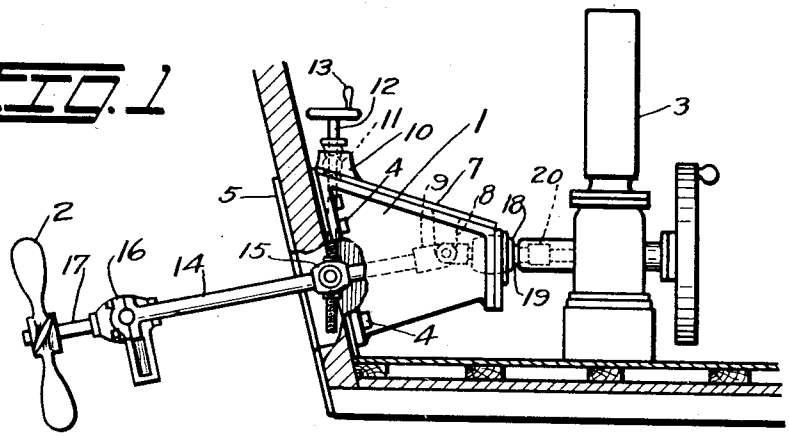
Aug. 20, 1929. R. K. CAMPBELL 1,725,252

STERN MOTOR

Filed Feb. 10, 1927

FIG. 1



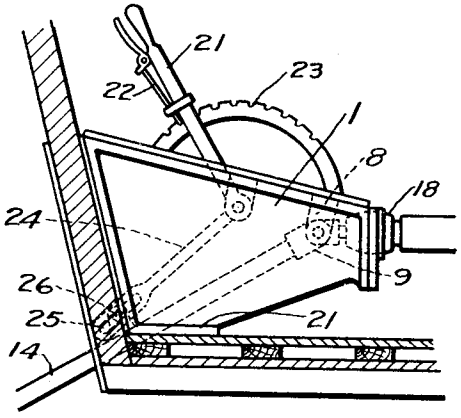


FIG. 2

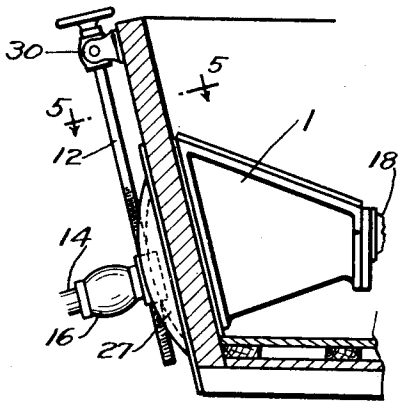
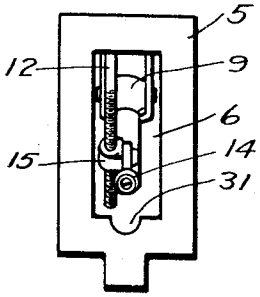


FIG. 3

FIG. 4



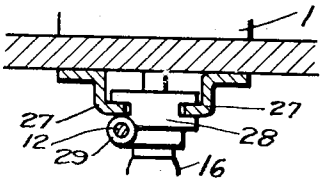


FIG. 5

Inventor

Robert K. Campbell

By Harry Bowen

Attorney

Patented Aug. 20, 1929. 1,725,252

UNITED STATES PATENT OFFICE.

ROBERT K. CAMPBELL, OF SEATTLE, WASHINGTON.

STERN MOTOR.

Application filed February 10, 1927. Serial No. 167,113.

The invention is an apparatus whereby a propeller may readily be attached to a boat and by which the propeller may readily be raised to a position above the keel when the boat is in shallow water.

The object of the invention is to provide means for mounting a propeller on a small boat which will enable the boat to be drawn along the bottom without injuring the propeller.

Another object of the invention is to provide means for mounting a propeller on a small boat through which the propeller may readily be raised or lowered.

Another object of the invention is to provide means for attaching the propeller to a boat that may readily be installed.

A further object of the invention is to provide means for attaching a propeller and an engine to a small boat in which the entire apparatus and engine are embodied within the boat.

A still further object of the invention is to provide means for installing a propeller and engine in a small boat in which the propeller may be removed by taking it through a housing in the boat.

And a still further object of the invention is to provide an apparatus for mounting a propeller in a small boat and adjusting the position thereof which is of a simple and economical construction.

With these ends in view the invention embodies, a housing adaptable to be attached to the inner side of the stern end of a boat, an engine adjacent the said housing with the shaft extending into a universal joint therein, a propeller shaft with the propeller on the outer end extending into the said universal joint and a vertical screw with a handle at the upper end extending into the housing and engaging a socket on the said shaft to adjust the position of the shaft.

Other features and advantages of the invention will appear from the following description taken in connection with the drawings, wherein:

Figure 1 is a sectional view of the stern of a boat showing the device as it would appear in use with a portion of the housing and boat end broken away.

Figure 2 is a similar view showing the housing and showing an alternate arrangement.

Figure 3 is also a similar view showing another alternate arrangement.

Figure 4 is an end view of the device as shown in Figure 1 showing the plate at the end of the boat with an opening therein through which the propeller shaft extends.

Figure 5 is a sectional view showing the track shown in Figure 3 and taken on line 5—5.

In the drawings the device is shown as it would be made wherein numeral 1 indicates the housing, numeral 2 the propeller and numeral 3 the engine.

The housing 1 may be made as shown in Figure 1 of a small narrow casting which may be bolted to the end of the boat by bolts 4, as shown. The end of the casting that is bolted against the end of the boat is open and on the outer surface of the end of the boat is a plate 5 that is provided with an opening 6 that is similar to the opening in the end of the casting 1. On the upper side of the casting is an opening with a cover plate 7 having a bearing 8 projecting downward from it and it will be observed that this bearing supports a coupling 9 at the inner end of the propeller shaft housing. The openings in the upper side of the casting which is covered by the plate 7 and also the openings in the outer end are of sufficient size to permit the propeller to be withdrawn through the casting so that it may be taken into the boat through the connection. At the upper end of the plate 7 is a boss 10 having a ball-socket 11 therein through which a screw 12 having a handle 13 on it passes. The lower end of the screw is connected to the propeller shaft housing, which is indicated by the numeral 14 through a swivel joint 15. It will be observed that as the screw is rotated it will readily raise or lower the propeller shaft. At the outer end of the housing 14 is a pump 16 which will supply cooling water to the engine. The propeller shaft 17 extends beyond the end of the housing and the propeller 2 is mounted on the outer end. At the inner end of the housing 1 is a ball and socket joint 18 which is connected to the engine shaft 19 and also to the inner end of a universal joint of the

propeller shaft in the coupling 9 so that the shaft may readily be aligned when the device is installed. The engine shaft may be provided with a clutch 20 as indicated by the dotted lines if desired.

In the design shown in Figure 2 the housing 1 is provided with a base 21 so that the opening at the end of the housing may extend through the bottom of a boat so that the propeller may be moved downward to a position considerably below the bottom of the boat. It is understood that in this design the propeller may be positioned by the screw 12, as shown in Figure 1, or by a lever 21 with a spring latch 22 operating in a segment 23, as shown in Figure 2. In this design the inner end of the lever is provided with an arm 24 having a slot 25 at the outer end which is slidable on a pin 26 that may be provided on a housing 14. It will be seen that in this design the propeller shaft may readily be raised or lowered by the lever 21.

In the design shown in Figure 3 the housing 1 is similar to that shown in Figure 1 and the vertical screw 12 is mounted on the outside of the boat. In this design a track 27 is attached to the end of the boat and the propeller shaft or housing 14 passes through a bearing 28, which is slidable in the track 27 and which is provided with a boss 29 which is pivotally attached to it and which is threaded so that the screw 12 will pass through it. The upper end of the screw 12 is held in a pivoted socket 30 and it will be observed that as the screw is rotated it will raise or lower the propeller shaft through the bearing 28. In this design the pump 16 may be mounted directly against the bearing 28 or adjacent the outer end, as shown in Figure 1.

The plate 5, shown in Figures 1 and 4 may be of any suitable shape or design and may be provided with any suitable means for holding the propeller shaft. In the design shown the lower end of the opening 6 is provided with a notch 31 to receive the propeller shaft when the propeller is in the downward position. This notch will hold the shaft laterally to provide greater rigidity while operating.

It will be understood that other changes may be made in the construction without departing from the spirit of the invention, one of which changes may be in the general design of the housing as it is understood that a housing of any suitable type may be used, another may be in the use of other means for raising or lowering the propeller shaft, another may be in the location or arrangement of the pump and still another may be in the design, arrangement or location of the engine or motor.

The construction will be readily understood from the foregoing description. To use the device it may readily be installed by cutting an opening in the stern of a boat similar to the opening 6 in the plate 5, mounting the housing 1 around the said opening with a water proof mounting, installing the engine with the shaft extending into the universal joint 18 and then installing the propeller with the shaft, the inner end of which may be squared, splined or keyed, extending into the universal joint in the coupling 9 and the vertical adjusting screw passing through the socket 15. It will be observed that this will provide a very unique mounting for a propeller with the engine and apparatus inside of the boat and the elevation of the propeller readily adjustable while at the same time the propeller may readily be removed by removing the cover plate of the housing 1 and withdrawing the propeller through the housing. The propeller may be lowered as much as desired and then when it is desired to operate the boat in shallow water, or draw it along the beach the propeller may be raised until it is above the keel or bottom of the boat.

Having thus fully described my invention, what I claim as new and desire to secure by Letters Patent, is:

1. In a stern motor attachment of the class described, a housing adaptable to be mounted in and to seal an opening at the stern of a boat, means for mounting and adjusting a propeller through the said housing, the said housing having openings therein through which the said propeller may be readily removed, motive power for rotating the said propeller, a circulating pump on the said propeller shaft for supplying cooling water for the said motive power, and means for steadying the outer end of the propeller shaft when in the lower position.

2. In a device of the class described, a housing adaptable to be installed in an opening in the end of a boat, a propeller, a shaft upon which the said propeller is mounted, said housing having a removable cover plate with bearings for mounting the shaft on the underside thereof and having openings to permit the said propeller and shaft to pass therethrough when the cover plate is removed, means for adjusting the position of the said propeller and means for rotating the said propeller.

In testimony whereof I affix my signature.

ROBERT K. CAMPBELL.