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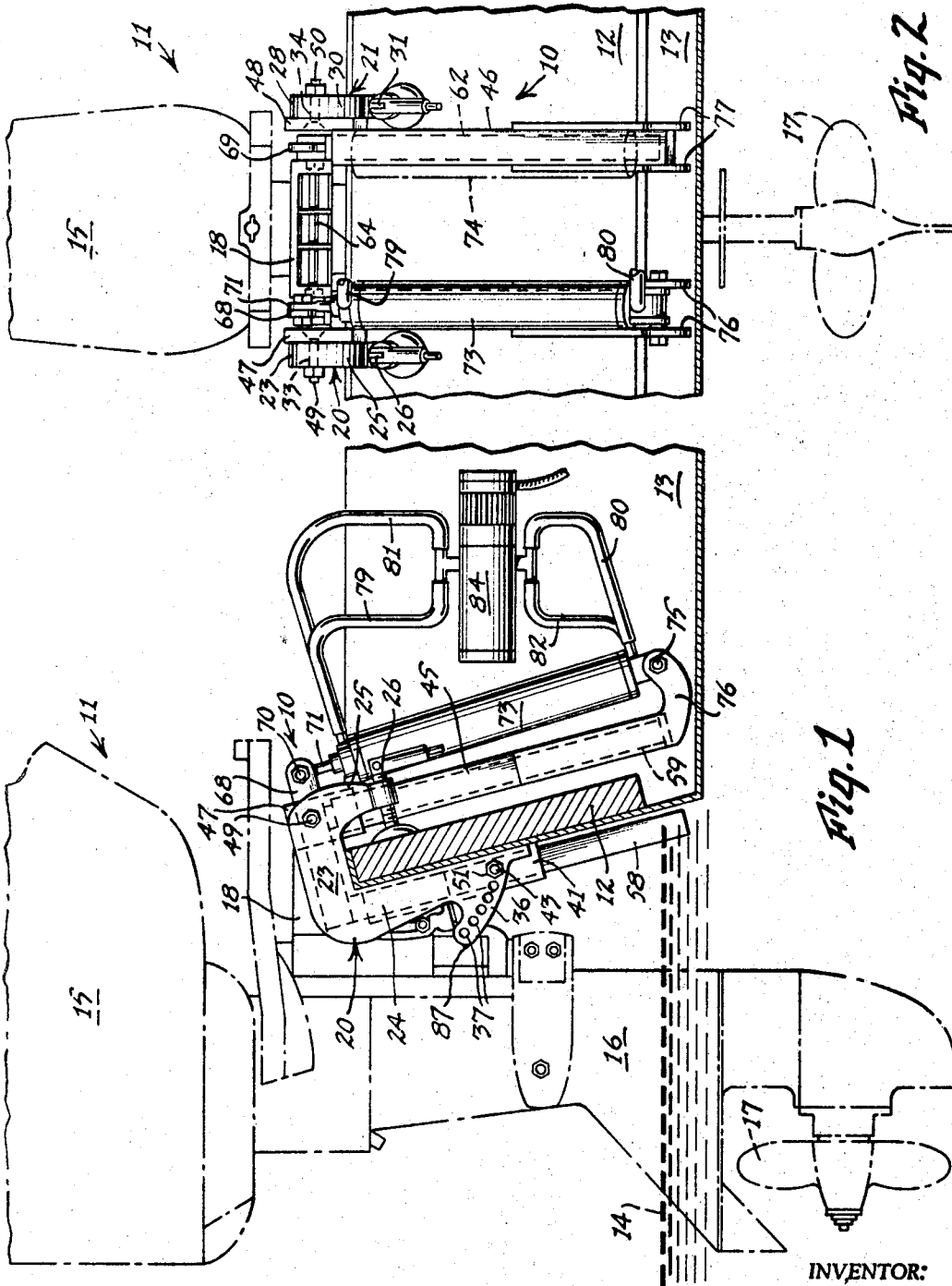
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ELEVATOR BRACKET FOR OUTBOARD MOTOR

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Sheet 1 of 2



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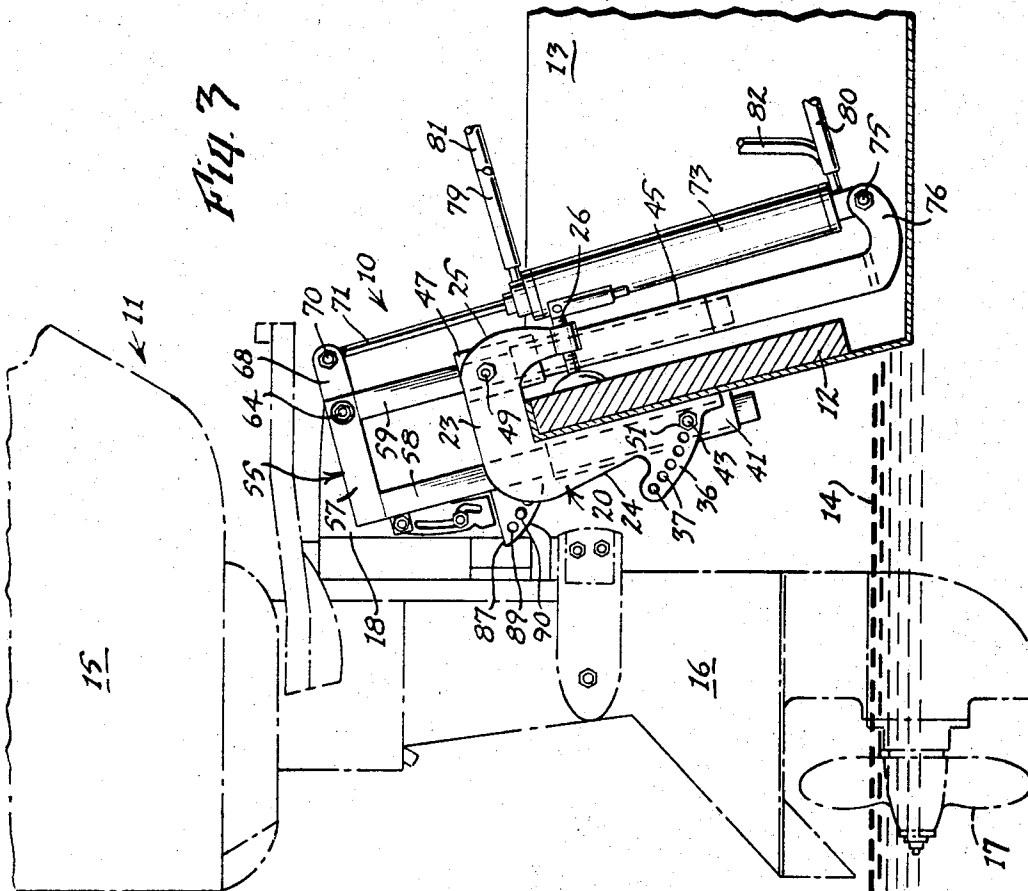
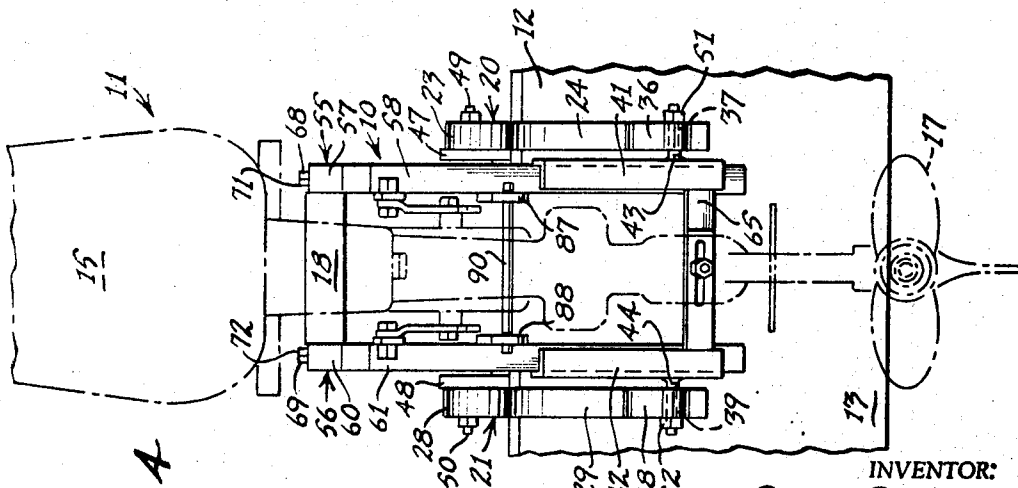
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6 Claims

ABSTRACT OF THE DISCLOSURE

An elevator bracket having a pair of outboard guide members secured to and between the outboard portions of a pair of conventional transom clamps, a pair of inboard guide members secured to and between the inboard portions of the transom clamps, a pair of elevator frames, each having a pair of depending outboard and inboard columns telescopically received in corresponding outboard and inboard guide members, a detachable hinge pin for securing the outboard motor to and between the elevator frames, and fluid power means for raising and lowering the frames so that the outboard motor may be raised and lowered when the transom clamps are secured upon the transom of a boat.

Background of the invention

This invention relates to means for mounting an outboard motor upon the transom of a boat, and more particularly to mounting means for raising and lowering the motor relative to the transom.

Means for mounting outboard motors upon the transoms of boats with means for adjusting the vertical position of the motor relative to the transom are known in the art. Moreover, fluid power means, such as hydraulic cylinders, for raising and lowering the motor relative to the transom are also known. However, many of these vertically adjustable motor mounting means must be secured to the boat by boring holes into the transom for receiving threaded bolts, wood screws or other penetrating securing means. Furthermore, many adjustable outboard motor mounts are quite cumbersome and produce an unbalanced load upon the transom when the outboard motor is in position.

Summary of the invention

It is therefore an object of this invention to provide an elevator bracket adapted to be used with a conventional outboard motor including the motor mounting block and the conventional transom clamps.

Another object of this invention is to provide an elevator bracket for a conventional outboard motor and transom clamps in which the time, labor and mechanical parts required for the conversion of the conventional outboard motor mount to a vertically adjustable motor mount are minimal.

Another object of this invention is to provide an elevator bracket for an outboard motor in which the motor mounting block will be carried by the bracket over the transom of the boat in order to provide a more balanced distribution of the weight of the motor over the transom.

A further object of this invention is to provide an elevator bracket for an outboard motor which may be mounted upon the transom of a boat without the necessity of drilling or forming any holes in the transom or any other parts of the boat.

Another object of this invention is to provide a vertically adjustable mounting mechanism for an outboard motor which may be installed upon the transom of a boat with a minimum of effort.

A further object of this invention is to provide an elevator mounting means for an outboard motor utilizing prac-

tically all of the existing parts of a conventional outboard motor mount, and in which the transom clamps are still utilized.

Another object of this invention is to provide an elevator mounting mechanism for an outboard motor, incorporating an elevator bracket which is detachably connected with a minimum of securing elements to and between the motor mounting block and the transom clamps.

Brief description of the drawings

FIG. 1 is a right side elevational view of the invention mounted upon a boat transom, shown in section, and supporting the conventional outboard motor, disclosed in phantom, in lowered position;

FIG. 2 is a front elevation of the invention in the same position as FIG. 1, with the boat transom shown fragmentarily;

FIG. 3 is a view similar to FIG. 1 with the motor in elevated position; and

FIG. 4 is a stern elevation of the invention in the same position as disclosed in FIG. 3, with the transom disclosed fragmentarily.

Description of the preferred embodiment

Referring now to the drawings in more detail, the elevator bracket 10 made in accordance with this invention is designed to mount a conventional outboard motor 11 upon the transom 12 of a boat 13 floating in the water 14. The outboard motor 11 includes the engine 15, stem 16, propeller 17 and motor mounting block 18.

The conventional devices for normally mounting the outboard motor 11 upon the transom 12 are a pair of conventional transom clamps 20 and 21. The right transom clamp 20 includes a transverse top piece 23 having a depending stern or outboard arm 24 and a front or inboard depending arm 25. The outboard arm 24 is adapted to rest flush against the outboard surface of the transom 12, while the depending inboard arm 25 is substantially shorter than the outboard arm 24 and is provided with a threaded opening for receiving the clamp screw 26 for threaded movement toward and away from engagement with the inboard surface of the transom 12. Thus, when the clamp screw 26 is moved rearwardly to engage the inboard surface of the transom 12, the transom clamp 20 is firmly secured to the transom 12.

In like manner, the left transom clamp 21 is provided with top piece 28, stern or outboard arm 29, front or inboard arm 30 and clamp screw 31, all the parts of the left transom clamp being identical to the corresponding parts of the right transom clamp 20.

Each of the top pieces 23 and 28 are provided with corresponding holes 33 and 34 (FIG. 2) through which a conventional elongated hinge pin, not shown, is adapted to be received. This same hinge pin extends through a corresponding opening, not shown, in the motor block 18. In this manner, the outboard motor 11 is pivotally secured about its transverse axis to and between the two transom clamps 20 and 21 for conventional mounting upon the transom 12.

The outboard arm 24 of the right clamp 20 is also provided with a rearwardly extending arcuate projection 36 having an arcuate series of apertures 37. A similar rearwardly extending projection 38 is formed on the left transom clamp 21 and is also provided with a series of arcuately spaced apertures 39. An elongated rod, not shown, is adapted to be inserted through horizontally aligned apertures 37 and 39 in order to engage the depending portion of the motor block 18 in various angular positions about the horizontal axes of the hinge pin holes 33 and 34.

The elements thus far described are known in the art of outboard motor mounts.

The elevator bracket 10 includes a pair of outboard or stern guide members 41 and 42. The guide members 41 and 42 are disclosed in the drawings, and particularly in FIG. 4, as opposed, elongated channel members, although they may be in the form of elongated sleeves. Fixed to each guide member 41 and 42 is a laterally projecting pin member, such as the threaded studs 43 and 44 (FIG. 4).

The elevator bracket 10 also includes a pair of front or inboard guide members 45 and 46, which are disclosed in the form of elongated, square, tubular sleeves. Each of the inboard sleeves 45 are provided with upwardly projecting ears 47 and 48 having aligned openings there-through for registering with the holes 33 and 34 in the transom clamps 20 and 21, respectively. Threaded bolts 49 and 50 extend through the corresponding holes 33 and 34 and the aligned openings in the ears 47 and 48 to secure the inboard sleeves 45 and 46 to their corresponding transom clamps 20 and 21.

The outboard guide members or sleeves 41 and 42 are secured to the corresponding transom clamps 20 and 21 by insertion of the threaded studs 43 and 44 through correspondingly aligned pin holes 37 and 39, and secured in place by the threaded nuts 51 and 52, respectively. These studs 43 and 44 are actually the only connections required between the elevator bracket 10 and the pair of transom clamps 20 and 21.

The elevator bracket 10 further includes a pair of elevator frames 55 and 56. The right elevator frame 55 includes a yoke 57 from the opposite ends of which depend the outboard column 58 and the inboard column 59. Outboard column 58 is telescopically received in the right outboard guide member 41, while the inboard column 59 is telescopically received in the right inboard guide member or sleeve 45.

In a similar manner, the left elevator frame 56 includes a yoke 60, an outboard column 61 and an inboard column 62, shown in hidden lines in FIG. 2. The left elevator frame 56 is constructed identically to the right elevator frame 55. The left outboard column 61 is telescopically received in the left outboard guide member 42, while the left inboard column 62 is telescopically received in the left inboard guide member or sleeve 46, as best disclosed in FIG. 2.

The corresponding inboard ends of the yokes 57 and 60 are provided with aligned hinge pin holes through which a transverse hinge pin 64 is adapted to extend, with the outer ends of the hinge pin 64 projecting no farther than the outer surfaces of the corresponding yokes 57 and 60. This hinge pin 64 is also adapted to extend through the existing hinge pin opening or openings in the motor mounting block 18. In this manner, the motor mounting block 18, and consequently the entire outboard motor 11, are adapted to be pivoted about a horizontal axis and supported by and between the elevator frames 55 and 56.

In order to further stabilize the elevator bracket 10, a transverse two-piece telescoping adjustable bar 65 is rigidly connected to the interior opposed surfaces of the outboard guide members 41 and 42. The transverse bar 65 is preferably in two telescoping pieces in order to permit transverse adjustment of the spacing between the outboard guide members 41 and 42 to accommodate motor mounting blocks of different widths.

Projecting forwardly of each of the yokes 57 and 60 are corresponding lift arms 68 and 69. Pivotally connected to each of the lift arms 68 and 69 by pins 70 are reciprocable piston rods 71 and 72 supported in the corresponding fluid-actuated cylinders 73 and 74. The bottom of each cylinder 73 and 74 is pivotally connected by a pin 75 to a J-bracket 76 and 77, respectively, fixed to the corresponding inboard guide members 45 and 46, respectively.

Each of the fluid cylinders 73 and 74 are double-acting

and provided with corresponding inlet and outlet fluid conduits 79, 80, 81 and 82, respectively, connecting the cylinders 73 and 74 to a source of fluid under pressure, such as the hydraulic pump and motor unit 84 (FIG. 1).

The operation of the invention is as follows:

In order to convert the conventional motor mounting means, including the outboard motor 11 and the pair of transom clamps 20 and 21, the conventional horizontal adjustment rod, not shown, is removed from the pair of registering apertures 37 and 39 in the projections 36 and 38, and the conventional hinge pin, not shown, is removed from the hinge pin holes 33 and 34 and the corresponding hinge pin hole or holes in the motor mounting block 18.

With the outboard motor 11 completely detached from the transom clamps 20 and 21, the elevator bracket 10, made in accordance with this invention, is then inserted and connected rapidly and easily between the motor 11 and the transom clamps 20 and 21.

The outboard guide members 41 and 42 are connected to the outboard arms 24 and 29 of the transom clamps 20 and 21 by inserting the threaded studs 43 and 44 through correspondingly aligned holes 37 and 39 in the projections 36 and 38, and then the pin members 43 and 44 are secured in place by the nuts 51 and 52.

The hinge pin 64 made in accordance with this invention, which must be shorter than the conventional hinge pin so that the ends will not project beyond the outer faces of the elevator frames 55 and 56, is inserted through the corresponding pin holes, not shown, on the forward portions of the yokes 57 and 60 and also through the existing hinge pin hole in the motor mounting block 18.

The upwardly projecting ears 47 and 48 are secured to the corresponding transom clamps 20 and 21 by inserting the bolts or pins 49 and 50 through the corresponding openings in the yokes 57 and 60 and the existing hinge pin holes 33 and 34 in the transom clamps 20 and 21, respectively.

After these three connections are made, and after the transom clamps 20 and 21 are securely fixed to the transom 12 by tightening the clamp screws 26 and 31, the elevator bracket 10 is in position for operation.

As best shown in FIGS. 3 and 4, a pair of side brackets 87 and 88, having arcuately spaced apertures 89, are preferably fixed to each of the outboard columns 58 and 61, so that horizontally aligned apertures may receive the transverse adjustment rod 90 in order to coact with the existing catch mechanism on the motor mounting block 18 for adjusting the motor mounting in various angular positions. In other words, the brackets 87 and 88 take the place of the projections 36 and 38 and incorporate a shorter adjustment rod 90 than the conventional adjustment rod, not shown.

With the elevator bracket 10 connected and mounted as described above, the outboard motor 11 may then be lowered or raised to any desired position, such as the lowermost position disclosed in FIGS. 1 and 2, and the elevated position disclosed in FIGS. 3 and 4. The elevating operation may be effected by appropriate controls in the front part of the boat convenient to the operator of the boat, in order to cause the motor-pump unit 84 to circulate fluid in the proper direction through the cylinders 73 and 74 to cause the piston rods 71 and 72 to simultaneously move in the desired axial direction for raising or lowering the elevator frames 55 and 56, and consequently the motor mounting block 18.

In the assembly of the motor mounting means made in accordance with this invention incorporating the elevator bracket 10, the only conventional parts of the motor 11 and the transom clamps 20 and 21 not incorporated are the conventional hinge pin and the conventional horizontal adjustment rod, each of which would be too long to function as their counter-parts, hinge pin 64 and adjustment rod 90.

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It is thus seen that a vertically adjustable outboard motor mounting means has been provided in which an elevator bracket 10 of relatively simple, but balanced and highly functional, construction may be inserted between the existing outboard motor and the conventional transom clamps with a minimum of conversion time, labor and parts for effecting a highly efficient adjustable outboard motor mount. Moreover, the conversion may be carried out completely without in any way damaging or weakening the structure of the boat, or the motor, such as by the necessity of drilling holes through the transom.

It will be noted, particularly in FIGS. 1 and 3, the outboard motor 11 is mounted very close to the transom 12 by virtue of the motor mounting block 18 extending across the top of the transom with the hinge pin 64 being inserted through corresponding holes on the inboard side of the transom 12. This construction permits the center of gravity of the entire outboard motor 11 and clamping and mounting assembly to lie very close to the transom 12, not only to minimize the leverage of the motor and mount about the transom 12, but also to minimize the binding between the telescoping parts of the elevator bracket 10.

Furthermore, a more effective elevating and lowering movement is attained because of the four telescoping and guiding elements of the bracket 10. There are two guide supports 41 and 42 on one side of the transom 12 and two guiding elements 45 and 46 on the opposite or front side of the transom. Moreover, there are two guiding elements 41 and 45 on the right side of the motor 11 and two guiding elements 42 and 46 on the left side of the motor 11. Thus, the four guiding and telescoping elements provide a very stable mount for the outboard motor 11 and minimize the weight and strain upon the lifting mechanisms 71, 72, 73 and 74.

By attaching the fluid cylinders 73 and 74 to the J-brackets 76 and 77, respectively, instead of to the bottom of the boat 13, the corresponding thrusts of the fluid pressure in the cylinders 73 and 74 is acting against the piston rods 71 and 72, and consequently the elevator frames 55 and 56, and reacting against the inboard guide members 45 and 46. Consequently, there is a smoother telescoping movement of the columns 58, 59, 61 and 62 within their respective guide members 41, 45, 42 and 46. Moreover, the entire elevator bracket 10 is self-contained, and requires no separate connecting of the cylinders 73 and 74 to the boat 13.

It will be apparent to those skilled in the art that various changes may be made in the invention without departing from the spirit and scope thereof, and therefore the invention is not limited by that which is shown in the drawings and described in the specification, but only as indicated in the appended claims.

What is claimed is:

1. An elevator bracket for an outboard motor including a motor mounting block and a pair of transom clamps, each transom clamp having a top piece adapted to rest on top of a boat transom, an outboard arm depending from said top piece and adapted to abut against the outboard surface of said transom, an inboard arm depending from said top piece and spaced inboard from said outboard arm, and a clamp securing member received in said inboard arm for engaging the inboard surface of said transom to secure said clamps in fixed position on said transom, comprising:

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- (a) a pair of elongated outboard guide members,
- (b) outboard securing means adapted to connect said outboard guide members to and between corresponding outboard arms of said transom clamps in spaced apart relationship,
- (c) a pair of elongated inboard guide members,
- (d) inboard securing means adapted to connect said inboard guide members to and between corresponding inboard portions of said transom clamps in spaced apart relationship,
- (e) a pair of elevator frames, each frame having a yoke, an outboard column and an inboard column spaced apart parallel and depending from said yoke,
- (f) each outboard column being telescopically received in a corresponding outboard guide member and each inboard column being telescopically received in a corresponding inboard guide member,
- (g) transverse hinge means adapted to secure said motor mounting block to and between said elevator frames,
- (h) a lift arm fixed to at least one of said elevator frames,
- (i) fluid power means connected to said lift arm and operative to move said lift arm longitudinally of said guide members to raise and lower said motor block relative to a boat transom upon which said transom clamps are mounted.

2. The invention according to claim 1 in which said fluid power means comprises a fluid cylinder, a piston rod reciprocable within said cylinder, and means for controlling the flow of fluid to and from said cylinder, means connecting said piston rod to said lift arm, a cylinder bracket fixed to the inboard guide member receiving the elevator frame to which said lift arm is fixed, and means connecting said cylinder to said cylinder bracket.

3. The invention according to claim 1 in which said outboard securing means and said inboard securing means comprise detachable pin members.

4. The invention according to claim 1 in which said transverse hinge means comprises a removable hinge pin only long enough to extend through corresponding openings in said elevator frames and said motor block.

5. The invention according to claim 1 further comprising adjustable means attached to said outboard columns for supporting said motor block in various angular positions about the transverse axis of said hinge means.

6. The invention according to claim 1 further comprising a bar rigidly connecting said outboard guide members in parallel relationship.

References Cited

UNITED STATES PATENTS

2,638,863	5/1953	Kiebler et al.	248—4 XR
2,713,842	7/1955	Plouff	115—41
2,908,242	10/1959	Forbes et al.	115—41
3,145,003	8/1964	Hart	248—4

60 JOHN PETO, *Primary Examiner*.

U.S. Cl. X.R.

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