March 18, 1930. E. BURMESTER ET AL 1,750,773

BOAT

Filed Nov. 26, 1928

Fig.1

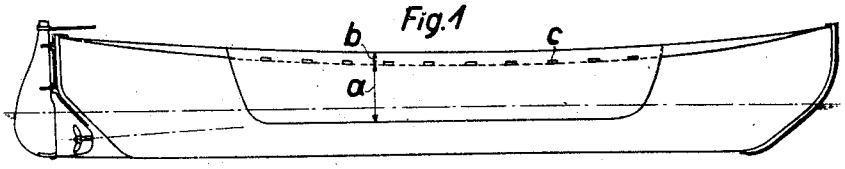


Fig.2

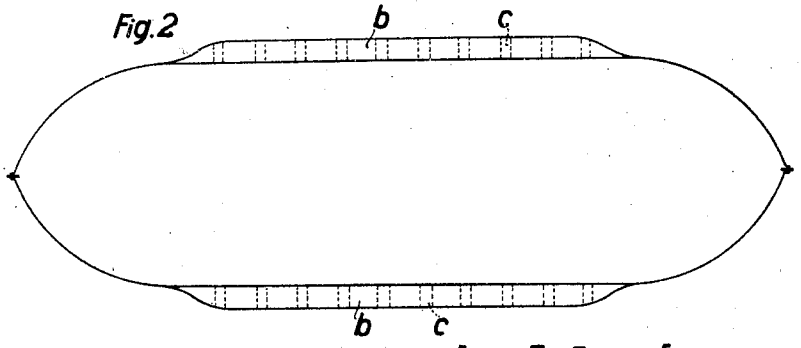


Fig.3

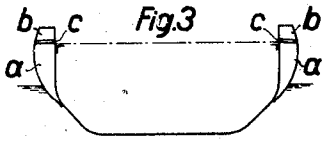


Fig.5

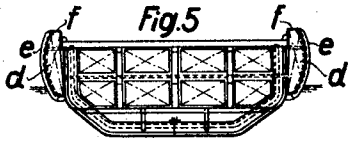


Fig.4

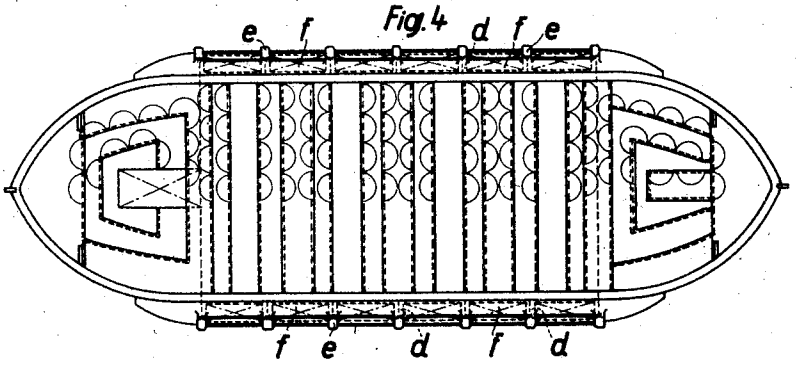


Fig.6

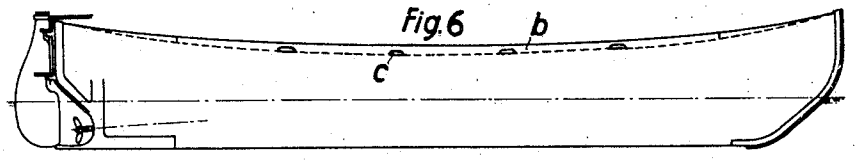
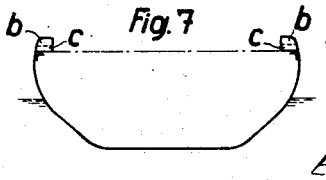


Fig.7



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UNITED STATES PATENT OFFICE

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BOAT

Application filed November 26, 1928, Serial No. 322,019, and in Germany December 15, 1927.

The present invention relates to boats, especially to lifeboats, and its object is to render the boat unsinkable and uncapsizable. Another object is to make a lifeboat unsinkable and uncapsizable while at the same time it conforms to the regulations as to over-all measurements, frame capacity, amount of seating accommodation, floating arrangements and equipment issued by the inspecting authorities of the various countries carrying on marine traffic.

The measures taken to render lifeboats unsinkable extend to the construction therein of metal or like air chambers associated with outer cork belts passing round the boat, and the volume of these floating devices takes up 10% of the content of the boat body.

The space allowed for each person in the boat is 0.283 cubic metres. 10% of the boat space, i. e. 10% of 0.283 (0.0283) cubic metres can be reckoned therefore as the share in the air chambers provided for each person; so that if the boat is fully loaded 28 kg. of the weight of each person is carried by air chambers. Therefore if the boat is water-logged or has sprung a leak it can only remain navigable if each person who weighs 75 kg. has 75–28 (47) kg. of his weight supported by the water displacement of the human body. This means that each person must be immersed breast high in water to give this displacement.

If a fully equipped and fully occupied lifeboat is filled by the waves breaking over it, the persons at the deepest part of the boat stand up to get as far as possible above the water level. But every person standing up in the boat and withdrawing their displacement from the water prejudices the position of the other occupants who thereupon sink deeper. The gunwhale of the boat then sinks to the water level so that the boat is unstable and can easily capsize. In rough water the above described behaviour soon leads to a catastrophe.

The correctness of the above statements has been proved by the inventors' practical experiments.

According to this invention a boat is provided with floating means, which may conveniently be hollow chambers filled with air or other gas, which are disposed at a level above the normal gunwale level and are traversed by channels at a level below their upper edge. The provision of these channels enables the part of the floating means above them to remain always above the water level even when the boat is filled with water, so that the boat is rendered unsinkable and uncapsizable for all cases (which has also been shown by practical experiments).

The accompanying drawings show diagrammatically some constructions according to the invention.

Figures 1, 2 and 3 of the drawings show in side view, plan and cross section a construction with floating means mounted on the outer sides of the boat.

Figures 4 and 5 show in plan and cross section a similar construction to that of Figures 1 to 3, but in which the stabilizing devices are divided by bulkheads which serve at the same time as vertical fenders.

Figures 6 and 7 show in side view and cross section a construction with floating means disposed inside the sides of the boat.

Referring to Figures 1 to 3 the floating or stabilizing means *a* attached to the outside are provided with members *b* of any suitable cross section projecting above the normal gunwale. These members *b* can be made as separate structural elements. Alternatively the gunwale or the fenders themselves may form the floating means in an extension projecting above the normal gunwale level.

Channels *c* which serve as water outlets are disposed a certain distance below the upper edge of the members *b*, for example at the normal gunwale level. Their effect is that the boat cannot be filled to a level above them so that the members *b* always remain above water.

The arrangement of the floating or stabilizing means outside the boat is especially suited for application of this invention to boats already built.

In the arrangement shown in Figures 4 and 5 the floating or stabilizing means are divided up by partitions (bulkheads) *d* to reduce as far as possible water entering said

means. These partitions may conveniently be made to project further from the boat than the floating means *f* to form protective collision means *e*, so that the need for the usual fenders is obviated.

In constructing a new boat according to the invention the floating means may conveniently be arranged inside the boat. Such an arrangement is shown in Figures 6 and 7. The floating means *b* are for example arranged inside the boat and attached to or formed in one with the upper edge of the boards. The devices *b* can also be extensions of additional floating devices projecting above the gunwale and arranged inside the boat. They can be arranged to run along the whole length of the boat or along the greater part thereof, or can be arranged as individual members distributed along the sides. In all cases they have lateral water openings or channels *c* (scupper holes) at a level above the gunwale passing through them or separating them from each other or from the gunwale.

The effect of this invention is not affected by whether the floating or stabilizing means are filled with air or with some lighter substance.

We claim:

1. A boat comprising floating means arranged on the sides of the boat and projecting above the upper edge of the normal gunwale level, said floating means having channels therein at a level below the upper edge thereof.

2. A boat comprising hollow gas-filled chambers arranged on the sides of the boat and projecting above the upper edge of the normal gunwale level, said chambers having channels therein at a level below the upper edge thereof.

3. A boat comprising floating means arranged on the sides of the boat and projecting above the normal gunwale level, said means having a plurality of channels traversing therethrough from the inside of the boat to the outside below the upper edge.

4. A boat comprising a plurality of floating elements arranged on the sides of the boat and disposed above the normal gunwale level, said elements having channels therein at a level below the upper edge thereof, and a partition arranged between each pair of elements.

5. A boat comprising a plurality of floating elements mounted on the outside of the longitudinal sides of the boat and disposed above the normal gunwale level, said elements having channels therein traversing therethrough at a level below their upper edges, and a partition disposed between each pair of said elements and projecting beyond the sides of the elements.

In testimony whereof we affix our signatures.

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HERMANN HEIN.