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MOUNTING BRACKET

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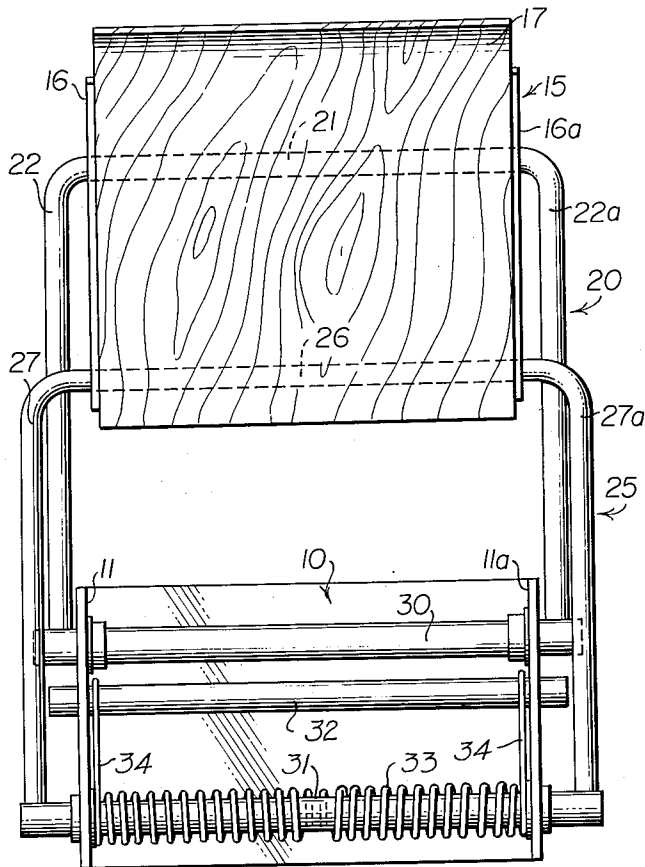


FIG. 1

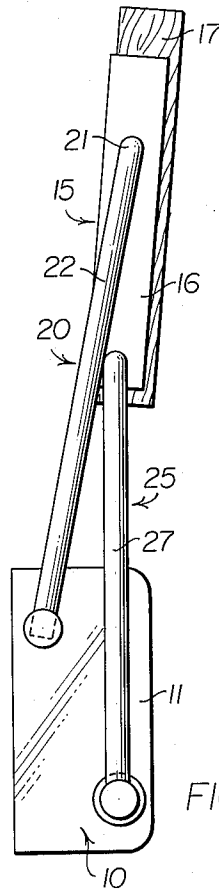


FIG. 2

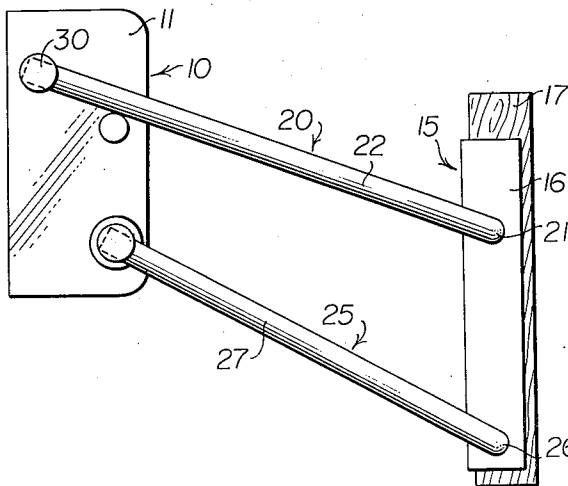


FIG. 3

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3,033,500 MOUNTING BRACKET

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This invention relates to mounting brackets for outboard motor or the like, and more particularly to an outboard motor mounting bracket having a self-locking storage position.

In recent years boating has increased tremendously in popularity. With the advent of lighter more powerful motors, the use of outboard motors is becoming increasingly popular.

In mounting outboards motors to boats, it is often desirable to have a mounting which will permit the motor to be easily shifted between an operation position and a storage position with the motor held out of the water. Many motors are constructed such that they may be pivoted between a vertical or operating position wherein the propeller is in the water and a horizontal position wherein the propeller is out of the water. However, such pivoting as many undesirable features. When pivoted to the horizontal position, the propeller extends a substantial distance behind the boat and is vulnerable to bumping which can break or bend the propeller or other parts of the motor and also be a navigational hazard. Also, in the horizontal position with the pivoting type of motor, the gasoline tank shifts position with the possibility of gasoline leakage especially through the air vent in the cap. Because of these and many other disadvantages it is desirable to keep the motor in the vertical position when stored as well as when in use.

According to the present invention, a motor mounting bracket is provided wherein the motor is stored in a vertical position and wherein the bracket is so constructed that it is self-locking in the storage position with the weight of the motor tending to urge the locking action in the storage position.

One of the principal objects of this invention is to provide a mounting bracket for an outboard motor or the like wherein the motor or the like is stored in a vertical position.

A more particular object of this invention is to provide a mounting bracket for an outboard motor or the like wherein the bracket is self-locking in a storage position.

Yet another object of this invention is to provide an outboard motor mounting bracket wherein a pair of unitary constructed support members interconnect a motor support plate and a transom plate in such a manner that the motor support plate can pivot to an operation position wherein the motor holds the plate in position and to a storage position wherein the weight of the motor tends to lock the bracket in the storage position.

Still another more particular object of this invention is to provide a mounting bracket for an outboard motor or the like which has a mounting plate which passes through an over-center condition when the plate is moved between a storage position and an operation position.

Other objects and a fuller understanding of the invention may be had by referring to the following description and claims taken in conjunction with the accompanying drawing in which:

FIGURE 1 is a front elevational view of the bracket in the storage position;

FIGURE 2 is a side elevational view of the device of FIGURE 1; and,

FIGURE 3 is the device of FIGURE 2 in the operation position.

Referring now to the drawing, the motor support has a transom plate 10 suitable for mounting on the transom

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of a boat. The transom plate 10 has a pair of lateral flanges 11, 11a positioned to project substantially perpendicular to the transom of a boat when the transom plate 10 is mounted. A motor mounting plate 15 is provided having a pair of lateral flanges 16, 16a and a motor mounting board 17.

The transom plate 10 and motor plate 15 are interconnected by an upper support member 20 and a lower support member 25. The upper support member 20 is generally U-shaped and has a central section 21 and a pair of arms 22, 22a. The central section 21 is pivotally connected to the motor plate 15 near the top thereof. The arms 22, 22a are rigidly connected to an upper mounting pin 30 which is pivotally connected to the flanges 11, 11a of the transom plate near the top thereof. The lower support member 25 has also a U-shape with a central section 26 and a pair of arms 27, 27a. The central section 26 of the lower support means is pivotally connected to the flanges 16, 16a of the motor plate near the bottom thereof. The arms 27, 27a are rigidly connected to a lower mounting pin 31 which is pivotally connected to the flanges 11, 11a of the transom plate near the bottom thereof. The upper mounting pin 30 is spaced from a vertical plane passing through the lower mounting pin 31 and is closer to the transom of the boat than the lower mounting pin when the transom plate 10 is mounted.

The device is so constructed that the sum of the length of the arms 27, 27a of the lower support member plus the distance between the lower support member connection and the upper support member connection to the motor plate is less than the sum of the length of the upper support member arms plus the distance between the upper support member arm and lower support member arm connection to the transom plate. The reason for such construction will be described presently.

The bracket has two positions, a use or operation position as shown in FIGURE 3 and a storage position as shown in FIGURES 1 and 2. In the operation position the transom plate 10 and the motor plate 15 are spaced apart and generally parallel with the arms of the upper and lower support members disposed transversely therebetween. In the storage position the transom plate 10 and the motor plate 15 are on generally parallel planes with the motor plate being above the transom plate and the arms of the support members lying generally on such plane. The device is shiftable between the storage position and the operation position. In shifting from the operation position to the storage position, because of the construction of the arms and the spacing of the connections, the arms will first move in the same direction about their respective pivotal connections to the transom plate 10. In moving out of the operation position the mechanism reaches an over-center condition before reaching the storage position. After passing through this over-center condition the arms of the upper and lower plate move in opposite direction about their respective pivotal connections to the transom plate. Because of this action after reaching over center, the weight of the motor will tend to force the device into the storage position and securely lock it therein. In the storage position, the force exerted by the weight of the supported motor urges the arms 22, 22a of the upper support member to move in a clockwise direction as seen in FIGURE 2 and the arms 27, 27a of the lower support member 25 to move in a counterclockwise direction as seen in FIGURE 2. This reversing of direction is obtained because the mechanism is not a true parallelogram wherein the inherent arm rotation must always be constant. An examination of the drawing will show that in pivoting between the operation position and the use position, the arms 27, 27a will pass from one side of a vertical plane to the other while the arms 22, 22a never pass through such a vertical plane, but, as

described above, reverse direction of rotation when the arms 27, 27a pass through this vertical plane. The over-center condition described above exists when the arms 27, 27a are on the vertical plane. In moving into the storage position, once the arms 27, 27a pass the over-center condition and the direction of movement of the arms 22, 22a reverses, the weight of the motor supported on the motor plate 15 urges the rotation to continue until the arms 22, 22a abut the arm 27, 27a thus limiting further movement and defining the storage position.

To move the device from the storage position, it is necessary to exert a force on the motor mounting plate to first cause it to rotate about the pivoted connections of the upper arms to the motor mounting plate in a counterclockwise direction as seen in FIGURE 2. The force must continue until the arms 27, 27a pass the over-center condition at which point the weight of the motor urges the rotation to continue and move the device into the operation position.

In order to limit the movement of the device into the operation position, a central pin 32 is carried between the flanges 11, 11a of the transom plate and extends beyond them. The arms 22, 22a of the upper support member abut the pin 32 preventing further movement, thus defining the operation position.

An auxiliary counter-balance spring 33 may be provided to assist in moving the device to the storage position and is especially useful when a heavy motor is to be attached. In the preferred and disclosed embodiment the counter-balance spring takes the form of a coil spring surrounding the lower mounting pin 31 with a pair of arms 34 abutting the central pin 32.

Although the invention has been described in great detail, it is believed that the invention essentially comprises a mounting bracket for an outboard motor or the like which has a transom plate and a motor plate which are interconnected by unitary constructed support members so arranged that the transom plate is self-locking in the storage position.

Although the invention has been described in its preferred form with a certain degree of particularity, it is understood that the present disclosure of the preferred form has been made only by way of example and that numerous changes in the details of construction and the combination and arrangement of parts may be resorted to without departing from the spirit and the scope of the invention as hereinafter claimed.

I claim:

1. A bracket for an outboard motor or the like, comprising, a transom plate, a motor plate, an upper support member, said upper support member being generally U-shaped with a central section and first and second arms, said central section of the upper support member being pivotally connected to said motor plate near the top thereof, said first and second arms of the upper support member being pivotally connected to said transom plate near the top thereof, a lower support member, said lower support member being generally U-shaped with a central section and first and second arms, the central section of the lower support member being pivotally connected to said motor plate near the bottom thereof, the first and second arms of the lower support member being pivotally connected to the transom plate near the bottom thereof, the pivotal connection of the arms of the lower support member being spaced from a vertical plane passing through the pivotal connection of the arms of the upper support member, the sum of the length of the arms of the lower support member plus the distance from the lower support member to the upper support member motor plate connection being less than the sum of the length of the upper support member arms plus the distance between the upper support member arm and

lower support member arm transom plate connections, said motor plate being shiftable relative to the transom plate from a lower operation position to an upper storage position, said plates when in the operation position being spaced and generally parallel with the arms disposed transversely thereof, said plates when in the storage position being on generally parallel planes with the support plate above the transom plate and the arms lying generally in such planes, said arms and plates having an intermediate over-center position, said arms being pivotal relative to the plates in the same direction when shifted from the operation to the over-center position and returned and pivotal relative to the plates in the opposite direction when shifted from the storage position to the over-center position and returned such that the force of a supported motor or the like urges the arms of the lower support member toward the arms of the upper support member when the device is in the storage position.

2. A bracket for an outboard motor or the like comprising, a transom plate, a motor plate, an upper support member, said upper support member being generally U-shaped with a central section and first and second arms, said central section of the upper support member being pivotally connected to said motor plate, said first and second arms of the upper support member being pivotally connected to said transom plate, a lower support member, said lower support member being generally U-shaped with a central section and first and second arms, the central section of the lower support member being pivotally connected to said motor plate, the first and second arms of the lower support member being pivotally connected to the transom plate, the pivotal connection of the arms of the lower support member being spaced from a vertical plane passing through the pivotal connection of the arms of the upper support member, the sum of the length of the arms of the lower support member plus the distance from the lower support member to the upper support member motor plate connection being less than the sum of the length of the upper support member arms plus the distance between the upper support member arm and lower support member arm transom plate connections, said motor plate being shiftable relative to the transom plate from a lower operation position to an upper storage position, said plates when in the operation position being spaced and generally parallel with the arms disposed transversely thereof, said plates when in the storage position being on generally parallel planes with the support plate above the transom plate and the arms lying generally in such planes, said arms and plates having an intermediate over-center position, said arms being pivotal relative to the plates in the same direction when shifted from the operation to the over-center position and returned and pivotal relative to the plates in the opposite direction when shifted from the storage position to the over-center position and returned such that the force of a supported motor or the like urges the arms of the lower support member toward the arms of the upper support member when the device is in the storage position, stop means coactable between one of said plates and one of said support members to limit movement of the device and thereby define the operation position.

3. In the device of claim 2, said transom plate having a projection positioned to abut on the arms of said upper supported member to limit movement of the device and thereby define the operation position.

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