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COMBINATION RUDDER AND PROPELLER DRIVE ASSEMBLY

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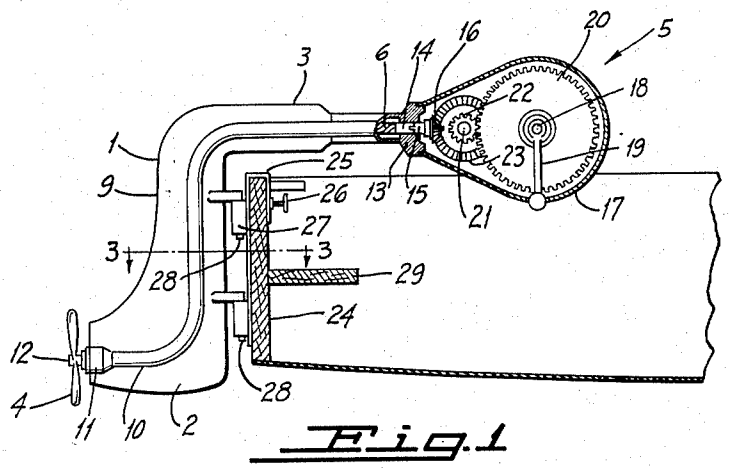



Fig. 1

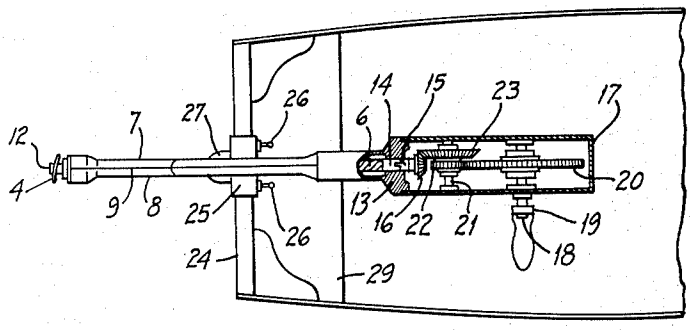



Fig. 2

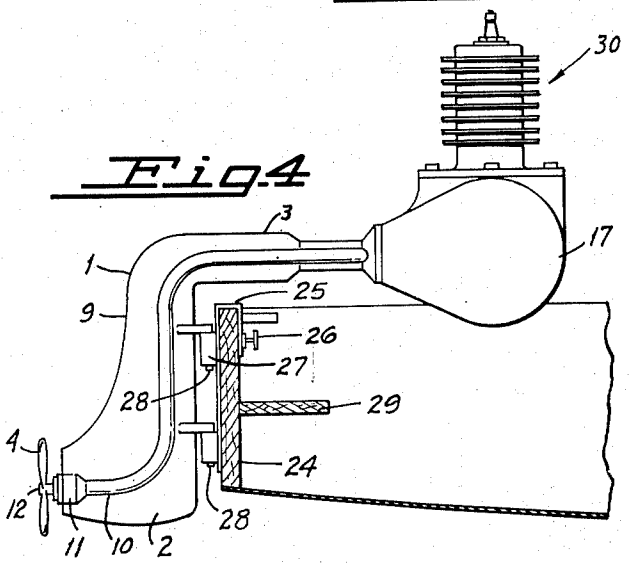



Fig. 4

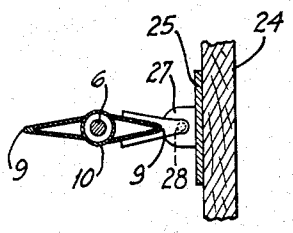



Fig. 3

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## COMBINATION RUDDER AND PROPELLER DRIVE ASSEMBLY

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4 Claims. (Cl. 115—24)

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The present invention relates to improvements in a combination rudder and propeller drive assembly for a boat, and the principal object of the invention is to provide an assembly of the character described in which the rudder, the propeller and the propeller drive are combined into a single unitary structure adapted to be applied to the boat as a unit.

It is a further object of the invention to arrange the unit in such a manner that the operator may work the drive for the propeller while sitting on a rear seat in the boat and while looking forward. This feature is of particular advantage insofar as it facilitates the operation of the boat, makes it safer, particularly for children, to operate the boat, and facilitates navigation of the boat insofar as it makes it easier for the operator to steer the boat into narrow quarters in an unobtrusive manner and without noise, which is of particular importance to the fisherman and duck hunter.

It is further proposed in the present invention to provide a unitary structure of the character described that can be installed in a boat without difficulty, can be readily removed, and is sufficiently light in weight for easy carrying and transporting.

While my combination assembly is principally intended for manual operation, it is also capable of being operated by a motor, and in that case the motor will be positioned in such a manner with respect to the handle of the rudder that no oil may drip from the motor into the water, and contamination of the latter is thereby prevented.

Further objects and advantages of my invention will appear as the specification proceeds, and the novel features of my invention will be fully defined in the claims attached hereto.

The preferred form of my invention is illustrated in the accompanying drawing, in which

Figure 1 shows a side view of my combination rudder and propeller drive assembly as applied to the rear end of a boat,

Figure 2, a top plan view of the combination shown in Figure 1,

Figure 3, a horizontal section taken along line 3—3 of Figure 1, and

Figure 4, a side view of a slightly modified form in which an engine drive is substituted for the manual drive of the first three figures.

While I have shown only the preferred forms of my invention, I wish to have it understood that various changes and modifications may be made within the scope of the claims attached hereto without departing from the spirit of the invention.

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Referring to the drawing in detail, my combination rudder and propeller drive assembly comprises in its principal features a rudder 1 having a blade 2 and a handle 3, a propeller 4 revolvably secured upon the rear edge of the blade, an operating mechanism 5 secured upon the front portion of the handle, and a flexible shaft 6 connecting the propeller to the drive.

The rudder is preferably made in the form of a shell including two side plates 7 and 8 secured upon one another along the edges 9 and bulging away from one another so as to form a central passage 10 for the flexible shaft 6. The rudder may be made of any suitable conventional shape, and the rear end of the passage within the rudder contains a bearing 11 for the propeller shaft 12.

The front end of the rudder handle terminates in a bearing 13 for a coupling 14 between the flexible shaft 6 and a stub-shaft 15 having a pinion 16 thereon.

A housing 17 is mounted upon the front end of the bearing 13 and has a transverse shaft 18 revolvably mounted therein, the shaft having a crank handle 19 disposed outside the housing for operating the same.

A gear wheel 20 is mounted on the shaft 18. The housing carries a second shaft 21 between the pinion and the shaft 18, and the shaft 21 has a gear wheel 22 mounted thereon, meshing with gear wheel 20, and also a bevelled gear 23 meshing with the pinion 16.

It will be seen that in this manner the rudder, the propeller, the drive means for the propeller and the flexible shaft connecting the drive means with the propeller are all mounted to form a unitary structure.

The rear wall of the boat, indicated at 24, has a bracket 25 removably secured thereon, the bracket being channel-shaped so as to fit over the rear wall and being held in place by means of a pair of clamping screws 26. The rear wall of the bracket is provided with two alined bearings 27, and the rudder blade has two vertical pins 28 mounted in front of its forward edge, the pins being engageable in the bearings 27 so as to support the rudder with freedom of swinging movement with respect to the rear wall of the boat.

A seat 29 is provided in the rear of the boat in a conventional manner, the rudder handle being proportioned for convenient operation of the crank 19 by a person seated on the seat 29 and looking forward.

The operation of the invention thus far described will be readily understood from the foregoing description. The bracket 25 may be

readily applied to the rear wall of the boat, and the entire assembly of the rudder and the propeller with its drive means is applied to the boat by merely dropping the pins 28 into the bearings 27.

A person occupying the seat 29 may now readily operate the rudder for steering the boat and at the same time operate the crank handle 19 for rotating the propeller 4 to advance the boat.

The form illustrated in Figure 4 resembles the one previously described in all details except that a motor 30 is mounted on the housing 17 for driving the gear wheel 20 in any suitable and well-known manner, as by means of a crank shaft. It will be noted that when the engine is mounted in this manner it will be located over the interior of the boat instead of being outside the boat.

I claim:

1. A combination rudder and propeller drive assembly for a boat having a rear wall, comprising a rudder including a relatively flat blade disposed in a vertical plane and having a vertical central section, a rearwardly projecting lower section and a forwardly projecting upper section and having a substantially centrally located guide duct extending from end to end therein, means for securing the central section upon the rear wall of the boat, a flexible shaft in said guide duct, a propeller mounted upon the rear end of the shaft and rearwardly of the rudder, a gear housing mounted upon the front end of the rudder so as to form a forward continuation thereof, and a gear mechanism in said housing and connected to the front end of the shaft, and having means for driving the same.

2. A combination rudder and propeller drive assembly for a boat having a rear wall, comprising a rudder including a relatively flat blade disposed in a vertical plane and having a vertical central section, a rearwardly projecting lower section and a forwardly projecting upper section and having a substantially centrally located guide duct extending from end to end therein, means for securing the central section upon the rear wall of the boat, a flexible shaft in said guide duct, a propeller mounted upon the rear end of the shaft and rearwardly of the rudder, a gear housing mounted upon the front end of the rudder so as to form a forward continuation thereof, and a gear mechanism in said housing and connected to the front end of the shaft, and having means for driving the same, the rudder being made of two flat complementary plates arranged in contacting side by side relation and having registering grooves to form the duct.

3. In a combination rudder and propeller drive assembly for a boat having a substantially vertical rear wall, a rudder comprising a unitary



flat blade having a vertical central section, a rearwardly projecting lower section and a forwardly projecting top section and having a substantially centrally located guide duct therein, the three sections being of substantially the same thickness and having continuous and smooth outer surfaces, means for swingably securing the central section upon the rear wall of the boat with the top section projecting over the boat, a flexible shaft in said guide duct, a propeller mounted upon the rear end of the shaft and rearwardly of the blade, and means mounted upon the front end of the rudder for driving the shaft, the central section extending upwardly substantially to the height of the boat and being of a width greatly in excess of its thickness to produce a steering effect throughout the depth of immersion.

4. In a combination rudder and propeller drive assembly for a boat having a substantially vertical rear wall, a rudder comprising a unitary flat blade having a vertical central section, a rearwardly projecting lower section and a forwardly projecting top section and having a substantially centrally located guide duct therein, the drive sections being of substantially the same thickness and having continuous and smooth outer surfaces, means for swingably securing the central section upon the rear wall of the boat with the top section projecting over the boat, a flexible shaft in said guide duct, a propeller mounted upon the rear end of the shaft and rearwardly of the blade, and means mounted upon the front end of the rudder for driving the shaft, the central section extending upwardly substantially to the height of the boat and being of a width greatly in excess of its thickness to produce a steering effect throughout the depth of immersion, and the rudder being made in two complementary flat plate sections arranged in contacting side-by-side relation and having registering grooves to form the duct.

CARL HERMAN STAHMER.


## REFERENCES CITED

The following references are of record in the file of this patent:

UNITED STATES PATENTS

| Number | Name | Date |
|---|---|---|
| 486,684 | Salisbury | Nov. 22, 1892 |
| 992,676 | Krohn | May 16, 1911 |
| 1,512,902 | Boyd | Oct. 28, 1924 |
| 1,639,339 | Grass | Aug. 16, 1927 |
| 2,273,815 | Bevington | Feb. 24, 1942 |

FOREIGN PATENTS

| Number | Country | Date |
|---|---|---|
| 5,580 | Great Britain | Dec. 15, 1893 |
| 370,707 | France | Oct. 23, 1906 |