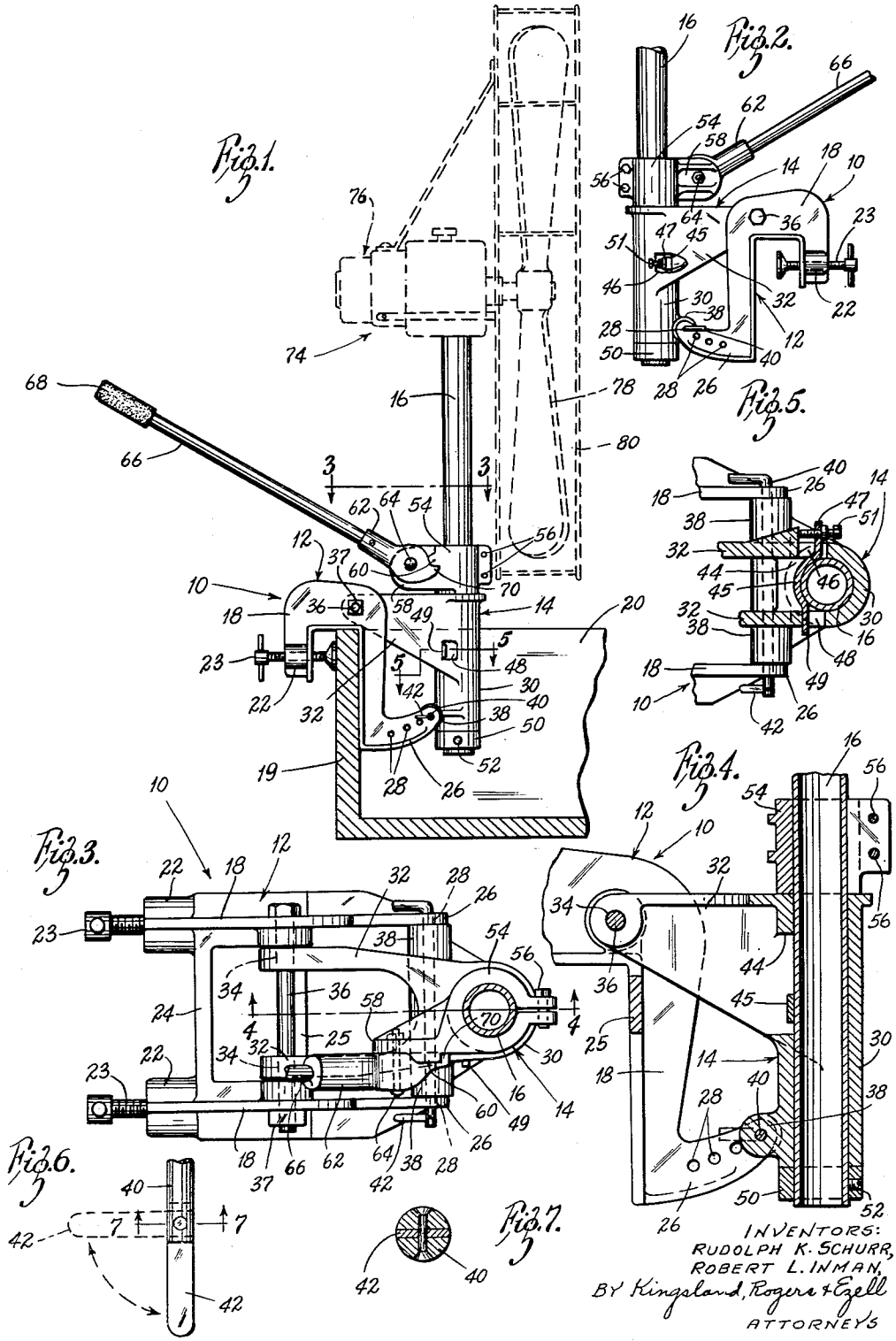
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MOUNTING BRACKET FOR SUPPORTING AIR MOTORS

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MOUNTING BRACKET FOR SUPPORTING AIR MOTORS

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The present invention relates generally to the air propeller motor art, and more particularly to a method of and a bracket for supporting an air propeller motor from the transom or rear wall of a boat.

In brief, the present invention comprises a bracket including a mounting base and a sleeve unit pivotally supported thereon. An air propeller motor supporting shaft is movably received in the sleeve unit for both vertical adjustment and rotative movement for purposes of moving the air propeller motor to different positions in steering the boat. The present novel bracket is adapted to removably fit on the transom of a boat in a manner to dispose it substantially within the interior thereof. The sleeve unit is adjustable in respect to the mounting base to change the effective thrust of the air propeller motor. The present novel method includes utilizing the thrust of the air propeller motor to maintain the bracket secure.

The present novel bracket construction overcomes the deficiencies found in outboard motor supports, and is exceedingly simple in its adaptation to the transom of a boat and in its use.

An object of the present invention is to provide a novel mounting bracket for air propeller motors which may be readily, quickly and firmly attached to a transom of a boat, and which reduces the possibility of splitting the transom.

Another object is to provide a novel method of mounting an air propeller motor on the transom of a boat which utilizes the air thrust in maintaining the mounting secure.

Another object is to provide a novel mounting bracket for air propeller motors which permits vertical adjustment of the air propeller motor in respect to the boat and water, and which permits further adjustment of the plane of the propeller of the air propeller motor in respect to the surface of the water.

Another object is to provide a novel mounting bracket for air propeller motors incorporating readily manipulatable construction for rotating the air propeller motor about a vertical axis through three hundred and sixty degrees.

Another object is to provide a novel mounting bracket for air propeller motors which is of sturdy construction and adapted to give long service with minimum maintenance.

Another object is to provide a novel mounting bracket for air propeller motors which may be efficiently used by boat owners with a minimum of instruction.

Another object is to provide a novel mounting bracket for air propeller motors which includes readily adjustable means for maintaining the air propeller motor supporting shaft at a desired degree of stiffness of rotation.

Other objects and advantages are apparent from the following description taken with the accompanying drawing, in which:

FIGURE 1 is a side elevational view of a mounting bracket for air propeller motors constructed in accordance with the teachings of the present invention illustrated as attached to the transom of a diagrammatically illustrated boat, the air propeller motor being shown in dotted lines and in position to move the boat rearwardly;

FIGURE 2 is a side elevational view of the mounting bracket of FIGURE 1 looking at the other side, the air propeller motor mounting shaft and the steering shaft being broken away for conservation of space;

FIGURE 3 is a cross-sectional view taken on substantially the line 3—3 of FIGURE 1, the major portion of the mounting bracket being shown in plan;

FIGURE 4 is a vertical cross-sectional view taken substantially on the line 4—4 of FIGURE 3;

FIGURE 5 is a horizontal cross-sectional view taken on substantially the line 5—5 of FIGURE 1;

FIGURE 6 is an enlarged plan view of a portion of a removable pin illustrating the securing device pivotally engaging the same; and

FIGURE 7 is a vertical cross-sectional view taken on substantially the line 7—7 of FIGURE 6.

Referring to the drawing more particularly by reference numerals, 10 indicates generally an air boat bracket constructed in accordance with the teachings of the present invention. The bracket 10 includes a mounting base 12, a sleeve unit 14 pivotally supported thereon, and an air propeller motor supporting shaft 16 adjustably mounted in said sleeve unit 14.

The base 12 may be a casting, and preferably is generally of the configuration clearly shown in the drawing. It includes two spaced Z-form side portions 18 adapted to engage over the transom or rear wall 19 of a boat 20, each having a threaded boss 22 receiving a mounting or securing member 23 which will engage the inside face of a transom 19. Transverse braces 24 and 25 are formed integral with the side portions 18. A rearwardly extending portion 26 has an arcuately disposed series of apertures 28.

The sleeve unit 14 also may be a casting of the configuration illustrated, and includes a sleeve portion 30 from which extend two parallel web portions 32, each having an aperture 34 at the free end receiving a shaft or bolt 36 mounted in aligned apertures in the upper reaches of the side portions 18. A nut 37 secures the bolt 36. Integral apertured aligned bosses 38 extend across the front side of the lower end of the sleeve portion 30 between the rearwardly extending portions 26. A removable pin 40 extends through selected aligned apertures 28 and through the apertures of the bosses 38, being retained against accidental removal by a pivotally mounted locking leaf 42, or the like.

A window 44 is formed in one side of the sleeve portion 30, and openings 46 and 48 are formed in the web portions 32. A friction shoe 45 is disposed in the window 44 and has oppositely directed ears 47 and 49 extending through the openings 46 and 48, respectively. An adjusting screw 51 is disposed in a threaded opening in the ear 47 and engages a wall of the opening 46, as is clear from FIGURE 5. The friction shoe 45 engages the shaft 16 to prevent free rotative movement thereof.

The shaft 16 is mounted in the sleeve unit 14, as illustrated, and is maintained against vertical accidental removal by a collar 50 secured to the shaft 16 by a setscrew 52. Accidental vertical movement downwardly of the shaft 16 is prevented by a split collar 54 which is clamped against removal from the shaft 16 by suitable machine screws 56. An integral ear 58 extends forwardly from the split collar 54 and includes a laterally extending lug 60. A socket member 62 is pivotally mounted on the ear 58 by a suitable stove bolt 64 and receives a steering shaft 66 on the free end of which is a hand grip 68. The socket member has an extension 70 which engages the lug 60 in the steering position of FIGURE 1. The steering shaft 66 may be pivoted upwardly into vertical position out of the way of occupants of the boat when not in use.

An air propeller motor 74 is shown in dotted lines mounted on the upper end of the shaft 16. This unit, which forms no part of the present invention, includes a

gasoline motor **76**, or the like, a small propeller **78**, and a guard **80**.

In use, the bracket **10** may be readily mounted upon the transom **19** by an occupant in the boat **20**. The main portion of the bracket **10** is disposed within the boat **20**, it being noted that the bracket **10** is of a depth to engage the transom **19** to a point well below the top thereof which both minimizes possibilities of splitting the transom **19** and forward tilting of the air propeller motor **74** should the securing member **23** work loose. The thrust of the air propeller motor **74**, in driving the boat **20** forwardly, tends to rotate it forwardly about its bracket mounting. Hence, the effect at the bracket **10** is at the bottom thereof on the inner face of the transom **19** and at the engagement points of the securing members **23** on the outer face, which tends to prevent the members **23** from becoming loose. Also, the spread vertically between the two engagement lines is great enough to prevent splitting of the top of the transom **19**.

The vertical position of the shaft **16** to the water may be easily adjusted by removing the pin **40** after rotating the locking leaf **42** to the full line position shown in FIGURE 6. The sleeve unit **14** may then be pivoted clockwise to deflect the propeller **78** toward the surface of the water, and the pin **40** reinserted in selected aligned openings **28**.

The shaft **16** is mounted in the sleeve unit **14** for rotative movement through swinging movement of the steering shaft **66**. In FIGURE 1, the air propeller motor **74** is illustrated in position for moving the boat **20** rearwardly. To move the boat **20** forwardly, the air propeller motor **74** faces to the rear since this will dispose it further away from the boat occupants. The steering shaft **66** is swung through an angle of one hundred and eighty degrees to accomplish the necessary rotation of the shaft **16**. The friction shoe **45** provides for adjustment of the freedom of movement of the shaft **16**. It is not desirable to have the air propeller motor **74** freely rotatable during normal use thereof, which the friction shoe **45** adjusted to the desired degree eliminates.

The shaft **16** may be of greater length than illustrated, in which event the air propeller motor **74** will be at a higher level than shown. Such longer shaft **16** can be lowered to engage the bottom thereof on that boat bottom should it be desired for stability, or otherwise.

It is manifest that there has been provided a mounting bracket for air propeller motors which fulfills the objects and advantages sought therefor.

It is to be understood that the foregoing description and the accompanying drawing have been given by way of illustration and example. It is also to be understood that changes in form of the elements, rearrangement of parts, and substitution of equivalent elements, which will be obvious to those skilled in the art, are contemplated as within the scope of the present invention which is limited only by the claims which follow.

What is claimed is:

1. A bracket for mounting an air propeller motor on a boat comprising a mounting base, said base including spaced Z-portions secured against separation formed to engage over a boat transom, or the like, clamping means mounted in each Z-portion for engagement with the outside face of a boat transom, or the like, each Z-portion having a lower rearwardly extending portion having an arcuate series of openings, a sleeve unit pivotally mounted on said base including a sleeve portion, spaced lugs having aligned apertures formed integral with said sleeve portion, a removable pin extending through said lug apertures and through selected aligned openings in said Z-portion lower rearwardly extending portions, said lugs being between said lower rearwardly extending portions, an air propeller motor supporting shaft mounted in said sleeve portion, means preventing accidental longitudinal movement of said shaft, but permitting rotative movement thereof including an upper collar fixed to said shaft, means for adjusting the freedom of rotative movement of said shaft including a friction shoe mounted on said sleeve unit and engaging said shaft and means for adjusting the relative positions of said friction shoe and shaft.

2. A bracket for mounting an air propeller motor on a boat comprising a mounting base, said base including spaced Z-portions secured against separation formed to engage over a boat transom, or the like, clamping means mounted in each Z-portion for engagement with the outside face of a boat transom, or the like, each Z-portion having a lower rearwardly extending portion having an arcuate series of openings, a sleeve unit pivotally mounted on said base including a sleeve portion, spaced lugs having aligned apertures formed integral with said sleeve portion, a removable pin extending through said lug apertures and through selected aligned openings in said Z-portion lower rearwardly extending portions, said lugs being between said lower rearwardly extending portions, an air propeller motor supporting shaft mounted in said sleeve portion, means preventing accidental longitudinal movement of said shaft, but permitting rotative movement thereof including an upper collar fixed to said shaft, means for adjusting the freedom of rotative movement of said shaft, and a steering arm pivotally mounted on said upper collar movable between an operative position and a non-operative position.

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