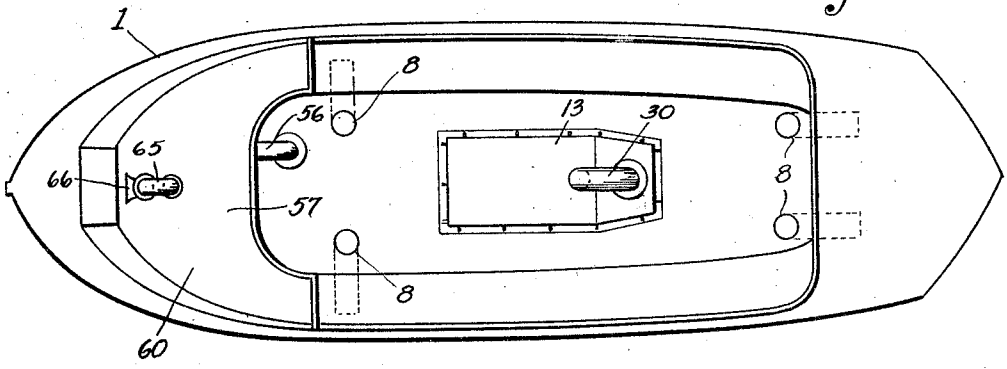
Dec. 11, 1928. 1,694,790

F. N. NELSON

ENGINE HOUSING

Filed Sept. 10, 1924 2 Sheets-Sheet 1

Fig.1



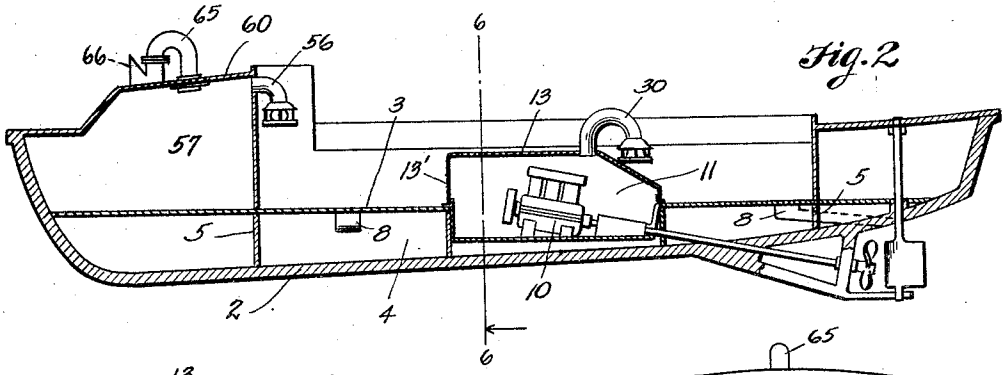


Fig.2

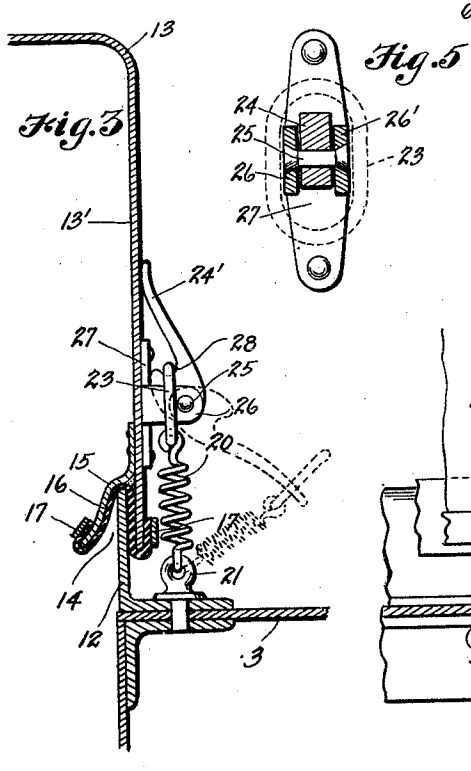


Fig.3

Fig.5

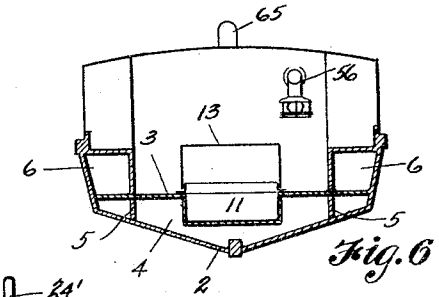


Fig.6

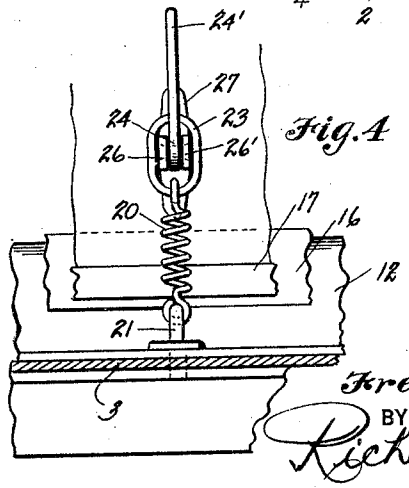


Fig.4

INVENTOR
Fred N. Nelson
BY
Richard J. Cook
ATTORNEY

Dec. 11, 1928. 1,694,790

F. N. NELSON

ENGINE HOUSING

Filed Sept. 10, 1924 2 Sheets-Sheet 2

Fig. 7

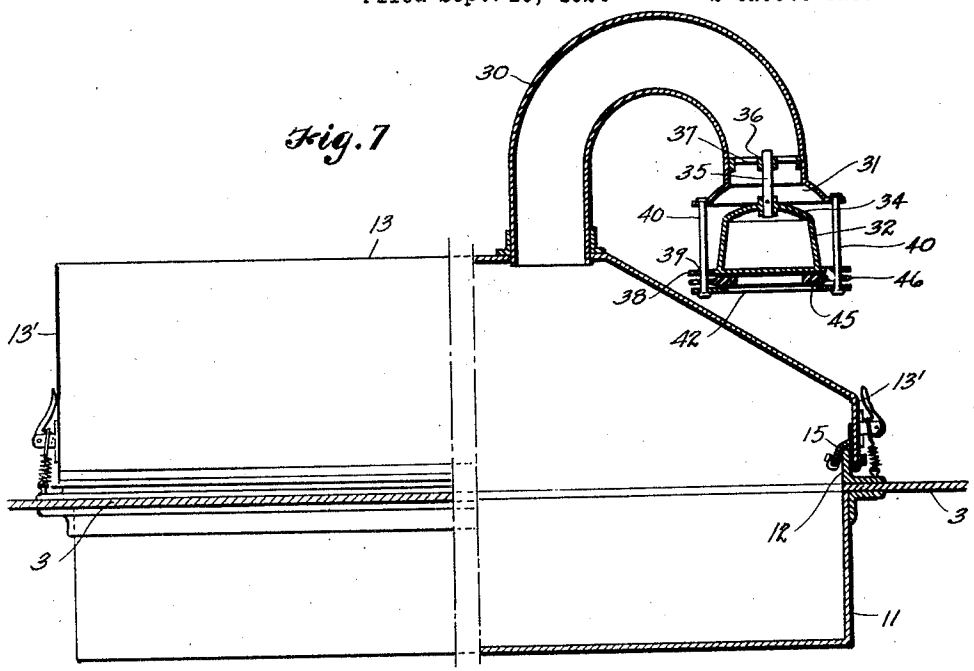


Fig. 9

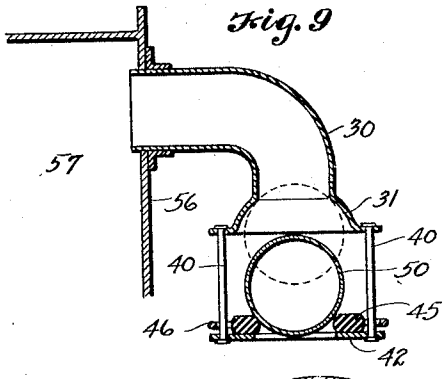


Fig. 8

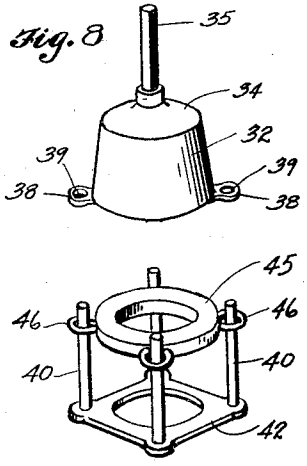
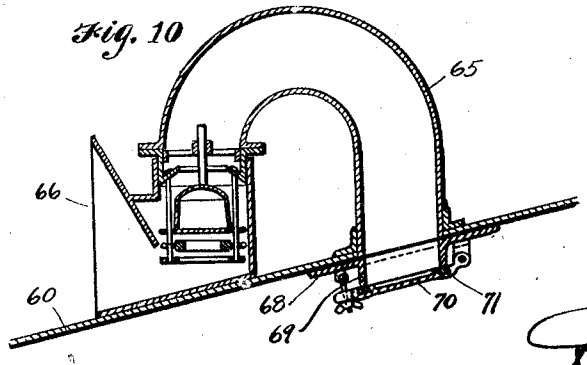


Fig. 10



INVENTOR
Fred N. Nelson
BY
Richard Hook
ATTORNEY

Patented Dec. 11, 1928. 1,694,790

UNITED STATES PATENT OFFICE.

FRED N. NELSON, OF SEATTLE, WASHINGTON.

ENGINE HOUSING.

Application filed September 10, 1924. Serial No. 736,852.

This invention relates to improvements in boats, and more particularly to launches, marine autos, fishing boats, power life boats and similar types of vessels; it being the principal object of the invention to provide boats of the above character having water tight, portable engine housings equipped with ventilators of novel construction that operate to normally permit a free inflow of air but which will close automatically to prevent the entrance of any water which might break over the boat or reach the ventilator should the boat, for any reason, become submerged or capsized.

Another object of the invention is to provide a ventilated engine housing, as above stated, having a portable upper section so constructed that it may be removably fitted in an air and water tight connection upon a coaming fixed to the deck or bottom of the boat about the engine foundation and which has clamping mechanism attached thereto whereby it may be releasably held in functional position to keep the engine free from water during rough or inclement weather or if the vessel should become submerged or capsized for any reason.

Still further objects of the invention reside in the various details of construction of ventilators for use in the engine housing and other ventilators adapted to be fitted to the pilot house, or other compartment, and which co-operate with other features of construction, disclosed in patent applications filed by myself, to make possible the construction of non-sinkable and self-bailing boats and vessels.

In accomplishing these and other objects of the invention, I have provided the improved construction, the preferred forms of which are illustrated in the accompanying drawings, wherein—

Figure 1 is a plan view of a boat embodying the features of construction, constructed and assembled in accordance with the objects of the present invention.

Figure 2 is a longitudinal, sectional view of the boat.

Figure 3 is an enlarged sectional detail showing the preferred type of clamping device whereby the portable section of the housing is clamped and locked upon the coaming secured to the deck or bottom about the engine foundation.

Figure 4 is a front view of a clamp.

Figure 5 is a detail view, partly in section, showing the construction of the pad for the clamping lever.

Figure 6 is a vertical, cross sectional view taken on line 6—6 in Figure 2.

Figure 7 is an enlarged side elevation of the engine housing; parts being shown in section to better illustrate the water tight connection between the portable section and deck and the details of construction of the ventilator tube and valve mechanism therein.

Figure 8 is a perspective view of the ventilator valve parts in disassembled relation.

Figure 9 is a sectional view of a ventilator of modified construction.

Figure 10 shows in section the type of ventilator and valve mechanism preferred for use on pilot house, cabin and similar compartments.

Referring more in detail to the several views of the drawings—

1 designates, in its entirety, a boat of that type wherein the present improvements are especially useful and applicable, preferably the boat would be of sheet metal construction although any material suitable for boat building may be used.

The boat shown is of the launch type, and comprises a hull 2 and a false bottom or deck 3 providing an intermediate air tight compartment 4 which is divided by means of transverse and longitudinally extending partitions 5 into a plurality of separate compartments. Above the deck, air tanks 6 may be provided under the thwarts and seats and forward and after ends which may be modified to suit the design but which in a general way will serve to add buoyancy where needed to prevent capsizing of the boat when submerged. The deck 3 is essentially located above the normal water line with engine foundation, fish well or cargo space extending below same, and the weight and load are so distributed that the proper metacentric height and maximum seaworthiness is obtained.

In order that the boat will be self-bailing, I have provided a plurality of valved scuppers 8 in the deck that open to the exterior of the hull at points preferably near the water line. These scuppers are in the form of tubular conduits and are interiorly equipped with back check valves which operate to permit an outflow of water but automatically close to prevent any inflow and which may be of that type illustrated in my co-pending application, Serial No. 651,228.

The engine, as designated at 10, is set down within an opening in the deck at the center and toward the rear of the boat and is contained within a housing comprising a lower section 11 and a portable, or removable, upper section 13. The lower section is absolutely water-tight and is secured to the under side of the deck about the opening in a water-tight connection. The lower housing section supports the engine and, due to its being set down a substantial distance below the deck, gives the boat better balance and makes it more seaworthy.

To the upper side of the deck, about the edge of the opening, is secured a coaming 12 upon which the portable, or removable, section 13 of the housing is detachably mounted. This may be of any suitable form and is water tight in construction. When it is in position over the engine, its side walls 13′ lie outside of the coaming, as shown in Figure 3, and the latter projects within a downwardly opening groove 14 formed between the lower edges of the walls and a flange plate 15 secured to the inner faces thereof. The joint between the portable sections and coaming is made water tight by means of a gasket of rubber, leather or canvas, 15, located within the groove 14 and forming a seat against which the upper edge of the coaming rests. The edges of the gasket are turned upwardly over the lower edges of the flange plate 15 and walls of the cover and to these edges are secured metal strips 17.

For the purpose of drawing the portable section down tight, in a water tight joint over the coaming and for locking it in this position, I have provided a plurality of clamping devices that are attached to the deck at spaced intervals about the housing. Each device comprises a coiled spring 20 that is fixed at its lower end to an eye bolt 21 that, in turn, is fixed to the deck and at its upper end the spring is attached to an oblong link 23, through which the handle portion 24′ of a locking lever 24 is adapted to be extended. The lever is pivotally attached, by means of a pin 25, between a pair of lugs 26—26′ turned outwardly from a pad 27 that is riveted, or otherwise secured, to the wall of the housing.

When the lever is moved to a downwardly inclined position, as shown in dotted lines in Figure 3, the link 23 may be passed thereover, then upon upward movement of the lever, the link will be caused to slide thereon toward the base end and finally will pass over the lever supporting lugs. The base portion of the lever is provided with a notch 28 in which the link will seat as the lever assumes an upright position and whereby the link is carried over, or inside of the pivot pin 25. The tension of the spring then retains the outer end of the lever against the wall of the housing and yieldingly against outward movement and also seats the portable section tightly in place. To release the clamps in order that the portable section may be removed from over the engine it is only necessary to throw the levers 24 outwardly and downwardly so that the links 23 may be disconnected therefrom.

For the purpose of admitting air into the engine housing when the portable section is in place, I have provided a "goose-neck" ventilator tube 30, one end of which extends through the top of the housing and the other of which is provided with a downwardly opening bell shaped mouth forming a seat 31 against which a float valve 32 is adapted to seat to prevent an inflow of water through the tube that otherise would occur should the boat capsize or be submerged or should water break over it.

The preferred type of valve is shown in Figures 7 and 8 which shows the valve to be hollow and of truncated conical form provided with a rounded top wall 34 adapted to fit the seat 31 and in which is fixed a guide spindle 35 that is slidable through a bearing 36 in a web, or strong back 37, fixed within the mouth of the tube 30. Extending from the lower edges of the valve are lugs 38 having openings 39 through which the rods 40 of a guide frame extend. These rods are fixed at their upper ends to the bell flange and at their lower ends are fixed to a frame plate 42 whereby they are held rigid, and which retains the valve 32 slidably within the rods 40 so that it may move from and against the seat 31.

A weighted ring 45 is supported slidably within the frame between the lower end wall of the valve and plate 42 by means of loops 46 fixed therein and extended about the rods 40 and this ring serves the purpose of holding the valve seated, by gravity, and thereby prevent an inflow of water should the boat capsize.

In Figure 9 is shown an alternative construction wherein a hollow ball 50 is used in lieu of the valve 32 and which serves in like manner to close the inlet should the boat capsize or water wash over the same. This type of valve is also used in this boat in a ventilator tube 56 which enters the wall of a cabin 57 provided in the bow of the boat. The ventilator serves as a means for admitting air to the cabin and the valve is provided to automatically close the tube to prevent an inflow of water.

In the present construction, I have provided the cabin with a forwardly sloping top wall 60 and in this is also fixed a "goose neck" ventilator tube 65 with a forwardly opening mouth 66, back of which and within the tube is an automatic valve mechanism that will be closed by inflow of water, this latter valve mechanism being similar to that shown in Figure 7, as described in connection with the

ventilator of the engine cover, and operates to admit more or less air into the cabin in accordance with wind entering the mouth of the ventilator tube.

A ring 68 with a wide horizontal flange is secured to the underside of the top wall of the housing serving the double purpose of a doubling plate for spreading the structural strains over a wider area and providing a vertical flange 69 against which a cover 70, fitted with a sealing gasket 71, may be closed from below. The riveted connection through the ring is made stronger than the connection of the ventilator tube above deck so that, if for any reason the ventilator tube is broken or carried away it will not interfere with the water tightness at the deck and the cover may be closed to prevent the entrance of water into the cabin.

Having thus described my invention, what I claim as new therein and desire to secure by Letters-Patent, is:

1. In a boat comprising a deck and having an engine for propelling the boat mounted on said deck, a coaming secured to the deck about the engine and a housing for the engine adapted to be removably fitted to the coaming in a water tight joint, and means for detachably securing it in such position.

2. In a boat comprising a deck and having an engine for propelling the boat mounted on said deck, a coaming secured to the deck about the engine, a water tight housing for the engine adapted to be removably fitted upon the coaming, clamping devices secured to the housing and anchor members attached to the deck for connection with said clamping devices whereby the housing may be secured in a water tight joint.

3. In a boat comprising a deck and having an engine mounting set within the deck and an engine on said mounting for propelling the boat, a coaming secured to the deck about said engine mounting, a water tight housing for the engine adapted to be removably fitted upon said coaming in a water tight connection, clamping devices for securing the housing and an air ventilating tube opening into the housing having a valve therein operable to close the tube by an inflow of water.

4. In a boat comprising a deck and having an engine mounting set within the deck and an engine for propelling the boat on said mounting, a coaming secured to the deck about the engine having a vertical flange, a water tight housing for the engine having a downwardly opening channel about its lower edge adapted to receive therein the flange of said coaming, a packing strip fitted within the channel and clamping devices for detachably securing the housing to the deck.

5. In a boat comprising a deck and having an engine mounting set within the deck and an engine for propelling the boat on said mounting, a coaming secured to the deck about the engine having a vertical flange, a water tight housing for the engine having a downwardly opening channel about its lower edge adapted to receive therein the flange of said coaming, a packing strip fitted within the channel to receive the edge of the coaming flange thereagainst, a plurality of notched clamping levers pivotally fixed to the housing, a plurality of anchor devices comprising coiled springs having ends secured to the deck and rings secured to their other ends for receiving the said levers and for seating in said notches of the lever to retain the housing tightly in position.

6. In a boat comprising a deck and having an engine mounting set within the deck and an engine on said mounting for propelling the boat, a coaming secured to the deck about said engine mounting, a water tight cover for the engine adapted to be removably fitted upon said coaming in a water tight connection, clamping devices for securing the cover and an air ventilating tube opening into the cover having a downturned, open outer end providing a valve seat, a valve guide fixed to said outer end, a float valve contained in said guide and adapted to close the tube when lifted against the valve seat.

7. In a boat comprising a deck and having an engine mounting set within the deck and an engine on said mounting for propelling the boat, a coaming secured to the deck about said engine mounting, a water tight housing for the engine adapted to be removably fitted upon said coaming in a water tight connection, clamping devices for securing the housing and an air ventilating tube opening into the cover having a downturned, open outer end flared outwardly to form a valve seat, a valve guide frame fixed to said outer end of the tube, a float valve contained within said guide and adapted to be lifted against said seat to close the tube and a weight contained within the frame beneath the float whereby the latter will be moved against the seat should the device be inverted.

8. The combination with a ventilator tube equipped with a downwardly facing valve seat at its outer end, a valve guide frame fixed to the end of said tube comprising a plurality of parallel guide rods and a plate joining said rods at their outer ends, a float valve having guide loops attached thereto and slidable on the said rods, and having an end portion adapted to fit against the valve seat and a weight slidable on the guide rods beneath the float for pressing the float against the valve seat when the device is inverted.

Signed at Seattle, King County, Washington, this 23rd day of August 1924.

FRED N. NELSON.