A device for mounting a trolling motor to the bow of a boat. The device has a base member adapted to be secured to a boat. One end of a swing arm is mounted from the base member so as to permit the swing arm to rotate through approximately 180° between driving and storing positions. A bracket is attached to the other end of the swing arm for at least partial rotation with respect thereto, and a trolling motor is selectively positionable in the bracket to accommodate vertical adjustment of the trolling motor. A first means is provided selectively to lock the swing arm in driving or storing position. This first lock means is operable from a remote location by an actuating means. A second lock means is provided selectively to maintain the disposition of the bracket with respect to the swing arm.

11 Claims, 10 Drawing Figures
BOW MOUNT FOR TROLLING MOTORS

BACKGROUND OF THE INVENTION

In selecting an outboard engine for a fishing boat fishermen have long been confronted with the dilemma of effecting a compromise between an engine of sufficiently large horsepower to propel the boat back and forth between the dock and the fishing area in the minimum amount of time and an engine of sufficiently low horsepower to facilitate trolling.

The necessity for compromise was obviated by the introduction of the low horsepower electric trolling motor. These motors are not only relatively inexpensive, they are also economically powered by a car battery. In addition, their silent operation permits fishermen to stalk productive fishing areas with even less noise than they could with rowboats.

Originally, these low horsepower trolling motors were mounted on the transom of the boat in the same manner as the higher horsepower outboard engines, but it soon became apparent that with the modestly powered trolling motors mounted astern the center of gravity of the boat, directional stability and maneuverability were both quite poor. These difficulties can be precluded by mounting the motor forward of the center of gravity, and several prior art constructions are known by which the motor can be mounted in proximity to the bow.

It must also be appreciated that the mount for these trolling motors should not only accommodate the steering mechanism but should also permit the propelling portion of the trolling motor to be positionable at selected vertical locations in order to operate effectively in water of various depths and should further permit the propelling portion to be selectively withdrawn from the water and to be retained in the withdrawn position while propelling the boat at advanced speeds with the higher horsepower engine.

The prior known bow mounts do accommodate both steering and withdrawal of the motor, but they also possess several inherent deficiencies. For example, the attachment of the trolling motor to the bow mount itself in most prior art configurations requires a factory installation with no thought given to maintenance or repair so that it is exceedingly difficult, if not impossible, physically to remove the trolling motor from the bow mount should it ever be necessary, or desirable, to do so. In addition, the means for accomplishing selective vertical positioning of the propelling portion of the trolling motor has heretofore generally been a constituent of the means by which the propelling portion was removed from, and retained out of, the water during those periods when it is desired to propel the boat at advanced speeds. For such constructions it has been necessary first to raise the propelling portion to its vertically uppermost position and then, sequentially, swing the propelling portion to a position wherein it can be retained out of the water.

SUMMARY OF THE INVENTION

It is, therefore, a primary object of the present invention to provide a mount for securing a propelling device to the bow of a boat.

It is another object of the present invention to provide a bow mount, as above, having universal application — i.e., a bow mount the concept of which permits it to be readily adaptable for assembly with any presently existing trolling motor without requiring disassembly of the latter.

It is yet another object of the present invention to provide a bow mount as above, that permits the propelling portion of the trolling motor to be readily movable between a driving position and a storing position without the necessity of first changing the vertical disposition of the propelling portion with respect to the bow mount.

It is a further object of the present invention to provide a bow mount, as above, that permits the vertical disposition of the trolling motor to be adjusted with respect thereto and, if desired, maintained independently of any movement between the driving and storing positions.

It is yet a further object of the present invention to provide a bow mount, as above, that not only permits the fisherman to move the trolling motor from at least the driving position to the storing position while he remains seated remotely of the bow but that also permits reverse movement of the trolling motor from the storing to the driving position by a fisherman similarly located remotely of the bow.

It is an even further object of the present invention to provide a bow mount, as above, that is sturdily constructed for long life but yet is economical to manufacture and maintain.

These and other objects, together with the advantages thereof over existing and prior art forms which will become apparent from the following specification, are accomplished by means hereinafter described and claimed.

In general, a device embodying the concept of the present invention for mounting a trolling motor to a boat has a base member adapted to be secured to a boat, preferably the bow thereof. One end of a swing arm is mounted on the base member and is adapted to rotate through approximately 180° between a driving and a storing position. A bracket is attached to the opposite end of the swing arm for at least partial rotation with respect thereto, and a trolling motor may be received within the bracket for positioning at selected vertical dispositions.

A first lock means carried on the swing arm interacts with appropriate keeper means on the base member to maintain the swing arm in the driving position, and the same first lock means interacts with appropriate keeper means on the bracket to maintain the swing arm and the trolling motor in the storing position.

A second lock means is carried on the bracket to interact with the swing arm and thereby maintain a selected disposition of the trolling motor and with respect to the swing arm, particularly when the swing arm is in the driving position.

One preferred embodiment of a device according to the concept of the present invention is shown by way of example in the accompanying drawings without attempting to show all of the various forms and modifications in which the invention might be embodied; the invention being measured by the appended claims and not by the details of the specification.

DESCRIPTION OF THE DRAWINGS

FIG. 1 is a schematic, side elevation of a device embodying the concept of the present invention mounted on the bow of a boat and maintaining a trolling motor secured thereto in the driving position;
The bow mount may be fastened to the boat 11 by a plurality of screws, or bolts, 30 that extend through the base wall 31, including the laterally extending flanges 32, of the base member 29 and into the boat. As shown in FIG. 7, the bolts 30 may be anchored through the breast hook 33.

The base member 29 has a pair of upstanding, laterally spaced, preferably parallel, ribs 34 and 35 which extend the length thereof. The inboard end 27 of the preferably channel-shaped swing arm 28 is pivotally secured to the base member 29 by a pin 38 which extends transversely between the two ribs 34 and 35 and is received in registered bores which pierce the side flanges 40a and 40b, respectively, of the swing arm 28. The inboard end 27 of the swing arm 28 (including the flanges 40a and 40b thereof) is accurately rounded, as at 42, in order to permit the arm 28 to swing freely about the pivot pin 38 without restriction.

A first locking mechanism which is indicated generally by the numeral 43 and which will be more fully hereinafter described is carried by the swing arm 28 so that the lock bolt 44 therein will cooperatively engage keepers 45a and 45b recessed into the forward ends of the ribs 34 and 35 selectively to maintain the arm 28 disposed in the driving position, as depicted in FIGS. 1 and 5, with the propelling portion 15 of the trolling motor 12 submerged beneath the surface 46 of the water.

A sleeve 48 which circumscribes the motor tube 19 extends downwardly from the housing 20 sufficiently to be lockingly engaged by the bracket 25 in order to permit selective vertical disposition of the trolling motor 12.

The bracket is provided with clamp means 49 to effect this result. The fixed jaw portions 50 of the clamp means 49 are presented from the bracket 25, and appropriate caps 51 are secured to the bracket 25 in opposition to the respective fixed jaw portions, as by screws 52. At least one screw for each cap 51 is preferably provided with a head portion 53 (FIG. 10) adapted to be manipulated by hand.

In order to assure that the subject mount 10 will readily accept the motor tube of various makes of trolling motors, the diameter of the circular aperture formed by the recess 55 (FIG. 6) in each jaw portion 50 and the opposed recess 56 in the corresponding cap 51 is selected to accommodate the largest presently known motor tube, and split pillow blocks 58 may be employed as fillers in order to adapt the bow mount to trolling motors having a motor tube of lesser diameter.

The bracket 25 has opposed side walls 59a and 59b that extend rearwardly from the fixed jaw portions of the clamp means and embrace the side flanges 40a and 40b of the swing arm 28 therebetween. A pivot pin 60 extends through the registered bores 61a and 61b in the side walls 59a and 59b respectively, and is received within a sleeve 62 that extends between side flanges 40a and 40b to permit at least partial rotation of the bracket 25 with respect to the swing arm 28 about the transverse axis defined by the pivot pin 60.

A stop wall 63 extends transversely between the side walls 59a and 59b and is adapted to engage the edges 64a and 64b on the side flanges 40a and 40b of the swing arm 28 in order to limit the degree to which the bracket 25 can be rotated in a clockwise direction with respect to the swing arm as viewed in FIG. 6.
A second set of registered bores 65a and 65b in the side walls 59a and 59b, respectively, rotatably receive an L-shaped arm 66 to which a cam locking block 67 is secured. The cam surface 68 on block 67 engages the web 69 of the swing arm 28 selectively to wedge the swing arm 28 between the block 67 and the stop wall 63 and thereby selectively lock the bracket 25 against rotation with respect to the swing arm 28.

As such, in the driving position the propelling portion 15 of the trolling motor 12 is maintained in its selected vertical position by the action of the clamping means 49 against the sleeve 48, and the substantially perpendiccular angular relation between the motor tube 19 and the swing arm 28 is maintained by the wedging action applied by the locking block 67. The substantially horizontal driving disposition of the swing arm 28 which positions the bracket 25 outboard of the boat 11 so that the propelling portion 15 of the trolling motor 12 can be immersed is maintained by engagement of the lock bolt 44 within keepers 45.

The locking mechanism 43 may be operated to release the bolt 44 from a position remotely of the bow mount 10. As best seen in FIGS. 6 and 8, the lock bolt 44 is oriented transversely of the swing arm 28 and is slidably received within the opposed, laterally registered, guide slots 70a and 70b in the respective side flanges 40a and 40b of the swing arm 28. Laterally spaced hooks 71 and 72 on a yoke 73 are secured within peripherical notches 74 and 75 on the outer surface of the lock bolt 44. By locating these notches adjacent the inner surface 76a and 76b of the side flanges 40a and 40b the lateral position of the lock bolt 44 is maintained. Moreover, the resulting broad base by which the yoke 73 applies forces to the lock bolt 44 tends to stabilize the lock bolt 44 against cocking so that as the actuating cord 78 applies a displacing force against the medial portion of the lock bolt 44 the bolt will be translated along the guide slots 70a and 70b.

A bight 79 in the end of the actuating cord 78 is conveniently received within a concave positioning groove 80 that extends peripherally of the lock bolt 44 at the medial portion thereof. A ring clamp 81 clamps the short, standing end 82 of the bight 79 against the longer, working end 83 thereof. The working end 83 of the cord extends longitudinally of the swing arm 28 for a distance greater than the required throw of lock bolt 44 and then passes through a grommet 84 secured within a bore 85 through the web 69 of the swing arm 28 and extends for the desired distance to a remote location for the fisherman. A simple handle 86 may be secured to the remote end of the actuating cord 78 as by passing the working end of the cord 78 through a bore 87 in the handle 86 and tying a knot 88 on the end of the cord.

The yoke 73 applies a biasing pressure against the lock bolt 44 by virtue of a tension spring 89 that extends between the vertex 90 of the yoke 73 and an anchor screw 91 (FIG. 6) secured to the web 69 of the swing arm 28. This biasing pressure retains the lock bolt 44 engaged within the keepers 45 until the pressure applied to the lock bolt by the action of hauling on actuating cord 78 exceeds the biasing tension applied by spring 89. Thus, as the remotely located fisherman hauls on cord 78, the bolt 44 will disengage from the keepers 45 and the application of further tensile pressure to cord 78 will effect rotation of the swing arm 28 about the pivot pin 38 and thereby withdraw the propelling portion 15 of the trolling motor 12 from the water (from the FIG. 1 to the FIG. 2 position). As the center of gravity of the combined weights of the arm 28 and the trolling motor 12 moves rearwardly of the vertical plane through the pivot pin 38 (slightly beyond the position depicted in FIG. 2) the operator can either retard the motion of the arm 28 through the remainder of its swing by placing his hand beneath the housing 20, or he may take a shorter lead on the cord 78 and raise the hand holding the cord so that the cord itself acts as a snub on rotation of the swing arm 28.

In either event, once the swing arm 28 has been rotated through the 180° arc from its driving position (depicted in FIG. 1) to the storing position (depicted in FIG. 3), the operator may rotate the arm 66 to release the lock block 67. It is suggested that the operator use one hand to release the lock block 67 and grasp the motor tube 19, or sleeve 48, with the other hand so that the propelling portion 15 of the trolling motor 12 can be gently lowered to its storing position (FIG. 4) on the cushions 93a and 93b provided on the upper edges of the ribs 34 and 35 (FIG. 7).

As the propelling portion 15 is thus lowered, a pair of jaws 94a and 94b on the respective side walls 59a and 59b of the brackets 25 cooperatively intersect with the lock bolt 44. Each jaw 94 presents a strike face 95 which engages the lock bolt 44 as the propelling portion is lowered toward its storage position on cushions 93 to translate the lock bolt 44 toward its releasing position against the biasing action of the spring 89. As the propelling portion 15 comes to rest on the cushions 93, the apex 96 of each strike face 95 passes beyond the bolt 44 and the spring 89 snaps the bolt into the keeper notched 98a and 98b behind the apex 96 of each strike face on jaws 94a and 94b.

As best shown in FIG. 7, the keeper notches each have an engaging wedge surface 99 that is inclined with respect to the guide slots 70a and 70b, and thus the path along which the bolt moves between the release and engaging positions, so that the keeper notches 98 will accommodate the lock bolt 44 irrespective of the axial disposition of the motor tube 19 (or sleeve 48) with respect to the bracket 25. By thus inclining the wedge surfaces 99, one need not alter the disposition of the trolling motor every time it is moved between the operating the storing positions.

A resilient pad 100 is secured to the base member 29 between the ribs 34 and 35 so that it can be engaged by the swing arm 28 when it is in its storing position. The interlocked trolling motor and swing arm are thereby cushioned from the base member 29 in order to preclude the tendency of the trolling motor to be unduly jarred as the boat is driven by the relatively high powered engine 13.

In order to facilitate removal of the trolling motor from the boat without the necessity of tediously releasing the clamping means 49, the pivot pin 38 is preferably adapted for easy removal. As shown in FIG. 5, this can be readily achieved by securing an easily gripped knob 101 to one end of the pivot pin and employing a spring clip 102 that may be manually inserted and withdrawn from a bore 103 in the opposite end of the pivot pin. In order to thwart the unauthorized removal of the trolling motor merely by disengaging the pin 38, aligned bores 104 and 105 and the ribs 34 and 35 register with the aligned bores 106 and 107 in the side flanges 40a and 40b of the swing arm 28 when the
swing arm is in the storing position. The shackle 108 of a "bicycle" lock can then be positioned through the bores 104, 105, 106 and 107 to secure the swing arm 28 against unauthorized removal from the bias member 29.

The trolling motor is also readily swung from the storing to the operating position without requiring the fisherman to move the bow of the boat. He need merely haul on the cord 78 to release the lock bolt 44 from the keeper notches 98 in the jaws 94 of bracket 25 and thereby permit the trolling motor 12 and bracket 25 to be rotated about pivot pin 60 while the swing arm 28 remains in the storing position.

When the trolling motor has been swung to the point where the motor tube 19 assumes the desired angularity with respect to the swing arm 28, the fisherman applies pressure to arm 66 whereby to wedge the cam surface 68 on block 67 against web 69 of the swing arm 28 in order to maintain the selected angularity — usually 90°— between the motor tube 19 and the swing arm 28. Thereafter, the fisherman applies an upwardly directed force — as by lifting with the cord or otherwise applying upwardly directed pressure against the interlocked trolling motor and swing arm — to rotate the swing arm 28 to the point where the center of gravity for the combined trolling motor and swing arm passes forwardly of the vertical plane through pivot pin 38. Once the swing arm has been moved to this position the fisherman desirably applies a retarding pressure via cord 78 in order to prevent the trolling motor from slaming into its driving position.

In the event that the fisherman would release the cord 78 before the trolling motor has fully reached its final driving position, the ribs 34 and 35 are each bev-eled to provide strike surfaces 109 and 109 by which the lock bolt 44 will be translated against the biasing action of spring 89 to clear the outer apex 110 and 110 of the respective ribs 34 and 35 and snap into the keepers 45a and 45b.

It should now be apparent that a bow mount incorporating the concept of the present invention is readily adapted for remote operation without the necessity of altering the position of the motor tube with respect to the bracket each time the trolling motor is moved between the driving and storing positions and otherwise accomplishes the object of the invention.

I claim:

1. A device for mounting a trolling motor to a boat comprising, a base member, a swing arm having first and second opposed ends, means mounting the first end of said swing arm from said base member for permitting said swing arm to rotate through approximately 180° between driving and storing positions, a bracket, means mounting said bracket on the second end of said swing arm for at least partial rotation with respect thereto, means for securing a trolling motor to said bracket, a lock bolt mounted on said swing arm for movement between an engaging and a releasing position, first keeper means on said base member receiving said bolt when in said engaging position to maintain said swing arm in the driving position and second keeper means on said bracket receiving said bolt when in said engaging position to maintain said swing arm in the storing position, and means for moving said lock bolt to the releasing position.

2. A device for mounting a trolling motor to a boat, as set forth in claim 1, in which each said keeper means has at least one wedge surface that is engageable by said bolt, said wedge surface on each keeper means being inclined with respect to the path along which said bolt moves between the release and engaging positions to contact the keeper means.

3. A device for mounting a trolling motor to a boat, as set forth in claim 2, having a lock means, said lock means carried by said bracket to engage the swing arm and selectively preclude rotation of the bracket with respect to the swing arm.

4. A device for mounting a trolling motor to a boat as set forth in claim 3, in which said lock means comprises a block and stop plate, said block being movable selectively to lock said swing arm between the stop plate and block.

5. A device for mounting a trolling motor to a boat, as set forth in claim 4, in which said block presents a cam surface and said block is mounted for rotation by which to drive said cam surface against said swing arm.

6. A device for mounting a trolling motor to a boat, as set forth in claim 1, in which the means for moving said lock bolt to the releasing position extends from said lock bolt to a location remote from said lock bolt.

7. A device for mounting a trolling motor to a boat, as set forth in claim 6, in which the means for moving said lock bolt to the releasing position comprises a cord secured to said lock bolt and reaved through a reaction point located in spaced relation with respect to said lock bolt so that as said cord is hauled the lock bolt will be moved from the engaging position to the releasing position.

8. A device for mounting a trolling motor to a boat, as set forth in claim 7, in which guide slots in said swing arm delineate the path along which said lock bolt moves between the engaging and releasing positions and in which spring means bias said lock bolt toward the engaging position.

9. A device for mounting a trolling motor to a boat, as set forth in claim 8, in which the swing arm has a channel-shaper cross section with spaced flanges extending outwardly from a web, said guide slots being provided in said flanges, laterally spaced hooks on a yoke engaging the lock bolt in proximity to said spaced flanges in order to stabilize said lock bolt, said yoke also having a vertex to which the means for biasing said lock bolt is attached.

10. A device for mounting a trolling motor to a boat, as set forth in claim 7, in which a reaction point is provided by a bore through the web of said swing arm, said bore being spaced from said lock bolt on the same side of said engaging position as said releasing position and at a distance from said lock bolt in excess of that between said engaging and releasing positions.

11. A device for mounting a trolling motor to a boat, as set forth in claim 1, in which means are provided on said base member and said swing arm to receive a shackle means when said swing arm is in the storing position.