

No. 829,782.

PATENTED AUG. 28, 1906.

T. HANLEY.
BOAT.

APPLICATION FILED AUG. 16, 1905.

Fig. 1.

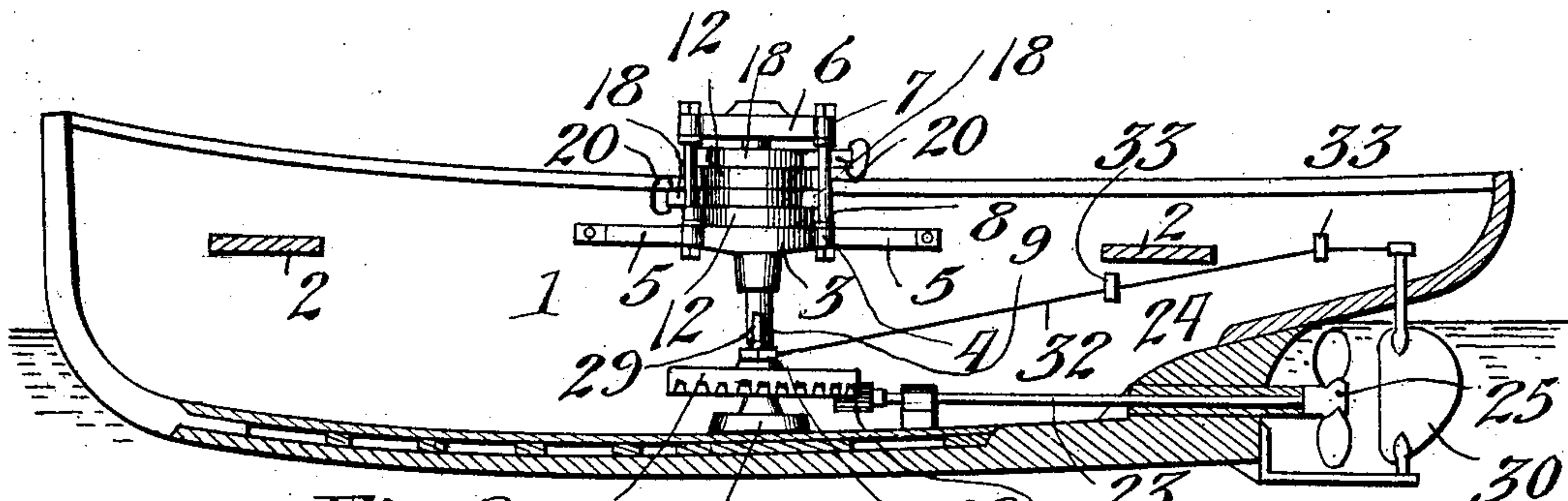


Fig. 2.

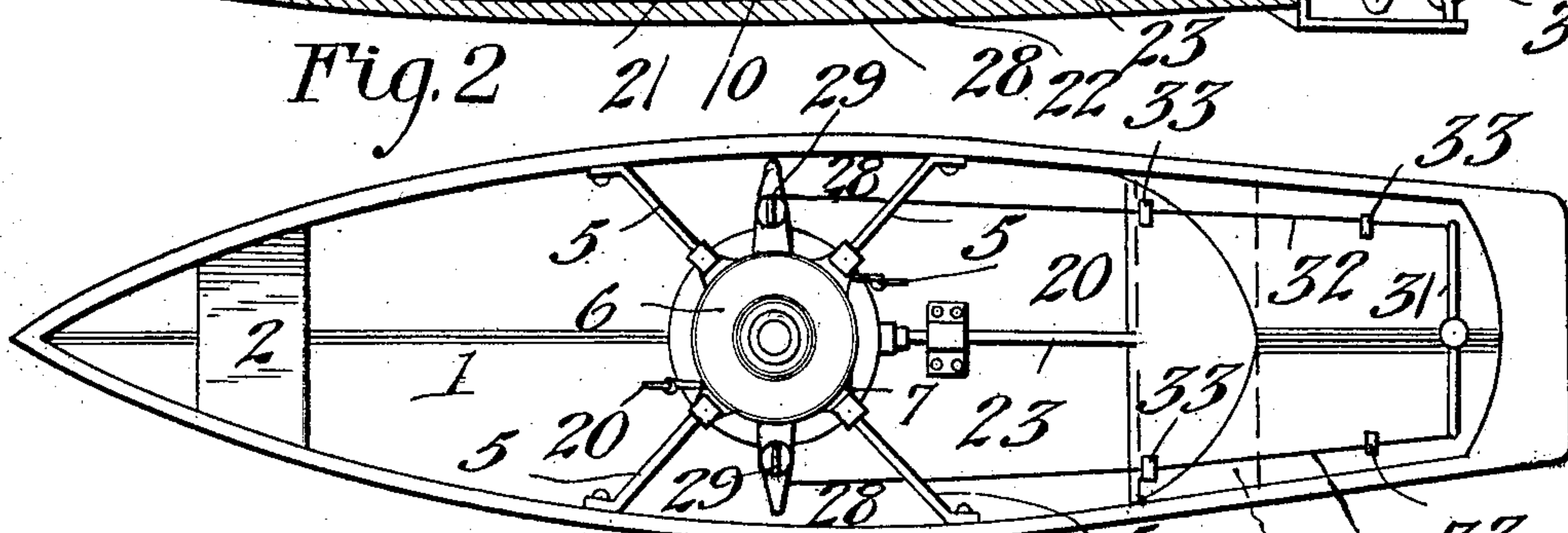


Fig. 3.

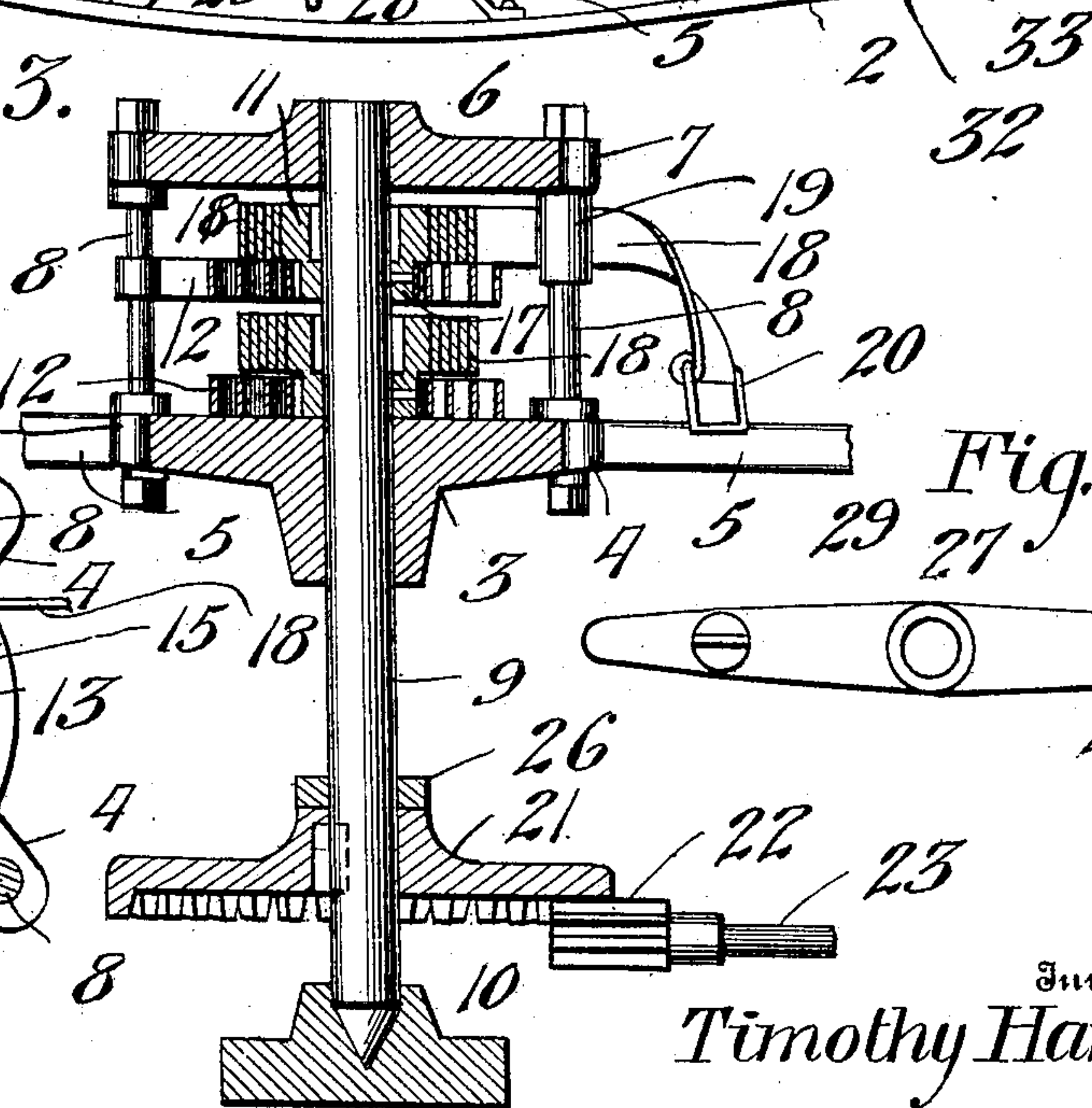


Fig. 4.

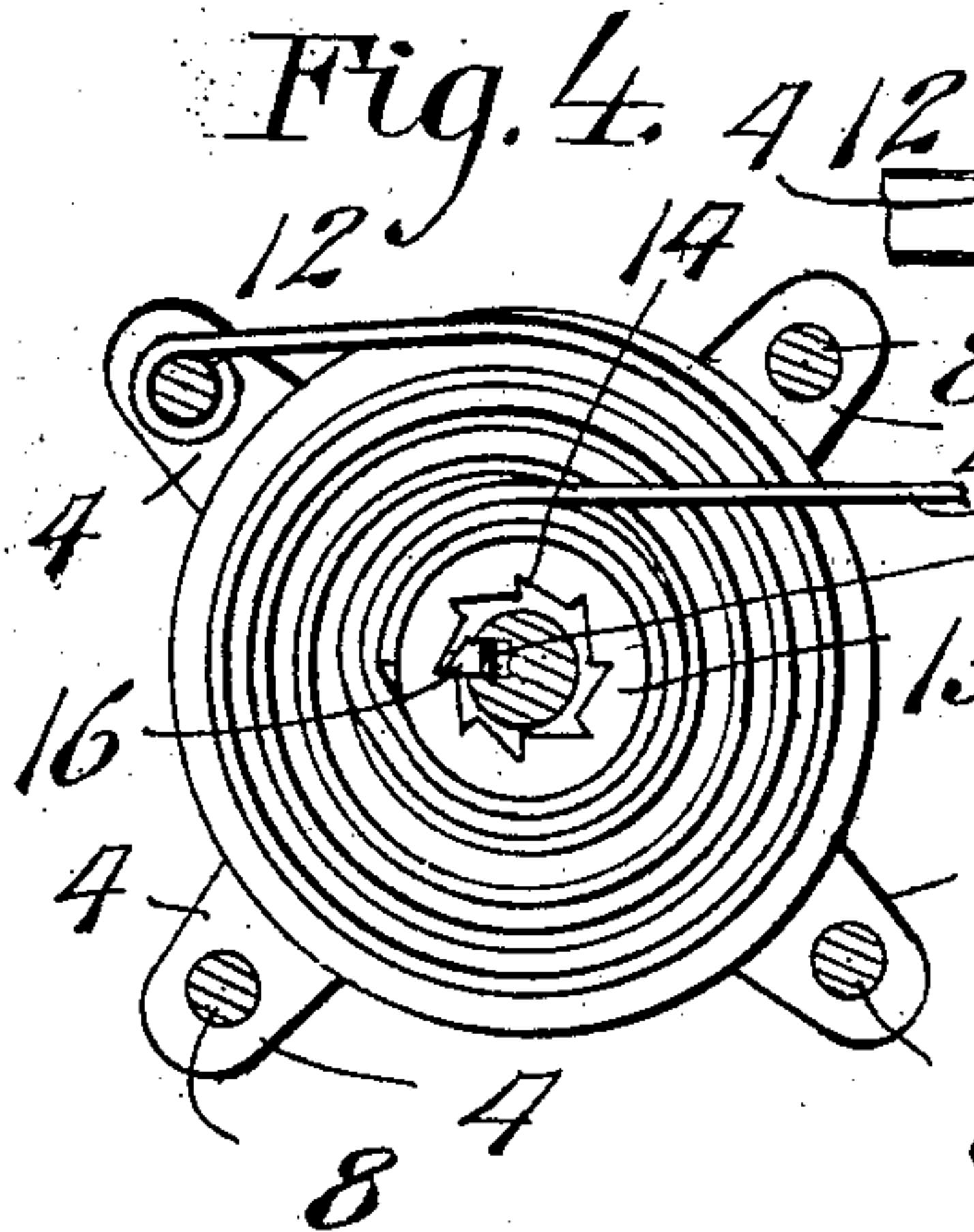
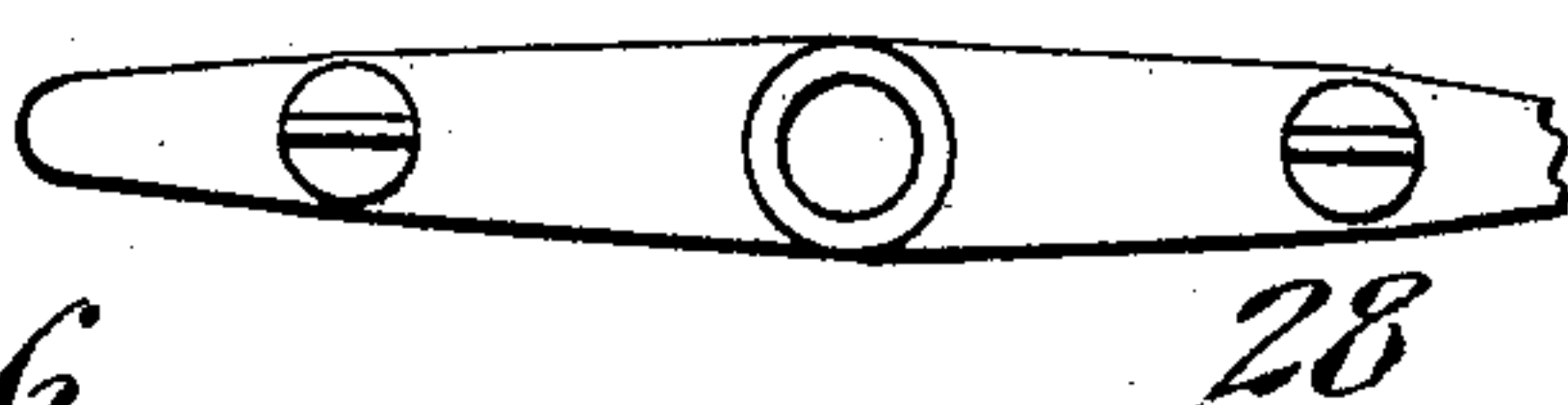


Fig. 5.



Witnesses

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BOAT.

No. 829,782.

Specification of Letters Patent.

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To all whom it may concern:

Be it known that I, TIMOTHY HANLEY, a citizen of the United States, residing at Boston, in the county of Suffolk and State of Massachusetts, have invented new and useful Improvements in Boats, of which the following is a specification.

The invention relates to an improvement in manually-propelled boats, comprehending, specifically, the mechanism adapted for manual operation to propel the boat through the water.

The main object of the present invention is the production of means supported within the boat and arranged to be manually operated by one or more persons to impart a desired revolution to the propeller.

Another object of the invention is to so construct and arrange the operating mechanism that the operator may simultaneously or alternately influence said mechanism.

The preferred details of structure of the invention will be described in the following specification, reference being had particularly to the accompanying drawings, in which—

Figure 1 is a longitudinal central section through a boat fitted with my improved mechanism, the operating parts being shown in elevation. Fig. 2 is a top plan view of the same. Fig. 3 is a vertical section through the operating mechanism, the power-shaft being shown in elevation. Fig. 4 is a transverse section taken above one of the drums of the operating mechanism. Fig. 5 is a perspective view illustrating a portion of the foot-rest of the steering-gear.

Referring to the drawings, my improved mechanism is arranged to be secured within a boat 1, which is suitably provided with transverse seats 2, arranged on opposite sides of the mechanism and positioned to permit convenient operation thereof, as hereinafter described.

The operating mechanism comprises a base 3, having four equally-spaced radially-projecting lugs 4, and preferably provided with struts or brace-bars 5, projecting from the base and adapted to be suitably secured to the sides or other permanent part of the boat. A head-block 6, similar in dimensions to the base 3 and provided with similar lugs 7, is supported above the base through the medium of uprights 8, joining the vertically-aligned ears of the base and head-block. A power-shaft 9 is supported centrally of the

base and head-block, being revolvably mounted in each and preferably pointed at the lower end and supported in a bearing-block 10, fixed to the keelson or base timbers of the boat. The motive power for the shaft is arranged in duplicate, each set comprising a drum 11 and a spring 12, and as these parts are in duplicate in each set a detailed description of one will suffice for both. The drum 11 comprises a concentric ring 13, loosely encircling the power-shaft, the inner periphery of the ring being formed to provide a series of toothed-shaped notches 14, hereinafter termed the "ratchet of the drum." The shaft 9 is provided in horizontal alinement with the ring 13 with a recess 15, in which is seated a spring-pressed dog 16, having an inclined end face, whereby to permit operative engagement between the ratchet-teeth and dog in the revolution of the ratchet in one direction and the independent revolution of the parts in the movement of the ratchet in the reverse direction. The ring 13 is provided with a depending sleeve 17, preferably of less diameter than the ring and also encircling the power-shaft. The coil-spring 12 is secured at one end to one of the uprights 8 and at the opposite end to the sleeve 17, being coiled about the sleeve, so that the operative force of said spring when under tension will revolve the sleeve, and thereby the drum, in a direction to permit the ratchet to override the dog without engagement therewith—that is, in a direction reverse to its movement when imparting motion to the power-shaft.

It will be noted that the respective sets of motive power are arranged one above the other on the power-shaft, and they will be respectively hereinafter referred to as the "upper" and "lower" driving mechanism. The drums of the respective driving mechanisms are provided with an operating means, such as a strap 18, to terminally secure to and coiled about the drum-ring 13. The strap of the upper driving mechanism projects from its drum in a reverse direction to the strap of the lower mechanism, said straps being reversely coiled about the respective drums, so that a pull upon either or both of the straps will operate the shaft. The free ends of each of the straps project through bearing-blocks 19, mounted on a convenient upright 8, and are terminally provided with hand-grips 20 for ease of operation. It will be noted that the respective straps are coiled reversely to

the particular operating-spring, whereby the uncoiling of the strap will put the spring under tension, with the effect to recoil the strap upon release of the pull thereon. Near the lower end a gear 21 is keyed to the power-shaft and arranged to intermesh with a pinion 22, supported on the inner end of a screw-shaft 23, which shaft extends rearwardly through the usual bearing 24 and is provided beyond the hull of the boat with the usual screw or other propeller 25.

The steering apparatus particularly adapted for use in connection with my power mechanism comprises a collar 26, loosely encircling the power-shaft and supported upon the gear 21. The collar is provided with diametrically opposite projecting arms 27, having foot-rests 28 at their outer ends, each foot-rest being preferably provided with a centrally-arranged vertically-projecting heel-plate 29, whereby the steering mechanism may be operated by either or both of the occupants. The rudder 30 is pivotally mounted in the usual manner in rear of the propeller, the terminals of the cross-head 31 thereof being connected through the medium of flexible connections 32 with the respective arms 27, as clearly shown in Fig. 2. Suitable guide-rings 33 are provided to receive and guide said connections 32.

In operation the occupants of the seat 2 by grasping the handholds 20 of the strap and exerting a pull thereon will impart revolution to the drum-ratchet 13, and thereby to the power-shaft. The movement of the power-shaft is transmitted to the propeller, through the operative engagement of the gear 21 and 22, as will be obvious. Upon release of the pull upon the strap, the springs 12, which have been put under tension in the uncoiling of the strap, will operate to recoil the strap about the drum ready for the next operation, this resetting movement turning the drum-ratchet in the reverse direction, which movement is of course independent of the movement of the shaft, owing to the described arrangement of the ratchet and dog. During the forward movement of the boat the occupant of either seat by placing his feet upon the rests 28, preferably with his heel against the plate 29, may effectively control the direction of the boat through obvious operation of the steering mechanism. As the upper and lower driving mechanisms are arranged for operation through independent connection with the power-shaft, it is obvious that the boat may be propelled by the operation of one or both straps, and that in the latter event the respective straps may be

simultaneously or alternately operated, as may be desired.

The mechanism described provides for the ready and convenient propulsion of the boat by the operation of one or more persons without regard as to whether they are working in unison or not.

Having thus described the invention, what is claimed as new is—

1. The combination with a boat having a propeller-shaft, of a power-shaft geared thereto, duplicate driving mechanism arranged for coöperation with the power-shaft, and manually-operated means connected with each of said driving mechanisms, said operating means extending in opposite directions from the driving mechanisms to permit operation of the propeller-shaft from either or both ends of the boat, and rudder-operating means revolubly supported by the power-shaft.

2. The combination with a boat having a propeller-shaft, of a power-shaft geared thereto, duplicate driving mechanism arranged for connection with said shaft, each of said mechanisms comprising a drum, a pawl-and-ratchet mechanism between the drum and power-shaft, automatic means for operating the drum in one direction, and a strap connected with the drum, the respective straps extending in reverse directions from the driving mechanisms, arms operatively supported by the power-shaft and connected to the steering mechanism, each of said arms having a foot-rest provided with a centrally-projecting heel-plate, whereby said arms may be operated from either side of the driving mechanism.

3. The combination with a boat having a propeller-shaft provided with a gear-pinion, of a power-shaft having a gear fixed thereto and adapted to intermesh with the pinion, and a driving mechanism arranged for connection with said shaft, said mechanism comprising a drum, a pawl-and-ratchet connection between the drum and power-shaft, a spring terminally secured to the drum and coiled about the same, a strap coiled about the drum in a direction reverse to the coil of the spring and arms having operative connection with the steering-gear, said arms being revolubly mounted on the power-shaft and supported by the gear thereon.

In testimony whereof I affix my signature in presence of two witnesses.

TIMOTHY HANLEY.

Witnesses:

CHAS. NILSSON,
JAMES MCINTYRE.