This invention relates to a boat bailer and more particularly to a device which, when manually actuated, will automatically drain bilge water from a boat.

The present invention is intended for use primarily on a boat of moderate size, for example, a craft equipped with an outboard motor. The bailer provides an opening through which bilge water may escape when the boat is in motion at planking speed. By virtue of its location on the boat, water resistance or drag is eliminated, and air pockets which might interfere with the proper operation of the boat’s propeller, especially on outboards when making turns, are prevented. The bailer may also be used as a drain when the boat is on dry land and the bilge is being cleaned.

While boat bailing of various types have been known for many years, it is a primary object of the present invention to provide a bailer which is simpler than prior bailers and yet which operates in a positive, efficient, and trouble-free manner.

A further object of the invention is to provide an improved manually actuable boat bailer which is effective to drain bilge water automatically when the boat is in motion.

An additional object of the invention is to provide such a boat bailer which may be conveniently actuated from a plurality of locations on the boat.

Another object of the invention is to provide such a boat bailer including a self-centering valve which is manually opened and automatically closed.

A further object of the invention is to provide such a boat bailer which is adjustable for installation on boats having different dimensions.

The present invention is an improvement upon the devices disclosed and claimed in U.S. Letters Patent No. 2,885,897, issued to the present applicant on June 2, 1959 for “Semi-Automatic Boat Bailer.” The device of that patent has a valve body which moves outwardly of the boat transom to release the bilge water and which is urged inwardly by a tension spring to close the drain. In some instances the valve body may be externally obstructed or may be prevented by debris from closing properly. Such conditions may be difficult to ascertain from within the boat. Also, the environmental forces exerted on the valve body may tend to open the valve spuriously. Moreover, the operating linkage required may be inconvenient to mount in some boats.

It is accordingly a specific object of the present invention to provide a boat bailer which has an inwardly opening valve that is operated by a linkage which is unobtrusive and yet reliable.

These and other objects, advantages, and features of the invention will become more apparent upon consideration of the following detailed description of the invention when taken in conjunction with the accompanying drawings of a preferred embodiment, which illustrates a vertical, partly sectional view of the boat bailer arranged in position on the transom of a boat.

Referring to the drawing, reference numeral 1 designates the rear wall or transom of a boat on which the invention is mounted. At the bottom of the transom an opening is formed through which a tubular housing 2 is inserted. The housing, which may be substantially cylindrical, receives lock rings 32 and 36 which are threaded onto the housing and which ensure a water-tight seal against the surfaces of the transom. Alternatively, one of the rings may be replaced by a fixed flange. The housing 2 forms the orifice through which the bilge water is drained and preferably has sufficient length to accommodate transoms of various thicknesses. The inner end 2a of the housing constitutes a valve seat, and the space between the valve seat and the bottom 4 of the boat serves as a depository for shell particles, sand or other debris that may be brought into the boat.

A self-centering valve member 5, which may be made of any suitable material that is compatible with the use of a boat, and the valve seat 2a, is fastened as by an eye 6 to a pull chain 7 or similar linkage. The chain 7 may be manually controlled from any of a plurality of positions in the boat. The pull chain may be directed to the control point by a series of pulleys (not shown). The self-centering action of the valve member may be ensured by tapering the valve member as shown and by supporting the valve member with some lateral freedom, as will appear more fully hereinafter. The large end of the valve member lies inside the boat and has a diameter greater than the diameter of the valve seat 2a. As will appear below, the smaller end of the valve member is arranged to reciprocate in housing 2.

The smaller end of the valve member 5 is connected as by an eye 8 to a valve closing mechanism 9. This mechanism includes a helical compression spring 10 and a pair of V-shaped double hooks 11 and 12. The vertex of hook 11 is held by eye 8. The hook passes through the spring and has its ends reversely bent about diametrically opposed points of an end turn of the spring. Hook 12 is disposed oppositely to hook 11, having its vertex secured to a transverse pin 13 and its ends reversely bent about the other end turn of the spring. Pin 13 is fixed to the housing 2 as by recessed nuts threaded on the pin ends. The valve closing mechanism provides positive return of the valve member 5, yet permits sufficient lateral movement of the member to ensure centering. Movement of the valve member away from its seat is limited by total compression of spring 10. The return force of the spring remains constant even after long usage, because the spring can never be stressed beyond its elastic limit.

In the use of the invention, when the forward motion of the boat causes the bow to rise, water in the bilge gravitates toward the stern and accumulates in a pocket formed by the transom and the bottom of the boat. When planing speed is attained, the bailer is actuated by pulling manually on pull chain 7. Valve member 5 moves inwardly of the boat and is thus unseated from valve seat 2a, allowing the bilge water to drain through the housing 2. The suction created by the forward motion of the boat through the water draws the bilge water from the boat and prevents water from entering the boat through the housing.

Inward movement of the valve member 5 compresses spring 10. When the pull chain 7 is released, spring 10 expands (its outer end moving toward pin 13), and the valve member 5 is returned to its rest position against seat 2a.

Because of the self-centering action of the valve member, a tight seal between the valve member and valve seat is assured. Since the valve member moves inwardly, external obstruction of the valve movement is not possible, and the presence of debris preventing closure of the valve is readily perceived. The actuating linkage requires no mounting space. The return mechanism is positive and does not protrude from the housing of the bailer.

While a preferred embodiment of the invention has been shown and described, it will be apparent to those skilled in the art that changes can be made without departing from the principles and spirit of the invention,
the scope of which is defined in the appended claims. For example, within the broader aspects of the invention the shape of the valve member may be modified. Accordingly, the foregoing embodiment is to be considered illustrative, rather than restrictive of the invention, and those modifications which come within the meaning and range of equivalency of the claims are to be included therein.

The invention claimed is:

1. In a device for bailing a boat, a tubular housing passing through the transom of said boat near the bottom, said housing forming an orifice through said transom and having a valve seat adjacent its inner end, a valve member inwardly movable toward said valve seat, a pulling element connected to said valve member to move it away from said valve seat, and a return mechanism within said housing and connected to said valve member to move it toward said valve seat when said pulling element is released, said return mechanism comprising a compression spring and means for compressing said spring when said valve member is moved away from its seat, said spring extending lengthwise of said housing and lying between said valve member and a spring retaining element fixed to said housing, and said compressing means comprising means connecting said valve member and said retaining element, respectively, to the ends of said spring remote therefrom, said spring being helical, said spring connecting means comprising generally V-shaped elements oppositely disposed within said spring and having one of their extremities connected to an end of the spring and the other of their extremities connected to said retaining element and said valve member, respectively.

2. The device of claim 1, said valve member having lateral freedom to permit it to center itself in closing.

3. The device of claim 2, said valve member being tapered and having its larger end inside said boat and its smaller end extending into said housing.

References Cited in the file of this patent

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