Oct. 3, 1961 G. J. CURTIS 3,002,485

ADJUSTABLE STABILIZER FOR BOATS

Filed July 22, 1960 2 Sheets-Sheet 1

Fig. 1

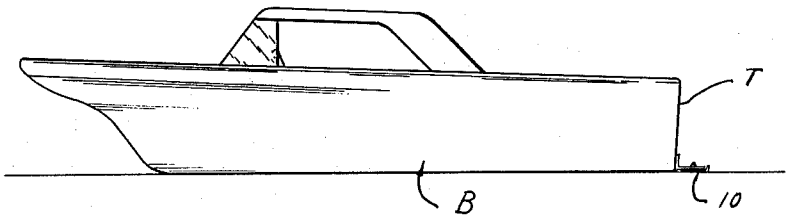


Fig. 2

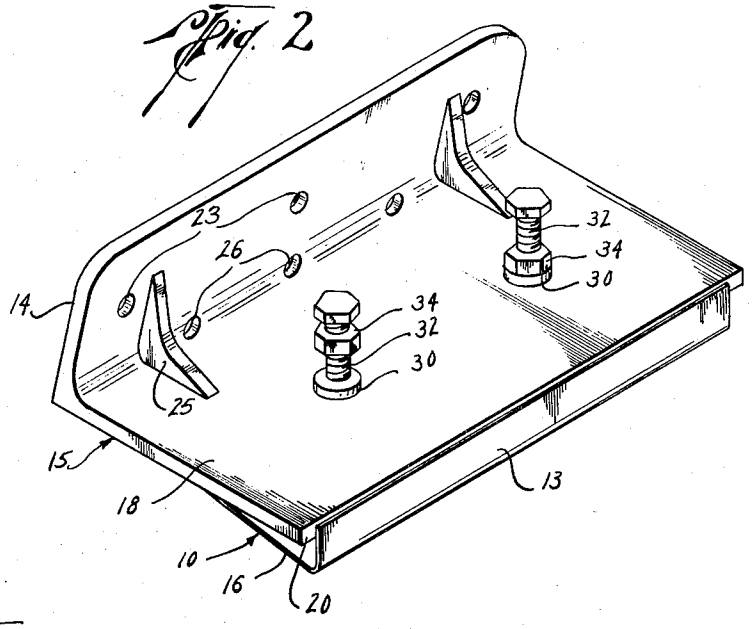
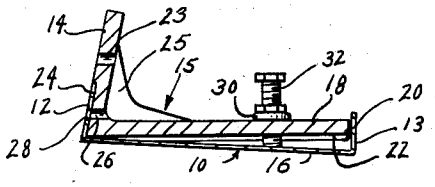


Fig. 3



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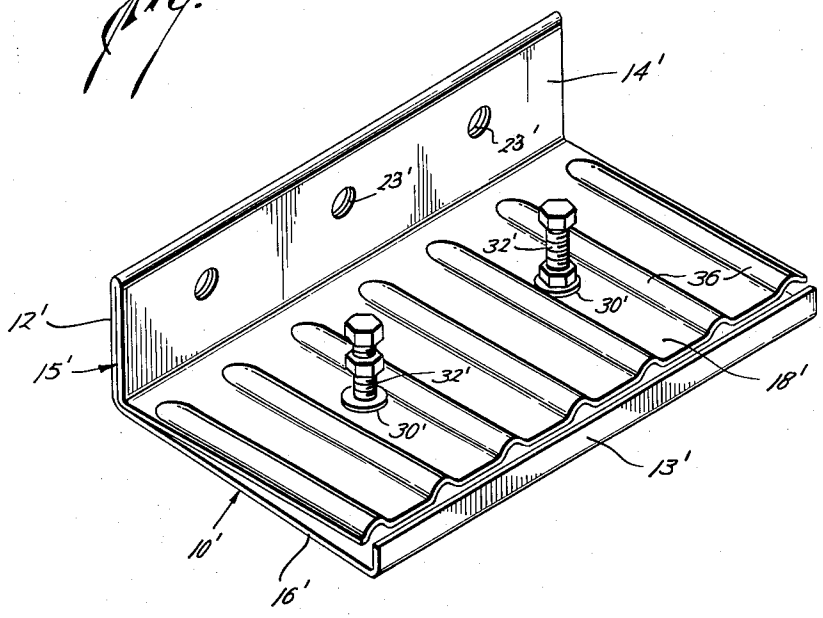
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Fig. 4



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ADJUSTABLE STABILIZER FOR BOATS

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This invention relates to stabilizer mechanism for boats and more particularly to a device which is adapted to be attached to a boat at a location to increase the surface of the boat which is in contact with the water and which is adjustable to regulate the effect of such surface on the position and stability of movement of the boat during its propulsion through the water.

The stability of movement and position assumed by a boat during its propulsion through the water is effected by various factors, such as the shape of the hull, the area and symmetry of the surface which is in contact with the water and the draft or depth to which the boat extends beneath the surface. The occurrence of irregularities in the shape of the bottom of the boat, such as those which may be produced by warping or lack of symmetry in manufacture often causes instability of movement and uncertainty in steering to an extent which makes it necessary to carry out expensive refinishing or reshaping operations to restore the boat to its most efficient operating condition.

The operation of boats may also be greatly affected by the amount of power which is used to propel them. Thus, a boat which is designed to operate satisfactorily with a motor of one size may assume a position in the water such that its efficiency in operation is greatly reduced when the boat is provided with a motor of increased power, and especially when such a boat is propelled at high speed. Moreover, the speed of the boat may be adversely affected by the use of a motor of increased power with a boat whose length is insufficient to maintain the boat at the proper angle during the operation of the boat, so that the bow of the boat is caused to ride too high out of the water.

The present invention has for an important object the provision of stabilizer mechanism for attachment to a boat to increase the surface of contact between the bottom of the boat and the water, whereby the boat may be caused to assume a more nearly horizontal position during its propulsion through the water.

Another object of the invention is to provide stabilizer mechanism for a boat which may be applied to the boat at a location to stabilize lateral rocking movement of the boat during forward movement of the boat in the water.

A further object of the invention is the provision of stabilizer mechanism for boats which may be adjusted to counteract irregularities in the shape of the bottom of the boat to overcome the tendency of such irregularities to cause unstable movements of the boat in the water.

Another object of the invention is to provide stabilizer mechanism for boats comprising a flat plate and means for attaching the plate to the boat to form a part of the water contacting surface of the boat and including means for adjusting the position of the plate relative to the boat to regulate the upward force exerted by the water on the plate as the boat moves forwardly through the water.

Another object of the invention is the provision of stabilizer mechanism for boats embodying a flat plate-like element and means for mounting the element on the boat with one face of the element extending rearwardly from and forming a continuation of the bottom surface of the boat and including means for adjusting the angle of the plate relative to the bottom of the boat to regulate the upward force exerted by the water on the plate during forward movement of the boat through the water.

A further object of the invention is to provide stabilizer mechanism for boats, which is of simple design and

rugged construction, which is easily attached to or removed from a boat and which is of economical manufacture.

The above and other important objects of the invention may best be understood from the following detailed description, constituting a specification of the same, when considered in conjunction with the annexed drawings, wherein—

FIGURE 1 is an elevational view on a greatly reduced scale illustrating a preferred embodiment of the invention, and showing the same attached to a boat;

FIGURE 2 is a perspective view of the stabilizer mechanism of the invention detached from the boat;

FIGURE 3 is a central, longitudinal, cross-sectional view of the stabilizer mechanism as illustrated in FIGURE 2, showing details of structure and arrangement of the parts of the same; and

FIGURE 4 is a perspective view, on a somewhat reduced scale illustrating a modified form of the invention.

Referring now to the drawings in greater detail, the stabilizer of the invention comprises a plate-like element 10, which may be conveniently formed of sheet metal, having front and rear upturned end flanges 12 and 13, and which is attached by its front flange 12 to one flange 14 of an angle bracket 15, with the main body portion 16 of the element lying beneath the other flange 18 of the bracket and the flange 13 positioned beyond and in parallel relation to the free outer edge 20 of the flange 18.

The bottom of the flange 18 of the angle bracket may, if desired, be recessed, as indicated at 22 to a depth to receive the main body 16 of the element when the element is in its upmost position relative to the bracket, and the flange 14 of the bracket may be similarly provided with an external recess 24 into which the flange 12 is fitted, as seen in FIGURE 3.

The bracket 15 is preferably of cast metal construction, and formed with gussets or reinforcing webs 25 extending between the flanges 14 and 18 of the bracket to provide a relatively rigid, non-flexible structure.

The bracket is formed with perforations 23, through which screws, or other suitable fastening means, may be extended by which the bracket is secured to the transom T of the boat exteriorly thereof, with the flange 18 extending rearwardly, horizontally, to present a downwardly facing surface forming a continuation of the bottom surface of the boat. Similar perforations 26 are also provided in the flange 14 of the bracket, and the front flange 12 of the element 10 is provided with perforations 28 in registration with the perforations 26 of the bracket, by which the bracket and element may be secured to the transom T.

The flange 18 of the bracket is also provided with internally threaded perforations, which may be surrounded by reinforcing bosses 30 and through which adjusting bolts 32 are threadably extended, whose lower ends are engageable with the upper surface of the element 10 to adjust the position of the element relative to the flange 18 of the bracket. The bolts 32 are preferably provided with lock nuts 34 to securely maintain the bolts in any desired position of adjustment.

It will be apparent that the main body portion 16 of the element 10 may be moved vertically by adjustment of the bolts 32 to position the element in any desired angular relation to the flange 18 of the bracket, whereby the surface of the device which is exposed to the upward pressure of the water may be adjusted to control the upward force exerted on the bottom of the boat, tending to maintain the boat in a horizontal position during the movement of the boat through the water. Thus, by adjusting the element downwardly relative to the bracket, the angular position of the element 10 may be adjusted to counteract the tendency of the bow to rise out of the

water during the forward movement of the boat. It will also be apparent that by adjusting the bolts 32, one side portion of the plate-like element 10 may be moved to a somewhat different angular position relative to the flange 18 than the other side portion thereof, whereby the tendency of the boat to rock from side to side may be adjusted to compensate for irregularities in the shape of the bottom of the boat.

In making use of the invention, two of the devices will ordinarily be attached to the transom T, one at each side of the longitudinal axis of the boat and the elements 10 will be adjusted to cause the boat to assume the desired position during its forward movement through the water.

A somewhat modified form of the invention is illustrated in FIGURE 4, wherein the device is formed of suitable material, such as sheet metal, in one piece, bent upon itself. In this form of the invention, the plate-like element 10' is formed in one piece with the bracket 15' by folding the sheet metal upon itself, and the flanges 12' and 14' are provided with openings such as those shown at 23', for the reception of screws by which the device may be attached to the transom T. The plate-like element 10' is also formed with an upturned rear end flange 13', similar to the flange 13, and for the same purpose. The flange 18' in this form of the invention may be formed with longitudinal corrugations 36 to stiffen the flange to prevent bending of the same, and this flange is provided with internally threaded openings, surrounded by upwardly pressed bosses 30' through which bolts 32' are threadably extended, for engagement with the main body portion 16' of the plate-like element to adjust the angular position of the same relative to the flange 18' in the same manner as previously described in connection with the form of the invention illustrated in FIGURES 2 and 3.

This modified form of the invention is applied to the boat and adjusted in the same manner as previously described to cause the boat to move through the water in a predetermined angular position.

It will thus be seen that the invention constructed and applied as described above, provides an adjustable stabilizer for boats which is of simple design and rugged construction, which may be easily applied to a boat and which may be readily adjusted to compensate for variations in the weight and power of the motive force employed, whereby the boat may be operated at maximum efficiency.

The invention is disclosed herein in connection with certain specific embodiments of the same, but it will be understood that these are intended by way of illustration only and that various changes can be made in the form and construction of the device within the spirit of the invention and the scope of the appended claims.

Having thus clearly shown and described the invention, what is claimed as new and desired to secure by Letters Patent is—

1. In a stabilizer for boats a bracket of angular shape, means for securing the bracket to the transom of a boat with one flange disposed parallel to and in contact with the external face of the transom and the other flange extending rearwardly substantially in the plane of the bottom surface of the boat, a flexible, plate-like member carried by the bracket and having a portion extending rearwardly from the transom beneath said other flange and whose lower face is positioned for contact with the water to apply an upward force to the transom and means movably carried by said other flange in position for coaction with said member and said other flange to flex said member to vary the angular position of said member laterally and longitudinally relative to said other flange to vary said upward force.

2. In a stabilizer for boats a flexible plate-like member of angular shape, means for securing the member to the transom of a boat with one flange disposed parallel to and in contact with the external face of the transom and the other flange extending rearwardly in position for contact with the water to apply an upward force on the transom, and means for flexing said other flange vertically to vary the angular position thereof laterally and longitudinally relative to the bottom of the boat to adjust the upward force exerted by the water.

3. In a stabilizer for boats a rigid bracket of angular shape, means for securing the bracket to the transom of a boat with one flange positioned parallel to and in contact with the external face of the transom and the other flange extending rearwardly, horizontally, substantially at the level of the bottom of the boat, said one flange having a recess in its forward face opening toward the transom and said other flange having a downwardly opening recess in its lower face extending across said other flange from end to end thereof and a flexible plate-like member of angular shape having an upturned end portion disposed in the recess of said one flange and a main portion disposed beneath said other flange in position to enter the recess of said other flange and means for flexing said member to vary the angular position of said main portion relative to said other flange.

4. In a stabilizer for boats a rigid bracket of angular shape, means for securing the bracket to the transom of a boat with one flange positioned parallel to and in contact with the external face of the transom and the other flange extending rearwardly, horizontally, substantially at the level of the bottom of the boat, said one flange having a recess in its forward face opening toward the transom and said other flange having a downwardly opening recess in its lower face extending across said other flange from end to end thereof and a flexible plate-like member of angular shape having an upturned end portion disposed in the recess of said one flange and a main portion disposed beneath said other flange in position to enter the recess of said other flange and means for flexing said member to vary the angular position of said main portion relative to said other flange, said member also having an upturned end portion extending beyond the rear edge of said other flange.

5. In a stabilizer for boats a rigid bracket of angular shape having an upwardly extending flange positioned parallel to and in contact with the external surface of the transom of a boat and a flange extending rearwardly, substantially horizontally therefrom, said upwardly extending flange having a recess in its front face opening toward said transom and said rearwardly extending flange having a downwardly opening recess extending across its lower face, a flexible, plate-like member having an upturned end portion positioned in the recess of said upwardly extending flange and a main portion positioned to enter the recess in said rearwardly extending flange, means for securing said upwardly extending flange and said upturned end portion to said transom and means for flexing said main portion to vary the angular position of said main portion relative to said rearwardly extending flange.

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