

W. H. MICHEL.
 PROPELLER LIFTER.
 APPLICATION FILED MAR. 23, 1916.

1,204,895.

Patented Nov. 14, 1916.
 2 SHEETS—SHEET 1.

Fig. 1.

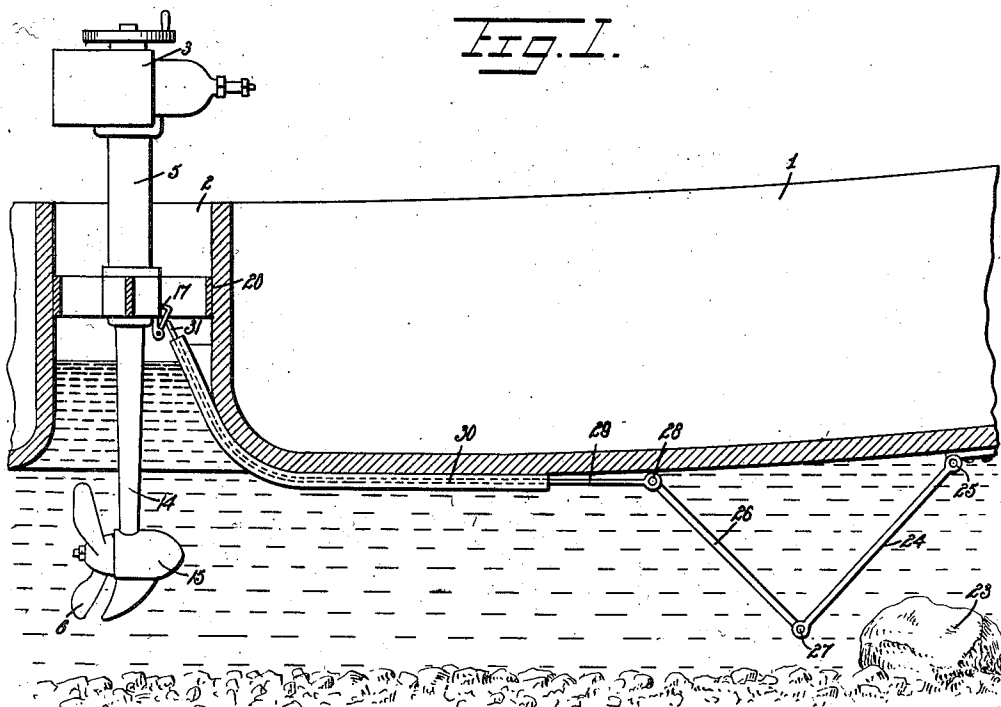
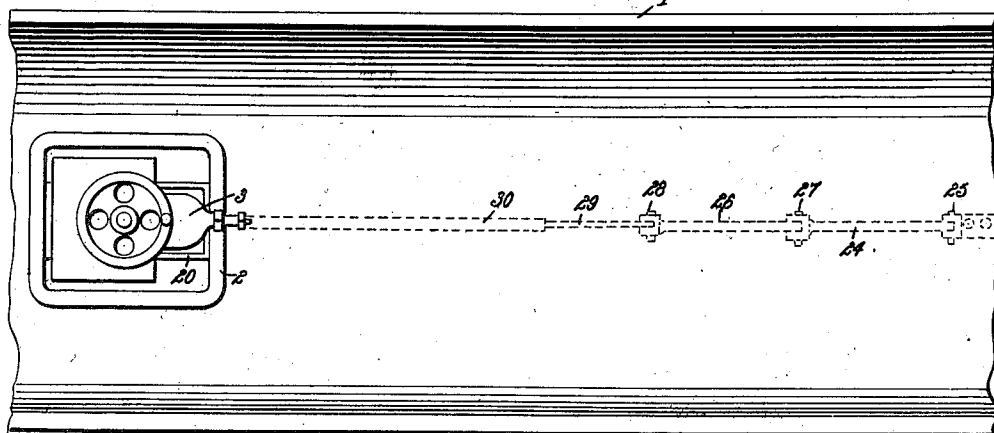


Fig. 2.



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Fig. 3.

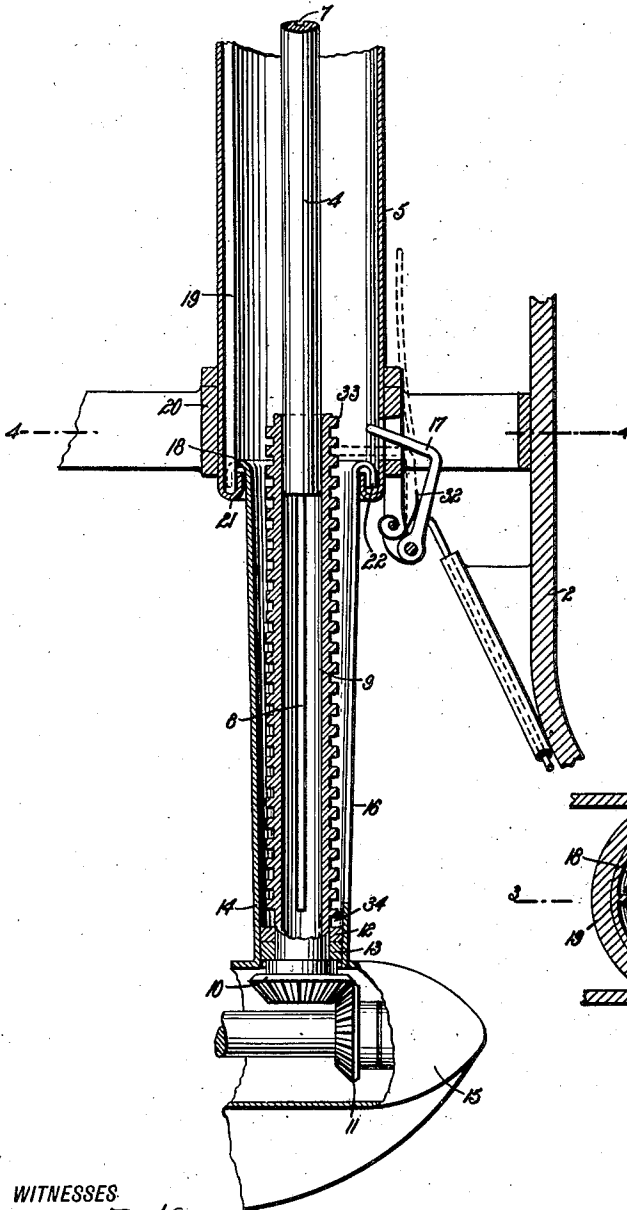
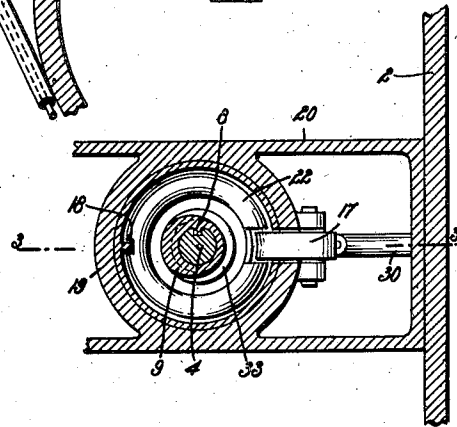


Fig. 4.



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UNITED STATES PATENT OFFICE.

WALTER H. MICHEL, OF PASSAIC, NEW JERSEY.

PROPELLER-LIFTER.

1,204,895.

Specification of Letters Patent.

Patented Nov. 14, 1916.

Application filed March 23, 1916. Serial No. 86,116.

To all whom it may concern:

Be it known that I, WALTER H. MICHEL, a citizen of the United States, and a resident of Passaic, in the county of Passaic and State of New Jersey, have invented a new and Improved Propeller-Lifter, of which the following is a full, clear, and exact description.

This invention relates to propelling mechanism for motor boats and particularly to means for actuating the propeller and also for raising the same when the boat passes over an obstruction.

Another object in view is to provide a shifting mechanism for the driving mechanism of the propeller whereby the driving mechanism is caused to automatically raise the propeller to a position above the bottom of the boat.

A still further object in view is to provide a pivotally mounted construction arranged on the bottom of the boat for engaging an obstacle and means operated thereby for shifting the driving mechanism of the propeller of the boat, whereby the driving mechanism will engage a pin and become automatically raised by continued engagement therewith.

In the accompanying drawings: Figure 1 is a fragmentary longitudinal vertical section through the boat showing a propelling mechanism and means for automatically manipulating the same whereby the propeller will be lifted. Fig. 2 is a top plan view of the structure shown in Fig. 1. Fig. 3 is an enlarged fragmentary vertical section through the driving mechanism and associated parts shown in Fig. 1, the section being taken approximately on line 3-3 of Fig. 4. Fig. 4 is an enlarged detail sectional view through Fig. 3 approximately on line 4-4.

Referring to the accompanying drawings by numerals, 1 indicates a boat of any desired kind which is provided with a well 2 whereby the engine 3 may be properly arranged in position for operating the driving shaft 4 (Fig. 3) which is connected with the engine and extends into casing 5 but does not extend down to the propeller 6. The shaft 4 is provided with a keyway 7 which accommodates the key 8 connected with

sleeve 9 so that when the driving shaft 4 is rotated sleeve 9 will be rotated and as sleeve 9 is geared to the propeller 6 through the gears 10 and 11 the propeller will be operated whenever the engine is in operation. The sleeve 9 at the lower end is provided with a collar 12 which rests on a collar 13, collar 12 being formed integral with or rigidly secured to sleeve 9, while collar 13 is rigidly secured to the casing 14, which casing is rigidly connected with the casing 15 containing the beveled gears 10 and 11 and associated parts. Casing 14 is provided with a slot 16 for accommodating the pivotally mounted pin 17, as hereinafter fully described, and is also provided with a comparatively short slot 18 opposite slot 16 or at any other convenient point for accommodating the key 19. By providing the notch or slot 18 and key 19 the casing 14 cannot rotate but may freely slide upwardly or downwardly. The casing 5 is rigidly secured to a suitable spider 20 which in turn is connected to the side walls of well 2 in any suitable manner. The bottom of casing 5 is turned up at 21 so as to provide an annular groove in which the turned-over portion 22 fits, as shown in Fig. 3, when the parts are in their lowered operative position.

Whenever the boat is passing over an obstacle which is liable to strike the propeller 6, as for instance, a stone 23 (Fig. 1) the bar 24 will strike the obstacle, and as the same is pivotally mounted at 25, will move upwardly and force the bar 26 substantially longitudinally, said bar being pivotally connected at 27 to bar 24, thus forming in a certain sense a toggle arrangement. Bar 26 is pivotally connected at 28 to a flexible rod 29, said rod passing through a guiding tube 30 which guiding tube extends for a short distance along the bottom of the boat 1 and then upwardly into well 2 so that the operative end 31 of rod 29 normally rests against the lower part of the pin 17, as shown in Figs. 1 and 3. A spring 32 is provided for normally holding the pin in the position shown in Fig. 3, but when the rod 29 is operated by reason of the bar 24 striking an obstacle, spring 32 is overcome and the inner end of pin 17 is forced into

the threads 33 on sleeve 19, said sleeve being threaded exteriorly from the top to near the bottom, where there is provided an annular space 34 at the bottom. If the obstacle is of an appreciable height the same will force the pin 17 and associated parts to the dotted position shown in Fig. 3; thus the flexible bar 26 will move past the end of the pin and the pin will firmly engage the threads 33 on sleeve 9.

As the driving shaft is rotating under the action of the engine and the sleeve 9 is also rotating, this will cause the sleeve to climb quickly on the pin 17 and thereby raise the casing 15 together with propeller 6 and casing 14 and associated parts. As soon as the sleeve 19 has been raised until pin 17 engages the annular groove 34, a continued rotation of the sleeve under the action of the motor 3 will not injure any parts. The various parts will remain in their elevated position by reason of the fact that the resilient bar 29 is holding the pin 17 in its operative position. If the obstacle has been passed over by the momentum of the boat and it is safe to again lower the propeller, the operator may manually force the rod 29 back to the position shown in Figs. 1 and 3 and the propeller will automatically drop to its former position. This arrangement is very desirable where obstructions are liable to be met with in operating in comparatively shallow water. In addition to providing this automatic means for raising the propeller the operator may, if he so desires, reach down and manually raise the casing 14 and associated parts for a short distance in order to keep the propeller from striking the ground.

What I claim is:—

1. In a device of the character described, the combination with a propeller and a rotating shaft for operating the propeller, of means for automatically raising the shaft and propeller, said means including a pivotally mounted toggle member arranged in front of the propeller and adapted to be collapsed by an obstacle.

2. In a device of the character described, the combination with a boat provided with a well, a propeller and an engine for driving the propeller, of a shaft extending through said well and connecting the propeller with the engine, said shaft being provided with a threaded portion merging into an annular groove at the bottom, a sleeve surrounding said threaded portion and supporting said shaft, a bracket connected with said well supporting said sleeve, a pin mounted on said bracket and adapted to be inserted into said threaded portion whereby when said shaft is rotated the same will automatically move upwardly and carry with it said sleeve and said propeller until said pin moves into said groove, and means mounted on the bot-

tom of the boat for moving said pin so that the same will engage said threaded portion, said means being adapted to be actuated by an obstacle.

3. In a propeller lifter of the character described, an obstacle engaging member formed with a folding section and a movable section, a driving shaft for said propeller, said shaft being formed with a threaded section, a pin adapted to be moved by said movable section into engagement with the threads of said threaded section whereby upon the rotation of said driving shaft said shaft and propeller will be raised.

4. In a device of the character described, the combination with a propeller and an engine for operating the propeller, of a driving member for connecting the engine and the propeller, said driving member comprising a shaft connected with the engine and a sleeve splined to the driving shaft, said sleeve being threaded exteriorly, a pin adapted to be inserted into said threads, and means on the bottom of the boat for causing the pin to enter said threads whereby the continued rotation of the sleeve will cause the same to climb the pin and thereby lift the propeller out of the water.

5. In a device of the character described, the combination with a boat having a well, of a propelling mechanism therefor, said propelling mechanism comprising an engine, a casing supporting said engine and connected with the walls of said well, a driving shaft connected with said engine and rotated thereby, said driving shaft extending longitudinally of said casing, an auxiliary casing normally supported by the first mentioned casing arranged to normally support a propeller, said auxiliary casing telescopically fitting said first mentioned casing, means for preventing the rotation of said auxiliary casing when telescoping into the first mentioned casing, a sleeve splined to said driving shaft, said sleeve being threaded exteriorly, a propeller, means for connecting said sleeve with said propeller so as to transmit rotary motion to the propeller, a pin, and means for operating said pin so as to cause the same to enter the threads on said sleeve, whereby as the sleeve continues to rotate the same will climb the pin and raise said auxiliary casing and propeller upwardly.

6. In a propeller lifter of the character described, a driving member adapted to be connected to the propeller, said driving member being formed with a fixed rotary section and a section telescoping over but splined to said rotary section whereby both sections rotate together while one section moves longitudinally, said telescoping section being threaded exteriorly and connected with the propeller, a pin adapted to be inserted into the threads on said telescoping

section, said pin being fixed whereby upon
the rotation of the telescoping section the
same together with the propeller will be
raised, and means actuated by a member on
5 the bottom of the boat to which the device
is secured for moving said pin into engage-
ment with said telescoping section.

In testimony whereof I have signed my
name to this specification in the presence of
two subscribing witnesses.

WALTER H. MICHEL.

Witnesses:

GEO. F. SCHMIDT,

CURT R. SHOCKNER.