March 15, 1960 A. P. WISMAN 2,928,630

ASSEMBLY FOR SUPPORTING AN OUTBOARD MOTOR

Filed Sept. 12, 1955 2 Sheets-Sheet 1

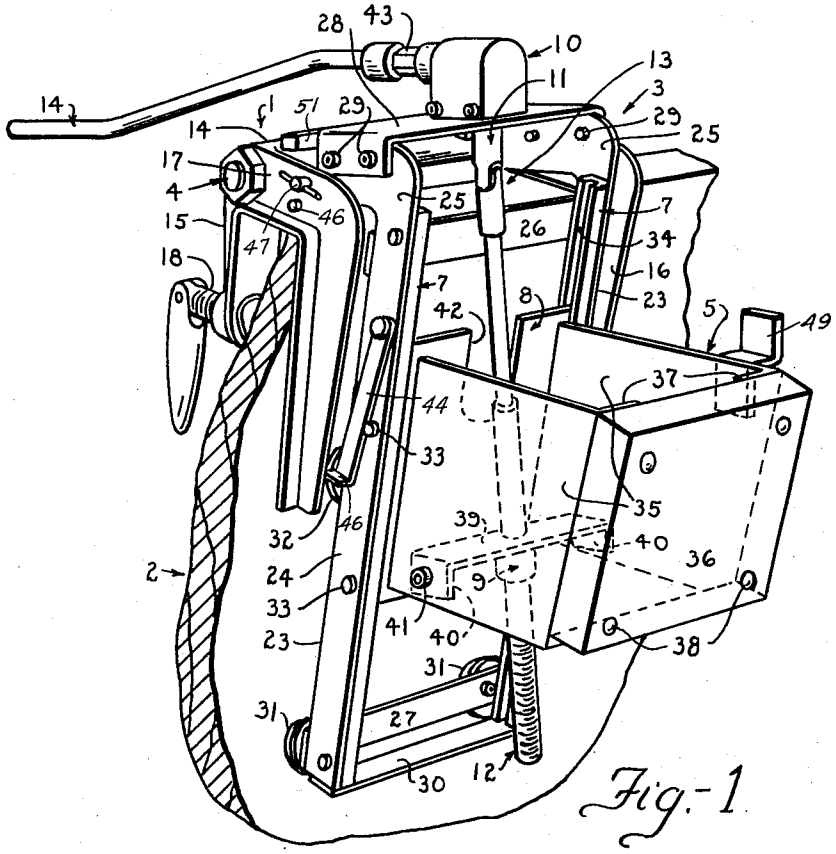


Fig.-1

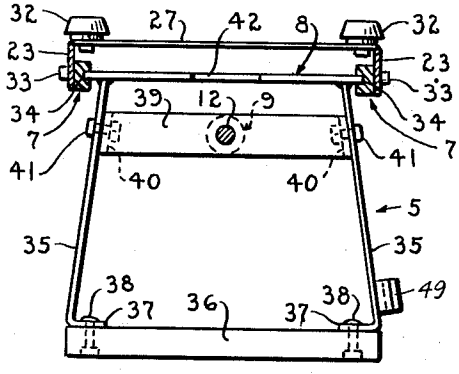


Fig.-2

INVENTOR.
Andrew P. Wisman
BY
Charles L. Penfold
ATTORNEY

March 15, 1960 A. P. WISMAN 2,928,630

ASSEMBLY FOR SUPPORTING AN OUTBOARD MOTOR

Filed Sept. 12, 1955 2 Sheets-Sheet 2

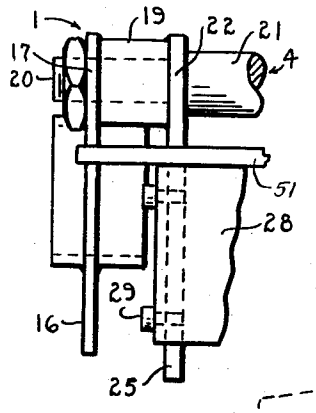


Fig.- 3

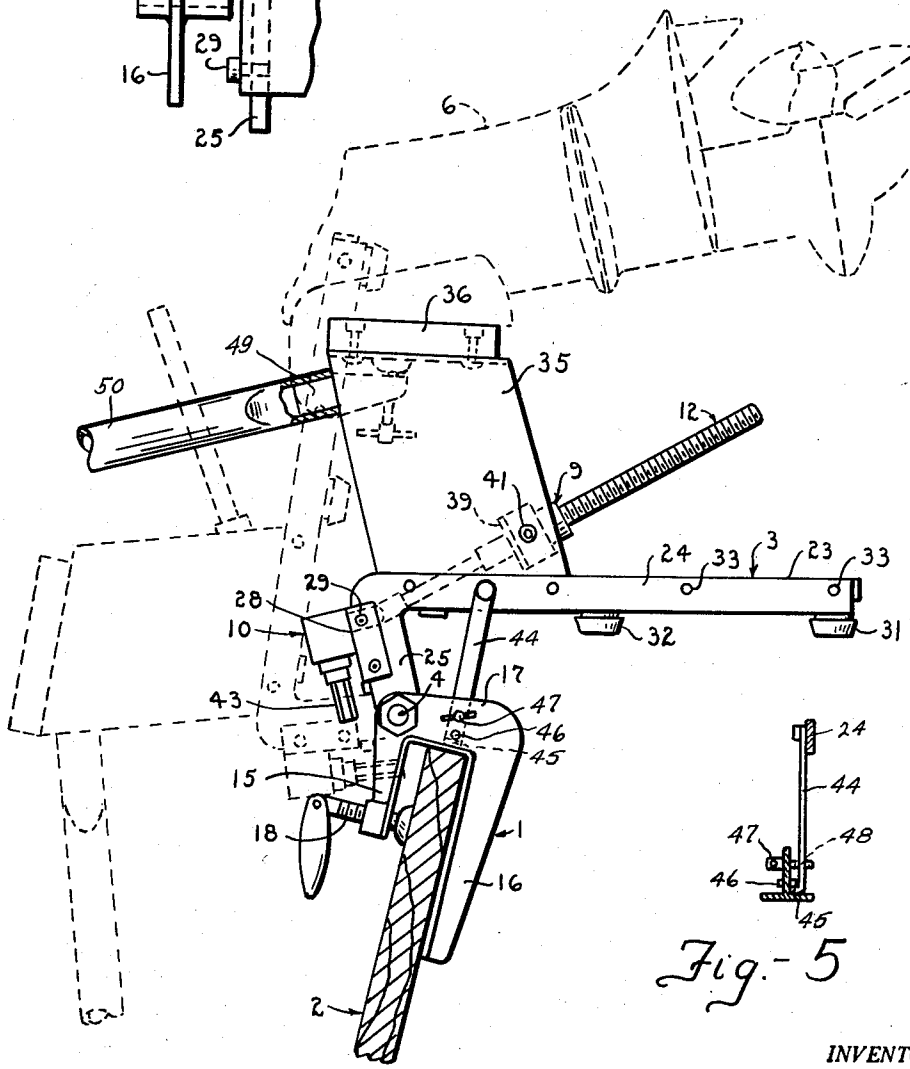


Fig.- 4

Fig.- 5

INVENTOR.
Andrew P. Wisman
BY
Charles S. Penfield
ATTORNEY

United States Patent Office 2,928,630
Patented Mar. 15, 1960

2,928,630

ASSEMBLY FOR SUPPORTING AN OUTBOARD MOTOR

Andrew P. Wisman, Fort Wayne, Ind., assignor to Cletus G. Hartman, Fort Wayne, Ind.

Application September 12, 1955, Serial No. 533,742

5 Claims. (Cl. 248—4)

The invention relates generally to supports and more particularly is directed to a structure, device or assembly for supporting an outboard motor.

The structure embodying the invention may be used wherever applicable and for supporting any of the various kinds or types of outboard motors now in current use, but has been primarily designed and constructed to support motors of the heavier class such as those having a horsepower rating of ten or more. Some motors in this class are used to propel relatively large boats known as cabin cruisers. Such motors are relatively heavy and as a result it is difficult, if not impossible, under certain conditions, to lift or swing the motor inwardly to a convenient position when repairs or adjustments are required.

It is recognized that various attempts have been made to provide a mounting assembly for motors of the above mentioned heavier class but none have proven completely satisfactory under all operating conditions or use. Some assemblies are relatively cumbersome, some are comprised of a multitude of intricate parts, while others are of flimsy construction and difficult to operate.

With the foregoing in mind, one of the principal objects of the invention is to provide a motor supporting assembly which is durable, comprised of a minimum of components, and mechanism whereby a carriage for the motor and constituting one of the components can be readily raised or lowered with a motor thereon to an appropriate operative or inoperative position. This adjustment of the carriage affords a means whereby the motor can be raised and then swung into a convenient position with respect to the boat for the purpose above stated. This setup also provides means for elevating the motor so that the propeller will not strike a sand bar or other obstruction and enables one to operate the motor in relatively shallow water when approaching a shore.

More particularly, an important object of the invention is to provide a structure comprising, among other things, a mounting for attachment to the transom of a boat, a support pivotally connected to the mounting, a carriage for the motor slidably mounted on the support, a fitting on the carriage, and driving means on the support operatively connected to the fitting in a manner whereby the carriage and a motor thereon can be raised or lowered, within practicable limits, to any position desired. The pivotal connection between the mounting and support, among other things, promotes safety by permitting the support and motor to swing rearwardly and upwardly when the propeller or any lower part of the motor accidentally strikes an obstruction in the water.

A significant object of the invention is to pivotally mount the fitting on the carriage and provide the driving means with a drive shaft which is universally connected to a driven shaft which engages the fitting in order to compensate for the variable angular relationship between the driven shaft and support resulting from the raising and lowering of the carriage.

An important object of the invention is to locate the pivotal connection between the mounting and support

sufficiently inwardly from the boat transom to obtain a good leverage action and so that the motor can be swung upwardly and inwardly to any one of a number of desirable positions to permit ready removal or repair thereof.

A specific object of the invention is to provide the support with a connector so that an elongated handle bar can be detachably connected thereto to manually pivot the support and motor to the position above referred to.

Another object of the invention is to construct the support in the form of a frame having side members and provide the side members with guide or track means which cooperate with a slide member on the carriage for guiding and stabilizing movement of the carriage relative to the support.

Another object of the invention is to provide the support with bumpers to prevent injury to the boat transom when a motor is supported in an operative position on the assembly.

An additional object of the invention is to provide means on the mounting and means on the support whereby the support, carriage and motor as a unit can be temporarily locked in an elevated pivotal position to facilitate the making of any repairs or adjustments on the motor which would not otherwise be possible when the motor is in its lowermost upright operating position.

A further object of the invention is to provide the mounting and the support with stop means so that when the support and motor are swung into the boat to place the motor in an inverted or upside down position, the stops will engage to maintain the motor in this position.

Many other objects and advantages of the structure embodying the invention will become apparent after the description hereinafter set forth is considered in conjunction with the drawings annexed hereto.

In the drawings:

Figure 1 is a perspective view of the motor supporting assembly as applied to the transom of a boat;

Figure 2 is a top view of a part of the assembly with portions in section to illustrate details of the structure;

Figure 3 is a top view showing details of the pivotal connection between the mounting and support;

Figure 4 is an elevational side view of the assembly as applied to a boat and exemplifies various adjustments thereof; and

Figure 5 is a partial vertical section of a part of the assembly showing details of a locking device for holding the support in a predetermined position.

Referring more particularly to the drawings, the supporting assembly includes, among other things, a mounting generally designated **1** for attachment with a boat transom **2**, a support **3** pivotally connected to the mounting by an axle **4**, a carriage **5** for supporting a motor **6** shown in dotted lines in Figure 4, a pair of guides **7** carried by the support, a slide **8** on the carriage cooperating with the guides, a fitting **9** on the carriage, driving means **10** carried by the support and provided with a drive shaft **11**, a driven shaft **12** connected to the fitting, a universal joint connection **13** between the shafts, and a crank **14** for manipulating the driving means.

Considering more in detail the aforementioned components generally in the order above named, the mounting **1** may be designed and constructed in various ways, but as exemplified in the drawings it is preferably made in the form of a C-clamp and includes a pair of corresponding inner depending legs **15** and a pair of outer depending legs **16** which are somewhat longer than the inner legs and bear against the outer side of the boat transom **2** as shown in Figures 1 and 4. Each pair of legs is joined by a bridge portion **17** which bears against the top edge of the transom and the inner legs **15** are provided with screws **18** for engaging the inner side of the transom to firmly detachably secure the complete

assembly to the transom. The legs are formed to impart strength thereto and each of the bridge portions preferably includes a tubular portion 19 located at the junction between the bridge and the leg 15 to provide a bearing. The axle 4 is provided with reduced cylindrical ends 20 which are respectively journalled in the bearings 19 and nuts may be connected with threads on the axle for pivotally securing the support 3 on the mounting at a location spaced inwardly from the transom in order to obtain a good leverage action when the assembly and motor are swung upwardly to the position shown in Figure 4 and at the same time locate the motor farther inwardly to a better position to facilitate making repairs thereon. The axle includes an intermediate cylindrical portion 21 of a diameter somewhat larger than its reduced ends to form shoulders 22 which will be referred to subsequently.

The support 3 which is pivoted on the axle 4 may be designed and constructed in different ways but as shown is preferably in the form of a generally L-shaped rectangular frame which more or less nestingly receives the mounting. The support includes a pair of corresponding side members 23. Each of the side members includes a depending straight leg 24 and an inturned upper angularly disposed generally horizontal leg 25. The side members are preferably secured in spaced parallel relationship by upper and lower cleats 26 and 27 connecting with the inner edges of the depending legs 24 and by a bridge 28 detachably connected to the angled legs 25 by screws 29. Another cleat 30 is preferably secured to the bottom edges of the depending legs 24. The angled or generally horizontal legs 25 are provided with apertures through which the reduced ends 20 of the axle 4 extend. The horizontal legs are preferably welded to the intermediate portion 21 of the axle and against the shoulders 22 above referred to. With this setup the tubular bearings 19 also serve to space or center the support 3 between the legs 16 of the mounting and for clearance purposes.

A pair of lower rubber bumpers 31 is preferably detachably secured to the lower cleat 27 and a pair of upper bumpers 32 is also secured to the inner edges of the depending legs 24 at locations directly above the lower bumpers, all for engaging or abutting the rear side of the boat transom to prevent damage to the transom and at the same time serve as shock absorbers and dampen the thrust and vibration between the motor and boat.

The side members 23 of the support are provided with the guides 7 which are secured by screws or rivets 33 to the opposed faces of the depending legs 24 and each guide is preferably provided with a longitudinal groove 34. The grooves are opposed and form guide means or tracks which slidably receive the longitudinal marginal edge portions of the slide member 8, the latter being connected to and constituting a component of the carriage 5. The sizes and lengths of the slide and guides are sufficient to provide a stable and well balanced subassembly and affords an efficient relative movement between the carriage and support.

The carriage 5 is generally square in shape and includes the slide member 8 above referred to, a pair of side wall members 35 and what might be termed a false or secondary transom 36 to which the motor 6 is connected. This transom is normally disposed in a position substantially parallel to the support 3 and the boat transom and is preferably secured against a pair of inturned flanges 37 on the side members by rivets or bolts 38. The transom 36 for the motor is spaced a sufficient distance rearwardly of the slide 8 and the carriage is open at its top and bottom for clearance to permit the motor clamps to receive the transom and manipulation of the clamp screws. The driven shaft 12 extends diagonally through the carriage and its lower end is threadedly connected to the fitting 9.

The fitting 9 is preferably secured to a mounting bracket 39 having offset ends 40 and screws or bolts 41 extend through the side walls 35 of the carriage and the offset ends 40 to detachably connect the bracket and fitting as a unit for pivotal movement on and within the carriage. The length of the bracket is such that the offset ends are guided by side walls of the carriage. The slide member 8 is preferably provided with a clearance notch 42 for the driven shaft 12.

The driving means 10 is preferably mounted on the bridge 28 above referred to. This bridge is detachable and has offset ends which straddle the legs 25 to reenforce the latter. The driving means includes a coupling element 43 connectible with the crank 14 and gears which operate the drive shaft 11 when the gears are driven by the crank. The drive shaft 11 is relatively short as compared to the driven shaft and extends downwardly through the bridge at right angles thereto. The universal joint connection 13 operatively connects the drive and driven shafts and is disposed in relatively close proximity to the axle 4 to promote relative movement between the support and mounting.

To operate the supporting assembly it is merely necessary to apply the crank 14 to the element 43 of the driving means 10 and rotate the crank in one direction to raise the carriage and movement of the crank in a reverse direction will lower the carriage and motor thereon.

If the motor requires attention it may be readily swung upwardly and inwardly to the dotted line position illustrated in Figure 4 and it may be held in this position by any suitable holding means. The holding means may be made as desired but is preferably in the form of an elongated member 44 having an end pivoted on the leg 24 of the support and a bent or hooked end 45 which may be interposed between the leg and a detachable lug 46 on the leg. This holding means is preferably placed on the starboard side for convenient manipulation and so located that the motor is temporarily held in a counter-balanced position. The holding means affords a setup which makes it unnecessary to manually hold the motor in this position while making repairs thereon. A locking element 47 is preferably employed to lock the holding means in a holding position. This element may be threadedly connected to the support and enter an opening 48 in the member 44 for this purpose.

Any means suitable for the purpose may be employed to swing the motor about the axis of the axle 4, but as herein shown in Figure 5, the means employed for this purpose comprises a connector or lug 49 provided on the carriage and a bar lever 50 is detachably connectible with the connector. The lever is of a sufficient length and the connector is preferably located on the port side relatively high on the carriage to afford a good leverage action. The arrangement is preferably such that the support and motor can be swung within an arc in excess of 180 degrees with respect to the mounting regardless of the position of the carriage and motor on the support, but, in general practice, the carriage and motor are first raised or elevated to an uppermost position before the support, carriage and motor as a unit are pivoted with respect to the mounting.

As alluded to above, the support, carriage and motor can also be swung to a position substantially in the boat to place the motor in an inverted or upside down position when required to make certain repairs, such as the replacement of a sheared pin adjacent the propeller, which would not ordinarily be possible if the motor was in the horizontal dotted line position in Figure 4. The support is provided with a frontal cross member constituting stop means 51 which is adapted to engage the inner legs 15 of the mounting 1 to maintain the motor in an inverted predetermined position. The legs 15 thus serve as stop means for the support.

In view of the foregoing it will be manifest that the

support, carriage and motor as a unit can be manually moved and held in any pivotal position permitted by the connection between the mounting and support; locked in a counter-balanced position or in an inverted position for making any repairs required. Attention is directed to the fact that when the motor is locked in the horizontal position, the motor can be easily and quickly slid off the false transom **36**. Of further importance is the fact that when the motor is swung into the boat there is no chance of losing the motor while repairs are being made.

Having thus described my invention, it is obvious that various modifications may be made in the same without departing from the spirit of the invention, and, therefore, I do not wish to be understood as limiting myself to the exact form, construction, arrangement, and combination of parts herein shown and described.

I claim:

1. Structure of the kind described comprising a mounting for attachment to the transom of a boat, a support pivotally connected to the mounting, guides provided on the support, a carriage for a motor, said carriage having means slidable in the guides, a fitting pivotally mounted on the carriage, a threaded driven shaft connected to the fitting and normally disposed in an acute angular position with respect to the support, a driving means mounted on the support and provided with a drive shaft with the axis of said driven shaft being angularly disposed with respect to the plane of the up and down movement of the fitting, and a universal joint connecting said shafts to compensate for any variable angular relationship occuring between the driven shaft and support when the driving means is operated to cause the said means on the carriage to slide in the guides.

2. A supporting assembly for an outboard motor comprising: a mounting clamp means for attaching the assembly to a part of a boat, a support pivotally connected to the mounting clamp means, guide means carried by the support, a carriage having a slide engaging the guide means and a transom for supporting a motor, a threaded fitting pivotally mounted on the carriage, driving means carried by the support and provided with a drive shaft, a universal joint attached to the drive shaft, and a threaded driven shaft extending angularly through the carriage and with reference to the support operatively connecting the threaded fitting and universal joint, the arrangement being such that operation of the driving means will cause the slide to ride in the guide means to raise or lower the carriage as desired.

3. The structure defined in claim 2, including means on the support and means on the mounting cooperable with the means on the support for maintaining the support and carriage as a unit in a predetermined pivotal position with respect to the mounting when moved to said position.

4. The structure defined in claim 2, in which the slide is provided with a clearance opening for the driven shaft, and the carriage is provided with a connector which is adapted to cooperate with a lever to facilitate pivoting of the support and carriage as a unit with respect to the mounting.

5. A motor supporting unit of the kind described, comprising a clamping assembly for straddling the upper portion of a boat transom for attaching the unit to the transom and having a horizontal portion, a support having a substantially horizontal part pivotally connected to the forward extremity of the said horizontal portion and also having a pair of depending legs, a box-like carriage having a forward side slidably connected to the legs and a rear side provided with a transom for supporting a motor, a member pivotally mounted on the carriage within its confines at a location spaced from its forward and rear sides and provided with a threaded element, said support including a bridge connected to the legs, a drive shaft rotatably mounted on the bridge, and a driven shaft extending angularly through the carriage having an upper end universally connected to the drive shaft and a lower threaded extremity connected to the threaded element in a manner whereby the drive shaft may be rotated to raise or lower the carriage.

References Cited in the file of this patent

UNITED STATES PATENTS

1,141,196	McLaren	June 1, 1915
1,152,425	Lovell	Sept. 7, 1915
1,894,710	Samuelson	Jan. 17, 1933
1,973,166	Fowler et al.	Sept. 11, 1934
2,631,799	Poulin	Mar. 17, 1953
2,638,863	Kiebler	May 19, 1953
2,706,961	Barber	Apr. 26, 1955

FOREIGN PATENTS

309,789	Italy	July 17, 1933
459,393	Germany	Nov. 2, 1928
469,910	France	June 3, 1914