

(No Model.)

2 Sheets—Sheet 1.

R. J. VICTOR.
STEERING GEAR FOR VESSELS.

No. 471,202.

Patented Mar. 22, 1892.

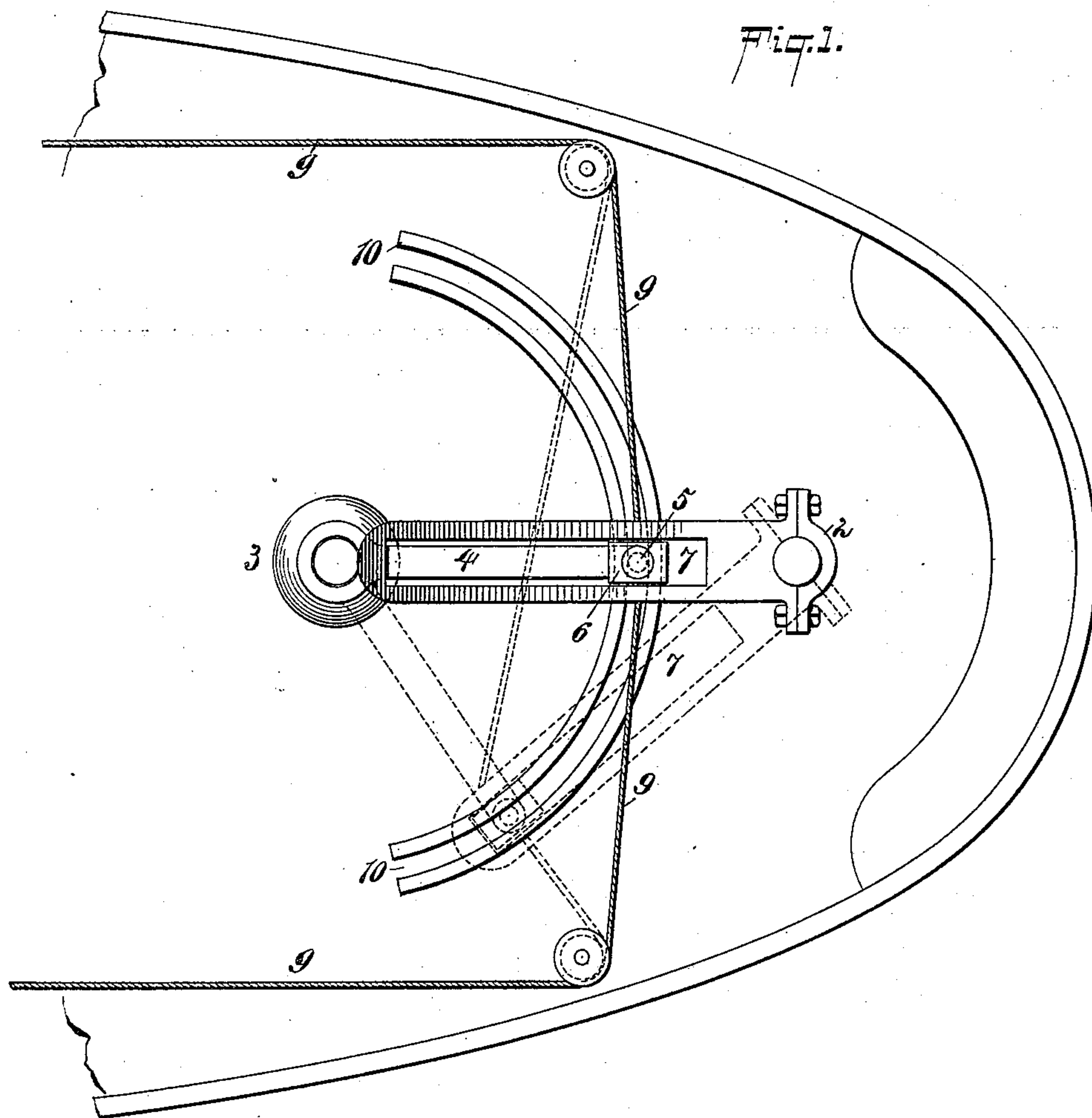
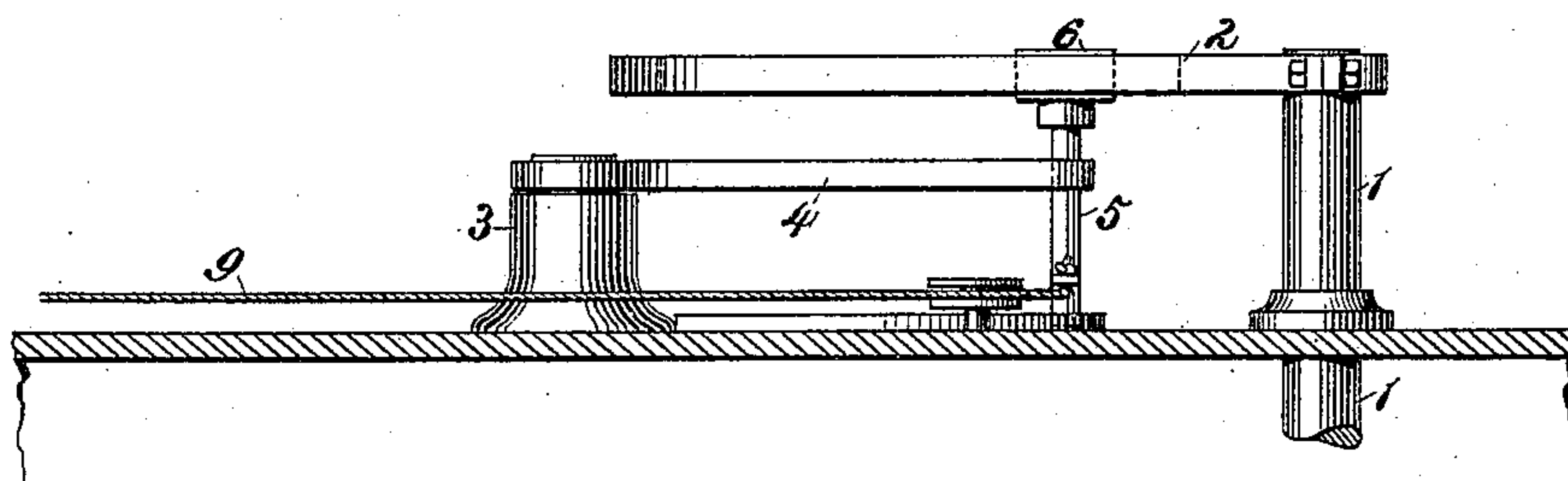


Fig. 2.



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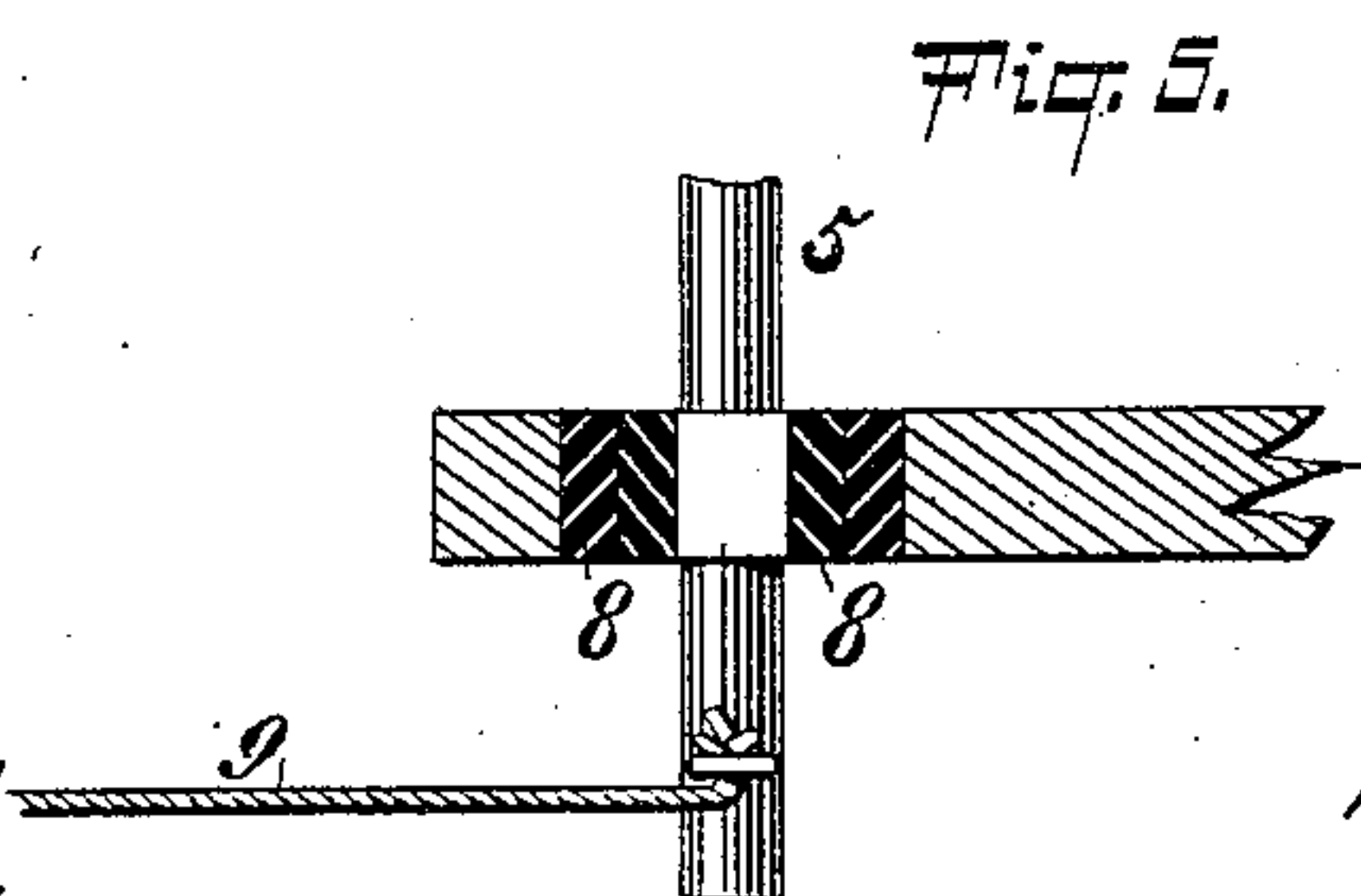
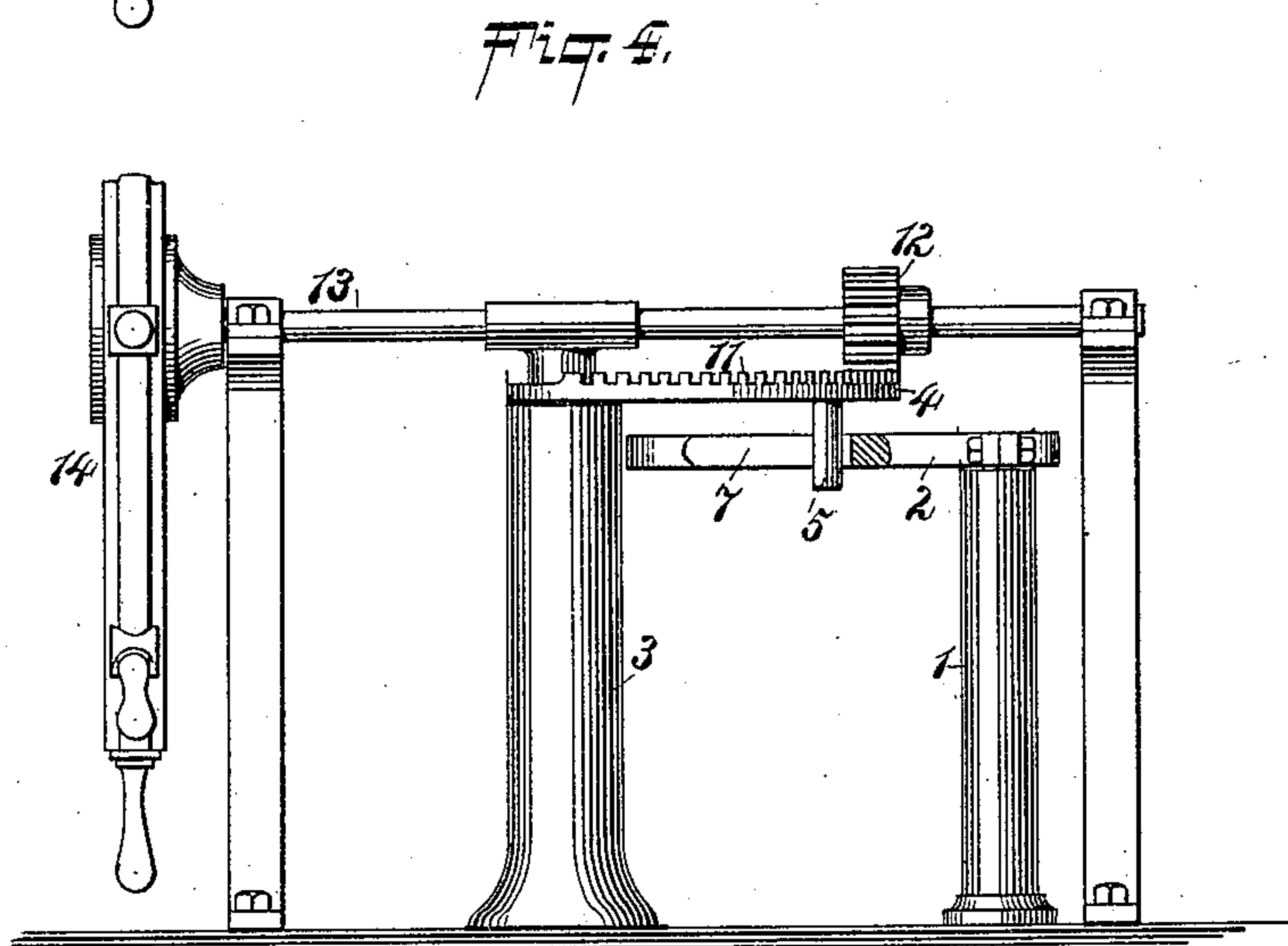
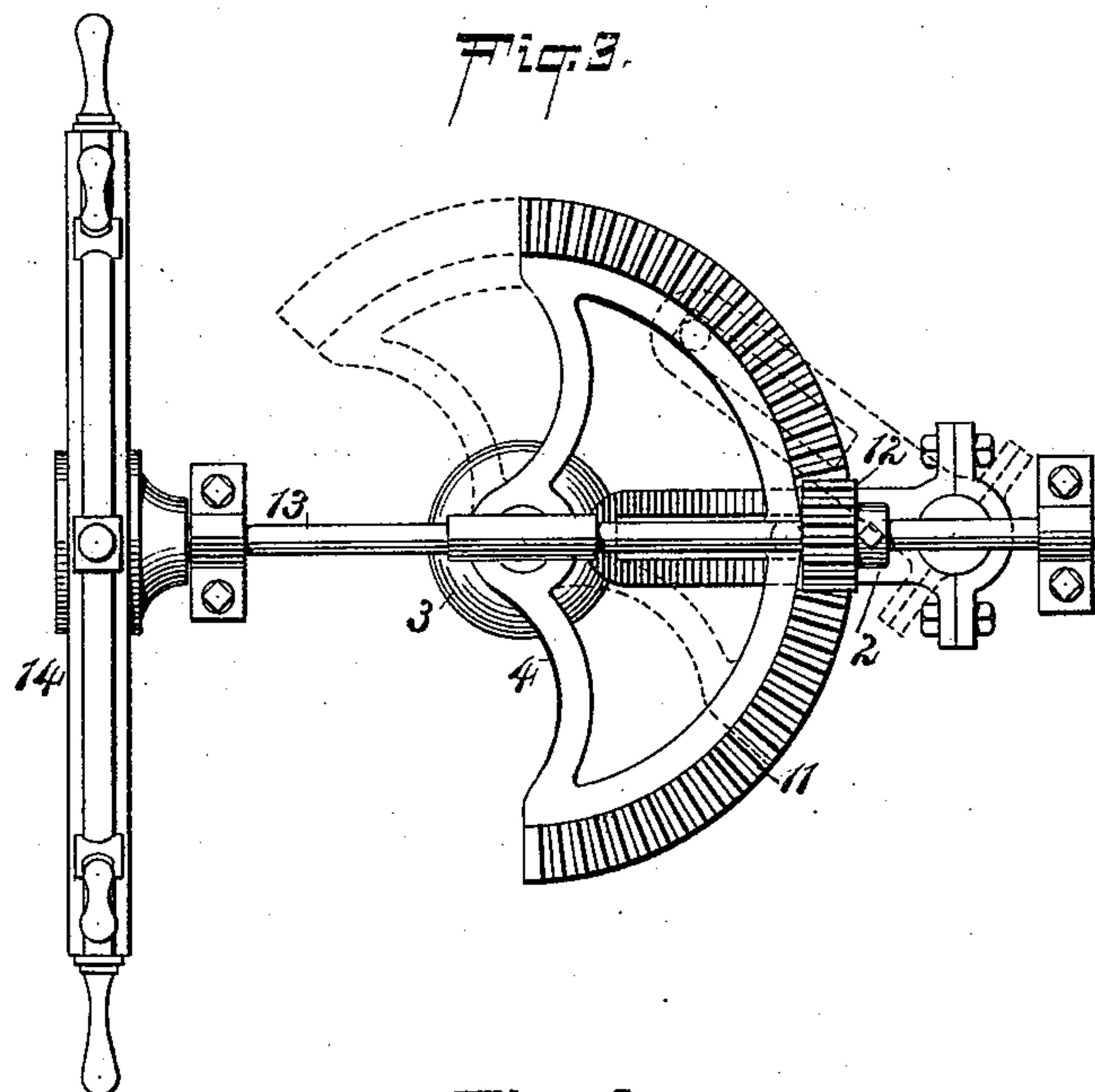
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UNITED STATES PATENT OFFICE.

ROBERT J. VICTOR, OF NEW YORK, N. Y.

STEERING-GEAR FOR VESSELS.

SPECIFICATION forming part of Letters Patent No. 471,202, dated March 22, 1892.

Application filed August 8, 1891. Serial No. 402,147. (No model.)

To all whom it may concern:

Be it known that I, ROBERT J. VICTOR, a citizen of the United States, and a resident of the city and county of New York, in the State of New York, have invented a certain new and useful Improvement in Steering-Gear for Vessels, of which the following is a specification, such as will enable those skilled in the art to which it appertains to make and use the same.

In all vessels the harder over the rudder is put the greater is the force exerted thereon by the water and in the ordinary form of steering-gear now in use the greater the force required to be exerted by the helmsman to put and keep the rudder in such position, by reason of which, although one man could easily keep the vessel upon a straight course, with the rudder amidships, it is frequently necessary to keep a second man at the wheel to render assistance when it becomes necessary to put the rudder hard over.

The object of my invention is to provide a steering-gear of simple and cheap construction upon which the leverage upon the rudder will be increased the farther the same is moved from the amidships position and which will fully overcome the difficulty before mentioned, and this I do in the manner described in the following specification, of which the accompanying drawings form a part, wherein similar numerals of reference designate like or equivalent parts wherever found throughout the several views, and in which—

Figure 1 represents a top plan view of the stern portion of a vessel provided with my improved steering-gear; Fig. 2, a side view thereof; Fig. 3, a top plan view of a modified form of the construction shown in Figs. 1 and 2; Fig. 4, a side view of the form of construction shown in Fig. 3, and Fig. 5 a detail of a portion of my improved steering-gear.

Referring to the drawings, Figs. 1 and 2, the numeral 1 designates the rudder-post, and 2 the tiller, which is rigidly attached thereto in any desired manner. Some little distance from the rudder-post 1 and secured firmly to the deck is a stud 3, on which is pivoted, as shown, a lever 4, which extends toward the rudder-post and preferably underneath the tiller 2. In the outer end of this lever 4, and preferably passing through the same, is a pin 5, which is secured to a gib or gibs 6, preferably by being pivoted therein, which gibs

6 are so arranged to slide freely along the tiller 2, preferably in a slot 7, as shown. The pin 5 is preferably made of a square form where it passes through the lever 4, which is preferably provided with an elongated slot, in which are placed pieces of soft rubber or other suitable material upon which any strain brought upon the pin 5 will be received, and secured in any desired manner either to the lever 4 or to the pin 5 are tiller-ropes 9, by which the device is operated in the usual manner. If desired, curved bars 10 may be fastened upon the deck or a groove of the same form cut therein, in which may rest and travel the bottom end of the pin 5.

The operation of the device is as follows: Power being exerted upon the tiller-ropes 9 in any well-known manner, the pin 5 acts upon the tiller 2 through the gibs 6, and the same is made to move accordingly, by which, at the same time that the tiller 2 is describing a segment of a circle in one direction, the lever 4, to which is secured the pin 5, is describing a segment of a circle in the opposite direction, and the pin 5 forces the gibs 6 to slide along the tiller 2 toward the outer end thereof, thus increasing at every outward movement of the tiller the leverage exerted by the pin 5 through the tiller 2 upon the rudder-post 1. The rubber buffers 8 on each side of the pin 5 in the lever 4 serve to catch and lessen the strain upon the entire mechanism caused by waves striking against the rudder, which otherwise, especially when the tiller and lever 4 are in the position shown in dotted lines, might possibly be broken or injured.

In the modified form of construction shown in Figs. 3 and 4 I have shown the device as adapted for use upon sailing-vessels where the hand steering-wheel is placed at the rudder-post and it is desired to do entirely away with tiller chains or ropes. In this form of device the lever 4 is in the form of a quadrant having gear-teeth 11 meshing with a pinion 12, mounted upon a shaft 13, to which is attached the hand steering-wheel 14, the pin 5 being attached to the quadrant in the same manner as to the lever 4 in the form shown in Figs. 1 and 2, and, if desired, having the rubber buffers 8, as shown in Fig. 5. The operation of this modified form of my device is precisely similar to that of the form shown in

Figs. 1 and 2 and hereinbefore more particularly described, the action of the pinion 11 upon the gear-teeth 10 of the quadrant 4 causing the pin 5 to traverse the same segment of a circle and slide along the tiller 2 in the slot 7, as does the movement of the tiller-ropes in the form of construction shown in Figs. 1 and 2. In this modified form of construction shown in Figs. 3 and 4 I have omitted the gib or gibs 6, as they are not absolutely essential and may be omitted, if desired, in either form, as the pin 5, sliding along the slot 7, will bring about the desired result without the intervention of the gibs 6.

The forms of device shown and described really constitute a compound tiller consisting of two parts, one of which is rigidly secured to the rudder-post and the other pivoted at some distance therefrom, the two being united by a sliding pivotal connection, and this is the form I prefer, although in some instances it may be found advisable to omit the lever 4 and use simply the guiding track or groove 10 for the pin 5, as it is only necessary to compel the pin 5 to traverse a segment of a circle in the opposite direction from that traversed by the end of the tiller 2, in order to bring about the desired result. It will be seen that the pivoted lever 4, the quadrant used in place thereof, or the track 10 will either, if used, act as a guide to cause the pin 5 to traverse the segment of a circle, as above described.

It is evident that many changes in the construction, combination, and arrangement of the parts of my improved steering-gear may be made without departing from the scope of my invention, and I do not limit myself to any particular form of construction thereof; but,

Having fully described the same, its construction and operation, what I claim, and desire to secure by Letters Patent, is—

1. In a steering-gear for vessels, the combination, with the tiller, of a slide adapted to slide along the same, through which motion is transmitted to the tiller, and a guide for causing said slide to traverse the segment of a circle in an opposite direction to that traversed by the tiller when the same is moved, substantially as and for the purposes set forth.

2. In a steering-gear for vessels, the combination, with the rudder, of a compound tiller consisting of two parts, one of which is rigidly secured to the rudder-post and the other pivotally connected with a support, the two parts being connected by a pivoted sliding connection, and means for transmitting motion to the pivoted part, substantially as shown and described.

3. A compound tiller consisting of two parts, one of which is rigidly connected at one end with the rudder-post and the other pivotally connected at one end with a support, the free end of the pivoted part being connected with the part attached to the rudder-post by a slid-

ing connection, and means for transmitting motion to the pivoted part, substantially as shown and described.

4. In a steering-gear for vessels, the combination, with the rudder, of a compound tiller consisting of two parts, one of which is rigidly attached to the rudder-post and the other pivotally connected with a support, and means for transmitting motion to the pivoted part, the part attached to the rudder-post extending toward the support and that connected with the support extending toward the rudder-post, the two parts being united by a connection adapted to slide along the part secured to the rudder-post as the rudder is moved, substantially as shown and described.

5. In a steering-gear for vessels, the combination, with the rudder, of a compound tiller consisting of two parts, one of which is rigidly attached to the rudder-post and is provided with a longitudinal slot and the other pivotally connected with a support, and means for transmitting motion to the pivoted part, the part attached to the rudder-post extending toward the support and that connected with the support extending toward the rudder-post and being provided with a pin adapted to slide in the slot in the other part, substantially as shown and described.

6. In a steering-gear for vessels, the combination, with the rudder, of a compound tiller consisting of two parts, one of which is rigidly attached to the rudder-post and is provided with a longitudinal slot and the other pivotally connected with a support, and means for transmitting motion to the pivoted part, the part attached to the rudder-post extending toward the support and that connected with the support extending toward the rudder-post, a pin passing through the part pivoted to the support into the slot in the part secured to the rudder-post and adapted to slide along the same, and a guiding-slot 10 for the lower end of the pin, substantially as shown and described.

7. In a steering-gear for vessels, the combination, with the rudder, of a compound tiller consisting of two parts, one of which is rigidly attached to the rudder-post and the other pivotally connected with a support, and means for transmitting motion to the pivoted part, the part attached to the rudder-post extending toward the support and that connected with the support extending toward the rudder-post and being pivotally connected with gibs adapted to slide along the part attached to the rudder-post, substantially as shown and described.

Signed at the city and county of New York, in the State of New York, this 7th day of August, A. D. 1891.

ROBERT J. VICTOR.

Witnesses:

C. L. DAVIS,
F. GADELLA.