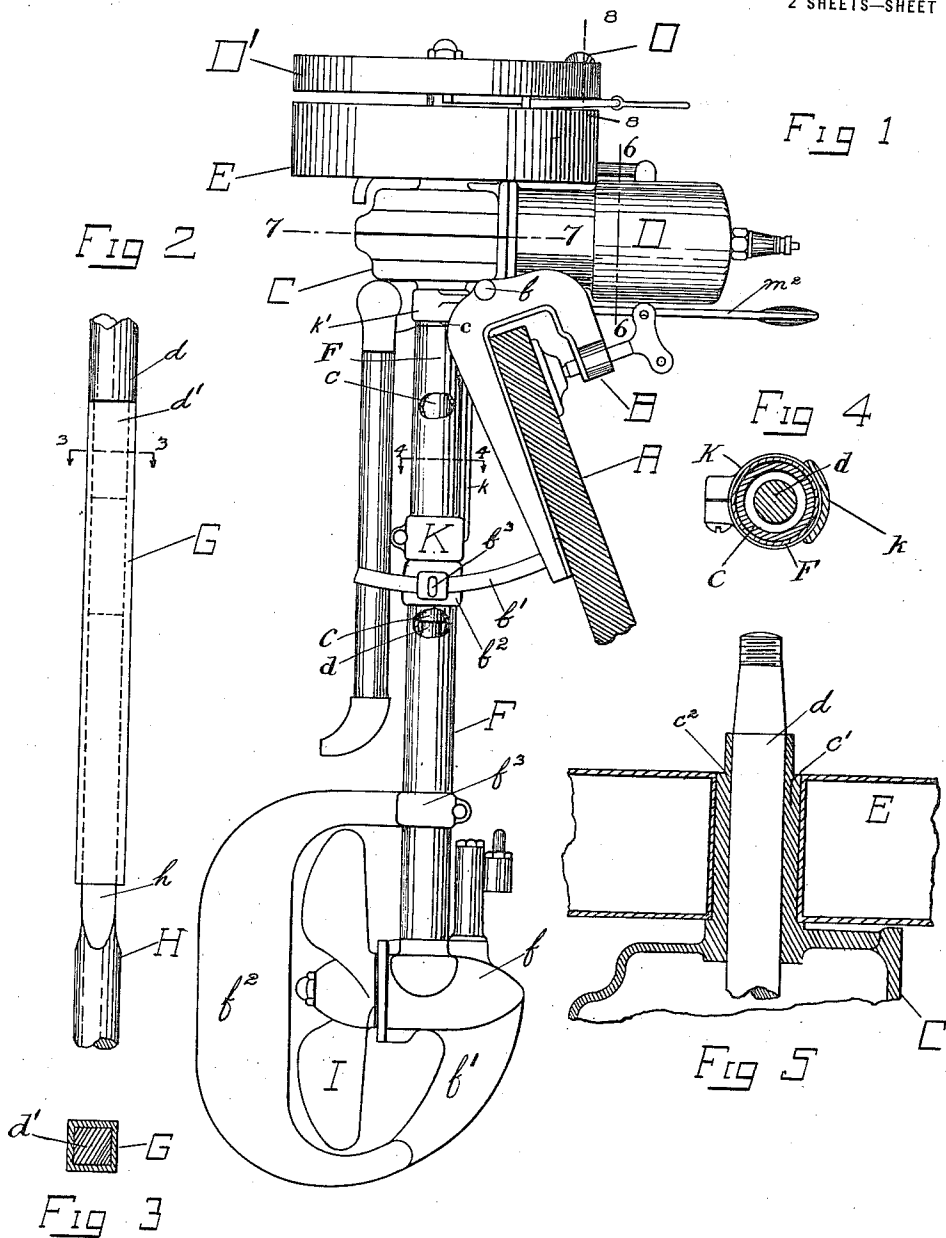


C. A. HOEFER.  
 DETACHABLE BOAT MOTOR.  
 APPLICATION FILED MAR. 13, 1914.

1,160,410.

Patented Nov. 16, 1915.

2 SHEETS—SHEET 1.



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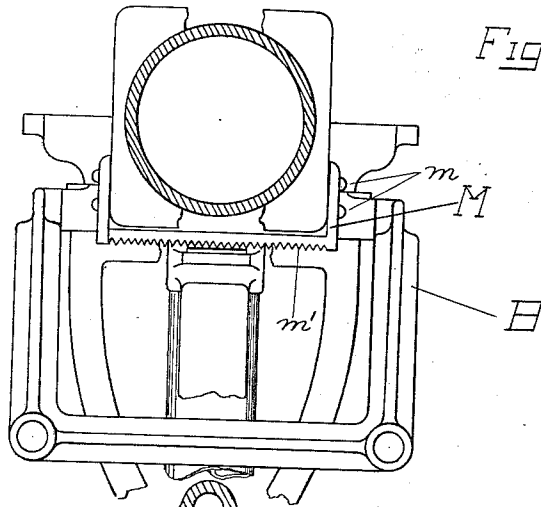


Fig 6

Fig 7

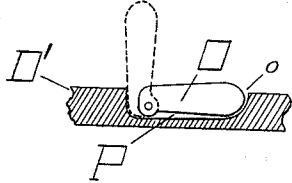
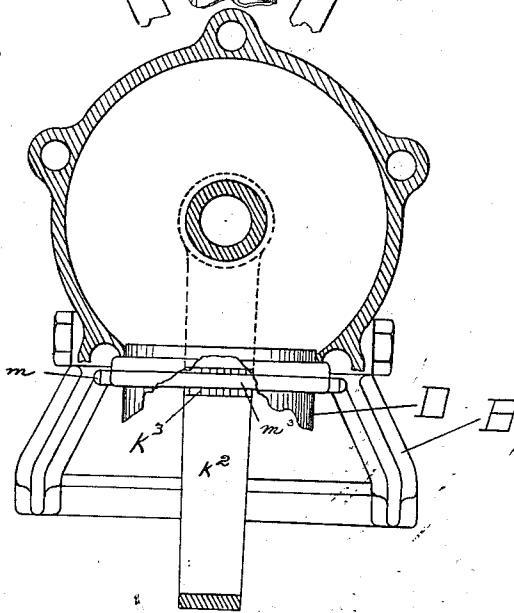


Fig 8

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# UNITED STATES PATENT OFFICE.

CHESTER A. HOEFER, OF FREEPORT, ILLINOIS.

## DETACHABLE BOAT-MOTOR.

1,160,410.

Specification of Letters Patent. Patented Nov. 16, 1915.

Application filed March 13, 1914. Serial No. 824,338.

*To all whom it may concern:*

Be it known that I, CHESTER A. HOEFER, residing at Freeport, in the county of Stephenson and State of Illinois, have invented certain new and useful Improvements in Detachable Boat-Motors, of which the following is a specification.

My invention relates to certain improvements in a boat propelling device of the class designed to be readily attached to or detached from the stern of a small boat. A device of this class should comprise a motor, a propeller and a steering device, all mounted in a single frame provided with a clamp adapted to engage the rear portion of the boat.

It is the purpose of my device to simplify the construction of the various parts and at the same time render them more efficient and certain in their operation.

To such end the invention consists in certain novel features that will be shown in the preferred embodiment of my device and the main features of which will be pointed out in the claims at the end of this specification.

In the drawings Figure 1 is a side elevation of a complete boat motor showing a portion of a stern plank of a boat in vertical section secured in the clamp of the frame; Fig. 2 is a detail elevation of the lower portion of the crank shaft, the upper portion of the stub shaft which is geared to the propeller shaft, and a tubular connection between the two, slidable upon the stub shaft; Fig. 3 is a horizontal section in the line 3—3 of Fig. 2; Fig. 4 is a horizontal section in the line 4—4, Fig. 1; Fig. 5 is a vertical section of the upper portion of the crank case and the middle portion of the gasolene tank, the upper portion of the crank shaft being shown in full lines; Fig. 6 is a detail vertical section in line 6—6 of Fig. 1 showing the parts upon a larger scale and Fig. 7 is a horizontal section in the plane 7—7 of Fig. 1 looking downward, certain parts being broken away to show a tiller holding device adapted to secure the rudder in any desired position against the thrust of the water upon the same, and Fig. 8 is a detail vertical section in the line 8—8 of Fig. 1.

Referring to these drawings A is a portion of the stern plank of a boat, B is a clamp adapted thereto which is pivotally connected at *b* to a crank case, C, to which in turn is secured an engine cylinder, D, which may be a cylinder of any suitable en-

gine, preferably of the internal combustion type. The crank case has a downwardly projecting tubular extension, *c*, and an upwardly projecting tubular extension, *c*<sup>1</sup>, which is shouldered at *c*<sup>2</sup>. Upon the portion of the upper extension below the shoulder a gasolene tank, E, is fitted, preferably by means of a driving fit, so as to furnish a secure support for the tank without other means of attachment to the device.

A tubular rudder post F is vertically adjustable upon the downward extension *c* of the crank case C. This post is guided in and supported by a collar *b*<sup>2</sup> which is itself supported by rigid curved arms *b*<sup>1</sup> projecting from the frame B, and which slides upon those arms to adjust the angle made by the post with a vertical line, the desired adjustment being maintained by set screws *b*<sup>3</sup>. Upon the extension *c* at the upper end of the post is a collar *k*<sup>1</sup> having a stub tiller handle *k*<sup>2</sup> (Fig. 7) and from this collar a rigid bar *k* extends downward alongside the post and has at its lower end a clamp K, normally rigidly engaging the post and resting upon the collar *b*<sup>2</sup> which thus supports the tiller frame, the rudder post, and parts carried by the latter.

The lower portion of the tubular rudder post has secured to it a propeller shaft casing, *f*, provided with a downwardly extending fin, *f*<sup>1</sup>, to which is secured a rudder, *f*<sup>2</sup>, which extends in rear of and around a propeller, I, and returns above the same to be secured directly to the rudder post F by means of a clamp, *f*<sup>3</sup>.

The handle *k*<sup>2</sup> is provided with teeth, *k*<sup>3</sup>, and engaging teeth, *m*<sup>1</sup>, are also provided upon a casting, M, secured to a portion of the crank case by means of screws, *m*. A detachable extension, *m*<sup>2</sup>, is provided for the tiller handle to bring the same within easy reach of the operator and to afford the desired leverage.

In moving the tiller back and forth the stub handle *k*<sup>2</sup> necessarily springs downward and when released springs back and is held by the engaging teeth in any desired position so that the operator may give his attention to other matters until a change of course becomes necessary.

Within the crank case and its projecting portions is mounted the crank shaft *d*, upon the upper end of which is secured a fly wheel, D', and upon the lower squared end *d*<sup>1</sup> of which is fastened a square tubular ex-

tension, G. The lower end of this extension G is slipped over the squared end, *h*, of the stub shaft H, which is geared to the propeller shaft. The tubular extension G is arranged to slip easily up and down upon the squared portion *h* of the stub shaft to accommodate itself to any necessary vertical adjustment of the propeller with relation to the engine.

When it is desired to adjust vertically the rudder post and parts carried thereby, the clamp K is loosened and the post is moved longitudinally therein at the same time sliding on the extension *c* and in the collar *b*<sup>2</sup>, and when the desired adjustment is obtained, the clamp is again tightened. During this adjustment, the portion *h* of the shaft H slides in the extension G of the shaft *d* as above noted. Obviously when the clamp K is rigidly engaged with the rudder post, the tiller frame *k*<sup>2</sup>, *k*<sup>1</sup>, *k*, K, the post F and the propeller casing below move together as a whole, and are held against vertical movement by the crank case above and the collar *b*<sup>2</sup> below the tiller frame.

Referring to Fig. 8, a handle, O, is pivoted in a recess, P in the fly-wheel D', so that the free end *o* will swing from the position shown in full lines to that shown in dotted lines, the pivot upon which it is secured being arranged radially of the balance wheel D' and the free end of the handle being rounded as shown so as to present no sharp corners. In swinging from the position seen in dotted lines to that shown in full lines the handle moves in a direction opposite to the ordinary movement of the fly wheel so that after the wheel is started a touch upon the handle will throw it into its recess. It should be noticed that when the handle is in this recess a considerable portion of the free end projects therefrom. This projecting portion furnishes a convenient means

for swinging the handle from the recess outward to the proper position for cranking.

The various details of construction and arrangement above described while preferred at the present time are not necessary to my improvements broadly considered but may be varied more or less without departing from the essential features thereof; therefore I do not desire to limit my invention to such details but will point out in the following claims the characteristics which I consider essential and in said claims it is my intention to cover all of the patentable novelty contained in my invention in view of the prior art.

I claim as new and desire to secure by Letters Patent—

1. In a device of the class described the combination with a suitable frame, rudder and rudder post of a tiller holding device secured to the frame and having downwardly projecting teeth, and a tiller upon the rudder post provided with means of engagement with said teeth and arranged to spring upward into engagement therewith whereby the tiller is held against movement except when sprung downward to release it from said holding device.

2. The combination with a fly wheel having a suitable recess of a cranking handle pivoted thereto in said recess and swinging from a position substantially at right angles to the plane of the fly wheel to a position in which it is partially but not wholly within the recess.

In witness whereof I have signed the above application for Letters Patent at 80 Freeport, Illinois, this 7th day of February, A. D. 1914.

CHESTER A. HOEFER.

Witnesses:

H. H. ANTRIM,  
W. C. PFENDER.