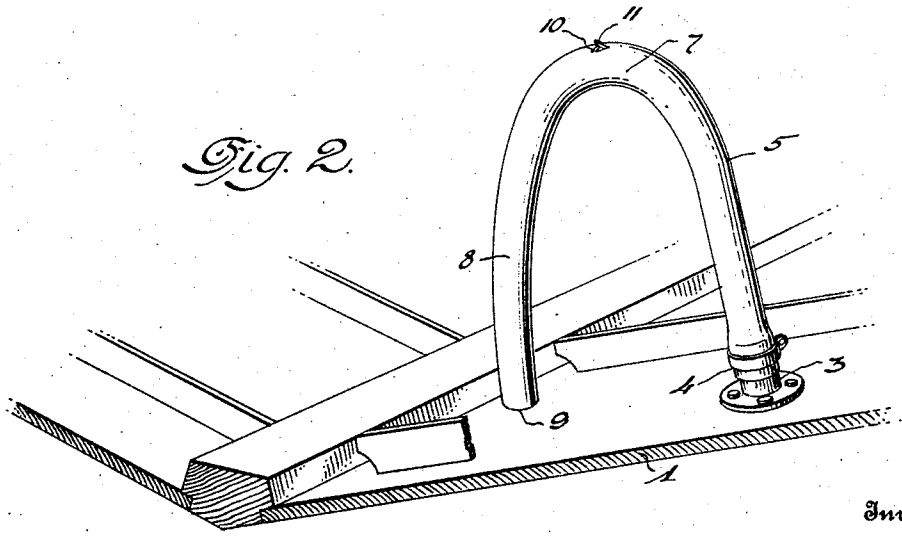


Fig. 2.



Inventor:

Garfield A. Wood

By Bathrick & Bathrick

Attorneys

Patented Mar. 30, 1926. 1,578,621

UNITED STATES PATENT OFFICE.

GARFIELD A. WOOD, OF DETROIT, MICHIGAN.

AUTOMATIC BAILER.

Application filed October 4, 1924. Serial No. 741,553.

To all whom it may concern:

Be it known that I, GARFIELD A. WOOD, a citizen of the United States, residing at Detroit, in the county of Wayne and State of Michigan, have invented certain new and useful Improvements in Automatic Bailers, of which the following is a specification, reference being had therein to the accompanying drawings.

This invention has reference to devices for the automatic bailing of vessels, wherein the suction produced by the passage of the hull of a boat through water, particularly at high speeds, is utilized to draw bilge water from the hull through a bilge opening which is usually provided with a hood adapted to increase the suction and has usually been also provided with a valve for the closing of the said bilge opening when the boat is not in motion.

With such devices as hitherto used, it has often occurred that the closing of the bilge valves has been overlooked after a boat has been brought to rest, with the result that water has entered the bilge openings sometimes to such extent that the boat has been sunk, and it is an object of this invention to provide an automatic bailer which will be quite as effective as those hitherto used, but which is valveless and is not therefore subject to the disadvantages referred to, and requires no attention either as to the bringing of the said bailer into operation or the prevention of leakage into the hull of the boat when the said boat is not in motion.

A further object is to provide in the hull of a boat a siphonic trap which will operate for the removal of bilge water from the hull of a boat travelling at a sufficient speed and which will prevent the inflow of water therethrough to the said hull when the boat travelling at a slow speed or is at rest; a still further object being to provide as a bilge pipe for the said purposes and in connection with the bilge opening of the hull, a pipe connected or adapted to be connected with the said opening and bent or adapted to be bent in an inverted U-formation whereby the upper curved portion of the said pipe when in position will be above the water-line of the vessel and the lower free end of the said pipe extended to a position wherein it will be immersed in accumulated bilge water in the said hull.

Still further objects subsidiary to or resulting from the aforesaid objects, or from the construction or operation of the said invention as it may be carried into effect, will become apparent as the said invention is hereinafer further disclosed.

In carrying the said invention into effect I may provide the hull of a vessel having a bilge opening therein with a coupling or collar about said opening, to which is attached a length of pipe such as of rubber, bent or adapted to be bent in an inverted U-shape formation with the free end situated proximate to the keel of the boat, and the upper curved portion substantially above the water-line of the said boat and preferably provided with an air vent therein, whereby, upon motion of the boat, suction set up around the bilge opening as result of such motion, will cause the withdrawal of bilge water from the said hull through the said bent pipe, and upon the boat coming to rest the elevated bend of the said pipe, being above the water-line, will prevent the return of water through the said pipe to the hull, the vent being provided to prevent the setting up of a siphonic action in the pipe such as might otherwise result in the returning of water to the hull.

All of which is more particularly described and ascertained hereinafter, by way of example, having reference to the accompanying drawing, wherein—

Figure 1 is a transverse section of the hull of a vessel, illustrating the application of the said invention thereto; and

Figure 2 is a fragmentary detail perspective view of the said hull and bilge pipe.

Similar characters of reference indicate similar parts in both figures of the drawing.

A hull 1 is indicated as having a bilge opening 2 therein, over which is superimposed a tubular coupling 3 of any suitable type, to which is attached one end 4 of a pipe 5 of a suitable size and length for the purposes which it is intended to fulfill, the said pipe extending upwardly to a point substantially above the water-line 6 of the vessel and being bent at 7 to provide a downwardly extending leg 8, the said pipe being therefore of inverted U-shaped formation, and the inlet end 9 thereof being

situated in such part of the hull as is most desirable for the collection of bilge water which may accumulate therein. Where the said pipe is flexible, the leg 8 may be varied as to position from time to time to suit different conditions, and in a preferred adaptation of my invention I make the said pipe of rubber tubing, although it may be of lead or other such suitable material as will be readily understood.

10 indicates an air vent in this example formed by the cutting of the tube, which provides a leaf 11 adapted to be opened, closed or adjusted to vary the size of the opening of the vent where the suction in the pipe is affected by the air vent to an extent requiring its adjustment, although in actual practice it is usually found that the vent need not be so large as to interfere appreciably with the operation of the device.

It will be seen from Figure 1 of the drawing that the height of the U-shaped bilge pipe causes the bent portion thereof to extend above the water-line of the hull so that inflow of water through the said pipe to the hull when suction is not effective cannot take place, the water in the upwardly extending leg of the pipe descending in level to that of the water-line 6; and the provision of the vent 10 prevents any tendency of a reverse siphonic action being set up in the pipe which might otherwise result in such return of water to the hull.

Obviously, the device described requires no valve to close the bilge opening, so that it is always ready for operation and cannot accidently be left in a condition which would result in undesirable inflow of water therethrough to the hull at any time, and if desired the bilge opening may be further provided with a scoop 12 for the purpose of increasing the suction about the said bilge opening when the boat is in motion as is commonly employed in connection with bilge valves as hitherto known.

The invention also has the advantage of great simplicity and ready application to the hull of a vessel as well as adjustment of the bilge pipe to meet different bilge water conditions, and due to the fact that it is valveless there is less liability of the device to become clogged by foreign matter or to get out of order than is the case where the bailers employ valves.

This invention may be developed within the scope of the following claims without departing form the essential features of the invention, and it is desired that the specification and drawing be read as merely illustrative and not in a limiting sense, except as necessitated by the prior art.

What I claim is:—

1. In a hull having a bilge outlet therein beneath the water-line thereof, an automatic bailer comprising a bilge pipe of inverted U-shaped formation extending upwardly from said opening to a point substantially above the water-line of said hull and then bent downwardly so that its free end is proximate to a part of said hull subject to the accumulation of bilge water, said bilge pipe having a vent opening in the upper part thereof.

2. As a new article of manufacture, a bilge pipe for the hull of a vessel, comprising inverted U-shaped pipe the legs of which are of greater height than the water-line of a hull with which it is to be used and one end of which is adapted to be connected with a bilge opening in said hull, said pipe having a vent opening intermediate its length, whereby said opening is situated above the water line of said hull, when the pipe is in use, and prevents the siphoning of water into said hull.

3. An automatic bailer according to claim 1, wherein adjustable means are provided for the regulating of the aperture of said vent opening.

In testimony whereof I affix my signature.

GARFIELD A. WOOD.