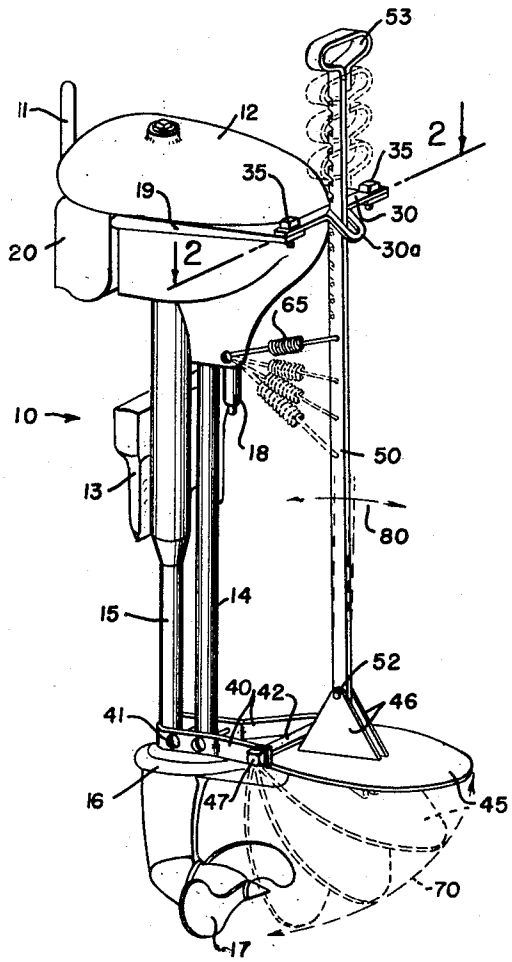
April 9, 1957 E. C. JOHNSON 2,787,974

MANUALLY VARIABLE TROLLING PLATE FOR OUTBOARD MOTORS

Filed July 2, 1953

Fig. 1



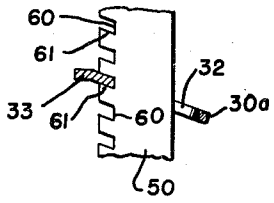




Fig. 3

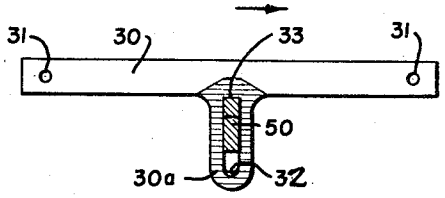



Fig. 2

Inventor

Ed C. Johnson

By Wilbur A.E. Mitchell,

Attorney

United States Patent Office 2,787,974 Patented Apr. 9, 1957



2,787,974

# MANUALLY VARIABLE TROLLING PLATE FOR OUTBOARD MOTORS

Ed C. Johnson, Nunn, Colo.

Application July 2, 1953, Serial No. 365,698

3 Claims. (Cl. 115—18)

This invention relates to outboard motors, and more particularly to trolling plates for outboards designed to slow the normal pushing speed of a motor, when trolling in fishing, below that of any normal motor revolution pushing speed. Heretofore, every time the boat fisherman wanted to troll, he would have to attach the trolling plate by clamps or bolt or bolts just to the rear of the propeller of the motor, and when he was through trolling he would have to remove the plate, requiring such attachment and removal, respectively, many times when the fisherman was in the boat and out on a body of water, with resultant inconvenience and danger to the fisherman. Attempt has heretofore been made to have a trolling plate permanently mounted to the outboard motor, so that the fisherman could cause any one of different angular positions of the plate to occur without having to remove the plate, but, as far as known, all previous such devices have comprised complicated systems of levers and pivots, having too many parts, and being too complicated and heavy to be inexpensive to manufacture and practical to install and operate.

Accordingly, it is a primary object of this invention to provide a manually operable variable trolling plate attachment, of fewer parts, than heretofore, of sturdy and simple construction, and easy to attach and operate, and inexpensive to manufacture, whereby the fisherman operator may leave the plate permanently attached to the motor and be able to operate same to vary the angle of the plate with relation to the propellor blade without leaving his rear boat seat, and at the same time, one which will permit adjustment of the plate into a horizontal position or anti-cavitation acting device when it is not desired to troll with the plate adjusted into trolling position.

Another object of this invention is the provision of such an attachment comprising only a pivotally mounted trolling plate, in trolling position association with the propellor, a stationary cross latch-acting bar thereabove, and one vertically operable adjustment and connecting bar pivoted directly to the plate and extending between the plate and the latch bar and being normally spring held in latch relationship with the bar.

Other and further objects will be apparent from the following detailed description, and from the drawings in which:

Figure 1 is a perspective view of an Evinrude motor, having my attachment secured thereto, by way of example;

Figure 2 is a top view of my latch acting or cross bar **30**, through which my one adjustment and connecting bar **50** extends and is operable; and

Figure 3 is a cross-sectional partial view taken on the line 3, looking in direction of the arrow, of Figure 2.

Throughout the drawings like characters of reference have been used to represent like parts.

Reference numeral **10** indicates a conventional outboard motor, illustrated in design, for example, as an Evinrude motor, having, as do all such motors, a motor head portion **20**, gas tank **12**, steering handle **11**, transom hinge **13**, for securing to the boat stern, exhaust **14**, gear and power shaft housing **15**, anti-cavitation plate **16**, propellor **17**, cam shaft housing **18**, and horizontal motor block



cooling vanes **19**. Vanes **19** are a pair, though only one is illustrated, of identical shape and size and are horizontally parallel, one on each side of the motor block in horizontally parallel arrangement.

My attachment comprises only five component parts, capable of attachment to any similar design of motor, as follows:

To the rear, or right as viewed, side of the motor, at the ends of the vanes **19**, I secure a cross latch-acting bar **30**, as by rigidly bolting it to the vanes, as by suitable holes and bolts, **31** and **35**, respectively, as illustrated. It is to be noted that cross bar **30** is slightly bent downwardly in its center, so that when bolted to vanes **19**, that center portion hangs downwardly from the horizontally held and parallel ends thereof, for reason to be explained. Also, at the center of that bar, a right angular opening **32** is formed therein and with relation to the bar, and that opening is reinforced by welding a yoke like rod member **30***a*, of size and configuration and as illustrated, to that bar. The front edge **33** of that opening **32** is termed the latch-holding edge, as will be explained. The opening **32** is designed sufficiently long enough and wide enough to permit free sliding or vertical movement of the bar **50** therethrough, whenever an adjustment of position of the plate **45** is desired to be made, as will be later explained, and at the same time to permit that bar **50** to be pivotally pushed backwards on its pivot **52** and so as to disengage any one of teeth-notches **61** from engaging latch-holding edge **33**, as will also be explained.

A suitable metal strap-like yoke **40** is bolted securely around exhaust and drive housing members, **14** and **15**, as illustrated, and carrying a suitable bolt pivot **47** rearwardly thereof, as illustrated. **40** is placed just above the anti-cavitation member **16**, and is so designed to cause the pivot bolt **47** to be positioned just slightly to the rear of a vertical plane through the propellor.

I provide a trolling plate **45**, having spaced apart ears **46** welded centrally to the rear side thereof, and with a pivot collar **42** formed at the top edge thereof, as by bending that edge, adapted to surround pivot bolt **47**, for free pivotal movement of the plate **45** on bolt **47** as its pivot. Ears **46** are slightly farther apart than the thickness of bar **50**, aligned holes being provided in the two ears so that the bar **50** may be pivotally secured to the ears by means of a bolt **52**, extending through said holes.

Lastly, I provide the single adjustment and connecting bar **50**, and spring **65**. I preferably provide bar **50** as a flat bar, and so as to freely pass through opening **32**, normally, except for the action of spring **65**, as illustrated. The lower end is suitably pivoted to the ears of the trolling plate **45**, as explained. The upper portion protrudes through opening 32, of latch acting bar **30**, and extends well above bar **30**, and has a handle portion **53** formed at its top. Adjacent its top, bar **50** is provided with a plurality of spaced apart notches **60** formed in its front edge, with each of said notches being wide enough to freely fully engage, by sliding over, the latch-holding or acting edge **33** of opening **32** of bar **30**. Notches **60** are formed as illustrated, in that edge of bar **50**, with each slightly slanting backwardly and downwardly, and so as to be able to holdingly cooperate with the also downwardly slanting holding edge **33**, when engaged therewith, as will be further explained. Coil tension spring **65** is secured to a suitable post, provided for the purpose on the motor cam shaft housing, at one of its ends, and is designed to have its other end secured to the bar **50**, as illustrated, and is normally of a length as to normally pull the bar **50** to the left, as illustrated, or toward the motor, so as to cause any notch **60**, of bar **50**, engaged with edge **33**, to remain so engaged during motor inoperation.

The positioning of the notches **60**, in bar **50**, is so designed as to permit the bar to be raised or lowered, with relation to latch-acting bar **30**, so as to cause any of the illustrated positions of plate **45**, on the pivot of the latter, as illustrated in dotted lines.

When connecting and adjusting bar **50** is so adjusted as to cause the trolling plate **45** to be positioned in any one of the dotted line illustrations of positioning of that trolling plate, upon operation of the motor, in trolling, that plate will then act to resist passage of water from the propellor thereagainst, and that resistance pressure, in turn, tends to cause an upthrust through the ears **46** and bolt **52** against bar **50**, and **50** in turn carries that upthrust to edge **61** of the notch **60** engaging the holding edge **33**, of latch-acting bar **30**, so that the entire upthrust is borne by bar **50** and said edge **61** and bar **30**; and, it will be seen that the downwardly slanting configuration of notches **60**, and also of the engaging edge **33**, of latch bar **30**, assures a constant engagement of **60** and **33** by that up-thrust during trolling, and which I term a thrust-acting holding means.

In motor operation when trolling, the fisherman may cause any one of different angular adjustments of the trolling plate, as illustrated in dotted lines, by pushing the bar **50**, by its handle, backwardly away from him, as he sits in the rear of the boat with the motor running, by exerting a sufficient pressure on bar handle **53** to cause the spring **65** to expand sufficiently to permit bar **50**, in yoke opening **32**, to be moved backwardly on its pivot **52** to disengage whichever notch **60** is engaging latch-acting edge **33**, and then either raising or lowering bar **50**, with the spring so expanded, as desired, and then re-engaging the desired new notch **60** with **33** to effect the desired angular position of plate **45** on the latter's pivot. Spring **65** assists in that reingagement. When the plate is so adjusted into position illustrated in solid lines of Figure 1, so as to be in a horizontal position, it will act as an additional anti-cavitation plate with **16**, and will then not interfere with the water pushing action of the propellor, as when the fisherman does not wish to troll. Spring **65** is designed to hold the engagement position of a notch **60** with edge **33**, when the motor is not in use.

It is to be understood that many changes and modifications of my invention may be made without deviating from the teaching and spirit thereof, and, therefore, I wish to be limited only by the scope of the hereunto appended claims.

What I claim and desire to secure by Letters Patent is:

1. In combination with an outboard motor having a motor block having a pair of cooling vanes extending in a parallel horizontal plane on each side and rearwardly thereof, a propellor, drive shaft and exhaust housing extending from the motor downwardly to adjacent the propellor, and an anti-cavitation plate secured to said housing just above said propellor, the combination therewith of an adjustable trolling plate attachment comprising a latch-acting bar horizontally and rigidly secured to the rearwardly extending cooling vanes and having a downwardly slanting latch-acting holding edge and a yoke extending from said edge, means for so securing the latch-acting bar to the vanes, a trolling plate pivotally mounted at a point adjacent the rear of the anti-cavitation plate and above the propellor, means for so pivotally mounting the trolling plate, an adjusting and connecting single bar extending vertically and slidably through the yoke and having its lower end pivotally, secured directly to the trolling plate at a point thereon spaced from the trolling plate pivot, means for so pivotally securing the adjusting and connecting bar to the trolling plate, said adjusting and connecting single bar having a plurality of spaced apart downwardly slanting notches formed in its forward edge adjacent the upper portion of said bar and adjacent the latch acting holding edge of the latch-acting bar,



the inner size of the yoke being sufficient to permit free vertical sliding movement of the adjusting and connecting bar therethrough for effecting swinging movement of the plate on its pivot thereby throughout a ninety degree angle, and a tension spring means for normally causing the adjusting and connecting bar to swing forwardly on its pivot securement point with the plate, comprising an adjustable water thrust-acting holding trolling plate attachment during motor operation in the water with the plate in trolling plate angular condition.

2. A thrust-acting, holding, single, adjusting and connecting rod means for connecting a pivotally mounted trolling plate on an outboard motor for adjustment of said plate during operation of the motor, comprising: a cross latch bar secured to the upper portion of the motor and having a holding edge with a yoke extending from that edge, a single adjusting and connecting rod vertically and slidably extending through said yoke and having its lower end pivotally secured to the plate, means for so pivotally securing said lower end of the bar to the plate, said rod having a plurality of spaced apart separate holding notch means formed in its forward edge adjacent the holding edge of the latch bar and with each of said notch means being adapted to be selectively and slidably engaged with said holding edge of the latch bar in different positions of said rod, for utilizing the up-thrust from the plate, upon motor operation in water, for effecting a holding of the rod against said holding edge, and spring means for normally removably holding a notch means engagement of the rod with the holding edge of the latch bar when the motor is not in operation in the water.

3. In combination, an adjustable trolling plate for outboard motors, comprising, a horizontal latch-acting bar rigidly secured to the upper rear part of the motor and having a downwardly slanting latch-acting holding edge and a yoke extending from said edge, means for so securing the latch-acting bar to the motor, a trolling plate pivotally mounted at a point above and to the rear of the motor propellor, means for effecting the pivotal mounting of the plate, a single adjustable vertical adjusting and connecting rigid bar operably slidably extending through said yoke and having its lower end pivotally connected directly to the plate, means for effecting said direct pivotal mounting of the lower end of the adjusting and connecting bar to the plate, the yoke extending horizontally from the holding edge a distance and being of an internal area size sufficiently to permit free up and down movement of the single adjusting and connecting bar within the yoke and between the portion of the yoke opposite the latch-acting holding edge and the holding edge, up-thrust holding means on said single connecting and adjusting bar at a point adjacent said latch holding edge of the latch-acting bar and adapted for cooperating with said latch-acting bar holding edge in utilizing the up-thrust from the plate, during motor operation in water, for holding the plate on its pivot, in any one of a plurality of positions thereof in an angle from the horizontal, by holding said single connecting bar, said cooperation of the holding means with the latch acting bar comprising a holding of the single adjusting and connecting bar from upward vertical movement with relation to the holding edge of the latch-acting bar, and tension means associated with said single adjusting and connecting bar and being adapted for normally holding said single adjusting and connecting bar from any vertical movement when the motor is in inoperation in water and being in association with said holding means.


**References Cited in the file of this patent**

UNITED STATES PATENTS

| | | |
|---|---|---|
| 1,394,645 | Schmidt | Oct. 25, 1921 |
| 1,475,111 | Gries et al. | Nov. 20, 1923 |
| 2,230,958 | Langdon | Feb. 4, 1941 |
| 2,288,504 | Weber | June 30, 1942 |
| 2,303,586 | Snell | Dec. 1, 1942 |