Sept. 3, 1940. J. G. RAYNIAK 2,213,434

SUPPORTING BRACKET

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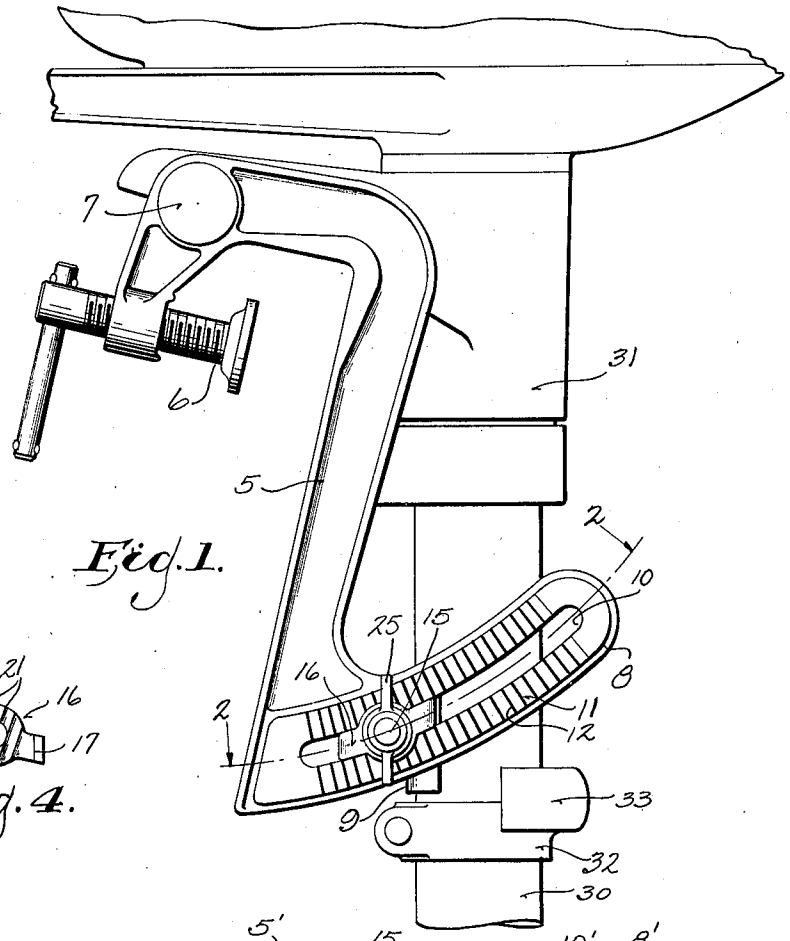


Fig. 1.

Fig. 4.

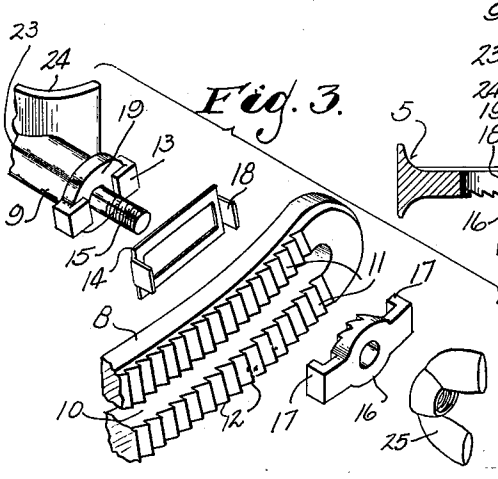


Fig. 3.

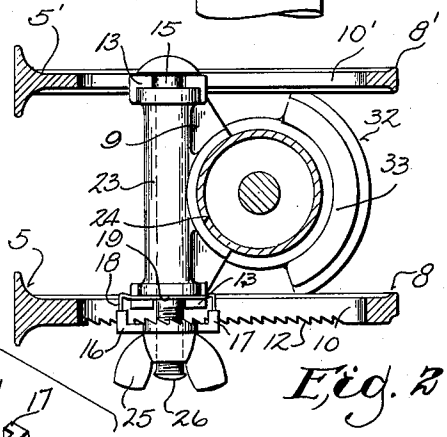


Fig. 2

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SUPPORTING BRACKET

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3 Claims. (Cl. 248—4)

This invention pertains to supporting brackets, and more particularly it pertains to improvements in that type of bracket permitting an arcuate relative or tilting adjustment of an object supported thereby.

One of the objects of my invention is to provide an improved adjusting bracket adapted for use in securing an outboard motor to the stern of a boat in proper operating position, in which adjustments may be expedited without danger of loss of parts.

A further object of my invention is to provide such a mounting bracket with improved means for adjusting and securing a thrust plate thereto, and improved means for locking the motor and its shaft housing to the thrust plate when in reversed position.

A further object is to provide a mounting bracket with improved means for adjustably securing a thrust plate or the like to a portion of the bracket, whereby the supported article may be adjusted to various relative positions expeditiously and without detachment of any part of said adjusting means, which might otherwise be dropped and possibly lost.

In the drawing:

Figure 1 is a view in elevation of my invention applied to an outboard motor mounting bracket, an attached outboard motor being partially shown in outline.

Figure 2 is a sectional view taken along the line 2—2 of Figure 1, showing a thrust plate secured by my improved means.

Figure 3 is a view in perspective of the various members of my invention shown in order of assembly, some of the members being only partially illustrated.

Figure 4 is a plan view of the clamping member as viewed from the side provided with an engageable serrated surface.

Like parts are identified by the same reference characters throughout the several views.

The drawing discloses one embodiment of my invention as adapted to an outboard motor mounting bracket.

As shown in Figures 1 and 2, a conventional outboard motor transom bracket assembly comprises a pair of integral or separate Z-shaped brackets 5 and 5' adapted to be secured to the stern of a boat and pivotally secured at one end portion thereof to the motor by means of a horizontal fulcrum pin 7 to permit motor tilting. Lower arms 8 and 8' of brackets 5 and 5' are held in spaced relation by means of an adjustable thrust bearing member 9 being interposed and secured between them. It has been conventional practice to provide either an arcuate slot or a series of bores in arms 8 and 8' and to adjustably secure sleeve bearing 9 in its proper position by projecting a bolt through one bracket arm, the bearing sleeve, the second bracket arm, and then tighten the bolt by means of a wrench. When a change of position of the thrust bearing is desired, it becomes necessary to remove the bolt, and to re-insert it after the bearing has been shifted to a desired location.

Outboard motors are frequently shifted from one boat to another, and it becomes necessary for the user to change the adjustment in correspondence to the inclination of the transom.

The adjustment of the thrust bearing member is usually made after the motor has been attached to the boat and users have found it particularly disconcerting to remove the bolt preparatory to a readjustment, only to lose their grip and see it disappear in the water.

I provide arcuate slots 10 and 10' in arms 8 and 8' of brackets 5 and 5'. A serrated surface 11 with teeth 12 is provided adjacent slot 10 in at least one of the arms and is herein described as being provided only in arm 8. Teeth 12 are provided adjacent slot 10 on the outer side of the arm and preferably extend substantially the length of the slot, preferably having their teeth in transverse relationship to said slot.

Thrust bearing member 9 consists of a conventional sleeve portion 23 and an integral arcuate bearing surface 24, but differs from conventional construction in that it is provided at each end with a guide comprising a pair of slide members 13 which cooperate to provide an elongated slide bearing guided by the walls of the slot 10 in which the slide members 13 are mounted. Bolt 15 extends between the slide members 13 through both slotted bracket arms 8 and 8' and through sleeve 23, whereby to secure thrust bearing member 9 intermediate said arms in a position determined by slide members 13.

A spring member 14 is provided with an apertured center portion and lugs 18 which project therefrom at right angles to the center portion, said spring being mounted over slide members 13 of trust bearing member 9 adjacent the serrated arm 8, whereby lugs 18 project into slot 10. A toothed guide element 16, best shown in Figure 4, consists of a central enlarged toothed portion provided with a center bore and two radially extending guide arms having offset portions 17.

Guide arms 17 are oppositely positioned and may be arcuately curved to correspond with the

curvature of slot 10. The central portion of element 16 is provided on the inner side with teeth 21 engageable with teeth 12 of arm 8, and when mounted on bolt 15 with the toothed side adjacent arm 8 offset arm portions 17 engageably contact lugs 18 of spring member 14 to prevent engagement of the teeth with the bracket teeth 12 until wing nut 25 is tightened sufficiently to distort spring 14 adjacent and press it against the bearing hub 19, as shown in Figure 2. The hub 19 and slide members 13 are integral and cooperate to provide a guide for the bracket arms 8 and 8'. With the tightening of wing nut 25 and the resulting engagement of teeth 12 and teeth 21, thrust block 9 is securely positioned in respect to bracket arms 8 and 8'. The end surfaces of the hubs 19 and 19' of block 9 are normal to the axis of the hub portion, and these surfaces, together with the sliding members 13 and 13', constitute guiding heads, whereby bearing member 9 assumes a right angle position in respect to the bracket arms when clamping pressure forces the arms against the bearing hubs. The central flat portion of spring 14 is interposed between bearing hub 19 and the inner wall of adjacent arm 8, and hence does not affect the normal alignment of the sleeve with the bracket arms when nut 25 is tightened.

When an adjustment of the thrust bearing member is desired, wing nut 25 is loosened and spring 14 forces member 16 out of engagement with teeth 12, thus relieving the pressure between shoulders 19 and 19' and arms 8 and 8', and thrust bearing member 9 may then be moved through slots 10 and 10' to a desired position, whereupon, by tightening the wing nut 25, the parts are locked by reengagement of the toothed members. Arcuate projecting arms 17 perform the function of keeping teeth 21 of member 16 in position to mesh with teeth 12 of bracket arm 8.

To prevent a complete removal and possible loss of wing nut 25, the threaded end of bolt 15 is preferably upset at 26 or provided with other means to prohibit removal of the nut.

Because the locking engagement between the teeth members as above described prohibits movement of the thrust bearing member along the slots 10 and 10' when the wing nut is drawn tight, it is unnecessary for said wing nut to be tightened to a degree which has been found necessary with the conventional method of securing the bearing in place by frictional engagement introduced by a lateral stress between the bracket arms and thrust bearing member. The wing nut may be tightened sufficiently by the fingers of the operator to secure the thrust bearing member against movement by motor thrust under all operating conditions. This feature I deem of particular importance when my invention is adapted to outboard motor use, as tools are frequently not available when an adjustment of the thrust bearing must be made.

The outboard motor is made to swivel as a unit for steering and reversing by having its drive shaft housing 30, Figure 1, rotatively supported by bearing member 31. The motor is reversed by being turned within the bearing member through a 180 degree arc.

A reverse lock, comprising a fitting 32 carrying an arcuate flange 33, is clamped to shaft housing 30 in a position such that when the motor is reversed in the swivel bearing 31, as for reversal, the flange 33 will engage behind the lower margin of thrust bearing 9 to lock the shaft housing against tilting. Since the rearward thrust of the propellor is on such occasions exerted entirely through the lower extremity of the thrust bearing 9, the guide portions 13 and 13', integrally carried by the hub portion of the bearing member as above described, is of value in preventing the bearing from tilting about the clamping bolt 15 during reversal.

I claim:

1. In an outboard motor assembly, a bracket including a member provided with an arcuate slot, one surface of said member being serrated, an adjustable thrust bearing including a hub portion provided with guide elements for loose guiding engagement with the slotted member, a bolt extending through the hub and the slot in the bracket member, a clamping nut threaded to said bolt, and an element loosely mounted on the bolt between the arm and clamping nut, and provided with means for engagement with said serrated surface.

2. In an ouboard motor assembly, a support having a pair of spaced arms provided with parallel arcuate slots, a motor supporting thrust bearing member between said arms, a guiding slide movable along one of said arms and having end bearings slidably engaged in the slot, a clamping bolt extending through said thrust bearing member, guiding slide and the slots in the arms, a locking element loosely mounted on the clamping bolt for engagement with the outer side of one of the arms, and means for automatically retracting the locking element from the arm when the clamping pressure is relieved.

3. The combination with a supporting bracket including a pair of slotted members, at least one of said members being flanked marginally of its slot by interlocking elements, of an adjustable bearing member provided with a guide in sliding relation to one of said bracket members, and clamping means for binding the bearing member to the bracket members, an interlocking element loosely carried by the clamping means in position for engagement with the locking elements on the bracket and a spring for retracting said loosely carried element to release said bearing member for readjustment along the slot when the clamping pressure is relieved.

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