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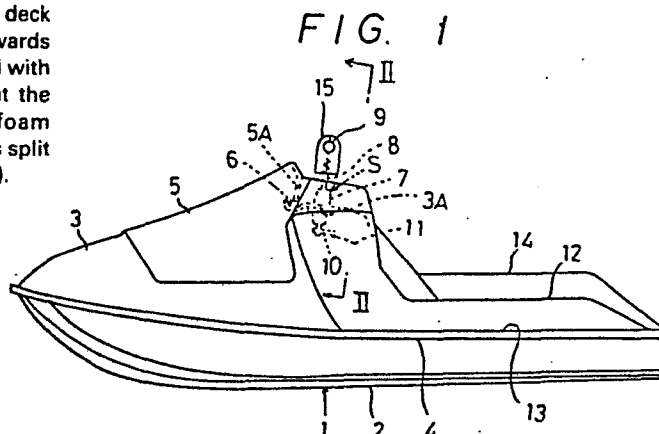
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54 **Small watercraft.**

57 A small watercraft having a rider's seat (14) at a rear deck on the hull (2) and a steering handle (9) extending upwards from the deck. Aforesaid steering handle (9) is provided with a member (15) creating buoyancy. It is advisable that the member (15) creating buoyancy is made of foam polyethylene or foam urethane or other resins, which is split in halves and secured across the steering handle (9).



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Small Watercraft

This invention relates to a small watercraft having a rider's seat at the rear deck on the hull and a steering handle in front of the rider's seat.

5 For example, the watercraft has been well known, which consists of the hull at its lower portion and the deck at its upper portion to provide for a rider's seat at the rear of aforesaid deck and a steering handle in front thereof, for sailing on water at high speed.

10

Such watercraft may sometimes upset in sailing.

Even if such watercraft should upset, since the center of gravity is designed low, it has its own dynamical stability to
15 right itself thanks to a moment resulting from its own buoyancy and the gravity on it.

With such a small watercraft, however, water invades into the watercraft as soon as it has been upset, since it has at the
20 front portion of the deck a closing engine hood covering the engine from above, and aforesaid engine hood has an air inlet normally open for engine air cleaner.

When water flows into the watercraft from the air inlet, the
25 water would stay on the lower portion or on the side of the engine hood with the watercraft, for instance, overturned 180 degrees. At this time, if the watercraft should be left as it

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is, the watercraft may not restore the normal posture, since it loses more or less its dynamical stability due to what is called "freewater effect".

5 It can be said that the purpose and object of this invention is to provide a small watercraft which doesn't fail to right itself if water flows into the watercraft, when it turns over about 180 degrees in sailing.

10 To achieve aforesaid object according to the invention, a small watercraft comprises means for creating buoyancy on the steering handle.

As mentioned above, since means for creating buoyancy provided
15 at a position farthest away from the center of gravity maximizes the resultant couple of the buoyancy and gravity, a small watercraft can effectively right itself if overturned.

In the accompanying drawings, there are shown an illustrative
20 embodiment of the invention from which these and other of its objectives, novel features and advantages will be readily apparent.

In the drawings :

25 Figure 1 is a side view of a small watercraft showing an embodiment according to the invention.

Figure 2 is a sectional view taken along line II-II in Fig.1.

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Figure 3 is a perspective view of Fig.2.

The following is the detailed description of the embodiment according to the invention, referring to the drawings.

5 In Fig.1, Numeral 1 is a ship body, formed by combining a glassfibre reinforced plastics (FRP) lower hull 2 and an FRP upper deck through a flange 4 at the outer circumference of them.

10 Aforesaid deck 3 extends from bow to stern, at the front section of which an engine hood 5 is provided to cover the engine (not shown) in the ship body 1 from thereabove.

15 Aforesaid engine hood 5 can be opened or removed with hinge and latch (not shown), as well as, when closed, sealed for water with a seal packing 6 secured around the whole circumference of the hood opening in the deck 3. And also on the side of aforesaid engine hood 5 opens a suction air intake port
20 (not shown), to which a suction air intake passage (not shown) is connected. Air taken into through the suction air intake passage is guided into the engine room and to an air cleaner (not shown) on the engine (not shown) therethrough.

25 On the other hand, the vertical rear wall of the engine hood 5 is shown by broken line 5A in Fig.5, the lower end of which is supported through aforesaid seal packing 6 by a steering-mounting wall 3A integrally formed on the upper wall disposed correspondingly at the rear of the engine hood 5 on the deck

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3. A steering device S is provided through the steering-mounting wall 3A constructed as such.

As shown in Fig.2, aforesaid steering device S consists of a steering column 7 securedly extending vertically through a hole 3B in aforesaid steering-mounting wall 3A, a steering shaft 8 rotatably fitted to the steering column 7, and a bar-like steering handle 9 integrally formed on the top end of the steering shaft 8 as a letter "T". And, on the lower end of aforesaid steering shaft 8 extending downwards, is provided a steering member 10, to which is connected a cable 11 that steers the jet nozzle (not shown) at the stern.

Furthermore, As shown in Fig.1, on a portion of aforesaid deck 3 corresponding to the back of the steering device S, is integrally formed a seat-mounting portion 12 raised at the center of the ship width, and foot mounts lower than the seat-mounting portion 12 disposed at the sides thereof.

A rider's seat 14 is mounted on the top of said seat-mounting portion 12.

The feature of the invention lies in means for creating buoyancy provided on aforesaid steering handle in such a small watercraft.

This means for creating buoyancy may be mounted in any portion of the watercraft above the draft line, but it is advantageously provided on said aforesaid steering handle farthest away

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from the draft line, because a created dynamical righting stability, that is, a resultant moment from a created buoyancy and the gravity, is maximized according to this construction.

5 As shown in Fig.3, with this embodiment, the means for creating buoyancy 15 uses such materials as small in specific gravity as possible (less than 1), as foam polyethylene or foam urethane, and is split in halves to be removably secured with fasteners 16 so as to pinch the steering handle 9 from
10 front and back.

Aforesaid construction, where the means for creating buoyancy 15 is disposed on the steering handle 9 locating at the highest position in the watercraft, produces a moment due to
15 buoyancy and gravity larger than that otherwise disposed above the draft line, thus resulting in a watercraft effectively righting itself, even if water flows into the watercraft with the craft overturned nearly 180 degrees, and the engine hood 5 coming right under.

20 And, as described in aforesaid embodiment, foam polyethylene or foam urethane or other resins in use for the means for creating buoyancy 15, will not only provide for an option of preferred style, but also efficiently function as fitting
25 members for various parts used. These materials have a lot of resiliency, thus serving as shock absorber.

Said means for creating buoyancy 15 in aforesaid embodiment

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can be replaced with a hermetic part having a void therein.

Again, said means for creating buoyancy 15, without using the fasteners 16 in Fig.2, can be integrally formed on the steering ring handle 9 by fitting a mold thereon and casting foaming agent.

Further, without resorting to a means for creating buoyancy 15 separate from the steering handle as shown aforesaid embodiment, the steering handle itself can be integrally formed as the means 15 having a large cavity therein. In this connection, it is desirable that foaming resins are selected for the material, since they create large buoyancy.

15 As described above, this invention provides means for creating buoyancy on the steering handle to secure an adequate dynamical stability to right itself, even if a watercraft is overturned and water should flow thereinto.

20 It will be obvious to those skilled in the art that various changes may be made to the invention without departing from the spirit and scope thereof and therefore the invention is not limited by that which is shown in the drawings and described in the specifications but only as indicated in the
25 appended claims.

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Claims :

1. A small watercraft having a rider's seat (14) at a rear deck on the hull (2) and a steering handle (9) extending upwards in front thereof, comprising means (15) for creating buoyancy being provided on said steering handle (9).

5

2. A small watercraft as claimed in claim 1, wherein said means (15) for creating buoyancy is made of foaming resins.

3. A small watercraft as claimed in claim 1 or 2, wherein said
10 means (15) for creating buoyancy is constructed as two half-split members, which are secured to said steering handle with a fastening means (16) as across said steering handle (9).

FIG. 1

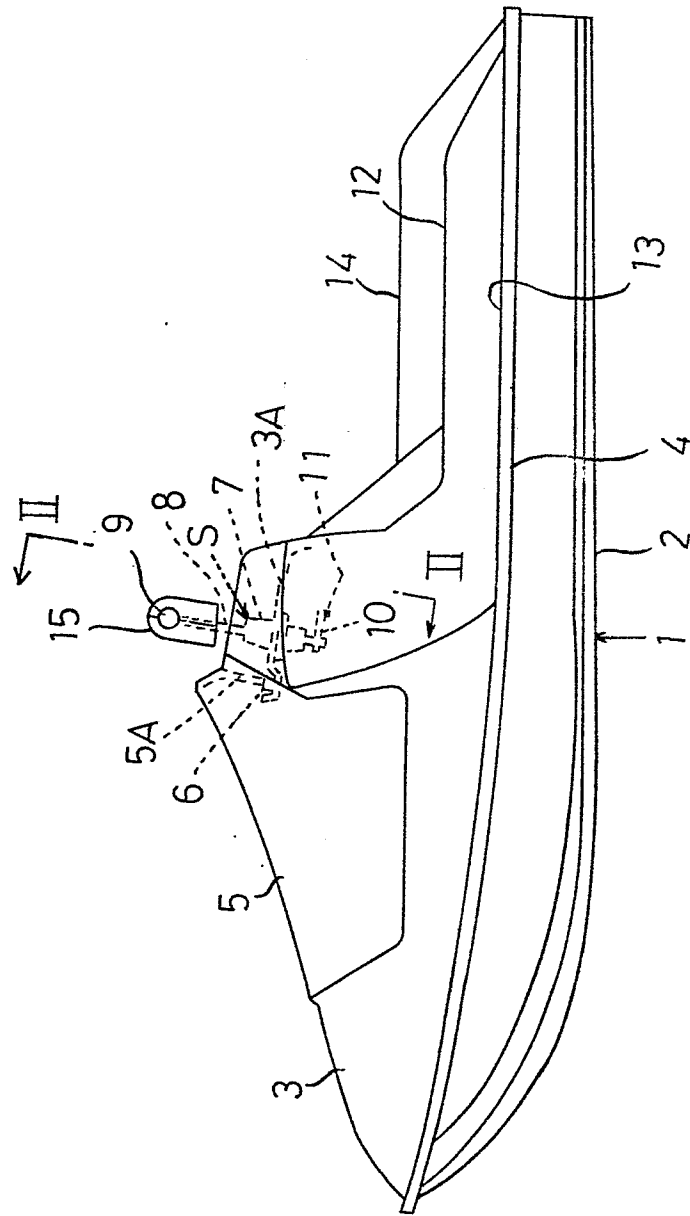


FIG. 2

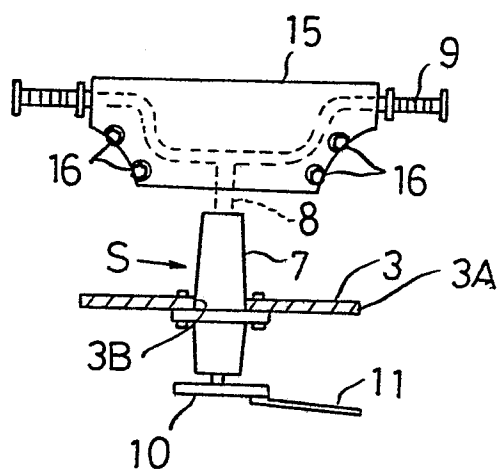
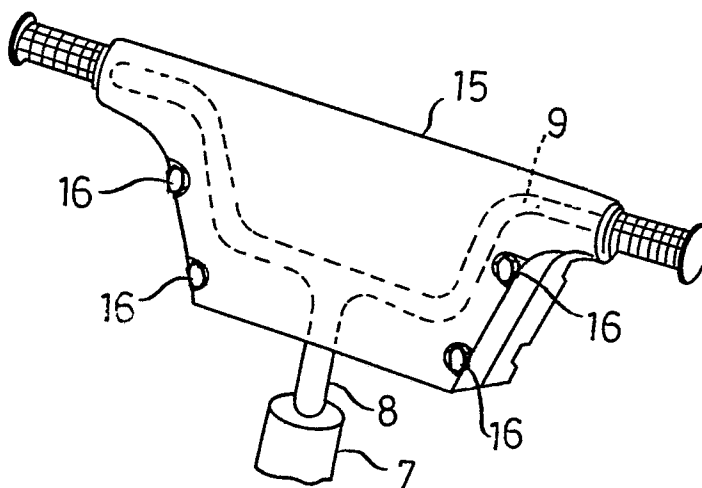


FIG. 3





European Patent
Office

EUROPEAN SEARCH REPORT

0197528

Application number

EP 86 10 4685

DOCUMENTS CONSIDERED TO BE RELEVANT			
Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (Int. Cl. 4)
A	US-A-3 623 447 (CLAYTON J. JACOBSON) * figure 2; column 2, lines 41-45 * -----	1	B 63 B 35/84
			TECHNICAL FIELDS SEARCHED (Int. Cl. 4)
			B 63 B B 63 C
The present search report has been drawn up for all claims			
Place of search THE HAGUE		Date of completion of the search 11-07-1986	Examiner VURRO, L.
CATEGORY OF CITED DOCUMENTS			
X : particularly relevant if taken alone Y : particularly relevant if combined with another document of the same category A : technological background O : non-written disclosure P : intermediate document		T : theory or principle underlying the invention E : earlier patent document, but published on, or after the filing date D : document cited in the application L : document cited for other reasons & : member of the same patent family, corresponding document	