

No. 886,389.

PATENTED MAY 5, 1908.

F. S. MERROW.
FISH TAIL PROPELLER.
APPLICATION FILED FEB. 27, 1907.

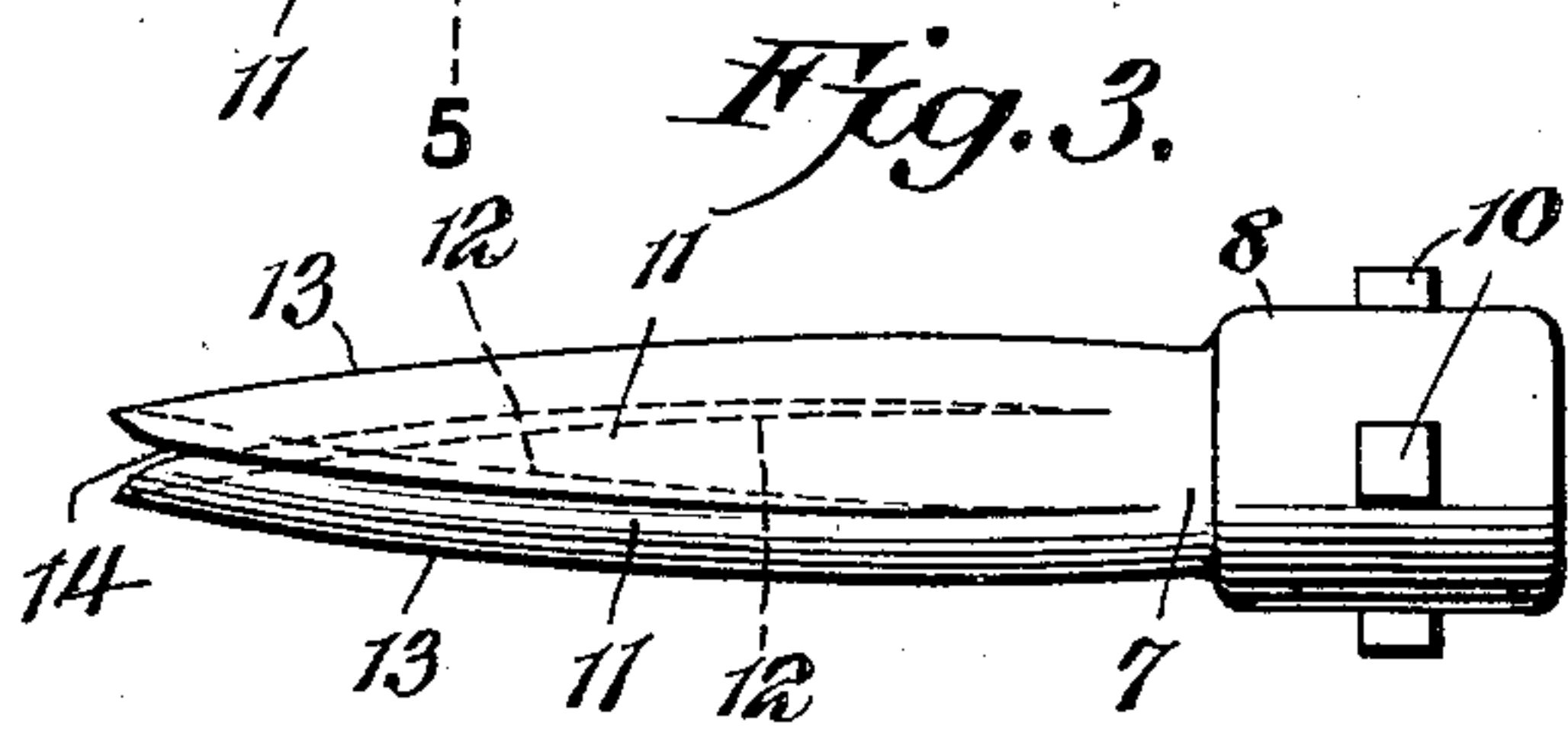
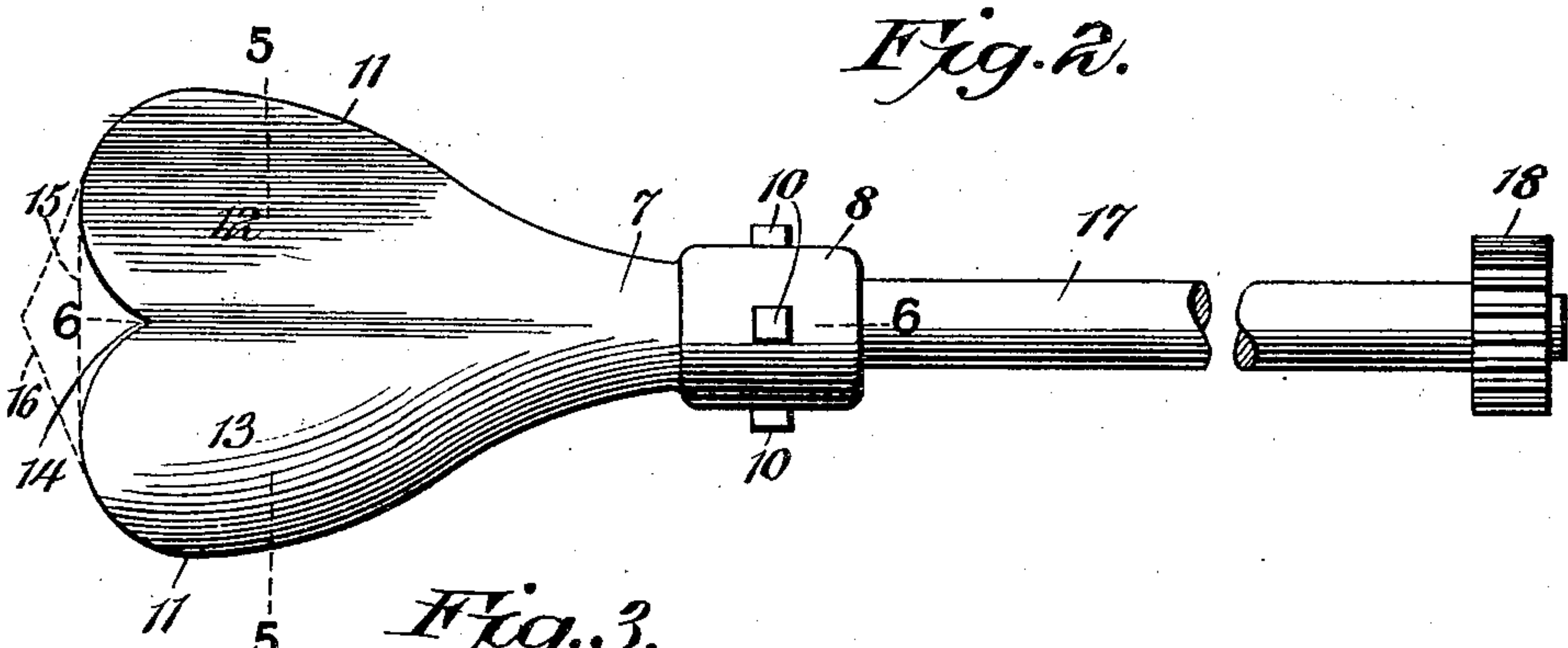
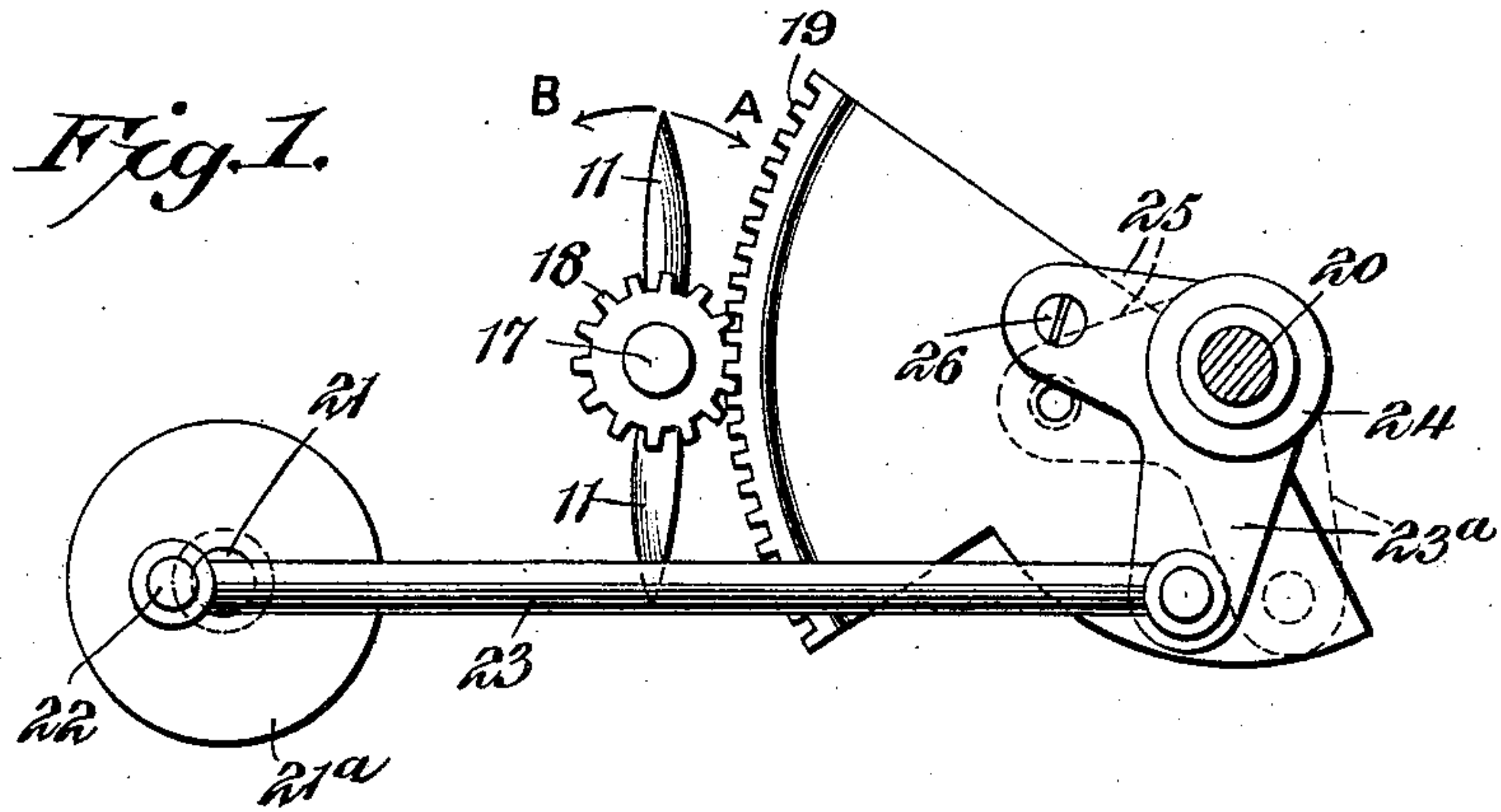


Fig. 5.

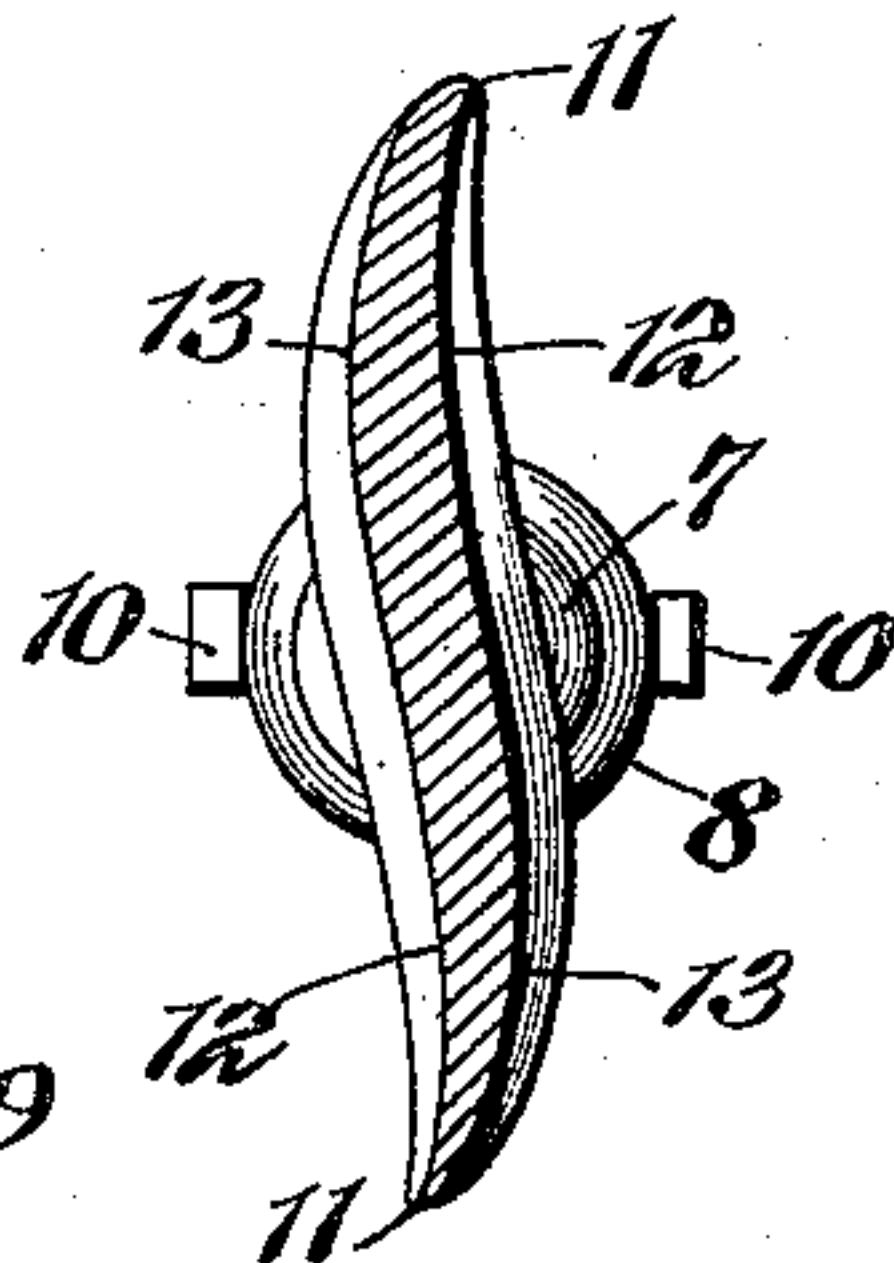


Fig. 4.

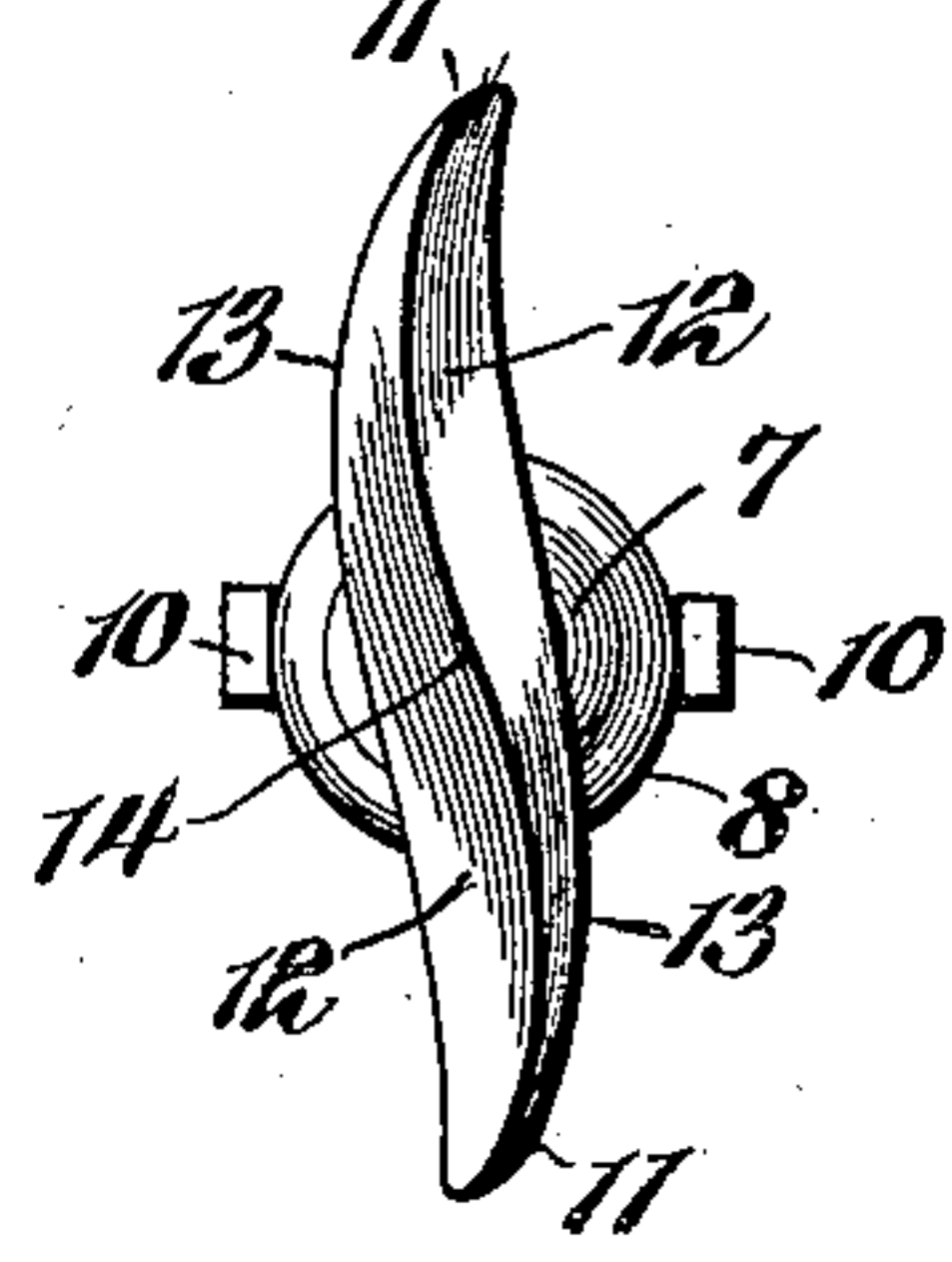
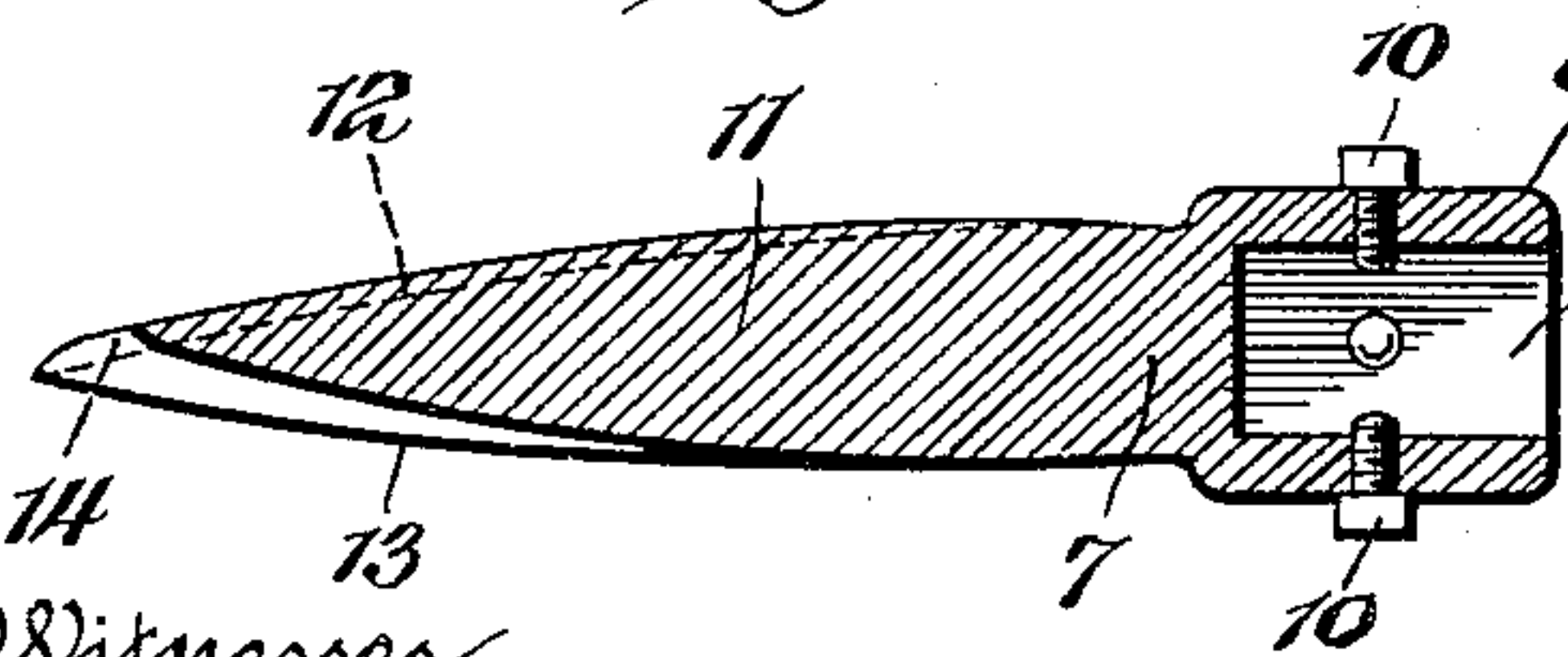


Fig. 6.



Witnesses
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UNITED STATES PATENT OFFICE.

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FISH-TAIL PROPELLER.

No. 886,389.

Specification of Letters Patent.

Patented May 5, 1908.

Application filed February 27, 1907. Serial No. 359,582.

To all whom it may concern:

Be it known that I, FRANK SCRIBNER MERROW, a subject of the King of Great Britain, residing at Mexico city, Mexico, have invented a new and useful Fish-Tail Propeller, of which the following is a specification.

The principal object of the present invention is to provide a novel, simple and effective propeller having an oscillatory movement after the manner of a fish's tail.

The preferred embodiment of the invention is illustrated in the accompanying drawings, wherein:—

Figure 1 is a front elevation of the propeller and one form of driving means therefor. Fig. 2 is a side elevation of the propeller and propeller shaft. Fig. 3 is a top plan view of the propeller. Fig. 4 is a rear elevation of the same. Fig. 5 is a cross sectional view on the line 5—5 of Fig. 2. Fig. 6 is a longitudinal sectional view on the line 6—6 of Fig. 2.

Similar reference numerals designate corresponding parts in all the figures of the drawings.

In the embodiment disclosed, the propeller consists of a neck 7 substantially circular in cross section, said neck carrying at its front a boss 8 having an angular shaft-receiving socket 9. Securing screws 10 are threaded through the different sides of the boss into the socket. Extending from the rear end of the neck are longitudinally disposed blades 11 that are arranged on opposite sides of the longitudinal axis of the propeller, and have their rear ends offset on opposite sides of a plane extending through said longitudinal axis, as will be clear by reference to Fig. 3. These blades are provided in opposite sides with longitudinally disposed transversely curved or concave channels 12, and the opposite sides are preferably convex, as shown at 13. The blades increase in width from the neck 7 to their rear ends, and the rear end of the propeller may be forked, as shown at 14, though the forked construction is not necessary, and the rear end of the propeller may have a vertical rear edge, as indicated in dotted lines at 15, or a tapered rear end, as indicated in dotted lines at 16, in Fig. 2.

The propeller is carried by a rock shaft 17, having its rear end fitted in the socket 9 and secured in place by the screws 10. The front end of this propeller shaft is provided with a pinion 18 that is in mesh with a segmental

rack 19 fulcrumed upon a suitable pivot 20. A driving shaft 21, operated by any suitable motor, is provided with a crank disk 21^a carrying a crank pin 22, and a pitman 23, having one end mounted on the crank pin 22, has its other end secured to one arm 23^a of a bell crank lever 24 that is journaled on the pivot 20. The other arm 25 of this bell crank is adapted to have an adjustable connection as 26 with a portion of the segmental rack 19.

In the operation of the structure, when the propeller is at a state of rest, the blades are in a vertical position, as shown in Figs. 1, 2 and 4. If the bell crank 24 is secured to the segmental rack 19, as shown in Fig. 1, upon the rotation of the driving shaft 21, the propeller will be oscillated, its movement, being from a vertical position in the direction of the arrow A in Fig. 1, a half revolution of the propeller being made, and a return movement to the original position being secured after each half revolution. If it is desired to oscillate the propeller in an opposite direction, it is only necessary to change the position of the bell crank with respect to the segmental gear 19, as shown in dotted lines in Fig. 1, whereupon, upon the movement of the propeller from a state of rest, said propeller will be oscillated in an opposite direction, or in other words, in the direction indicated by the arrow B.

From the foregoing, it is thought that the construction, operation, and many advantages of the herein described invention, will be apparent to those skilled in the art, without further description, and it will be understood that various changes in the size, shape, proportion, and minor details of construction, may be resorted to without departing from the spirit or sacrificing any of the advantages of the invention.

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

1. A fish tail propeller, comprising longitudinally disposed rigid blades having their rear ends longitudinally offset in opposite directions, said blades being transversely curved, and means for oscillating the propeller on its longitudinal axis.

2. A fish tail propeller, comprising blades located on opposite sides of its longitudinal axis, each of said blades tapering toward its rear end and being transversely curved, said blades furthermore when in upright relation having said tapered rear ends offset in oppo-

site directions and on opposite sides of the vertical plane in which the longitudinal axis of the propeller is located.

3. A fish tail propeller, comprising longitudinal blades located on opposite sides of its longitudinal axis, each of said blades tapering toward its rear end, said blades having their rear ends offset in opposite directions, said blades furthermore each having a longitudinally disposed transversely concave channel in one side.

4. A fish tail propeller, comprising longitudinal blades located on opposite sides of its longitudinal axis, said blades each tapering toward its rear end, said blades having their

rear ends offset in opposite directions, said blades furthermore each having a longitudinally disposed transversely concave channel in one side, a boss carried by the front end of the propeller and having a shaft receiving socket, and securing bolts passing through the boss into the socket.

In testimony that I claim the foregoing as my own, I have hereto affixed my signature in the presence of two witnesses.

FRANK SCRIBNER MERROW.

Witnesses:

C. G. KOFFROTH,
ROBIE D. LIBBY.