Sept. 21, 1926. 1,600,849

A. H. SCHWEITZER

AUTOMATIC BAILER

Filed Jan. 6, 1926

Fig. 1.

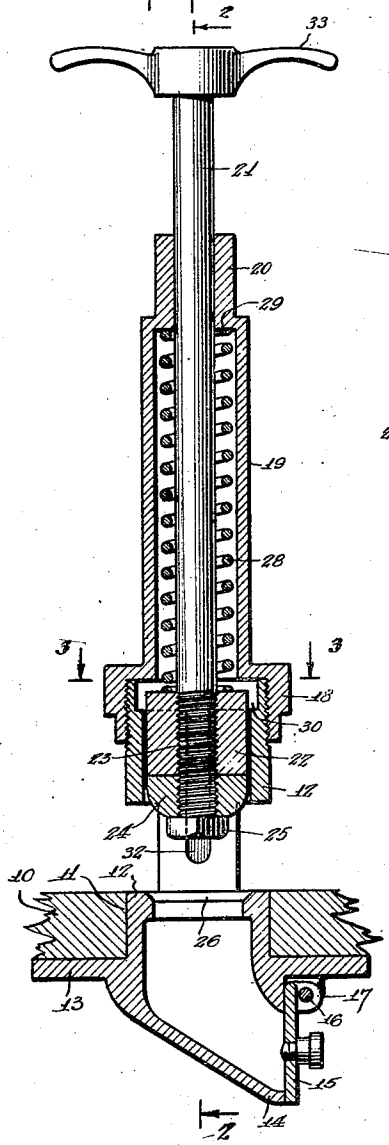


Fig. 3.

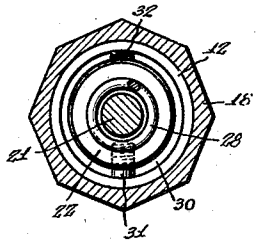


Fig. 4.

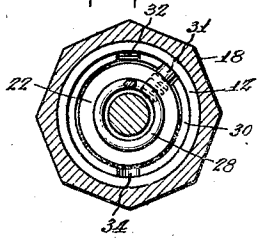
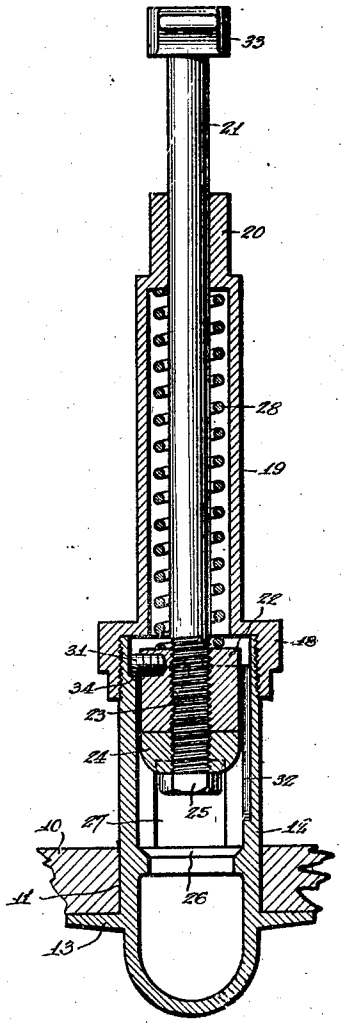


Fig. 2.



WITNESSES

Frank J. Faggioni

Franklin J. Foster

INVENTOR

Alfred H. Schweitzer,

BY Munn & Co

ATTORNEYS

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UNITED STATES PATENT OFFICE.

ALFRED HERRMAN SCHWEITZER, OF HIGHLANDS, NEW JERSEY.

AUTOMATIC BAILER.

Application filed January 6, 1926. Serial No. 79,696.

The present invention relates to improvements in bailers for speed boats. It is particularly concerned with the automatic type of bailer in which a drain pipe for bilge water is secured in the bottom of the boat and a flap valve at the lower end of the drain pipe automatically opens to permit drainage of bilge water when the boat has attained sufficient speed. This type of bailer includes a supplemental valve means usually coacting with a seat in the drain pipe to prevent water leaking around the flap valve from entering the boat when the latter is anchored or moored, or when the boat is moving astern or moving ahead at speeds less than the speed necessary for operating the gate valve.

An object of the present invention is to improve the supplemental valve mechanism, to render the same quick acting and efficient in use. Specific objects of the invention are to provide a valve which will always reset in the same position so that wear on the valve is minimized, to provide a valve with few wearing parts which may be quickly and inexpensively renewed, and to provide a bailer structure which may be readily taken apart and cleaned when it becomes clogged with refuse.

General objects of the invention are to provide a bailer of simple, practical construction which will be rugged and durable in use, and which may be manufactured, assembled and applied in operative position with comparative economy.

With the above noted and other objects in view, the invention consists in certain novel features of construction and combinations and arrangements of parts, as will be more fully hereinafter set forth and pointed out in the claims. The invention may be more fully understood from the following description in connection with the accompanying drawings, wherein

Fig. 1 is a view mainly in longitudinal section through a bailer embodying the invention.

Fig. 2 is a similar view taken at right angles to Fig. 1 on the line 2—2 of Fig. 1.

Fig. 3 is a transverse sectional view on the line 3—3 of Fig 1.

Fig. 4 is a similar view showing the valve mechanism rotated out of locked position.

Referring with particularly to the drawings, it will be noted that I have used the reference character 10 to designate the bottom of a boat formed with an opening 11 in which the drain pipe 12 is adapted to be secured. The drain pipe is formed with an annular external flange 13 which may be secured to the boat bottom in any appropriate manner, and terminates in a rearwardly directed discharge end 14 closed by a gate or flap valve 15 pivoted as at 16 to ears 17 projecting rearwardly from the drain pipe.

The upper end of the drain pipe 12 is threaded for the reception of the enlarged threaded lower end 18 of a tubular sleeve 19, providing a bearing at 20 for a vertically disposed valve stem 21. The valve 22 screwed on to the lower threaded end 23 of the valve stem, is preferably faced with rubber at 24, and retained in place by nut 25. This valve is adapted to coact with an annular seat 26 in the drain pipe to effectively shut off communication between the gate valve 15 and lateral inlet ports 27 in the drain pipe.

The valve is normally spring urged into closed position by coiled expansion spring 28 encircling the stem between the valve 22, and a downwardly facing shoulder 29 formed in the sleeve 19. With the valve in closed position, no water can pass from the boat to discharge through the gate valve, and no water can leak around the gate valve into the boat. When the boat is running at a sufficiently high speed however, it is desirable to shift the valve 22 out of operative position, and permit drainage of bilge water through the ports 27 and gate valve 15.

To accomplish this result there is provided in the upper end of the drain pipe, an internal shoulder 30 adapted for coaction with a radially projecting pin 31, screw threaded, drive fitted or otherwise mounted in the

valve 22. This pin normally works in a vertical groove 32 in the walls of the drain pipe. By manually grasping a valve stem handle 33, the valve may be lifted against the action of the spring 28 until the pin 31 clears the upper end of groove 32, at which time rotary movement of the valve stem will shift the pin 31 to a position where downward movement is blocked by the shoulder 30. For positively locking the valve stem against accidental rotational movement, when in elevated position, I provide a notch or recess 34 in the shoulder 30 at a point diametrically opposite groove 32. With the pin seated in this groove as in Fig. 2, vibration of the boat cannot cause accidental rotary movement of the valve, and consequently the possibility of the valve accidentally reclosing is eliminated.

Fig. 4 indicates the pin 31 resting in shoulder 30 at a position intermediate groove 32 and recess 34. An advantage of the construction is, that in order to reseat the valve, the pin 31 must be aligned with the groove 32, and will consequently assure reseating of the valve in exactly the same position each time, so that wear upon the rubber element 24 will be minimized.

In operation, when the boat has attained a sufficient speed, the operator grasps handle 33, pulls the valve stem upwardly against the action of the spring, and rotates the latter until the pin 31 drops into the groove 34. When it becomes desirable to reclose the valve, the handle is again grasped and lifted to disengage pin 31 from the recess 34, and the handle is rotated until the pin aligns with groove 32, whereupon the spring will restore the valve to seated position.

It will be seen that the device may be readily taken apart for the replacement of worn parts or for purposes of cleaning. The valve and its operating mechanism are essentially quick acting as opposed to the usual threaded plunger constructions.

Various changes and alterations might be made in the general form and arrangement of parts described without departing from the invention. Hence I do not wish to limit myself to the details set forth, but shall consider myself at liberty to make such changes and alterations as fairly fall within the spirit and scope of the appended claims.

I claim:

1. In an automatic bailer, an approximately vertical drain pipe having lateral ports therein, a swinging valve closing the outlet end of said pipe, a valve seat between the ports and the swinging valve, and a second valve, spring-pressed downwardly on to said seat, and means for locking said valve in elevated inoperative position.

2. In an automatic bailer, an approximately vertical drain pipe having lateral ports therein, a swinging valve closing the outlet end of said pipe, a valve seat between the ports and the swinging valve, and a second valve, spring-pressed downwardly on to said seat, and means for locking said valve in elevated inoperative position, including a pin projecting laterally from the valve, and a shoulder in the drain pipe upon which the pin is adapted to seat.

3. In an automatic bailer, an approximately vertical drain pipe having lateral ports therein, a swinging valve closing the outlet end of said pipe, a valve seat between the ports and the swinging valve, and a second valve, spring-pressed downwardly on to said seat, and means for locking said valve in elevated inoperative position, including a pin projecting laterally from the valve, and a shoulder in the drain pipe upon which the pin is adapted to seat, said drain pipe having a vertical groove therein, accommodating the pin as the valve is moved toward or away from the seat.

4. In an automatic bailer, an approximately vertical drain pipe having lateral ports therein, a swinging valve closing the outlet end of said pipe, a valve seat between the ports and the swinging valve, and a second valve, spring-pressed downwardly on to said seat, and means for locking said valve in elevated inoperative position, including a pin projecting laterally from the valve, and a shoulder in the drain pipe having a vertical groove therein, accommodating the pin as the valve is moved toward or away from the seat, said shoulder having a recess therein at a point spaced from the upper end of said groove, whereby the valve may be elevated and rotated to move the pin into locking engagement with the recess.

5. In an automatic bailer, a vertical drain pipe having lateral inlet ports therein, a valve seat in the drain pipe below the inlet ports, a spring urged plunger, a valve at the lower end of the plunger coacting with the seat, a shoulder in the drain pipe, and a pin carried by the valve engaging the shoulder to lock the valve in elevated inoperative position.

6. In an automatic bailer, a vertical drain pipe having lateral inlet ports therein, a valve seat in the drain pipe below the inlet ports, a spring urged plunger, a valve at the lower end of the plunger coacting with the seat, a shoulder in the drain pipe, and a pin carried by the valve engaging the shoulder to lock the valve in elevated inoperative position, said shoulder having a notch therein adapted to receive the pin, and said drain pipe having a vertical groove therein accommodating the pin as the valve is moved toward or away from the seat.

7. An automatic bailer including a drain pipe having inlet ports therein, a valve seat below the inlet ports, a sleeve screwed

on to the upper end of the drain pipe, a plunger having bearings in the sleeve and carrying a valve for coacting with said seat, and a valve operating spring housed within the sleeve and acting on the valve to maintain the latter seated.

8. An automatic bailer including a drain pipe having inlet ports therein, a valve seat below the inlet ports, a sleeve screwed on to the upper end of the drain pipe, a plunger having bearings in the sleeve and carrying a valve for coaction with said seat, and a valve operating spring housed within the sleeve and acting on the valve to maintain the latter seated, and means for retaining the valve in unseated position.

ALFRED HERRMAN SCHWEITZER.