

S. YEAGER.
 APPARATUS FOR STEERING VESSELS.
 APPLICATION FILED MAY 13, 1908.

921,777.

Patented May 18, 1909.

2 SHEETS—SHEET 1.

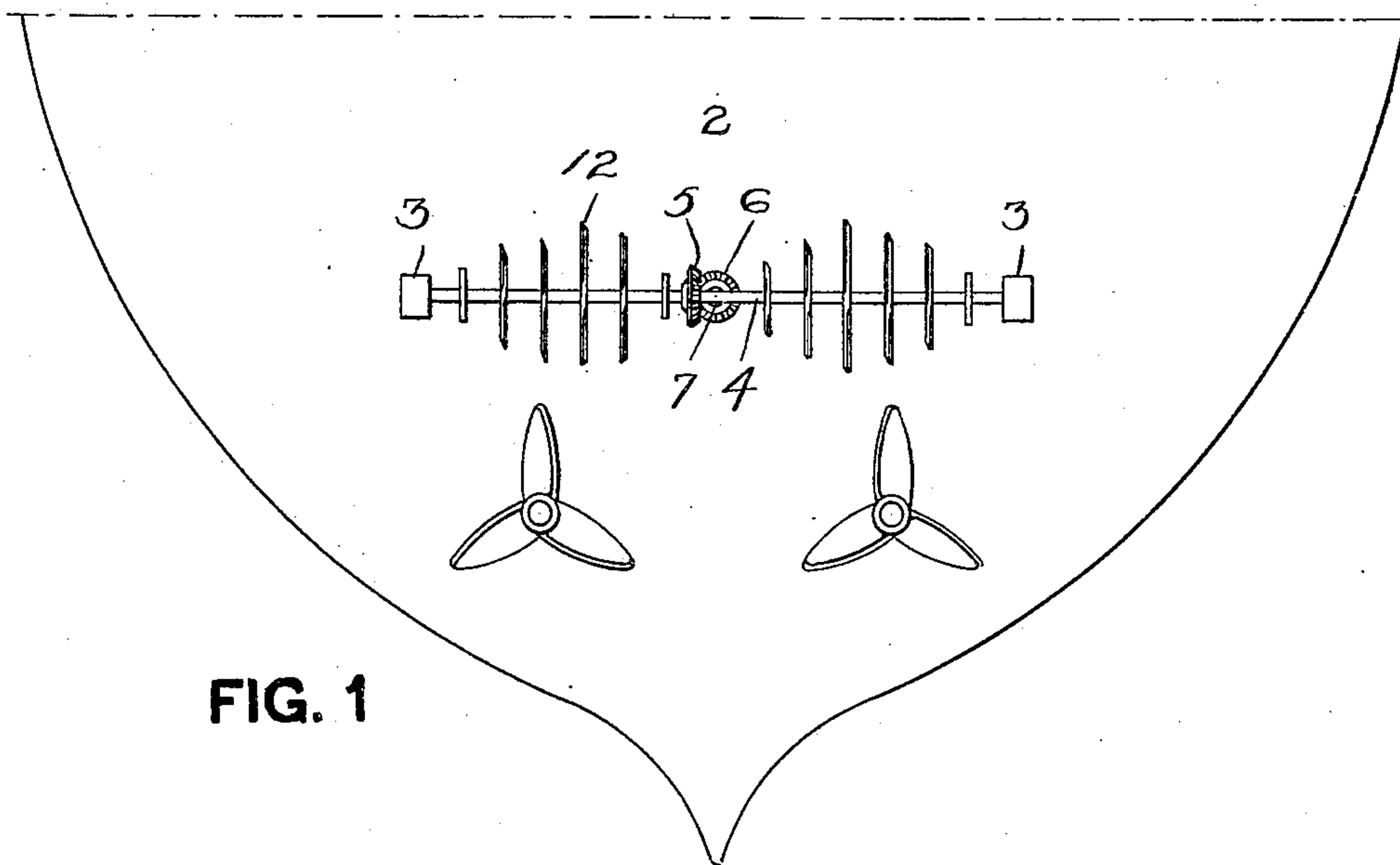


FIG. 1

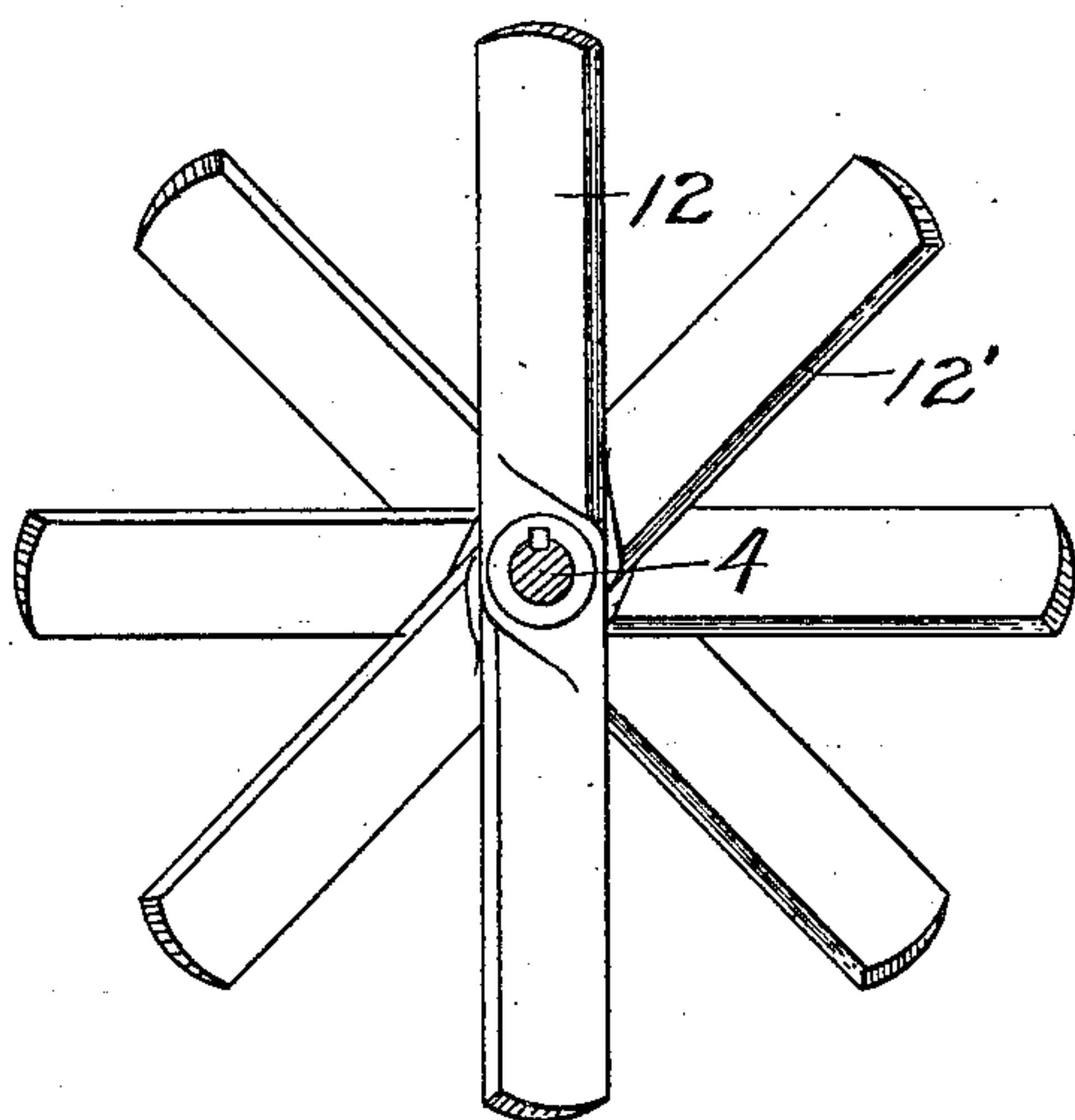


FIG. 2

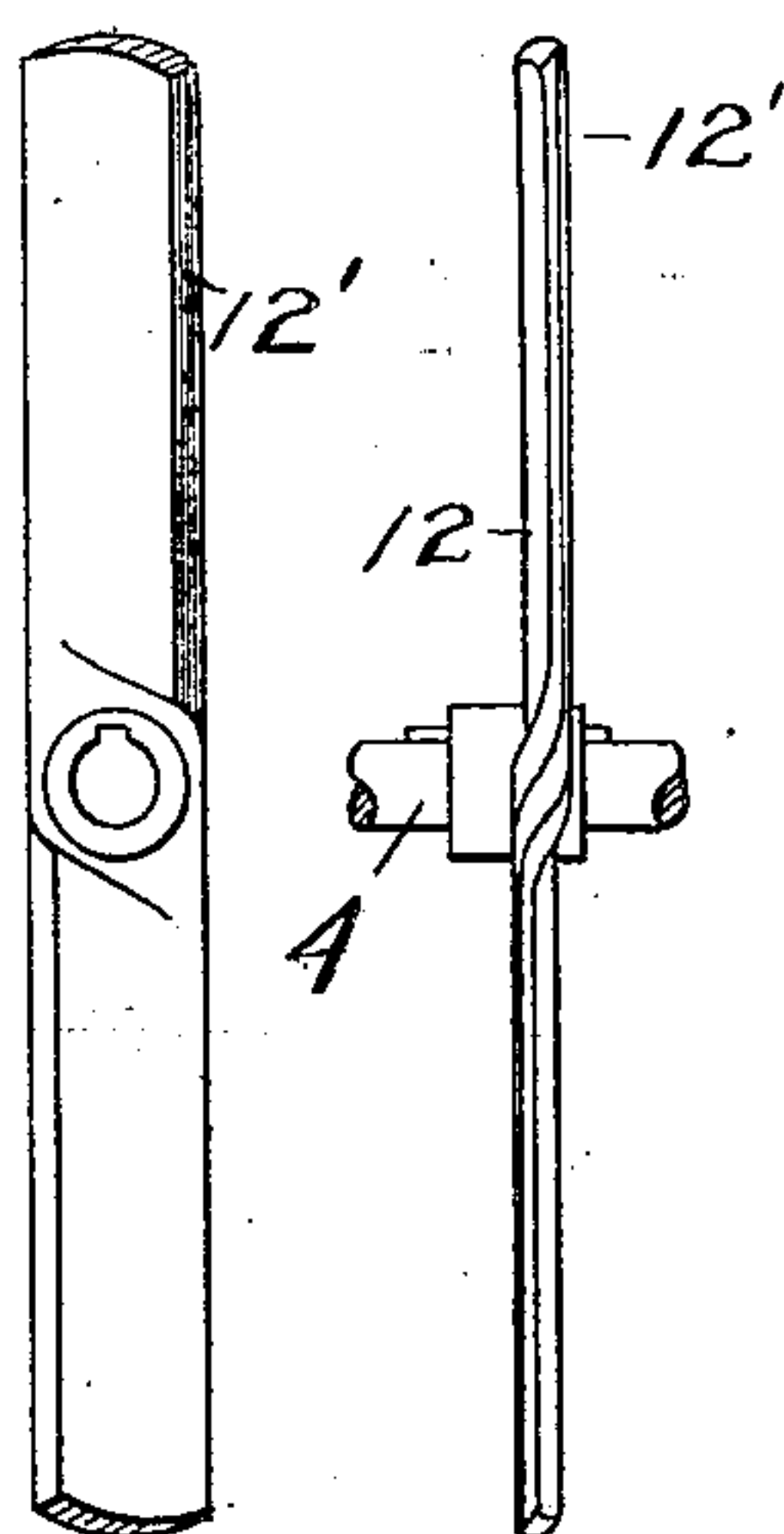


FIG. 3

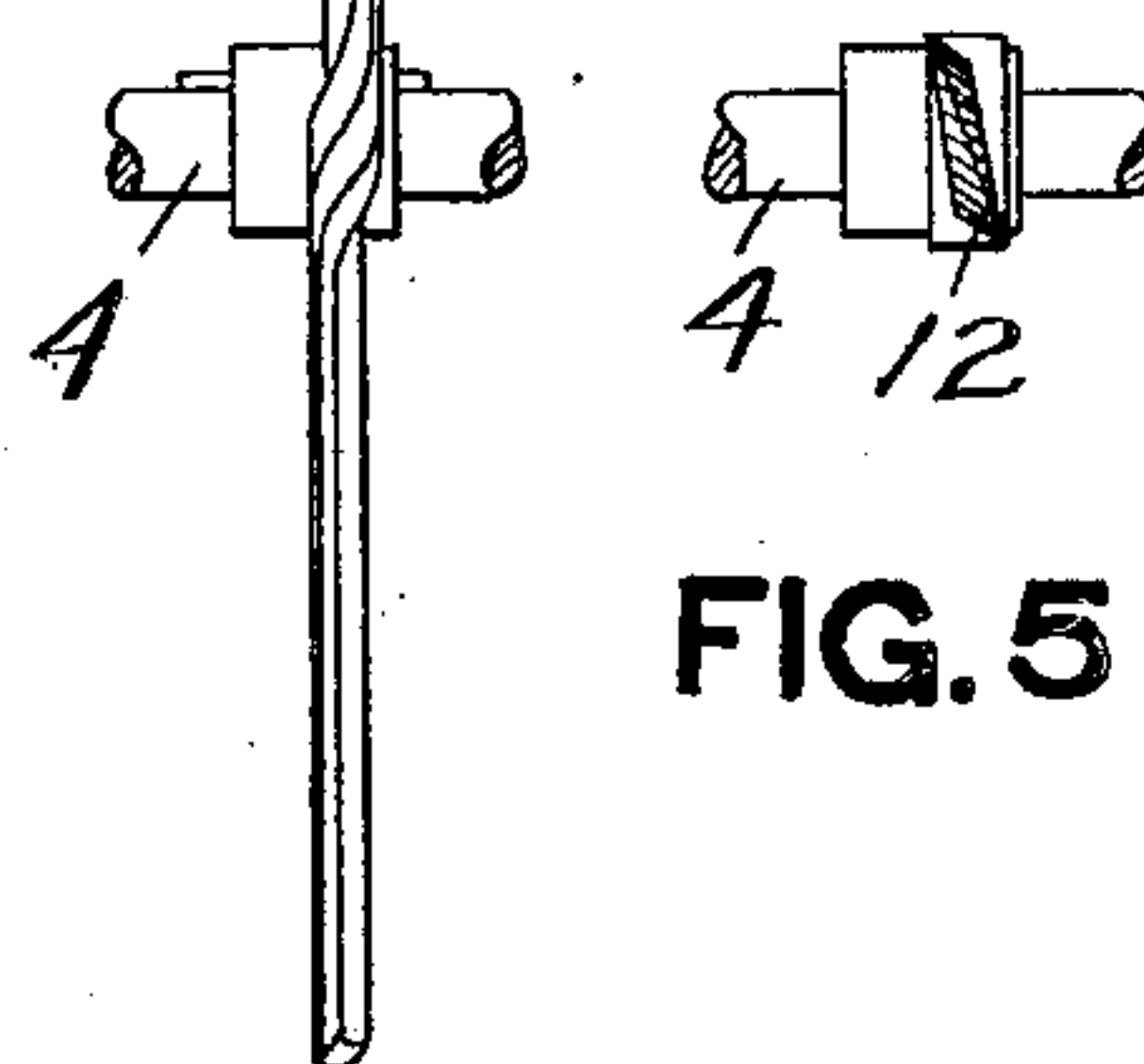


FIG. 4

FIG. 5

WITNESSES.

Elva Stanick
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Simon Yeager
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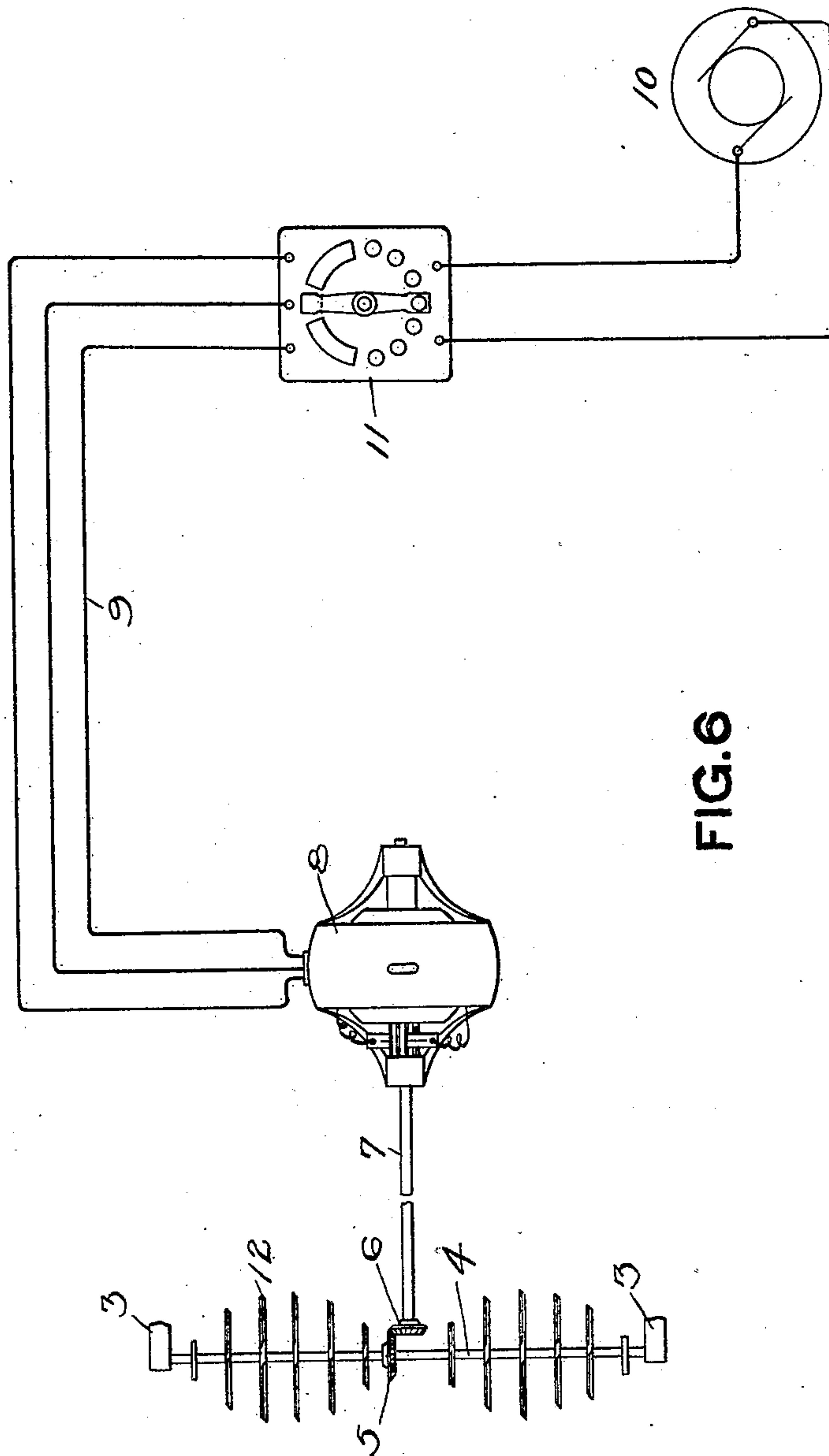


FIG. 6

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UNITED STATES PATENT OFFICE.

SIMON YEAGER, OF PITTSBURG, PENNSYLVANIA, ASSIGNOR OF ONE-HALF TO HARRY D. MILLER, OF PITTSBURG, PENNSYLVANIA.

APPARATUS FOR STEERING VESSELS.

No. 921,777.

Specification of Letters Patent.

Patented May 18, 1909.

Application filed May 13, 1908. Serial No. 432,674.

To all whom it may concern:

Be it known that I, SIMON YEAGER, of Pittsburgh, in the county of Allegheny and State of Pennsylvania, have invented a certain new and useful Improvement in Apparatus for Steering Vessels, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, forming part of this specification, in which—

Figure 1 is a rear elevation of the stern of a vessel showing my steering device applied thereto; Fig. 2 is an enlarged vertical sectional view of the steering device; Fig. 3 is a side elevation of one of the propelling blades of the steering device; Fig. 4 is a front elevation of the same; Fig. 5 is an end elevation of the same; and Fig. 6 is a diagrammatic view showing the manner of electrically operating and controlling the steering device.

My invention relates to a certain new and useful improvement in apparatus for steering vessels, changing their course and position while maneuvering, and for effecting a partial or complete turning to left or right within a very limited space, independent of the motion of the vessel, the arrangement being such as to dispense with the customary rudder.

It also aims to provide means for electrically controlling the steering device from different parts of the vessel, whereby the course of the latter may be changed gradually or with accelerated speed if exigencies require it, as, for instance, when a quick change is necessary to avoid collision with another vessel.

My invention consists in mounting on the stern of the boat an apparatus which is adapted to impart to the vessel a movement, the direction of which is at right angles to the longitudinal axis of the vessel, and consists in the peculiar construction and combination of parts as will be hereinafter more fully set forth.

In the drawing 2 represents the lower portion of the stern of a vessel. Mounted above the propellers in suitable bearings 3, at right angles to the longitudinal axis of the vessel is a horizontal rotatory shaft 4, which is pro-

vided with a centrally disposed bevel gear wheel 5 which meshes with a similar gear 6 mounted on the end of the driving shaft 7, which shaft may be operated by any suitable source of power, preferably an electric motor 8, such as shown in Fig. 6. This motor 8 is connected by electric conduits 9 with a generator 10 and is provided with controlling apparatus 11 which may be placed at any suitable point on the vessel.

Keyed to the horizontal shaft 4 is a series of narrow substantially parallel sided blades 12, the edges of which are beveled as indicated by the reference numeral 12', so as to readily cut the water when rotated. These blades 12 are spirally arranged on the shaft 4 and are provided with a pitch which, as the blades are caused to be rotated by means of the gears 5 and 6, will exert a force against the water and consequently cause the vessel to turn on its axis. The pitch, however, of these blades is very slight and offers very little resistance in the water when the vessel is under headway. By means of the controller 11 the motor 8 may be caused to run in either direction, imparting a similar forward or reverse movement to the steering apparatus.

Although I have shown and described my apparatus as applied to the stern of a vessel, it is obvious that it will give practically the same results if located at the bow or I may place an apparatus at each end. While I have shown my steering apparatus electrically operated and controlled, I do not desire to limit myself thereto.

The advantages arising from steering a vessel by my improved apparatus are found in the effective power with slight resistance to the movement of the vessel and in that the vessel may be steered from any part of the vessel and that the vessel may be turned while it is in motion.

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

1. A steering device consisting of a plurality of narrow, substantially parallel sided blades spirally arranged upon a horizontal rotatory shaft and having a pitch adapted to

exert a force against the water when the blades are rotated, and devices for rotating the blades in either direction.

2. A steering device consisting of a plurality of narrow substantially parallel sided blades spirally arranged upon a horizontal rotatory shaft having a pitch adapted to exert a force against the water by the rotation of the blades, and a motor for imparting a

rotatory movement to the steering device, in combination with a controller and electrical connections.

In testimony whereof, I have hereunto set my hand.

SIMON YEAGER.

Witnesses:

M. A. BARTH,

JAMES K. BAKEWELL.