

(No Model.)

2 Sheets—Sheet 1.

R. N. CHAMBERLAIN.
STEERING APPARATUS.

No. 534,358.

Patented Feb. 19, 1895.

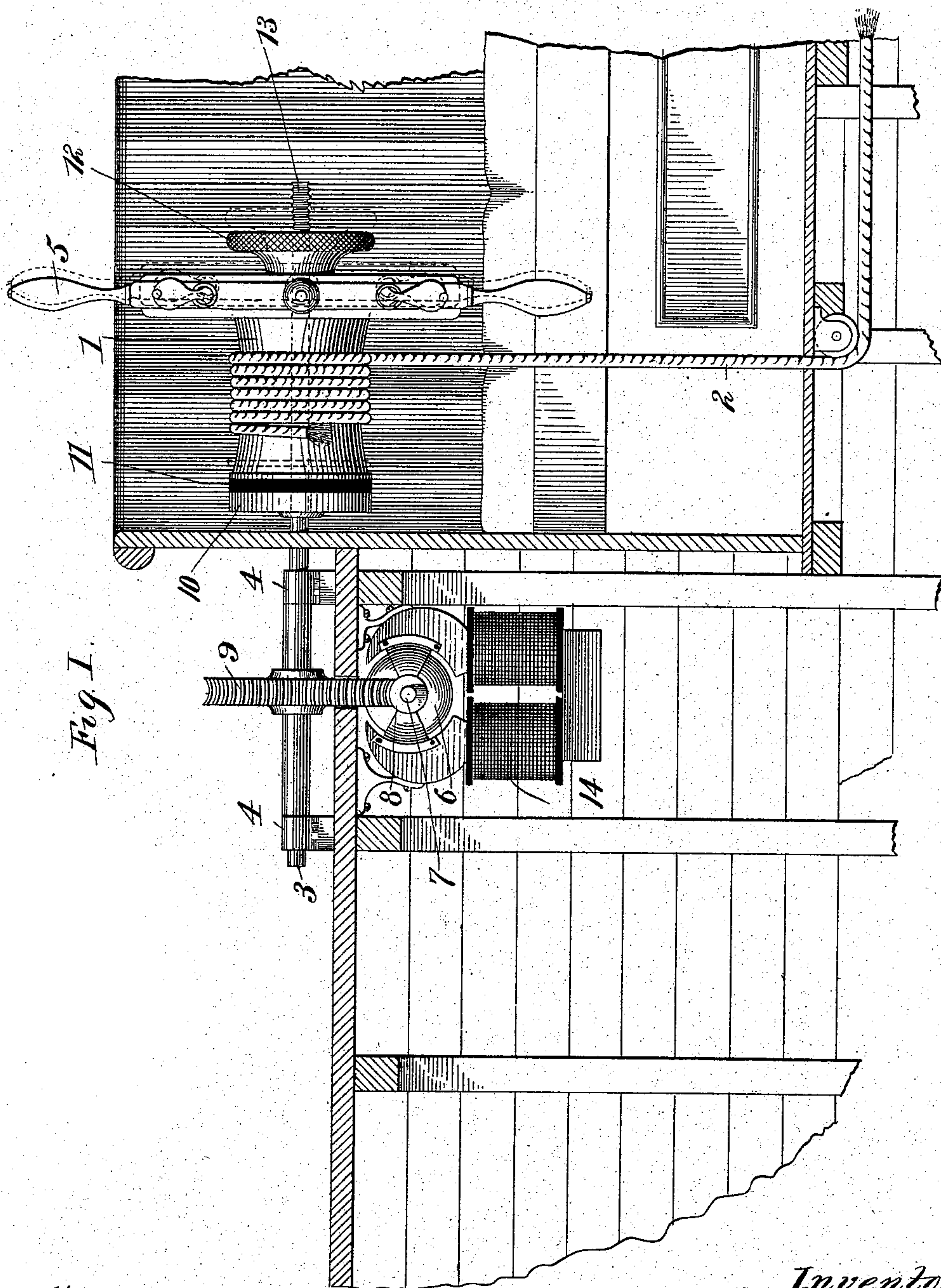


Fig. 1.

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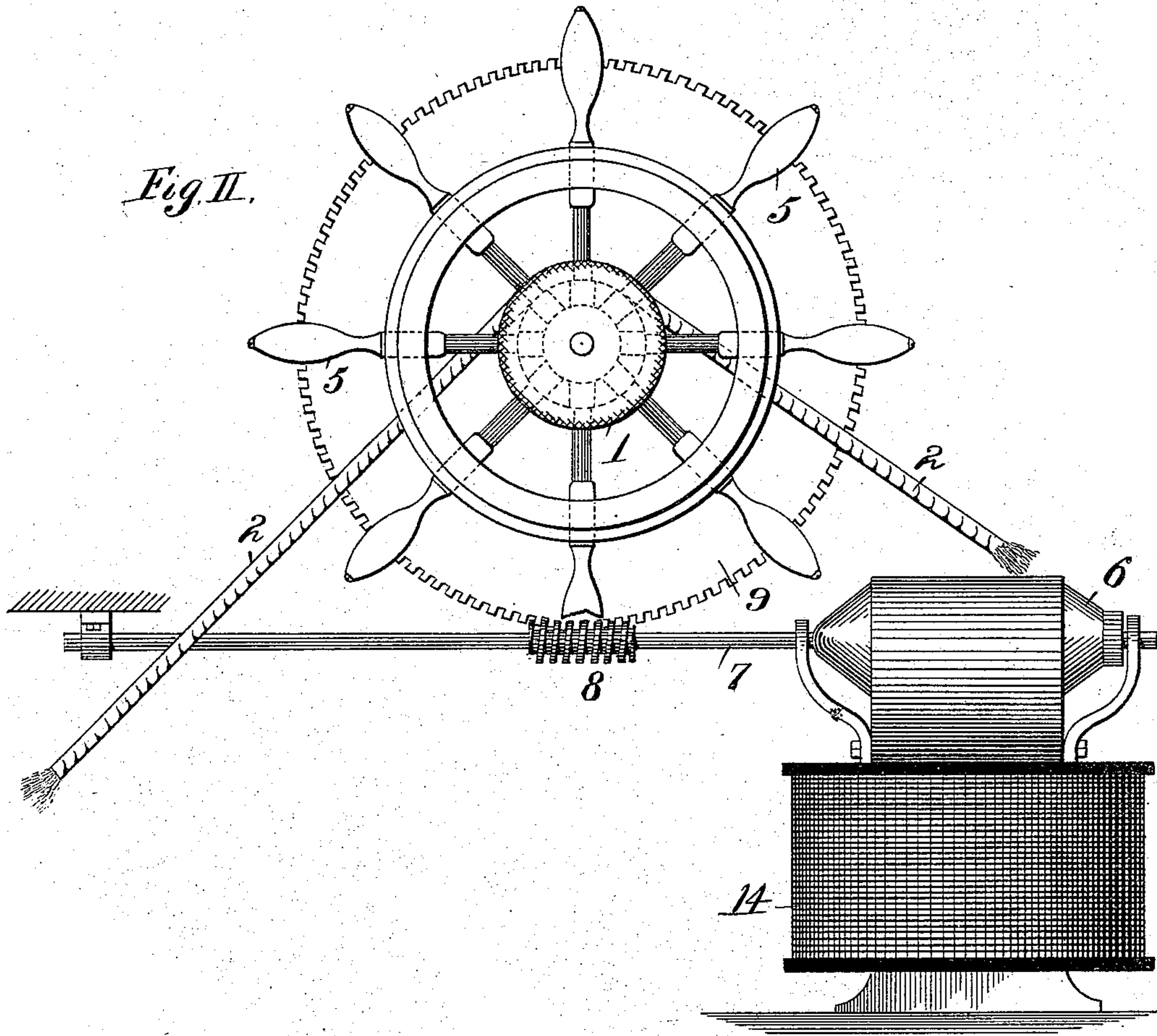
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2 Sheets—Sheet 2.

R. N. CHAMBERLAIN.
STEERING APPARATUS.

No. 534,358.

Patented Feb. 19, 1895.



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UNITED STATES PATENT OFFICE.

RUFUS N. CHAMBERLAIN, OF NEW YORK, N. Y.

STEERING APPARATUS.

SPECIFICATION forming part of Letters Patent No. 534,358, dated February 19, 1895.

Application filed May 16, 1894. Serial No. 511,489. (No model.)

To all whom it may concern:

Be it known that I, RUFUS N. CHAMBERLAIN, a citizen of the United States, residing at New York, county and State of New York, have invented a new and useful Steering Apparatus, of which the following is a specification.

My invention contemplates a combined mechanical and electrical steering gear, whereby, ordinarily, the helm of the vessel can be controlled by the usual wheel or windlass, and it is further so arranged that, when desired, the drum on which the rudder controlling chain or rope is mounted can be instantly connected to an electrical apparatus, so that the vessel can be steered thereby, in lieu of the mechanical steering apparatus, as will be explained.

Referring to the accompanying drawings which form a part of this specification: Figure I represents a longitudinal section of the portion of the vessel near the bow, the working parts of the steering apparatus being shown in elevation. Fig. II represents an end view of the device.

In the drawings 1 represents a drum on which the rope or chain 2 extending to the rudder is mounted and attached. The drum 1 is mounted and moves loosely upon the shaft 3, the shaft being supported in journals or supports 4, 4. The wheel, shown at 5, is rigidly secured to the drum 1. By means of this part of the apparatus the vessel is ordinarily mechanically controlled.

I will now proceed to describe the electrical portion of my apparatus which is designed to co-operate with the mechanical in certain contingencies and it is constructed as follows:

At 6 I show an armature mounted upon a shaft 7. The shaft 7 is provided midway of its length with a worm gear 8. The worm gear 8 intermeshes with the larger gear wheel 9, the latter being fixedly secured to the shaft 3 on which the drum 1 is loosely mounted.

At 10 I show a disk likewise fixedly secured to the shaft 3 and provided on its face with a rubber plate 11. Disk 10 with its rubber facing 11, are co-extensive and of the same diameter as the end of the drum 1.

At 12 I show a hand screw screwed upon the end 13 of the shaft 3.

When the hand screw 12 is screwed inwardly toward the wheel 5, the hub of the

said hand screw 12 will come in contact with the hub of the wheel 5 and will press it inwardly, carrying the drum 1 with it and in the direction of the rubber facing 11 of the disk 10. A slight movement, which is as indicated by the respective dotted and full positions in Fig. 1, will serve to bring the drum in close contact with the rubber facing on the disk 10, and thereupon, the disk 10 and the drum 1, will through the mediation of the pressure and the resulting friction on the rubber facing, hold the parts together and by this means fixedly secure for the time being the drum to the shaft 3. As soon as this is accomplished the electrical apparatus 14, arranged as shown, and connected to any suitable switch board can be brought into play and the vessel can be guided and steered through the electrical apparatus shown.

Of course the invention can be modified as the exigencies of the particular case may warrant, without departing from the spirit of the invention, which is, the providing of a combined mechanical and electrical steering gear, which can be changed from one to the other by the turning of the hand wheel or its mechanical equivalent.

In Fig. II I have purposely shown the wheel 9 larger than in Fig. I so as not to interfere with the lines of wheel 5.

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

1. The combination of the shaft 3, electric driving mechanism therefor, a rudder controlling drum 1 free to move on said shaft and having connected to it a hand wheel 5 and clutching devices adapted to connect and disconnect said drum and hand wheel from said shaft, substantially as set forth.

2. In a steering gear, the combination of a shaft 3 having a collar 10 and having electric driving mechanism therefor, a drum 1 free to revolve on said shaft and having rigid with it the hand wheel 5 and nut and screw 12, 13, adapted to bind the drum against said collar and rigidly connected to the electrically driven shaft, substantially as set forth.

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