This invention relates to new and useful improvements in marine speed craft or racing boats, and the principal objects of the invention is to provide a craft of the characteristic herein described which is capable of very high speed without sacrifice of stability, particularly while maneuvering curves.

As such, an important feature of the invention resides in forming the main body of the craft in the nature of an elongated, slender fuselage which, unlike a conventional hull, is disposed above the water line and is provided with transversely extending outrigger-like members equipped at their outer ends with water engaging ski or skid members which sustain the craft with a substantial amount of both lateral as well as forward and aft stability, thus safe-guarding the craft against tipping or turning over and such other objection.

Another important feature of the invention resides in the provision of means for permitting tilting or banking movement of the aforementioned skis about axes parallel to the fuselage and forming the skis in the shape of inverted channels, so that they may be banked and permitted to dig themselves into the water at an angle to prevent lateral skidding of the craft while negotiating curves.

Another important feature of the invention involves the provision of means in the form of inflatable and deflatable pontoons on the ski members which, in their inflated condition, provide buoyancy for the craft while it is at rest, but which may be deflated so that they do not offer substantial resistance to the movement of the craft while travelling at high speed, when the craft is sustained on water by its speed so that the buoyancy afforded by the pontoons is not necessary.

Another important feature of the invention resides in adapting the ski members for raising and lowering movement relative to the fuselage, whereby to afford what may be called resilient suspension of the craft on the water, as a result of which shocks and vibration incident to the movement of the ski members over water are substantially absorbed before reaching the fuselage.

Another important feature of the invention resides in its adaptability for use with an outboard motor mounted at the stern of the fuselage, or with a plurality of inboard motors carried by the respective ski members, the latter arrangement affording a wide distribution of power and propelling forces around the craft, rather than concentration of such power and propelling forces at the stern. Moreover, by employing power units on the individual ski members, such units may be used to sustain the craft on water when the ski members are lowered while the craft is at rest, without depending entirely on the buoyancy afforded by the aforementioned pontoons.

With the foregoing more important objects and features in view and with such objects and features as may become apparent as this specification proceeds, the invention will be understood from the following description taken in conjunction with the accompanying drawings, wherein like characters of reference are used to designate like parts, and wherein:

FIGURE 1 is a side elevational view of the invention in its travelling position;
FIGURE 2 is a side elevational view thereof while at rest;
FIGURE 3 is a side elevational view similar to that shown in FIGURE 1 but with the skin of the fuselage removed;
FIGURE 4 is a top plan view of the subject shown in FIGURE 3;
FIGURE 5 is a fragmentary sectional detail on an enlarged scale, showing the attachment of the ski members;
FIGURE 6 is a fragmentary front elevational view, partly in section, of the subject shown in FIGURE 5;
FIGURE 7 is a front elevational view of the craft shown in FIGURE 1; and
FIGURE 8 is a sectional detail on an enlarged scale, taken substantially in the plane of the line 8-8 in FIGURE 4.

Referring now to the accompanying drawings in detail, the marine speed craft or racing boat in accordance with the invention is designated generally by the reference numeral 10 and embodies in its construction an elongated, relatively slender fuselage 11 which, unlike a conventional hull, is disposed above the water line 12 at all times. The fuselage includes an elongated base 11a and suitable streamlined covering or skin 11b, as will be clearly apparent.

A transverse outrigger member 13 is rigidly secured to the fuselage base member 11a adjacent the forward end or bow thereof and projects to both sides of the fuselage.

Similarly, a transverse stern member 14 is pivoted to the stern member 11a at 15 for steering movement as indicated by the dotted lines 14a in FIGURE 4, the steering of the stern member 14 being effected from a steering post 16 through the medium of any suitable conventional means (not illustrated).

Elongated water engaging skis or skids 17, 18 are provided at the outer ends of the outrigger member 13 and stern member 14 respectively, these ski members being of an inverted channel-shaped form as is best shown in FIGURE 6 and being provided at their forward ends with upwardly projecting portions 17a equipped with hinge pins 19 for connecting the same to U-shaped yokes 20. The yokes 20, in turn, are provided with pivot pins or stub shafts 21 which are rotatably journalled in the members 13, 14 in parallel relation to the longitudinal axis of the fuselage 11. By virtue of this arrangement the ski members 17, 18 are universally connected to the respective members 13, 14, whereby the ski members may be lowered and raised between horizontal positions shown in FIGURE 1 and vertical positions shown in FIGURE 2 and, at the same time they may be banked or tilted from level positions shown by the full lines in FIGURE 7 to angularly disposed positions at either side, as exemplified by the dotted lines 22 in that figure.

The banking or tilting of the ski members may be effected by air or hydraulic cylinders 23 pivoted at 24 to the members 13, 14 and having their pistons 23a pivoted to cranks 25 rigid with the yokes 20. The raising and lowering of the ski members may be similarly effected by air or hydraulic cylinders 26 universally connected at 27 to the members 13, 14 and having their pistons or piston rods 26a universally connected to the ski members at 28. The outer ends of the outrigger member 13 are preferably provided with rigidly mounted stabilizer members 29 which are disposed above the ski members 17, and the member 13 is also equipped with hingedly mounted deflector flaps 30 which may be raised to the position shown by the dotted lines 30a in FIGURE 8 by manipulation of a suitable control in the cockpit 11c of the fuselage. Similar flaps may be also provided on the stern member 14, if so desired.

Each of the ski members 17, 18 carries an inflatable and deflatable pontoon 31, these pontoons being inflatable from compressed air tanks 31a in the fuselage, which also carries suitable air compressor and hydraulic pump unit 32 for actuating the cylinders 23, 26. In addition, a driver's seat 33 is provided in the cockpit 11c behind
the steering post 16 and the stern of the fuselage member 11a is equipped with a suitable mount 34 for an outboard motor 35 if such is to be used. Alternatively, each of the ski members 17, 18 may be provided with an individual conventional inboard motor (not shown) driving a propeller 36, or the like, it being understood that the propelling means may be of the propeller type, jet type, or of any other suitable conventional form.

Having described the construction of the invention, its operation will now be explained.

When the craft is in motion and travelling at high speed, the pontoons 31 are deflated as shown in FIGURE 1, so that they do not offer material resistance to the movement of the craft which is sustained on the surface of the water solely by its high speed of travel. The pivotal or hinged connection of the ski members 17, 18 by the pins 19 to the members 13, 14, will effectively absorb shocks and vibration incident to the movement of the ski members along the water, so that such shocks and vibration do not reach the fuselage. In this manner, a form of resiliently yieldable suspension of the craft on water will be attained, it being understood that although the cylinders 26 are capable of raising and lowering the ski members, the latter are free to move upwardly and downwardly to effect the above mentioned yieldable suspension when the cyllinders 26 are not energized.

To prevent the craft from excessively raising its bow and possibly tipping toward the stern, the deflector flaps 30 may be moved to the position shown at 30a, thus maintaining the bow of the craft substantially level. The channel-shaped configuration of the ski members 17, 18 will cause them to effectively dig themselves into the water to prevent lateral skidding, this action being particularly pronounced when the ski members are banked or tilted as shown at 22, while the craft is negotiating curves. Steering of the craft, of course, is effected by turning of the entire stern member 14 together with its ski members 18 and when the craft is provided with inboard engines with propellers at each ski member, very efficient steering control will be obtained. Moreover, under such circumstances the propelling power will be effectively distributed around the craft, both forward and astern, rather than being concentrated at the stern only, as when the outboard motor 35 is used.

When the craft is at rest as shown in FIGURE 2, the pontoons 31 are inflated to furnish the necessary buoyancy and the ski members 17, 18 are preferably lowered to their vertical positions, so that the fuselage 11 is raised substantially above the water level 12. In this position of the ski members, the inboard driven propellers 36 may be actuated so as to furnish an upward lift to the craft for sustaining the same above water, this being especially useful in the event of any failure of the pontoons 31 to inflate and provide the required buoyancy.

The inboard engines of the propellers 36 are, of course, arranged for operation either in a horizontal or a vertical plane and any conventional means may be provided for delivering fuel and air to such engines.

While in the foregoing there has been described and shown the preferred embodiment of the invention, various modifications may become apparent to those skilled in the art to which the invention relates. Accordingly, it is not desired to limit the invention to this disclosure and various modifications may be resorted to, such as may lie within the spirit and scope of the appended claims.

What is claimed as new is:

1. In a marine speed craft, the combination of an elongated and relatively slender fuselage, a rigid transverse outrigger member rigidly secured to the forward portion of said fuselage and projecting to both sides thereof, a rigid transverse stern member pivoted for steering movement to the fuselage and also projecting to both sides therefrom, a set of water engaging elongated ski members having front ends thereof movably connected to the outer ends of said outrigger member and of said stern member selectively for raising and lowering movement between substantially horizontal and substantially vertical positions about axes transverse of the fuselage and tilting movement about axes parallel to the fuselage, means for tilting said ski members, and means for raising and lowering the same.

2. The device as defined in claim 1 together with selectively inflatable and deflatable buoyant pontoons provided on said ski members.

3. In a marine speed craft, the combination of an elongated and relatively slender fuselage, a rigid transverse outrigger member rigidly secured to the forward portion of said fuselage and projecting to both sides thereof, a rigid transverse stern member pivoted for steering movement to the fuselage and also projecting to both sides therefrom, a set of water engaging elongated ski members provided at the outer ends of said outrigger member and of said stern member, said ski members constituting hydro planes serving to sustain said fuselage afloat only when said craft is in motion and not possessing sufficient buoyancy to sustain the craft afloat when at rest, and selectively inflatable and deflatable pontoons carried by said ski members, said pontoons being deflated when the craft is in motion whereby to lessen their resistance to water pressure and being inflated when the craft is at rest whereby to provide sole means for sustaining the craft afloat.

4. The device as defined in claim 3 wherein said ski members are movable between a substantially horizontal travelling position assumed when said craft is in motion and a substantially vertical position when the craft is at rest, and means for moving said ski members between the horizontal and vertical positions.

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