June 7, 1949. P. HOMAN 2,472,704

OUTBOARD MOTOR MOUNTING

Filed June 11, 1947

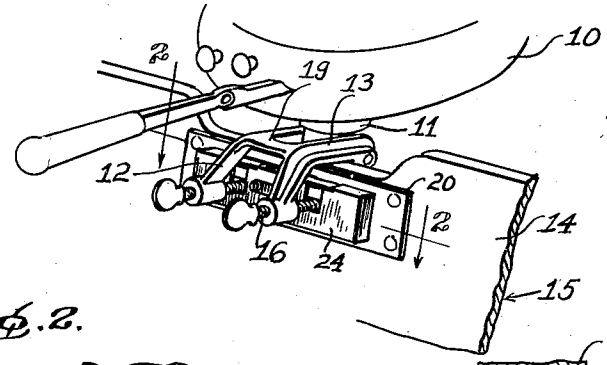


Fig. 1.

Fig. 2.

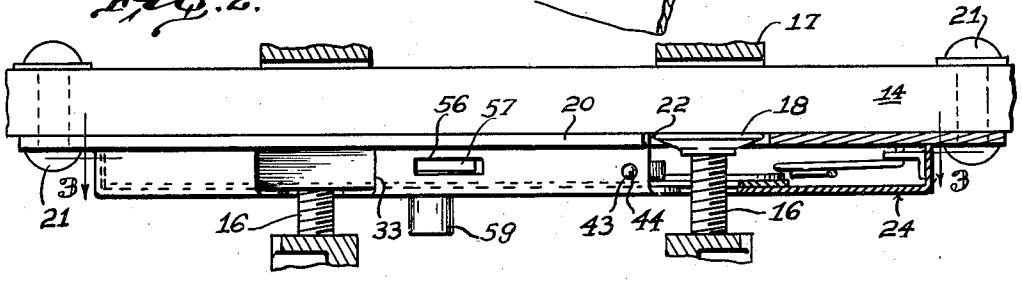


Fig. 3.

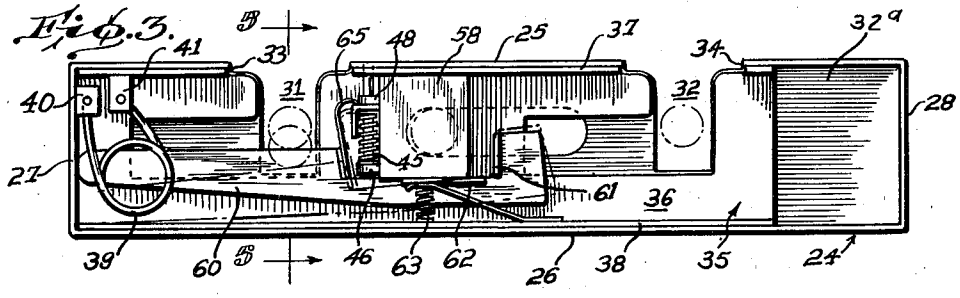


Fig. 4.

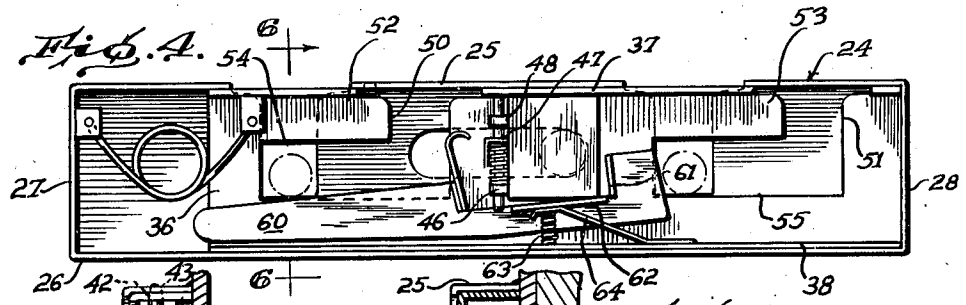


Fig. 5.

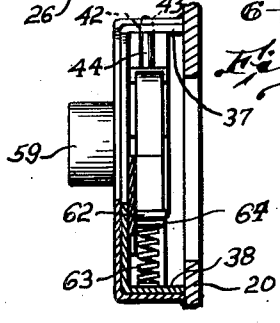
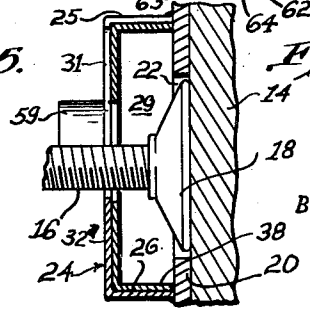


Fig. 6.



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OUTBOARD MOTOR MOUNTING

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8 Claims. (Cl. 248—4)

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This invention relates to a mounting structure and particularly to a device for mounting and locking an outboard motor in position of use.

It is an object of this invention to produce a new and improved mounting of the type described which may be manufactured of relatively few low cost parts safely and securely to receive an outboard motor in position of use on a boat.

Another object is to produce a durable and rugged mounting for an outboard motor that also locks the same in position of use.

More particularly, it is a further object of this invention to produce a mounting for outboard motors which, in the course of the mounting, operates automatically to lock the motor in the mounted position.

These and other objects and advantages of this invention will hereinafter appear, and for purposes of illustration but not of limitation, an embodiment of the invention is shown in the accompanying drawings, in which

Figure 1 is a perspective view of a fragment of the rear wall of a boat having a mounting for positioning and for locking the outboard motor in position of use;

Figure 2 is a sectional view taken generally along the line 2—2 of Figure 1;

Figure 3 is a sectional elevational view taken along the line 3—3 of Figure 2, and showing the relationship of parts of the mounting when in the unlatched condition;

Figure 4 is a view similar to that of Figure 3 but showing the parts in latched condition;

Figure 5 is a sectional elevational view taken along the line 5—5 of Figure 3; and

Figure 6 is a sectional elevational view taken along the line 6—6 of Figure 4.

Most outboard motors, such as that indicated by the numeral 10 in the drawings, are equipped with clamping means. These are usually pivotally attached to the motor or to the drive shaft housing 11 of the motor. The clamping means may simply consist of one or more C clamps 12 and 13 which hook over the backside 14 of the boat 15 so that the bolt-like elements 16, comprising the movable jaws, are shiftable longitudinally in the direction toward or away from the boat wall. In the mounted position, the backside 14 of the boat is firmly gripped between the stationary jaws 17 and the flared-out portions 18 on the end of the bolt-like elements. When two or more clamps are employed, they may be bridged, as by a cross piece 19, or they may comprise integral parts of a single clamp housing.

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A cardinal feature of this invention resides in a new and improved outboard motor mounting having means for receiving the clamping elements in position of use and for preventing inadvertent disengagement of the clamping elements even though the grip may have become relaxed or even fully released. The situation that enables an operating motor to spin from the boat while afloat and enables the removal of the motor by others, is thus simply and effectively obviated. As a further feature, the locking means may be adapted to be rendered effective as a coincidence with the movements mounting the motor.

Briefly described, I accomplish these results by securing to one wall of the boat a rigid mounting plate having vertically disposed notches therein for receiving the bolt-like clamping elements of the mounting means, and then blocking the bolt-like elements against movement from the notches. Although, as will hereinafter appear from the description, the movement of the bolt-like elements may be blocked by obstructing the entrance of the notches, as by latch means, it is to be understood that other means cooperating with the mounting plate or independently thereof, may be used.

More specifically, in carrying out the invention, I provide a rigid backing plate 20 of metal or the like, which is fixed, as by rivets 21, to the inner face of the backside 14 of the boat. The backing plate may be formed rectangularly with openings 22, each being arranged therein for receiving the flared-out end portion 18 of one of the movable jaws 16 substantially in fitting relation. A rectangular housing 24 dimensionally corresponding to the length and width of the backing plate 20 is secured thereto, as by welding the upper and lower housing walls 25 and 26 and the side walls 27 and 28 respectively to the backing plate to form a chamber 29 therebetween. In longitudinal alignment with the openings 22, vertically disposed notches or slots 31 and 32 are provided in the front plate 32a of the housing. These slots, which are of a width to enable the bolt-like elements 16 vertically to slide therein, but not of such dimension as to enable the flared-out end portion 18 to pass therethrough, lead from the upper edge of the wall. However, wider sections 33 and 34 in the adjacent upper wall 25 are cut out to enable the flared-out end portions 18 to pass therethrough.

Laterally shiftable within the housing is a latch assembly 35 including a body plate 36 which abuts the inner wall of the plate 32a and upper and

lower integral flanges 37 and 38 that slidably engage the upper and lower walls 25 and 26 respectively of the housing. Means are provided for constantly urging the latch assembly to slide toward one position of adjustment, hereinafter referred to as the latching position. Such means may comprise a coil spring 39 having one end anchored, as by means of an ear 40, to the housing, while the other end engages another ear 41 rigid with the latch, but such means may equally include other suitable tensioning means such as a leaf spring, fluid pressure means, rubber means, and the like.

When the latch assembly is in the unlatched position of adjustment, an opening 42 in the upper flange 37 and an opening 43 in the upper wall 25 are in registry so that they may be engaged by a vertically shiftable detent 44 which is constantly urged in the direction toward engagement, as by means of a spring 45 disposed between a lower guide 46 through which the detent is slidable and an upper shoulder 47 which is rigid with the detent. In the locked or engaged position, the shoulder 47 comes to rest against a stop 48 rigid with the body plate 36.

In the open position or unlatched position, vertical slots or notches 50 and 51 in the body plate 36 and the cut-out sections 52 and 53 in the upper flange 37 are in registry with the respective slots and cut-out portions in the housing so that the bolt-like elements 16 of the clamping means may be moved vertically therein. The body plate 36 is further provided with laterally disposed slots 54 and 55 which are contiguous at one end with the respective vertically disposed notches 50 and 51 and of a width to enable the bolt-like members to be disposed therein when the latch assembly is shifted laterally to the latching position. In the latching position of adjustment, upward movement of the bolt-like elements 16 is prevented by portions of the upper flange 37 and body plate 36 which block the slots 31 and 32 and the cut-out portions 33 and 34 of the housing. Since the flared-out end portions 18 are unable to pass rearwardly through the resulting openings defined by the housing and latch assembly in latching position, the bolt-like elements are completely blocked against movement from the housing even though the grip may have become fully released.

In ordinary operation, the tensioning means is sufficient to hold the latch assembly in latching position to prevent movement of the bolt-like elements, but not infrequently it is desirable to prevent others from applying such forces as will return the latch assembly to open position and enable the removal of the motor. For such purposes, an opening 56 in the housing and a similarly dimensioned opening in the adjacent wall of the latch assembly are adapted to be in registry when the latch assembly is in the latching position, the registered opening thus being able to receive the retractable lock bolt 57 of a lock assembly 58 to prevent their relative movement. Lock assemblies having a retractable lock bolt suitable for the purposes described are standard commercial items which need no further description since they form no part of the present invention. Suffice it to say that the lock assembly, which may be secured to the body plate 36, is of the type having a tumbler barrel 59 that extends forwardly through a horizontally disposed slot in the front plate 32 in which it is slidable.

As previously pointed out, an important feature of this invention resides in the means for automatically rendering the latch assembly effective in response to the movements mounting the motor. For this purpose, an elongate arm 60 formed of a flat plate is arranged to extend horizontally within the chamber 29. An intermediate portion of the arm is cut away, as at 61, and the lower portion of the lock assembly loosely seats within the notch in a manner to enable limited horizontal movement of the arm relative to the lock assembly and the plate 36 on which it is mounted. Disposed between the lower flange 38 and a ledge 62 bent from the notched portion of the arm and of a length always to engage the underside of the lock assembly, is a coil spring 63 which constantly urges the arm upwardly against the under side of the lock assembly. In order to enable relative longitudinal movement of the arm 60 without disturbing the spring 63, a resilient shelf 64 secured at one end to the flange 38 is interposed between the spring and the ledge 62.

When the latch assembly is in the inoperative position or unlatched position, the arm is in the position shown in Figure 3 of the drawings with one end bearing against the wall 27 of the housing, while the coil spring 63 causes the ledge fully to seat on the under side of the lock assembly. In this position, a portion of the arm 60 is disposed within one of the registered vertical slots 31 and 50, a hook 65 secured to the arm engaging the upper wall of the shoulder 47 secured to the detent 44 and the other end portion of the arm extending into a portion of the horizontal slot 55.

Normally the latch assembly is held in the inoperative position by the detent 44, which engages the registered openings 42 and 43. In this position, the corresponding vertical slots are in registry and a portion of the arm 60 extends into one. When the bolt-like elements 16 with the flared-out end portions are slipped through the registered openings and into the chamber 29, the arm 60 is depressed by one of the elements 16 and rocked counterclockwise with the corner of the locking assembly operating as the pivot. This causes the hook member 65 to retract the detent in opposition to the forces of the coil spring 45 with the result that the spring 39 is able to actuate the latch assembly toward the latching position of adjustment. As the latch assembly approaches the end of its movement toward the latching position, the arm is stopped by the other bolt-like member 16 when it engages the portion of the arm disposed within the slot 55. Thus the latch assembly moves a short distance laterally relative to the arm, a distance sufficient laterally to space the hook 65 from the shoulder 47, the elements being in the position illustrated in Figure 4 of the drawings.

In this position, movement of the bolt-like elements is blocked and the latch assembly may be locked in this position by the key means described to prevent others from returning the latch assembly from latching position for purposes of removing the motor. When it is desired to release the motor, the lock assembly is inactivated and the latch assembly is moved, by means of the barral 59 if desired, to the original unlatched position. During the return movement, the end of the arm 60 engages the wall 27 so that the arm is laterally displaced relative to the latch assembly to bring the hook member 65 adjacent the shoulder 47 but not in operative relation for the reason that the arm is still depressed. As a result, the detent is free to re-engage the registered

apertures for holding the latch assembly in position in opposition to the forces of the spring 39. Removal of the bolt-like element 16 from the mounting, frees the arm for return movement to its original position, as urged by the spring 63 operating to move the arm clockwise about the pivot, the hook 65 thereupon also engaging the shoulder 47.

It is manifest from the description of parts and the operation that I have produced a simple and efficient mounting that operates to lock the motor in position of use, which locking operation may be made automatically to become effective as the clamping means are received by the mounting. Although description has been made to a mounting plate having locking means in operative connection therewith, it is to be understood that the locking means may be separate from the mounting plate but associated therewith to effect the desired results.

It is to be further understood that numerous changes in the details of construction, arrangement and operation may be effected without departing from the spirit of the invention especially as defined in the appended claims.

What I claim is:

1. A mounting for an outboard motor having bolt-like clamping elements, said mounting comprising a housing secured to the boat and having notches for receiving the clamping elements therein, a latch shiftable between the open and the latching positions wherein the clamping elements are locked within said housing, spring means constantly urging the latch toward the latching position, and means for releasably holding said latch in the open position of adjustment.

2. A mounting for an outboard motor having bolt-like clamping elements, said mounting comprising a housing secured to the boat and having vertically arranged openings that enable the clamping elements to be received within said housing, a latch shiftable between the inoperative position and the operative position whereby the clamping elements are blocked against movement from said housing, spring means constantly urging said latch toward the operative position, detent means for releasably holding said latch in the inoperative position, and means responsive to the movement of said clamping means into said housing for rendering said detent means ineffective whereby the latch automatically shifts to the operative position.

3. A mounting for an outboard motor having bolt-like clamping elements, said mounting comprising a backing plate secured to said boat and having wells for seating the clamping elements, a housing adapted to be secured to said plate and having notches that enable the clamping elements to be received within said housing and to seat within said wells, and a shiftable latch for releasably blocking movement of said clamping elements from said housing.

4. A mounting for an outboard motor having bolt-like clamping elements, said mounting comprising a plate adapted to be secured to the boat and having notches therein for receiving the clamping elements, latching means cooperating with said plate and adapted in one position of adjustment to block the movement of the clamping elements from said notches, and means constantly urging said latching means toward the blocking position of adjustment, said last means comprising a tensioned spring anchored at one end to the plate and at the other end to the latching means.

5. A mounting for an outboard motor as claimed in claim 1, in which the means for releasably holding the latch in the open position of adjustment comprises a detent operatively mounted on the latch for reciprocal movement and adapted when the latch is in the open position operatively to engage the housing and prevent movement of said latch, means constantly urging said detent toward the operative position, and other means for rendering said detent ineffective.

6. A mounting for an outboard motor as claimed in claim 2, in which the means for rendering said detent means ineffective includes a shiftable lever normally having a portion thereof extending in the path of a clamping element whereby it is actuated during movement into the housing, and hook means on said lever operatively engaging said detent for rendering same ineffective as a result of such movements.

7. A mounting for an outboard motor as claimed in claim 6, in which spring means are employed constantly to urge the lever into the normal position of adjustment.

8. A mounting for an outboard motor as claimed in claim 6, in which means are provided for shifting imparting relative movement between the lever and latch during the movement of the latter toward the operative position thereby to space the hook means from the detent means and for returning said lever to its original position during the movement of said latch to the inoperative position of adjustment.

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