United States Patent

[11] **3,601,078**

[72] Inventor **William A. Bedford, Jr.**
Longboat Key, Fla.

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[73] Assignees **William A. Bedford, Jr.;**
Ann M. Bedford
a part interest to each

[54] **AUTOMATIC TRIM TAB**
6 Claims, 2 Drawing Figs.

[52] **U.S. Cl.** **114/66.5**
[51] **Int. Cl.** **B63b 1/22**
[50] **Field of Search** ..... 114/66.5 P, 66.5

[56] **References Cited**

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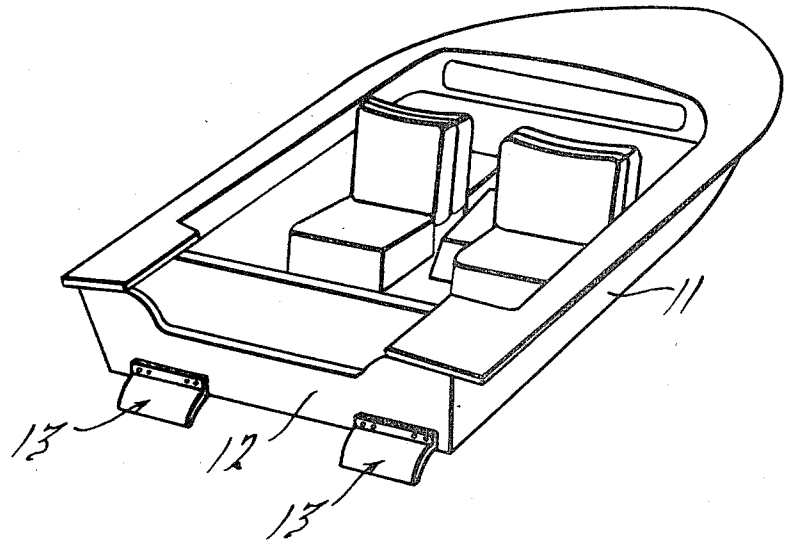
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Primary Examiner—Andrew H. Farrell
Attorney—Harness, Dickey & Pierce

ABSTRACT: A pair of spaced trim tabs are supported at the bottom of the transom of a boat to extend therebelow when the boat is at rest and when operating at a low speed. Each tab is a like unit element made of a suitable plastic material which is deflectable and which has memory to return to its original position when pressure is removed therefrom. A securing flange has an extending portion of arcuate shape tapering from the flange to the free edge which extends below the bottom of a boat when the boat is at rest. As the speed of the boat increases the extending portion moves upwardly until the boat reaches planing speed at which point the arcuate portion will straighten out and extend rearwardly of the boat.



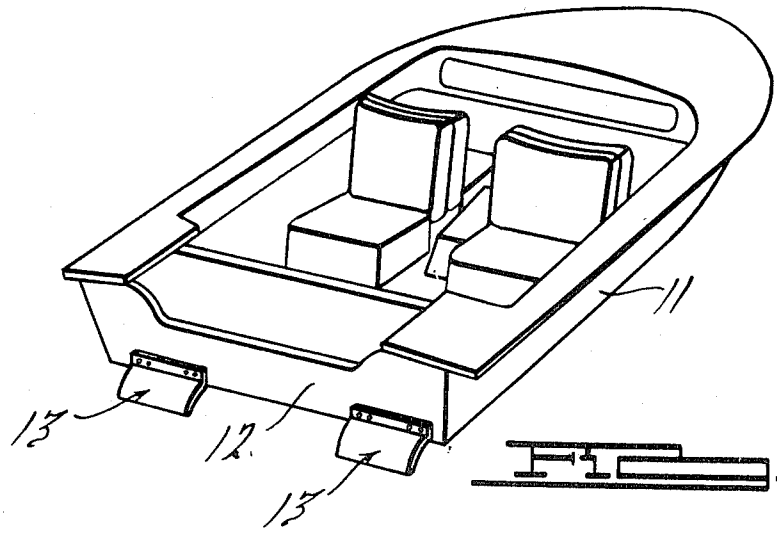


FIG. 1.

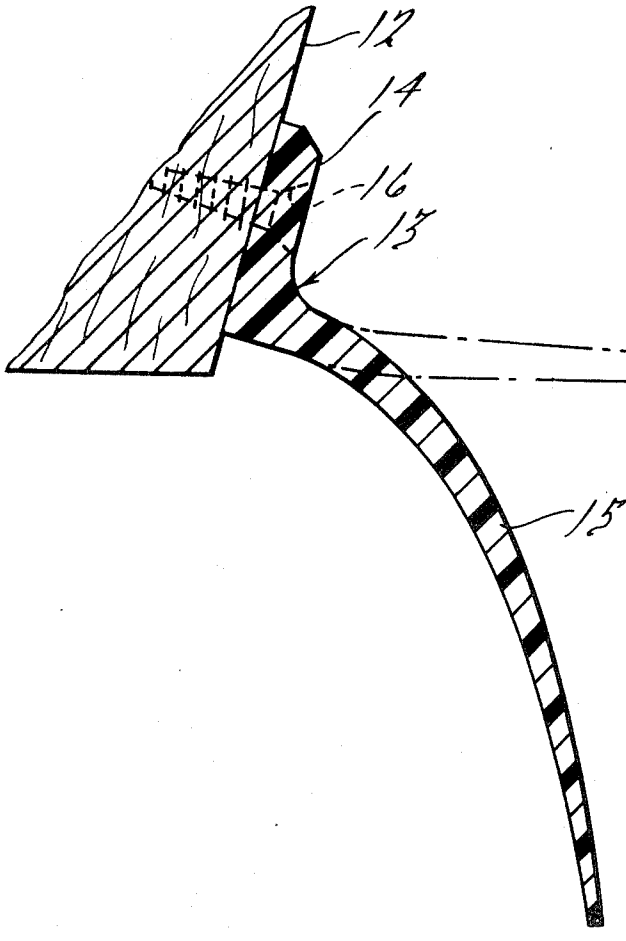


FIG. 2.

INVENTOR.
William A. Bedford, Jr.
BY
Harness, Dickey & Pierce
ATTORNEYS

AUTOMATIC TRIM TAB

RELATED APPLICATION

Reference may be had to the application to William A. Bedford, Jr., Ser. No. 820,240, filed Apr. 29, 1969 for "Trim Tab" for illustrating a trim tab having a support and hinged plate.

SUMMARY OF THE INVENTION

The invention pertains to the use of a pair of unit trim tabs having a supporting flange which is attachable to a boat and an arcuate flexible portion which extends outwardly and downwardly from the bottom edge thereof. When attached to the boat, the arcuate portion extends downwardly below the bottom of the boat and as the boat is driven and the speed increased, the arcuate portion will move rearwardly and upwardly to cause the boat to plane. When in planing position, the arcuate portion extends substantially in a straight line rearwardly of the boat bottom. The arcuate portion is thicker at the supported edge with the two surfaces converging providing a taper of such proportion as to permit the straightening of the arcuate or blade portion. After offering a desired resistance at low speed the boat is caused to plane when the speed has been sufficiently increased at which point the blade portion assumes a substantial planar position rearwardly of the boat above the bottom thereof. The unit tab can be individually molded or can be extruded and cut off in desired lengths depending upon the size of the boat on which the tabs are secured. The material is a plastic such as Lexon, Delrin and the like which has memory which causes the blade portion to return to its molded or extruded original arcuate shape when the force of the water is removed therefrom.

BRIEF DESCRIPTION OF THE DRAWING

FIG. **1** is a perspective view of a boat having a pair of tabs thereon which embody features of the present invention;

FIG. **2** is an enlarged sectional view of one of the tabs illustrated in FIG. **1**.

DESCRIPTION OF THE PREFERRED EMBODIMENT

A boat **11** has a transom **12** at the rear end on which a pair of spaced trim tabs **13** are supported at the bottom edge thereof. The boat is of the outboard motor type having a space between the tabs for the support of an outboard motor on the transom. The tabs are of like unit construction extruded or molded from a suitable plastic material such as Lexon, Delrin and the like which has memory so that the material will return to its initial position when an applied force has been removed therefrom. The trim tab has a supporting flange **14** from which a trim blade **15** extends from the bottom edge of the flange. The flange has apertures **16** through which bolts, screws or the like extend to secure the tab to the boat transom. The trim blade is of arcuate shape having substantial thickness at the point of juncture with the supporting flange which tapers

therefrom to the trailing edge which is substantially thinner than the junction portion. The taper may vary for different boats depending upon the resistance to be provided thereby when advancing through the water to cause the boat to plane when the planing speed is reached. As the speed is increased the arcuate tab blade tends to move upwardly and to assume a straight position at the time the boat is planing which eliminates the drag occurring before planing speed is reached.

As the boat is propelled forwardly, the bow will move out of the water and the transom will then be raised by the tab blade to maintain the boat in substantially horizontal planing position at all times. As the speed increases the tab blades will move upwardly and maintain the boat parallel to a starting position as it planes over the water. As the planing speed is reached, there is no drag by the tab blades which extend rearwardly. The material of the tabs has memory so that the tabs will tend to return to its original shape as illustrated in FIG. **2** when pressure is removed therefrom. The blade portion provides a further feature of preventing the rear end of the boat from rapidly sinking when the throttle is reduced since it will automatically move downwardly to a degree depending upon the reduced speed of the boat. Accordingly, the boat will settle downwardly in more or less level position since the tabs will automatically move downwardly and provide lift for the stern so that the rapid sinking thereof is avoided when the throttle is reduced. The tabs produce the planing of the boat with less effort and there is less violent reaction to the changes in the throttle and the boat will easily and quickly reach a planing position as the throttle is increased.

I claim:

1. In a trim tab for a boat, a unit element of elastomeric material having memory, said element embodying a supporting flange with means by which the flange is secured to a boat transom, and an arcuate tab blade extending rearwardly and downwardly from the supporting flange, said tab blade tapering from the supporting flange to the trailing edge which extends downwardly below the bottom of the boat when the supporting flange is in secured position.

2. In a trim tab for a boat as recited in claim **1**, wherein the varying thickness of the tab blade is such relative to the size of the boat that decreasing resistance and straightening of the blade occurs as the speed of the boat increases and reaches planing position.

3. In a trim tab for a boat as recited in claim **2**, wherein the securing means for the flange are apertures provided therethrough by which the flange is secured by bolts, screws or the like to the boat transom.

4. In a trim tab for a boat as recited in claim **3**, wherein the material of the tab is made of an elastomer such as Lexon, Delrin or the like which has memory so that the tab blade returns to its original form when pressure is removed therefrom.

5. In a trim tab for a boat as recited in claim **4**, wherein the tab is a unit construction extruded from the elastomer material having memory.

6. In a trim tab for a boat as recited in claim **4**, wherein the trim tab is molded from an elastomer material having memory.