April 3, 1928. 1,665,149

P. H. VAN WIENEN

CONVERTIBLE SKIMMING BOAT OR LIKE WATER CRAFT

Filed July 16, 1926

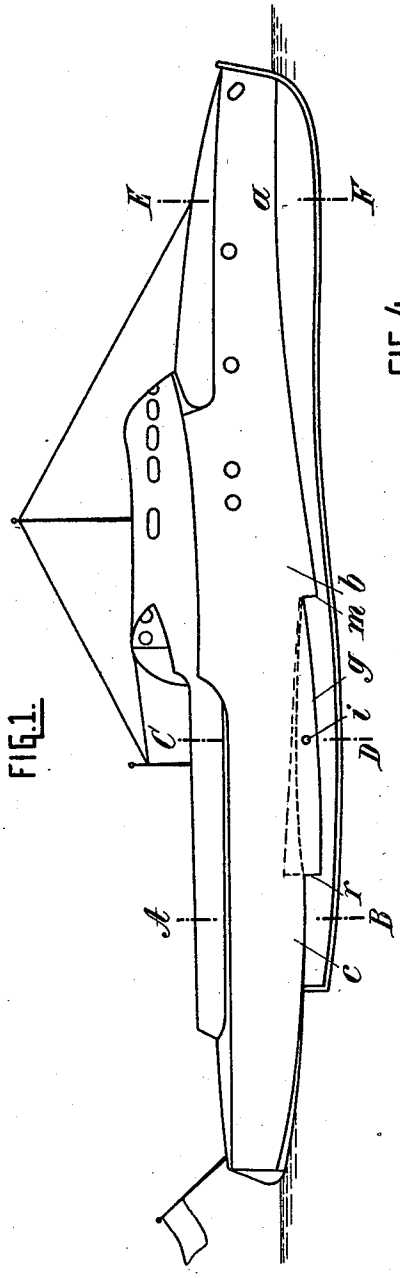


FIG. 1.

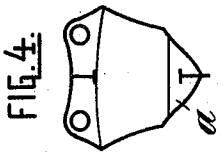


FIG. 4.

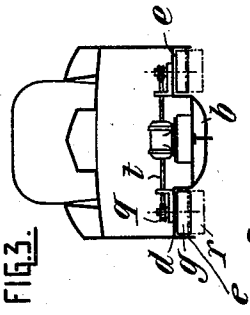


FIG. 3.

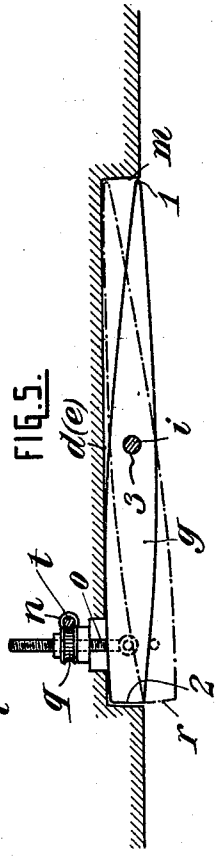


FIG. 5.

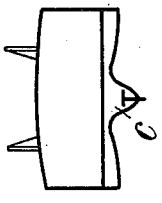


FIG. 2.

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UNITED STATES PATENT OFFICE.

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CONVERTIBLE SKIMMING BOAT OR LIKE WATER CRAFT.

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For the purpose of reducing the water displacement and for utilizing the driving power use has been made for some considerable time of the so-called skimming boats or boats of the hydroplane type having stepped bottoms. All the known constructions, however, have not so far satisfied the demand fully and have been found totally inefficient particularly in shallow seas with sand banks or during heavy weather. On the sudden occurrence of heavy weather the pilot became even exposed to the risk of losing both boat and life.

With a view to overcoming the above disadvantages according to this invention the craft is so constructed as to enable it to be used both as a skimming and ordinary water boat.

To this end the bottom of the boat is provided with a recess or recesses for the accommodation of wedge-shaped members adapted to be rotated about horizontal transverse axes whereby steps may be formed on the bottom of the boat by the swinging out of these members.

In calm weather the craft may be used even in a relatively large size as a skimming boat without risk of losing her stability. The wide portion of the wedge-shaped member is then lowered down to project into the water. On the occurrence of sudden heavy weather the wedge-shaped member or members may be drawn in to lodge within the recess provided therefor. The boat is then able to sink to a lower depth and then operates purely as an ordinary water craft.

My invention is illustrated diagrammatically and by way of example on the accompanying drawings in which Figure 1 is a side-view of a combined skimming and stepped boat designed according to this invention, Figure 2 a vertical cross-section on the line A—B of Fig. 1, Figure 3 a similar section on the line C—D and Figure 4 is a section on the line E—F of Fig. 1; and Figure 5 is a vertical longitudinal section through a portion of the bottom of the boat drawn to an enlarged scale and showing one constructional form of the wedge-shaped member.

The bow *a* of the boat is of the V type. The keel *b* is constructed to assume a drop shaped form towards the centre and the bottom of the craft has the form of a shallow arch on both sides towards the stern *c*. Adjacent to the midship keel *b* (Fig. 5) are two recesses *d*, *e*, each adapted to accommodate a wedge-shaped member *g* which is pivoted intermediate its ends so as to be oscillable about a transverse pin *i*. At *m* of each recess *d* and *e* an effective step is formed on each side in proximity to the midship keel. The wedge-shaped members *g* may be raised and lowered by means of rods *o* through the agency of a worm gear *q*. When the rear portion of each wedge-shaped member *g* is lowered into the water its rear face *r* produces a second step. In this position the wedge-shaped member acts as a lifting body raising the bow of the craft out of the water to adapt the latter for calm weather to travel as a fast skimmer or surface boat. When the wedge-shaped member is withdrawn its lower face lies flush with the bottom of the boat. The boat then operates as an ordinary displacement craft capable of being used as a heavy weather craft. The arrangement may be made use of also in the event of a flat keel construction. In this case the recess extends over the whole breadth of the keel and only one wedge-shaped member need be built into the cavity.

The wedge-shaped member *g* is provided with a sharp front end 1 and a rear blunt end 2 and the member is pivoted intermediate its ends at the point 3 as clearly shown in Fig. 5.

I claim:

1. A combined surface and displacement boat comprising a keel and a bottom portion having a recess therein; and a wedge-shaped member pivoted intermediate its ends in the recess and having a front sharp end and a rear blunt end, said member when entirely in the recess presenting a smooth bottom with the bottom of the boat to render the boat a displacement boat and when the rear blunt end projects beyond the recess the front end of the recess and the rear blunt end of the member form projecting steps in the bottom of the boat to render the boat a surface boat.

2. A combined surface and displacement boat comprising a keel and a bottom portion having a recess therein; a wedge-shaped member pivoted intermediate its ends in the recess and having a front sharp end and a rear blunt end, said member when entirely in the recess presenting a smooth bottom with the bottom of the boat to render the boat a displacement boat and when the rear

blunt end projects beyond the recess the front end of the recess and the rear blunt end of the member form projecting steps in the bottom of the boat to render the boat a surface boat; and means for raising and lowering the ends of the member.

3. A combined surface and displacement boat comprising a keel and a bottom portion having a recess therein; and a two-armed and wedge-shaped member pivoted intermediate its ends in the recess, said member when entirely in the recess presenting a smooth bottom with the bottom of the boat to render the boat a displacement boat and when one end of the member projects beyond the recess a pair of steps will be formed in the bottom of the boat to render the boat a surface boat.

4. A combined surface and displacement boat comprising a keel and a bottom portion having a recess therein; and a two-armed and wedge-shaped member pivoted intermediate its ends in the recess, said member when entirely in the recess presenting a smooth bottom with the bottom of the boat to render the boat a displacement boat and when one end of the member projects beyond the recess a step will be formed at the front end of the recess and a step will be formed at the rear end of the wedge-shaped member to form a pair of steps in the bottom of the boat to render the boat a surface boat.

5. A combined surface and displacement boat comprising a keel and a bottom portion having a recess therein; a two-armed and wedge-shaped member pivoted intermediate its ends in the recess, said member when entirely in the recess presenting a smooth bottom with the bottom of the boat to render the boat a displacement boat and when one end of the member projects beyond the recess a step will be formed at the front end of the recess and a step will be formed at the rear end of the wedge-shaped member to form a pair of steps in the bottom of the boat to render the boat a surface boat; and means for operating said wedge-shaped member.

In testimony whereof I have affixed my signature.

PIETER HENDRIK VAN WIENEN.