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BOAT HULL CONSTRUCTION

Filed Nov. 6, 1964

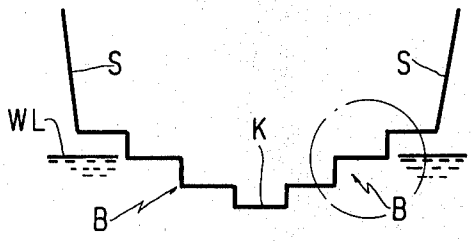


FIG. 1

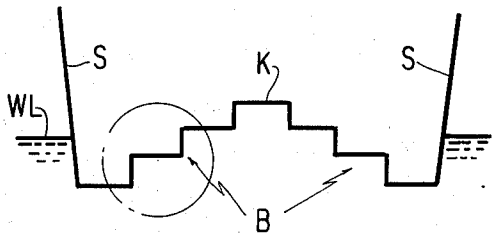


FIG. 2

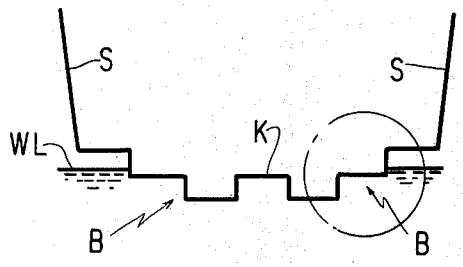


FIG. 3

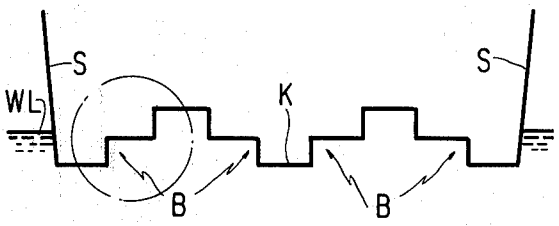


FIG. 4

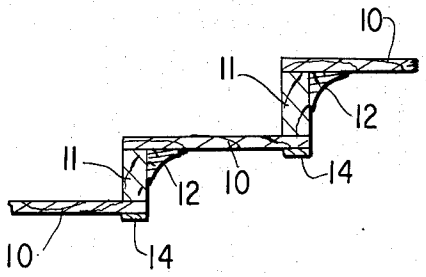


FIG. 5

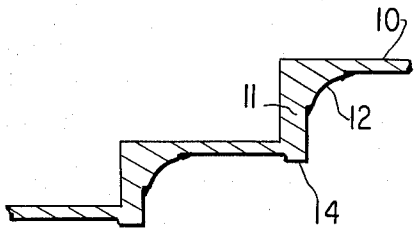


FIG. 6

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BOAT HULL CONSTRUCTION

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The present invention relates to hulls for boats and the like and, more particularly, to an improved boat hull construction which minimizes friction between the water and the bottom of the hull and which is a further improvement of a boat hull such as disclosed in my copending U.S. application Serial No. 363,102, filed April 28, 1964.

Heretofore, many attempts have been made to minimize the friction between the water and the bottom of boat hulls to move the boats faster through and/or over the water without increasing the power required to move the boats.

Accordingly, an object of the present invention is to provide a novel and improved boat hull construction which accomplishes the aforementioned purpose.

Another object is to provide such a construction which can be applied to various types of hulls including but not limited to hulls having V, inverted V, W or inverted W bottoms and having pointed, scow-shaped or modified scow-shaped bows.

Another object is to provide such a construction which can be fabricated from individual strips or strakes secured together or can be formed in a mold or press to produce a unitary hull.

A further object is to accomplish the foregoing in a simple, practical and economical manner.

Other and further objects of the invention will be obvious upon an understanding of the illustrative embodiment about to be described, or will be indicated in the appended claims, and various advantages not referred to herein will occur to one skilled in the art upon employment of the invention in practice.

In accordance with the present invention, the foregoing objects are generally accomplished by providing a boat hull bottom construction which has strake portions and vertical spacer portions between adjacent strake portions.

A preferred embodiment of the invention has been chosen for purposes of illustration and description, and is shown in the accompanying drawing, forming a part of the specification, wherein:

FIGS. 1 to 4 are silhouettes of boat hull cross-sections of the V, inverted V, W and inverted W types, respectively, each having a bottom embodying the present invention.

FIG. 5 is an enlarged fragmentary sectional view of the portion of the boat bottom within the broken line circle in FIGS. 1 to 4, illustrating a construction fabricated from individual wooden or fiberglass-resin strakes and strips.

FIG. 6 is a view similar to FIG. 5, illustrating a unitary construction formed in a mold or press from a metal or fiberglass-resin sheet.

Referring now to FIGS. 1 to 4 of the drawing, there are shown boat hulls each having sides S, bottom sections B and a keel section K. The water line when the boat hull is approaching top speed is indicated at WL in each of these views.

In FIG. 1, a V-type hull is shown wherein the bottom sections are stepped upwardly from the keel section to the sides.

In FIG. 2, an inverted V-type is shown wherein the bottom sections are stepped downwardly from the keel section to the sides.

In FIG. 3, a W-type hull is shown wherein the keel section is formed with a tunnel and the bottom sections are stepped upwardly from the keel section to the sides.

In FIG. 4, an inverted W-type hull is shown wherein two pairs of bottom sections provide a tunnel at each side of the keel section and the bottom sections of each pair are stepped upwardly from a side and the keel section, respectively, into the tunnel.

In FIGS. 5 and 6, a portion of a bottom section is shown which corresponds to the portion within the broken line circle in FIGS. 1 to 4. The bottom section generally comprises downwardly facing strake or tread portions **10** and upright spacer or riser portions between adjacent strake portions formed with a curved surface **12** for directing waves and/or sprays of water under the strake portions from left to right as viewed. The curved surfaces **12** eliminate pockets which may create drag.

If desired, the strake portions may have a depending formation **14** at the free edge thereof beneath a spacer portion for directing waves and/or sprays of water under the strake portions from right to left as viewed and indicated by the arrows.

Preferably, the riser or spacer portions **11** are of lesser upright dimension than the tread or strake portions **10** are of downwardly facing dimension, whereby the bottom of the hull is stepped gradually and is capable of riding on waves and/or sprays of water created and directed under the strake portions with smoothness, stability and maneuverability.

For example, if the strake portions **10** have a width of about five inches, the spacer portions **11** have a height of about two inches. Also, while the spacer portions may be of equal vertical dimensions, it has been found advantageous to decrease this dimension from top to bottom in a section B. For example, a section B including three spacer portions has an upper spacer portion of about 2.5 inches, a middle spacer portion of about 2.0 inches and a lower spacer portion of about 1.5 inches.

In FIG. 5, the bottom section is constructed of individual pre-shaped wooden or fiberglass-resin strake and spacer strips with adjacent strakes being lapped and extending over and under an intermediate spacer, respectively. The strake and spacer strips are secured by a conventional method employed in constructing boat hulls from strokes or strips.

In FIG. 6, the bottom section is constructed of a single unitary sheet of metal or fiberglass-resin which is formed in a mold or press to provide the strake and spacer portions having the shape shown herein.

With either method of construction (FIGS. 5 and 6) to produce the bottom shapes shown in FIGS. 1 to 4, the hull may be provided with pointed, scow-shaped or modified scow-shaped (blunt pointed) bow. Individual strips can be warped to produce such bow shapes, while a sheet can be pressed or molded to produce such bow shapes.

In operation of the boat, as the speed increases sprays and waves of water are directed under the strake portions progressively from top to bottom of each section B, and when the boat is about at full speed the hull has risen and rides on lower strake portions (WL) to greatly reduce surface friction since the strake portions above the lowermost one ride on sprays or waves of water having air mixed therein.

As the load in the boat increases or the speed of the boat decreases, the hull will ride on the upper strake portions. However, if the boat is propelled at full speed, a substantial portion of the load is overcome and the hull rides on lower strake portions.

From the foregoing description, it will be seen that the present invention provides a simple and economical boat hull constructions which can be produced in a large

variety of shapes by utilizing conventional boat building procedures.

As various changes may be made in the form, construction and arrangement of the parts herein, without departing from the spirit and scope of the invention and without sacrificing any of its advantages, it is to be understood that all matter herein is to be interpreted as illustrative and not in any limiting sense.

I claim:

A boat hull comprising a bow and a bottom having two adjacent lengthwise extending sections inclined crosswise in opposite directions uniformly throughout the entire length of said bottom, said sections being stepped crosswise uniformly and including a series of alternate contiguous horizontal tread portions and vertical riser portions, said tread portions having a much greater horizontal dimension than the vertical dimension of said rise portions with said tread and riser portions being of uniform dimensions throughout their length and said riser portions separating said tread portions by at least one-half inch, said tread portions each having a depending formation at the free edge thereof for directing sprays and waves of water towards an adjacent riser portion below said formation, and an arcuate formation at the junction of adjacent tread and riser portions for directing sprays and waves of water towards an adjacent depending formation, said arcuate formations being of much greater arcuate extent than the vertical dimension of said depending formations.

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