Mar. 5, 1929. H. L. CHISHOLM, JR 1,703,868

FOLDING FIN FOR MOTOR BOATS

Filed June 28, 1928

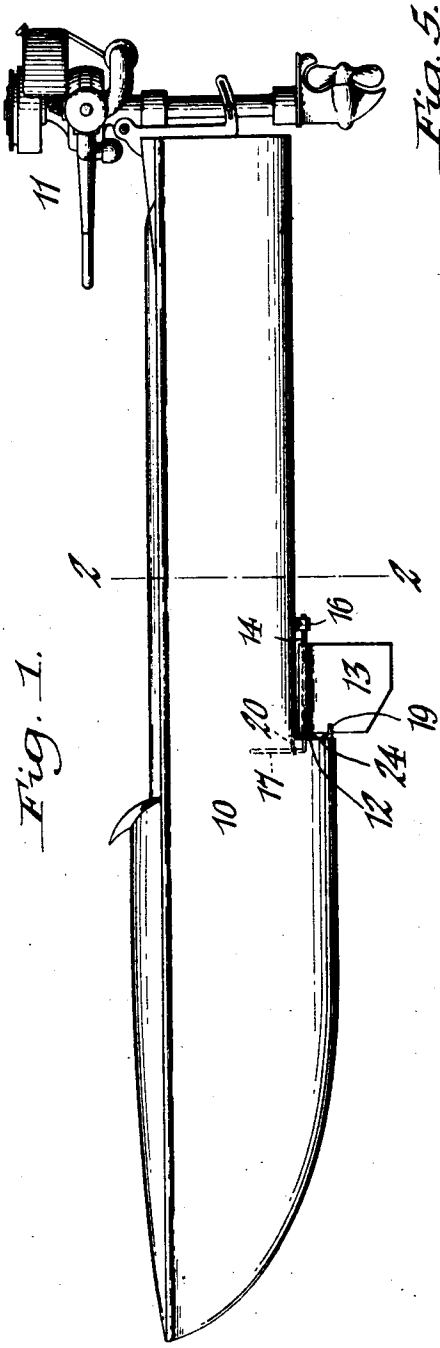


Fig. 1.

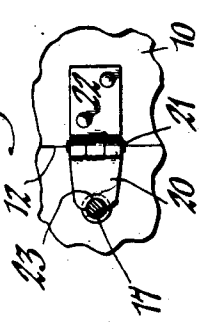


Fig. 5.

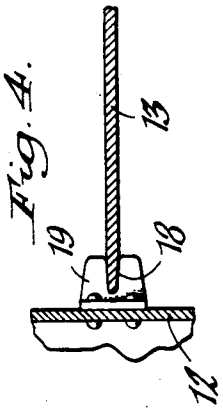


Fig. 4.

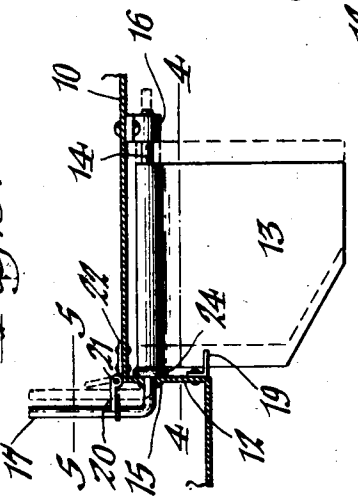


Fig. 3.

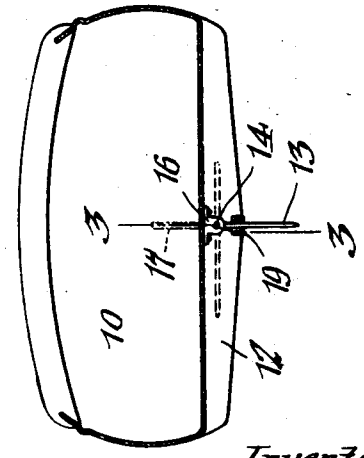


Fig. 2.

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UNITED STATES PATENT OFFICE.

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FOLDING FIN FOR MOTOR BOATS.

Application filed June 28, 1928. Serial No. 289,015.

This invention relates generally to improvements in boats, but more particularly to a folding fin intended primarily for motor boats.

Its chief object is to provide a simple and inexpensive fin of this character which can be readily folded up out of the way for beaching the boat or for mooring it in shoal water.

Another object of the invention is the provision of reliable and effective means for normally holding the fin in a rigid unfolded position.

In the accompanying drawings:—

Figure 1 is a side elevation of a motor boat equipped with my improvement. Figure 2 is a cross section thereof on line 2—2, Figure 1. Figure 3 is an enlarged fragmentary longitudinal section taken in the plane of line 3—3, Figure 2. Figure 4 is an enlarged horizontal section on line 4—4, Figure 3. Figure 5 is a similar section on line 5—5, Figure 3.

Similar characters of reference indicate corresponding parts throughout the several views.

By way of example, the invention has been shown in connection with a motor boat 10 operated by an out-board motor 11 and provided in its bottom with the customary step 12.

Unless skillfully handled, an out-board motor boat will capsize at high speed, especially when turning, and it is very essential that it be equipped with a fin or centering rib 13. My improved fin is so mounted that it can be readily folded laterally against the bottom of the boat for beaching purposes, and to this end the same is disposed substantially centrally of the boat immediately in rear of the step 12 and is fixed at its upper end on a longitudinal shaft 14 located above the normal water line of the boat and journaled at its front end on a suitable bearing 15 formed in the step and at its rear end in a bearing bracket 16 fastened to the boat-bottom in the manner shown in Figure 3. The fin-shaft extends forwardly into the interior of the boat where it terminates in a hand lever 17 preferably formed by bending the shaft upwardly at substantially right angles to its axis. By turning the lever in one direction or the other transversely of the boat, the fin 13 is folded flatwise against the underside thereof, as shown by dotted lines in Figure 2, in which position it lies in the space behind the step 12 and above the plane of the front bottom portion of the boat.

In addition to its folding action, the fin is capable of movement lengthwise of the boat and for this purpose sufficient play is left between the front and rear edges of the fin and its bearings 15, 16 to permit its shaft to slide fore and aft in the latter, as indicated by full and dotted lines, respectively, in Figure 3. When in its forward operative position, the front edge of the fin 13 is adapted to interlock with a rearwardly-opening locking notch 18 formed in a bracket 19 riveted or otherwise secured to the step 12 below the axis of the shaft 14 and serving to rigidly hold the fin in a vertical position and preventing torsional vibration thereof. In order to effectually hold the fin in its forward, unfolded position, a suitable latch 20 is provided which is hinged at 21 to a base plate 22 secured to the boat-bottom adjacent the step 12. This latch swings vertically and its front edge has a notch 23 which is adapted, in the horizontal position of said latch shown by full lines in Figures 3 and 5, to engage the hand lever 17, thereby holding the shaft against rearward displacement and the fin in locking engagement with the notch 18. Upon releasing the latch from the lever, by swinging it to the dotted line position shown in Figure 3, the fin is free to be shifted rearwardly to disengage it from its locking notch preparatory to folding it to a position for beaching the boat or mooring it in shoal water. Any suitable means may be employed for retaining the fin in its folded position.

Applied to the shaft 14 and interposed between the front edge of the fin 13 and the adjacent bearing 15 is a flexible packing 24, preferably in the form of a rubber sleeve, which, when the fin is in its unfolded position shown in Figure 3, is compressed in the manner shown, effectually sealing the bearing 15, when the latch 20 is released from the hand lever 17, the packing expands and assists in shifting the shaft and its fin to the dotted line position shown in Figure 3.

I claim as my invention:—

1. In a boat, a foldable fin therefor fulcrumed at its upper end to the bottom of the boat, and means disposed in spaced relation to the fulcrum and engageable with one of the edges of the fin for rigidly holding it in its unfolded operative position.

2. In a boat, a foldable fin therefor fulcrumed at its upper end to the bottom of the boat, and a notched bracket applied to the

boat adjacent one of the upright edges of the fin and spaced from the fin-fulcrum, the fin being adapted to engage edgewise in the bracket notch in its unfolded position.

3. In a boat, a fin hinged thereon for a combined movement both lengthwise and crosswise of the boat, an edgewise fin-receiving member applied to the boat below the hinge axis of the fin for holding it in its unfolded position, the latter being longitudinally movable into and out of engagement with said member, and means for releasably holding the fin in engagement with said holding member.

4. In a boat, a fin mounted thereon for folding against the bottom thereof, a hinge member for the fin journaled on the boat and movable a limited extent lengthwise thereof, and means disposed below and in substantially vertical alinement with the axis of the hinge member for retaining the fin in its unfolded position, said fin being engageable with and disengageable from the retaining means by shifting the hinge member in a fore and aft direction, respectively.

5. In a boat, a combined oscillatory and longitudinally shiftable shaft journaled therein, a fin carried by said shaft and foldable against the underside of the boat, a notched brace member with which said fin is adapted to engage in its unfolded position, and a lever for actuating said shaft to shift the same in a fore and aft direction to bring said fin into and out of engagement with its brace member and also to swing the fin to its folded and unfolded positions.

6. In a boat, a combined oscillatory and longitudinally shiftable shaft journaled therein, a fin carried by said shaft and foldable against the underside of the boat, a notched brace member with which said fin is adapted to engage in its unfolded position, a lever for actuating said shaft to shift the same in a fore and aft direction to bring said fin into and out of engagement with its brace member and also to swing the fin to its folded and unfolded positions, and locking means engageable with said lever for holding the fin in its unfolded, braced position.

7. In a boat, a foldable fin therefor fulcrumed at its upper end to the bottom of the boat, an actuating lever for said fin, a notched brace member disposed below the fin-fulcrum, said fin being engageable edgewise with the notch of said brace in its unfolded position, and a latch disposed above the fin-fulcrum and engageable with the actuating lever in the unfolded position of the fin.

8. In a boat, a foldable fin therefor fulcrumed at its upper end to the bottom of the boat, an actuating lever for said fin, a brace member disposed below the fin-fulcrum and having a locking notch therein, said fin being shiftable on its fulcrum fore and aft of the boat for bringing it into and out of engagement with said notch, and a latch disposed above the fin-fulcrum and having a notch therein engageable with said hand lever in the unfolded position of the fin.

9. In a boat, a foldable fin therefor fulcrumed at its upper end to the bottom of the boat and capable of a limited fore and aft movement, an actuating lever for said fin, means engageable with the fin in its fore position to hold it against movement about its fulcrum, and a pivoted latch engageable with said lever in the unfolded position of the fin to hold the latter in engagement with said holding means.

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