Nov. 13, 1934. C. W. STICKEL 1,980,601

OUTBOARD MOTOR STARTER

Filed June 3, 1933

Fig. 1.

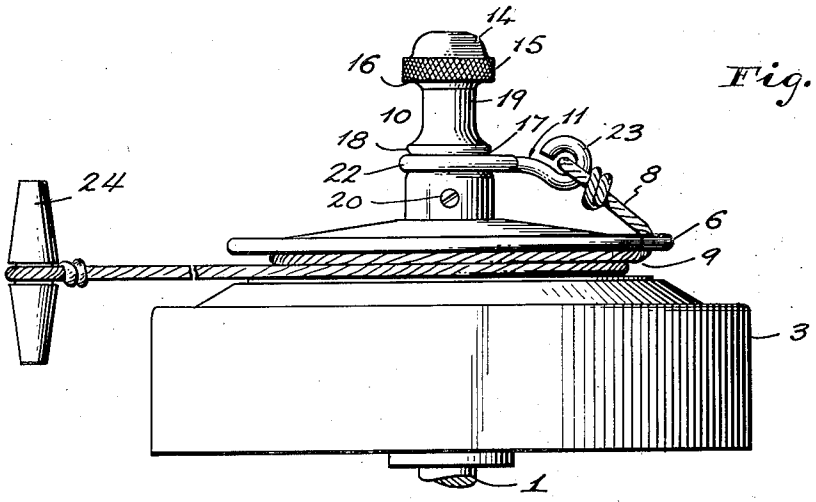


Fig. 2.

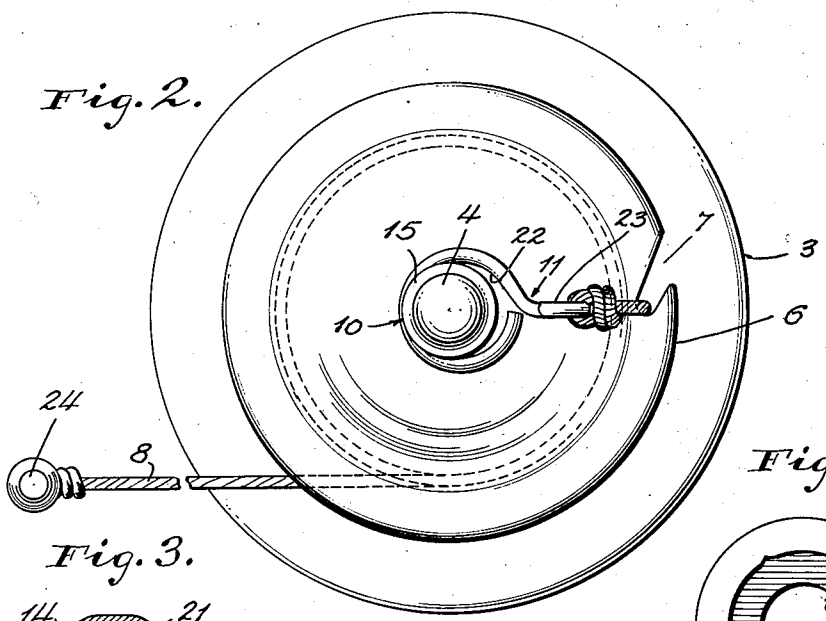


Fig. 3.

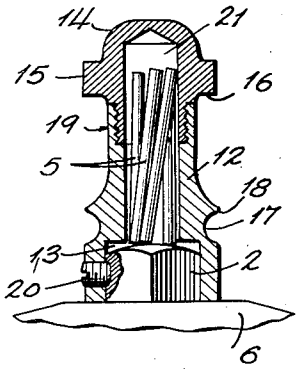


Fig. 4.

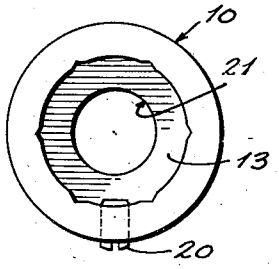
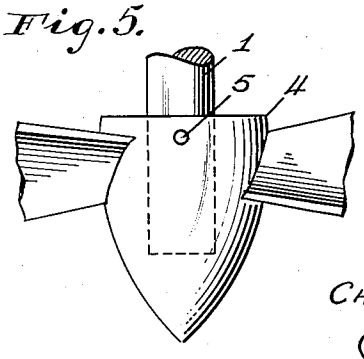


Fig. 5.



INVENTOR
CHARLES W. STICKEL
BY
Joseph J. Juhasz
ATTORNEY

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OUTBOARD MOTOR STARTER

Charles W. Stickel, Rochester, N. Y., assignor to Walton Products Company, Rochester, N. Y., a firm

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11 Claims. (Cl. 123—185)

This invention relates to novel means for detachably securing a rope to the fly wheel of an outboard motor.

To start an outboard motor, it is the common practice to wind a rope around an integral portion or part of the fly wheel, and then spin the motor by manually drawing outwardly on the outer end of said rope. This, however, often results in the knotted inner end of the rope, due to the quick jerk given by the operator to start said motor, flying back somewhat after the order of snapping a whip, and is apt to hit other occupants in the boat.

Therefore, an object of this invention is the provision of simple and efficient means for preventing the inner end of the rope from leaving the motor until lifted off, and in no case apt to fly off and hurt occupants of the boat, or cause operator to lose balance by reason of sudden release of end of rope.

Another object of the invention is a novel device or adapter for attachment as a unit to the motor shaft of an outboard motor, whereby the starting rope is detachably secured thereto, against accidental displacement.

A still further object of the invention is the provision of means, in an outboard motor rope-attaching device, for carrying a supply of the ordinary brass shear pins for attaching the propeller.

In the drawing:

Figure 1 is a view in side elevation of a device constructed in accordance with the present invention, showing rope in position, ready for starting motor, while

Figure 2 is a top plan view of the same.

Figure 3 is a vertical central sectional view of the post or adapter device, showing the same secured to a nut on the outer end of the motor shaft, and showing brass shear pins loosely contained inside.

Figure 4 is an enlarged view of the bottom or inner end of the adapter device, showing broaching to fit hexagon nut on end of motor shaft.

Figure 5 is a fragmentary view in side elevation of the propeller and propeller shaft of an outboard motor, showing brass shear pin in place.

Referring to the drawing by numerals, 1 designates the propeller shaft of an outboard motor. On the outer end of shaft 1 is the propeller hub 4; this hub is secured on said shaft by a brass shear pin 5. 2 is a nut which assists in securing the fly wheel 3 on motor shaft. The fly wheel is provided with the usual flange 6 having the ordinary rope-receiving notch 7. The rope 8 extends through notch 7 and is adapted to be wound upon the fly wheel, in groove 9 (Fig. 1) under the flange 6, when it is desired to rotate or spin the motor for the purpose of starting the same.

The term "rope" is used in this specification and the appended claims in a broad sense, meaning any kind of means that would perform the same function, such, for instance, as a flexible cable, etc.

My novel device comprises the post or adapter device 10, ring device 11 and rope 8. The adapter device 10 comprises a hollow body 12 (Fig. 3) which has at its bottom or inner end a nut-receiving socket 13 and is internally threaded and tapered at its top or outer end. A hollow cap 14 is threaded into the outer end of the body 12; this cap is provided with a knurled flange 15, producing an auxiliary shoulder 16. Intermediate the ends of the body 12 is a primary groove 17, which has an annular primary shoulder 18. Between shoulder 18 and shoulder 16 the reduced body 12 constitutes an auxiliary groove 19. A set screw 20 is employed to engage nut 2 and thereby fixedly secure the adapted device assembled with the motor shaft, so that said post or adapter device and shaft rotate synchronously. It will be apparent that upon loosening set screw 20, the operator can quickly remove or lift the adapted device. The nut-receiving socket 13 can be made of any desired shape and size to accommodate various types of nuts on various motors. The bottom or inner end of adapter may be fitted with flange or other means of fastening to fly wheel when no nut protrudes through. Further, the hollow structure of the body 12, cap 14, and the top of nut 2 produces an admirable compartment or container 21, in which a supply of the brass shear pins 5 can be stored. This is a great convenience, because the operator will have ready at hand a sufficient supply of the pins 5.

The ring device 11 comprises a large primary eye 22 and a small auxiliary eye 23. The rope 8 is suitably fastened or secured to the auxiliary eye 23. On the outer end of the rope is a grip 24. The primary eye 22 is sufficiently large to readily pass over the top or outer end of the adapter device and then be seated in the primary groove 17, bearing against the shoulder 18 thereof. To start the motor, the rope is wound around the grooved portion of the fly wheel, thereby holding the ring device securely in position upon the adapter device, with a portion of the rope extending through notch 7. When the rope is so positioned, the operator pulls on the grip 24 to quickly rotate the fly wheel, thereby spinning the mo-

tor; when the rope is unwound by this operation, the ring device 11 still remains upon the adapter device and usually the primary eye is in the groove 17. However, if the primary eye 22 should jump over shoulder 18, it then rides in the auxiliary groove 19 against shoulder 16. It has been found from extensive experience that the ring device rarely jumps out of groove 17 during the operation, but that in those rare instances in which it does, the ring device is efficiently kept from coming entirely off the adapter device by the flange 15 of the cap 14. Hence, there are two retaining means for the ring device on the adapter device, insuring against accidental displacement of the inner end of the starting rope from off the adapter device.

The device can quickly be applied in position for operation; likewise, it can be readily detached and stored away in any convenient place.

When the pin 5 on the hub 4 and shaft 1 is broken or sheared off, the motor can be hauled into the boat and a new pin installed, by reason of the supply being ready at hand in the adapter device.

What I claim is:

1. In an outboard motor starter, the combination with a flywheel, of an adapter fastened to said flywheel, a flywheel-encircling rope, and means fastening said rope to said adapter, whereby when said rope is unwound from said flywheel to start a motor, said fastening means and adapter will prevent whip of said rope.

2. An outboard motor starter, comprising an adapter provided with means for fastening same to a flywheel, a flywheel-encircling rope, and means fastening said rope to said adapter, whereby when said rope is unwound from a flywheel to start a motor, said fastening means and adapter will prevent whip of said rope.

3. An outboard motor starter, comprising an adapter provided with nut-fastening means, a flywheel-encircling rope, and means fastening said rope to said adapter, whereby when said rope is unwound from a flywheel to start a motor, said fastening means and adapter will prevent whip of said rope.

4. An outboard motor starter, comprising an adapter including a body tapering towards its outer end, said body provided with a primary groove, a cap on the outer end of said body, said cap provided with a flange, said tapering body and flanged cap constituting an auxiliary groove, rope-attaching means normally in said primary groove, said auxiliary groove adapted to receive said rope-attaching means upon its moving from said primary groove, whereby it is prevented from accidental displacement off the adapter, and a flywheel-encircling rope secured to said rope-attaching means.

5. An outboard motor starter, comprising an adapter provided with a plurality of shoulders, rope-attaching means on said adapter and normally engaging one of said shoulders, said rope attaching means capable of being stopped from displacement off the adapter by one of said shoulders, and a flywheel-encircling rope attached to said rope-attaching means.

6. In an outboard motor starter, the combination with a nut of an outboard motor shaft, of an adapter device having its inner end over said nut, said adapter device comprisng a hollow body opening upon said nut, a cap on the outer end of said hollow body, said body adapted to hold pins with their ends resting upon said nut, rope-attaching means on said adapter device, a flywheel fastened to said motor shaft by said nut, a flywheel-encircling rope secured to said rope-attaching means, a set screw extending through a portion of said body and in engagement with said nut, and said adapter device and rope-attaching means preventing whip of said rope when the same is unwound from around said flywheel.

7. In an outboard motor starter, the combination with a flywheel, of a flywheel-encircling rope, and means detachably fastening said rope to the center of said flywheel, whereby when said rope is unwound from said flywheel to start a motor, said fastening means will prevent whip of said rope.

8. In an outboard motor starter, the combination with a shaft provided with a flywheel, a nut on said shaft against said flywheel, of an adapter secured on said nut, a flywheel-encircling rope, and means fastening said rope to said adapter whereby when said rope is unwound from said flywheel to start a motor said fastening means and adapter will prevent whip of said rope.

9. In an outboard motor starter, the combination with a motor shaft, a flywheel on said shaft, of an adapter, means for fastening said adapter to rotate synchronously with said shaft, a flywheel-encircling rope, and means loosely fastening said rope to said adapter whereby when said rope is unwound from said flywheel, said fastening means and adapter will prevent whip of said rope.

10. In an outboard motor starter, the combination with a flywheel provided with an extension, of an adapter on said extension and rotating synchronously therewith, rope-attaching means on said adapter and rotatable independent thereof, and a flywheel-encircling rope fastened to said rope attaching means for the purpose specified.

11. In outboard motor starter, the combination with a flywheel provided with an extension, of a flywheel-encircling rope, and means loosely and detachably fastening said rope to said extension whereby when said rope is unwound from said flywheel to start a motor, said extension and fastening means will prevent whip of said rope.

CHARLES W. STICKEL.