

[54] **MARINE PROPELLER LOCK**

[76] Inventor: **John B. Reese**, 1033 Southwood Dr.,
Waco, Tex. 76710

[22] Filed: **Dec. 13, 1971**

[21] Appl. No.: **207,344**

[52] U.S. Cl. **70/232, 70/178**

[51] Int. Cl. **F16b 41/00, B60r 25/00**

[58] Field of Search 70/14, 177, 178,
70/203, 212, 232, 416, 428, DIG. 56, DIG. 58

[56] **References Cited**

UNITED STATES PATENTS

2,140,066	12/1938	White	70/14
1,333,878	3/1920	Smith.....	70/253
1,830,667	11/1931	Lolley.....	70/178
1,920,128	7/1933	Mickler.....	70/178

Primary Examiner—Albert G. Craig, Jr.

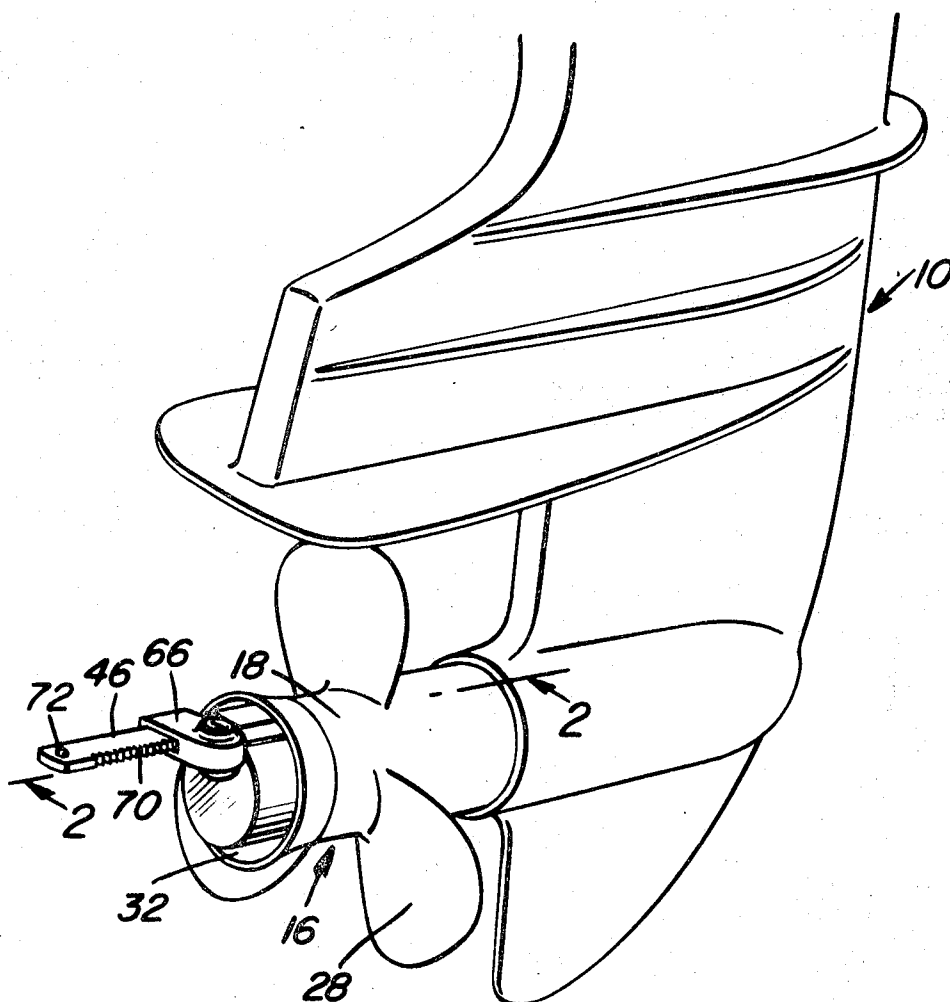
Attorney—Harvey B. Jacobson et al.

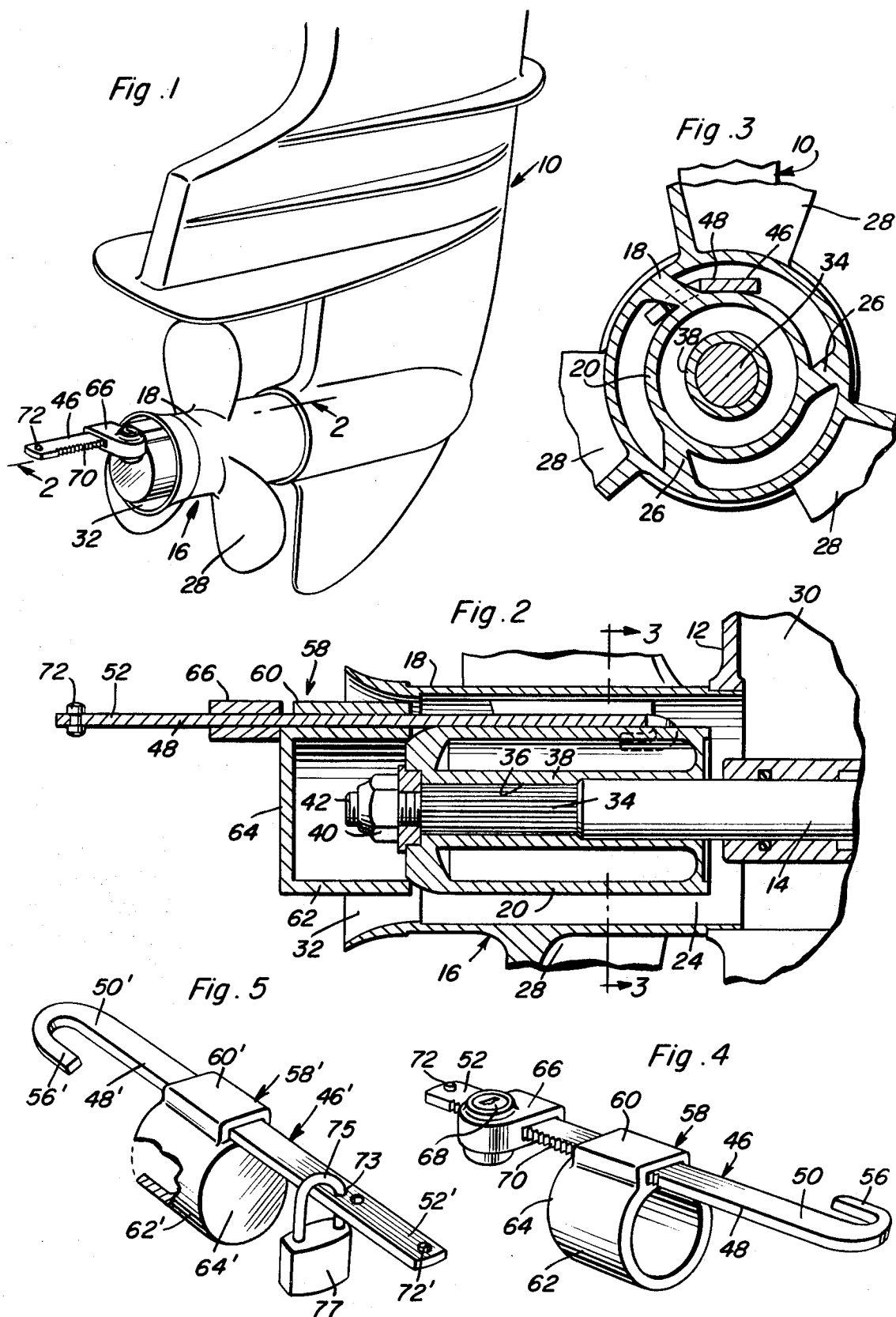
[57] **ABSTRACT**

An elongated bar for lengthwise insertion longitudinally between the inner and outer sleeve portions of a marine propeller. The bar includes hook structure on the end to be inserted between the sleeve portions for

hooked engagement with one of the generally radial lugs supporting the outer sleeve portion from the inner sleeve portion and a slide member is mounted on the other end portion of the rod and includes a laterally offset portion defining a recess opening toward the hooked end of the rod. The slide member is slideable along the rod into position to overlie and telescopically receive an associated propeller retaining nut in the recess defined by the offset portion and a lock assembly is provided for releasably locking the slide member in position against movement away from the hooked end of the rod whereby access to the propeller retaining nut by a wrench or other nut removing tool is prevented and unauthorized removal of the propeller from the associated propeller shaft is prevented. As a safety measure, the propeller lock is free of portions which would interfere with normal turning of the associated propeller and thus inadvertent operation of the associated motor without first removing the propeller lock will not cause damage to the propeller or other associated running gear even though a turning propeller having the propeller lock mounted thereon will cause an apparent vibration so as to immediately remind a person who has inadvertently started the associated motor that the propeller lock has not been removed.

9 Claims, 5 Drawing Figures





MARINE PROPELLER LOCK

The boating industry is enjoying annual increases in sales due to the rapid growth in boating popularity and thus each year there are more and more boats equipped with outboard motors and outdrive assemblies exposed to vandalism and theft. While outdrive assemblies may not be readily removed from boats and many persons have their outboard motors equipped with locks preventing removal of the outboard motors, the propellers of both outdrive assemblies and outboard motors may be readily removed through the utilization of simple hand tools in a minimum of time. As a result, with propellers being frequently damaged by running in shallow water or striking an underwater object, many propellers are stolen from outdrive assemblies and outboard motors each year.

At the present time there are no effective locks by which propellers may be locked onto associated outdrives or outboard motors. Although it might be possible to chain and thus lock a propeller to an outdrive assembly or outboard motor, inadvertent operation of the outdrive assembly or outboard motor without first removing such a chain could cause extensive damage to either the propeller and/or the associated outdrive assembly or outboard motor.

It is therefore the main object of this invention to provide an effective locking device whereby the propeller of an outdrive assembly or an outboard motor may be locked against removal.

Still another object of this invention, in accordance with the immediately preceding objects, is to provide a locking device for propellers which may be mounted on propellers of the type having "through the hub" exhausts in a manner that will not result in damage to either the propeller or the associated outdrive assembly or outboard motor should the motor be inadvertently operated without first removing the locking device.

Yet another object of this invention is to provide a propeller locking device that will automatically signal the operator of the boat in the event he should start the boat in motion with the propeller locking device installed.

An ancillary object of this invention is to provide a marine propeller locking device for preventing unauthorized removal of a propeller and which will also discourage unauthorized operation of the associated boat by generating a severe vibration if the boat is operated at speeds above that which is produced by engine idle speed.

A final object of this invention to be specifically enumerated herein is to provide a marine propeller lock in accordance with the preceding objects which will conform to conventional forms of manufacture, be of simple construction and easy to use so as to provide a device that will be economically feasible, long lasting and relatively trouble free in operation.

These together with other objects and advantages which will become subsequently apparent reside in the details of construction and operation as more fully hereinafter described and claimed, reference being had to the accompanying drawings forming a part hereof, wherein like numerals refer to like parts throughout and in which:

FIG. 1 is a fragmentary perspective view of the lower end of a typical outdrive or outboard motor unit with

the propeller locking device of the instant invention mounted on the associated marine propeller;

FIG. 2 is an enlarged fragmentary vertical sectional view taken substantially upon the plane indicated by the section line 2—2 of FIG. 1;

FIG. 3 is a fragmentary transverse sectional view taken substantially upon the plane indicated by the section line 3—3 of FIG. 2;

FIG. 4 is a perspective view of the propeller locking device illustrated in FIGS. 1—3; and

FIG. 5 is a perspective view of a modified form of propeller locking device.

Referring now more specifically to the drawings the numeral 10 generally designates the lower end of a typical outboard motor or outdrive unit. The unit 10 includes a housing 12 rearwardly from which a driven propeller shaft 14 projects. A marine propeller referred to in general by the reference numeral 16 includes an outer sleeve portion 18, an inner sleeve portion 20 defining an annular passage 24 between the sleeve portions 18 and 20, generally radial webs 26 which support the outer sleeve portion 18 from the inner sleeve portion 20 and circumferentially spaced propeller blades 28 supported from and radiating outwardly from the outer surface of the outer sleeve portion 18.

The housing 12 defines an engine exhaust passage 30 which opens rearwardly into the annular passage 24 and thus exhaust gases from the associated engine may be exhausted from the passage 30, into the adjacent forward end of the passage 24 and outwardly of the rear end 32 of the passage 24. Also, it will be noted that the rear end portion of the propeller shaft 14 includes a splined section 34 for which a splined rear end section 36 of a center sleeve 38 carried by the inner sleeve portion 20 is disposed and that a retaining nut 40 is threaded onto the externally threaded rear terminal end portion 42 of the shaft 14 in order to retain the propeller 16 on the shaft 14, this propeller construction being conventional.

A first form of propeller locking device is referred to in general by the reference numeral 46 and includes an elongated rod 48 defining first and second ends 50 and 52. The first end 50 includes a laterally outstanding hook 56 formed integrally therewith and it may be seen from FIG. 3 of the drawings that the hook 56 and the first end 50 of the rod 48 are disposed in an arc whose center is laterally offset to one side of the rod 48.

A lock body referred to in general by the reference numeral 58 is provided and includes a sleeve portion 60 from which a cylindrical member 62 is supported. The cylindrical member 62 is open at its end adjacent the hook 56 and includes an end wall closing the end thereof adjacent the second end 52 of the rod 48. Further, the center of the arc in which the hook 56 as well as the adjacent first end 50 of the rod 48 lie has its center curvature generally coinciding with the longitudinal center axis of the sleeve member 62.

A lock member 66 in the form of a slide is slidably disposed on the second end 52 of the rod 48 and includes a tumbler lock actuated ratchet assembly 68 coacting with ratchet teeth 70 formed along one side edge of the rod 48 whereby when the ratchet assembly 68 when locked will allow sliding movement of the lock member or slide 66 along the rod 48 toward the hook 56 but prevent sliding movement of the lock member or slide 66 along the rod 48 toward the second end 52 which is provided with a lateral abutment 72 to prevent

complete withdrawal of the lock member or slide 66 from the rod 48.

In operation, when it is desired to apply the propeller locking device 46 to the propeller 16, the ratchet assembly 68 is unlocked and slid along the rod 48 to the second end thereof. Thereafter, the lock body 58 is also slid toward the second end 52 into abutting engagement with the lock member or slide 66. Then, the first end 50 of the rod 48 is lengthwise forwardly inserted between the inner and outer sleeve portions 20 and 18 and then laterally displaced so as to engage the hook 56 with one of the webs 26. The rod 48 is then pulled rearwardly away from the housing 12 to fully seat the engaged web 26 in the hook 56 and the lock body 58 is slid toward the first end 50 as to position the forwardly opening cylindrical member 62 over the rear end of the inner sleeve portion 20 to thus wholly position the nut 40 within the cylindrical member 62 and completely prevent access thereto by any tools for removing the nut 40. After the rod 48 and lock body 58 have thus been positioned, the lock member or slide 66 is slid forwardly along the rod 48 toward the first end thereof into abutting engagement with the rear end wall 64 of the sleeve or cylindrical member 62 to thus prevent its rearward displacement along the rod 48. Thus, with the propeller locking device 46 properly applied to the propeller 16, removal of the propeller by loosening the nut 40 is prevented. Of course, it may be seen from FIGS. 1 and 2 of the drawings that no portion of the propeller locking device 46 will interfere with the housing 12 or any other portion of the drive unit 10 during rotation of the propeller 16 and thus the associated engine may be inadvertently started without damaging the unit 10. However, it will be appreciated that the propeller locking device 46, when mounted on the propeller 16, will generate considerable vibration upon rotation of the propeller 16 at speeds above idle speed. Thus, a person inadvertently starting the associated engine will be reminded that the propeller locking device 46 has not been removed or persons attempting unauthorized use of the associated boat will be discouraged from operation of the boat at speeds greater than idle speeds.

With attention now invited more specifically to FIG. 5 of the drawings there may be seen a second form of propeller locking device referred to in general by the reference numeral 46'. The device 46' includes many components corresponding to those of the device 46 and accordingly, these similar components have been designated by corresponding prime reference numerals.

The locking device 46' differs from the device 46 in that the rod 48' is not provided with teeth corresponding to the teeth 70 but is instead provided with longitudinally spaced bores 73 through which the hasp 75 of a padlock 77 may be secured in order to limit movement of the sleeve or cylinder member 62' toward the second end 52' of the rod 48'. Of course, the propeller locking device 46' may be marketed with but a few bores 73 formed in the rod 48' and if the locking device 46' is to be utilized on a propeller other than that for which it is intended to be used, such additional bore 73 as needed may be formed through the rod 48'.

Otherside, the operation of the device 46' is identical to the operation of the device 46.

The foregoing is considered as illustrative only of the principles of the invention. Further, since numerous

modifications and changes will readily occur to those skilled in the art, it is not desired to limit the invention to the exact construction and operation shown and described, and accordingly all suitable modifications and equivalents may be resorted to, falling within the scope of the invention.

What is claimed as new is as follows:

1. A propeller locking device for preventing unauthorized removal of marine propellers of the "through the hub" exhaust type including generally concentric inner and outer sleeve members supported from one another by generally radial webs and with one end of the inner sleeve member comprising a thrust abutment face engageable by a propeller retaining nut, said locking device including an elongated locking bar having a hook portion on one end opening toward the other end, and a lock body mounted on the other end portion of said bar for adjustable guided shifting therealong and including a laterally offset portion for register with and disposition behind an associated propeller nut to prevent its removal, said hook portion being adapted to be removably engaged with one of said webs, the laterally offset portion of said lock body defining a recess opening toward said end of said bar and adapted to receive a propeller retaining nut therein, whereby an associated nut may be completely received within said recess so as to prevent engagement of the nut by a wrench.

2. The combination of claim 1 wherein said bar is flat and includes opposite side edge portions, said hook portion projecting outwardly of one of said side edge portions.

3. The combination of claim 1 wherein said lock body is freely slidable on said bar, a lock member operable to releasably lock said lock body against movement toward said other end of said locking bar.

4. The combination of claim 3 wherein said lock member comprises a separate lock slide sliding disposed on said bar on the side of said lock structure remote from said one end of said bar and releasably lockable in position on the bar against movement toward said other end thereof and in position to define an abutment engageable by said lock body to limited movement toward the other end of said bar.

5. The combination of claim 4 wherein said bar and lock member include coacting ratchet means allowing movement of said lock member toward said one end of said bar and releasably preventing movement of said lock member toward the other end of said bar.

6. The combination of claim 4 wherein said lock member comprises a shank equipped lock and said bar has at least one transverse bore formed therethrough through which said shank is lockable.

7. A propeller locking device for preventing unauthorized removal of marine propellers of the type including a cylindrical hub portion to be telescoped onto the rear end of a propeller shaft and retained in position on the shaft by means of a propeller nut threaded onto the shaft behind the hub portion, the hub portion also including generally radially outwardly projecting portions intermediate its opposite ends, said propeller locking device including an elongated locking bar having a hook portion on one end opening toward the other end and adapted to be engaged with the forward edge of one of said radially outwardly projecting portions, a lock body mounted on the other end portion of said bar for adjustable guided shifting therealong and including a laterally offset portion defining a forwardly

5

opening recess opening toward said one end of said bar, said lock body being slidable along said bar toward said one end for telescoping over the rear end of said nut, and means operatively associated with said lock body and bar releasably preventing rearward movement of said lock body along said bar toward the other end thereof.

8. A propeller locking device for preventing unauthorized removal of a marine propeller of the type including a rearwardly facing abutment face through which a central propeller shaft receiving bore opens and against which a propeller retaining nut threaded on the rear end of a propeller shaft on which said propeller is mounted may abut to retain the propeller on the shaft, said locking device including an elongated tension member having means on one end adapted for removably engaging a forward portion of a propeller disposed to one side of the central bore formed therethrough against rearward displacement of the tension member relative to the propeller, a lock body slidably mounted

6

on the other end portion of said tension member for adjustable positioning therealong and including a laterally offset portion for register with and disposition behind an associated propeller nut to prevent its removal, the laterally offset portion of said lock body defining a recess opening toward said one end of said tension member and adapted to receive a propeller nut retaining therein, whereby an associated nut may be completely received within said recess so as to prevent engagement of the nut by a wrench, said lock body and tension member including coacting means releasably locking said lock body in a selected position against movement toward said other end of said tension member.

9. The combination of claim 8 wherein said coacting means includes means for releasably locking said lock body on said tension member in adjusted position along the latter against movement toward the other end of the tension member.

* * * * *

25

30

35

40

45

50

55

60

65