

Nov. 28, 1967

R. M. KERR

3,355,162

REPAIR STAND

Filed June 7, 1966

2 Sheets-Sheet 1

FIG. 1.

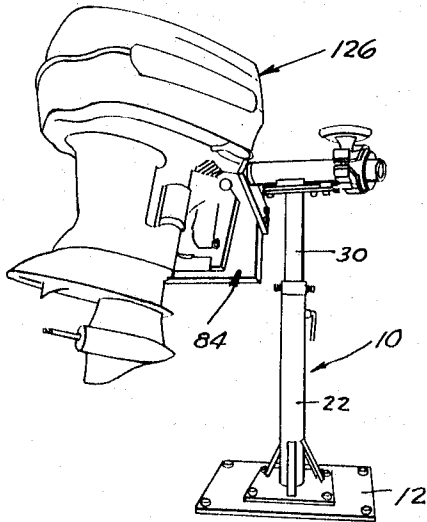


FIG. 2.

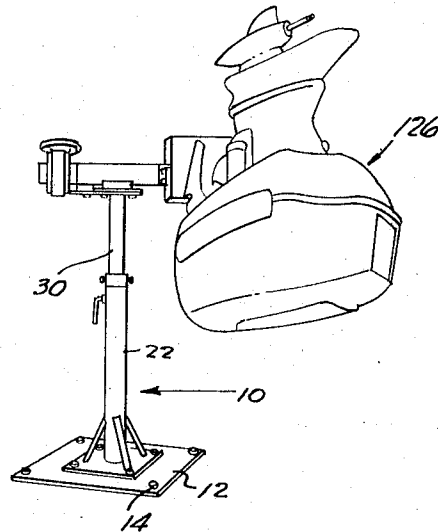
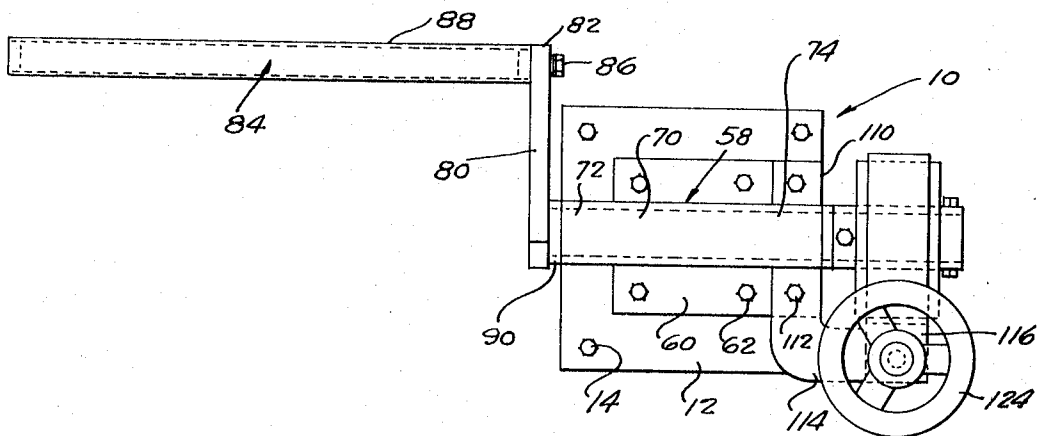


FIG. 3.



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FIG. 4.

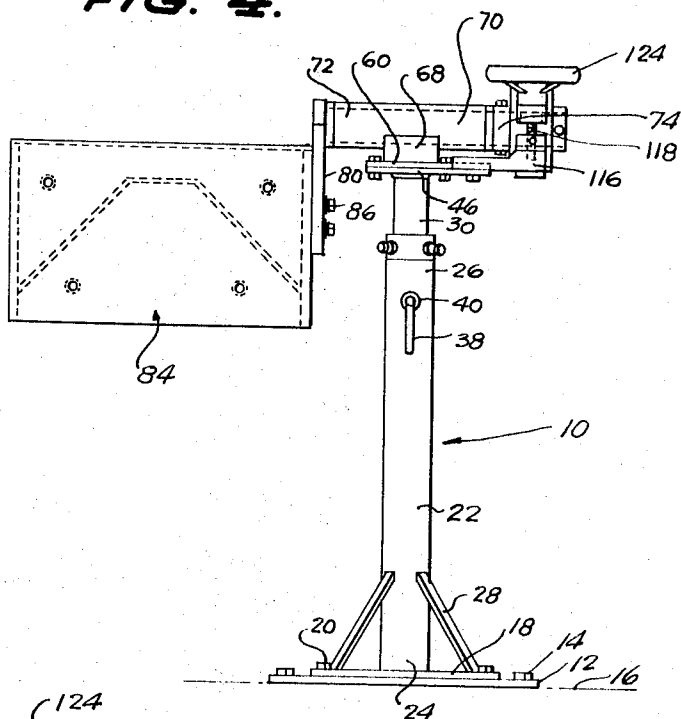


FIG. 5.

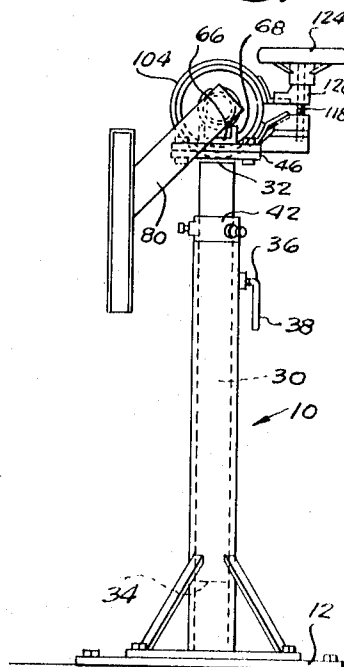


FIG. 6.

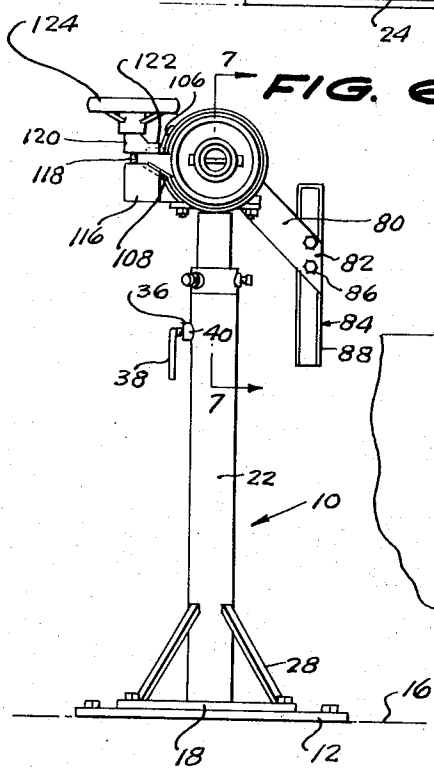
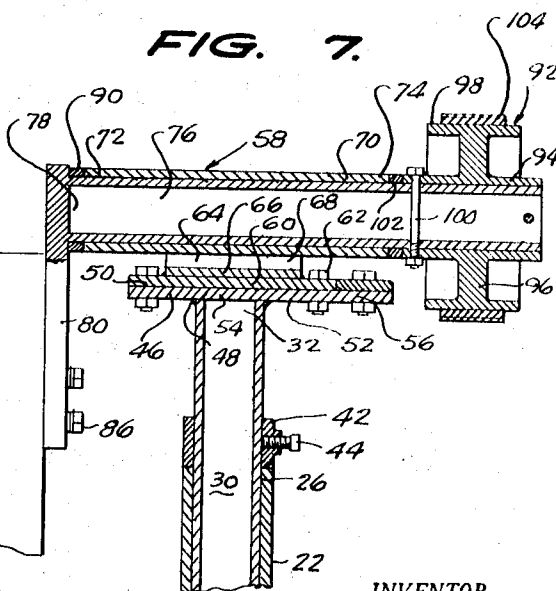


FIG. 7.



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ABSTRACT OF THE DISCLOSURE

A support for an outboard motor during repair operations, the support having an upright standard of variable height and a horizontal arm member on the standard with a brake at one end and a mounting saddle at the other end.

Summary of the invention

The invention herein disclosed pertains to the field of support assemblies particularly adapted to holding outboard motors and the like during repair operations, the device having variable positions for locating the motor for convenient access during said operations. In accomplishing this objective, the apparatus hereof comprises an upright standard with a tube mounted in horizontal position thereon, and an arm extending through the tube for rotational movement with respect thereto, the arm having a motor engagement means at one end and a holding brake assembly at the other end.

This invention pertains to a repair support in the nature of a work holder having provision for the changeable positioning of a workpiece at a maximum number and variety of locations for ease of access. The unit hereof finds particular utility in the repair of outboard motors and the like.

It has been previously proposed to provide work stands for holding outboard motors during repair and maintenance operations and the previous proposals have included means for changing the position of the motor during repair. However, these prior proposals have been limited insofar as the number of locations or stops thereon is concerned, and further the greater weight and bulk of modern engines of this type has increased the need for safety features in the handling thereof. It is therefore a primary objective of the present invention to provide a support as aforesaid wherein the range of positions of the motor is maximized and the danger of the operator losing control of the engine during change of position is minimized.

A related principal object of the invention resides in the provision of an outboard motor repair stand having the combined features of height adjustability, and full 360 degree rotatability about a horizontal and a vertical axis.

Another objective is to supply a control means for the application of a selective degree of tension to the device during movement, and one embodying a counterbalance principle.

Other and further objects and advantages of the invention will become apparent to those skilled in the art from a consideration of the following specification when read in conjunction with the annexed drawings, in which:

FIGURE 1 is a perspective view of a repair support constructed and assembled in accordance with the teachings of this invention, showing a motor in position thereon;

FIGURE 2 is a perspective view of the device from an opposite side, showing the motor in another position;

FIGURE 3 is an enlarged top plan view of the apparatus;

FIGURE 4 is a front elevational view thereof;

FIGURE 5 is a side elevational view thereof;

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FIGURE 6 is an opposite side view; and

FIGURE 7 is an enlarged, fragmentary sectional view showing details.

Referring to the drawing in more detail, a preferred embodiment of the repair support within the scope of the invention is therein shown and designated generally by reference numeral 10. The assembly 10 includes a substantially flat, rectangular base 12 adapted for connection, as by bolts 14, to a floor 16 or other supporting surface. A plate 18 of reduced dimension is fixed to the upper side of the base as by bolts 20 or other suitable fastening means. Extending upwardly from the plate 18 substantially at the center thereof is an elongated, tubular upright standard 22 having a lower end 24 fixed to the plate and an upper end 26 which is open for a purpose appearing in more detail below. A plurality of struts 28 extend from the plate 18 and are fixed to the standard intermediate its ends in order to rigidify the connection of the standard with respect to the plate.

As best shown in FIGURE 7, an elongated, substantially tubular stand extension element 30 is telescopically received in the open end 26 of the standard, the stand extension including an upper end 32 and lower end 34. The stand extension is normally movable both vertically and pivotally within the standard, and in order to lock the extension against pivotal movement at a desired location, a changeable fastener 36 having a handle 38 is threadedly engaged in a boss 40 intermediate the ends of the standard whereby the fastener is selectively engaged against the extension. In order to fix the depth of descent of the extension within the standard, the extension is supplied with a height adjustment collar 42 having a plurality of changeable fasteners 44 spaced thereabout to permit the collar to be located at any selected point along the extent of the stand extension, thereby limiting its extent of projection within the standard and setting the height of the overall device.

With continued reference to FIGURE 7, it will be further observed therein that a substantially rectangular, elongate upper plate 46 is fixed thereto as by welds 48. The plate 46 has upper side 50 and lower side 52, and is mounted in off-center relation to the stand extension. For purposes of description, the upper plate 46 has a central portion 54 and an extended side portion 56, for a purpose described in more detail below.

A further basic component of the instant invention comprises a head assembly 58 including a mounting element 60 secured as by bolts 62 to the central portion 54 of the plate 46 on its upper side 50. A spacer element 64 having a bight portion 66 and side arms 68 extends from the mounting element, and a horizontally arranged, elongated tube 70 is connected between the arms 68 and extends thereabove. The tube has a first end 72 and a second end 74.

A tubular main arm 76, elongated with respect to the tube 70, is extended through said tube and projects outwardly on each end thereof. At a first end 78 of the main arm, an elongated substantially solid bar element 80 is fixed thereto and projects outwardly therefrom in substantially right angular relation. The bar element 80 includes an outer end 82 of selected angularity to which a motor mounting saddle 84 is fixed by bolts 86. The saddle is of substantially rectangular form, and may be of reinforced, hollow construction as shown, or optionally changed to accommodate different articles to be mounted thereon. In any case, the saddle includes at least one flat side 88 which, as shown in FIGURES 3 and 6, coincides with the angularity of the end 82. As shown in the drawing, the first end of the main arm 78, to which the bar element 80 is affixed, projects outwardly of the first

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end of the tube, and the bar element is separated from the tube by an annular spacer or slip ring 90.

An annular brake drum 92 is fixed to the opposite end of the main arm, the drum including an interior sleeve 94, a web 96, and a drum outer surface 98. The sleeve 94 has a pair of openings therein coaligned with a similar pair of openings formed in the main arm, and a bolt assembly 100 serves to lock the drum to the arm by extension through said openings. Once again, a slip ring or spacer 102 separates the drum from the second end 74 of the tube.

A brake band 104 is engaged about the drum outer surface 98 and includes a pair of lips 106, 108 best seen in FIGURES 5 and 6 projecting therefrom for engagement with clamping means hereinafter described.

Referring to FIGURE 3, a bracket 110 is connected to the extended side portion 56 of the upper plate 46 by fastening means 112. The bracket is of substantially L-shape, and includes a laterally extended side portion 114 terminating in a block 116 which underlies the lip 108 and fixes the position of said lip. A threaded shaft 118 is fixed to the block and projects vertically therefrom and a bearing tension element 120 is loosely connected about the shaft, the tension element 120 having an extended portion 122 which is engaged against the upper lip 106 of the brake band. A control wheel 124 is threadedly engaged on the shaft 118, and thus controls the tension of the blocks 116 and 120 on the band and hence its gripping of the drum.

In the use of this apparatus, a motor 126 or similar item to be repaired is suitably engaged on the saddle 84. A selected height is chosen, and the device may be rotated by loosening of the fastener 36 permitting the stand extension to rotate within the standard, or the drum tension may be released by turning of the handle 124, thus permitting the main arm to be rotated within the tube. In the latter case, a desired degree of tension may be retained to prevent complete release and free swinging movement of the motor. The offset bar element permits the motor, regardless of weight, to become semi-counterbalanced to the tension of the drum thereby increasing the safety of the device.

Having described and illustrated an embodiment of this invention in some detail, it will be understood that this description and illustration have been offered only by way of example, and that the invention is to be limited in scope only by the appended claims.

I claim:

1. A repair support stand for an outboard motor or the like, the stand comprising:

- a base;
- a standard assembly of changeable height connected to the base;
- the standard assembly including a pivotal stand extension;
- a tube secured to the stand extension;
- an arm mounted within the tube for pivotal movement with respect thereto;
- a motor mounting saddle on one end of the arm; and
- a brake assembly connected to the opposite end of the arm and to the stand extension, the brake assembly including a brake drum, a band, and clamping means for changeably exerting pressure on the band about the clamp.

2. A repair support stand as defined in claim 1, and: means spacing the brake assembly and the saddle from the tube.

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3. A repair support stand for an outboard motor or the like, the stand comprising:

- a base adapted for connection to a supporting surface;
- a plate fixed to the base;
- a tubular standard extending from the plate and fixed thereto, the standard having an open upper end;
- strut means secured to the plate and the standard to reinforce the standard;
- a tubular stand extension telescopically and pivotally mounted in the standard and projecting outwardly from the open end thereof;
- a height adjustment collar on the stand extension arranged for connection thereon at changeable locations to set the height thereof with respect to the standard;
- an upper plate fixed to the stand extension, the upper plate having a central portion and an extended side portion;
- a head assembly, including a mounting element secured to the central portion of the upper plate, a spacer, and a horizontally arranged tube having first and second ends;
- a substantially cylindrical main arm projecting through the horizontal tube and extending outwardly on both ends thereof;
- an elongated bar element connected to the main arm on the first end of the tube in substantially right angular relation thereto, the bar element having an angular outer side;
- a motor engaging saddle secured to the angular outer side of the bar element and having one side aligned therewith;
- an annular brake drum including a drum outer surface, secured about the main arm on the second end of the tube;
- a brake band about the drum including a pair of projecting clamp lips;
- a bracket secured to the extended side portion of the upper plate and having a block underlying one of the lips;
- a threaded shaft fixed to the block;
- a bearing tension element on the shaft; and
- a wheel threadedly engaged on the shaft for forcing the tension element against the other of said lips to tighten the brake band about the drum to lock the arm against rotation at any selected position.

4. A repair support stand for an outboard motor or the like, the stand comprising:

- a base;
- a standard assembly connected to the base and including an upper element;
- a horizontal tube secured to said element;
- arm means operatively engaged with said tube for pivotal movement within the tube;
- a motor mounting saddle on one end of the arm; and
- a brake assembly connected to the opposite end of the arm and to the upper element, the brake assembly including means for changeably exerting pressure on the arm means to limit the rotation movement thereof.

References Cited

UNITED STATES PATENTS

2,106,525	1/1938	1/1938	Henry	269—71	X
2,787,826	4/1957	Aronson	269—71		
2,913,241	11/1959	Miner	248—4		X

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