

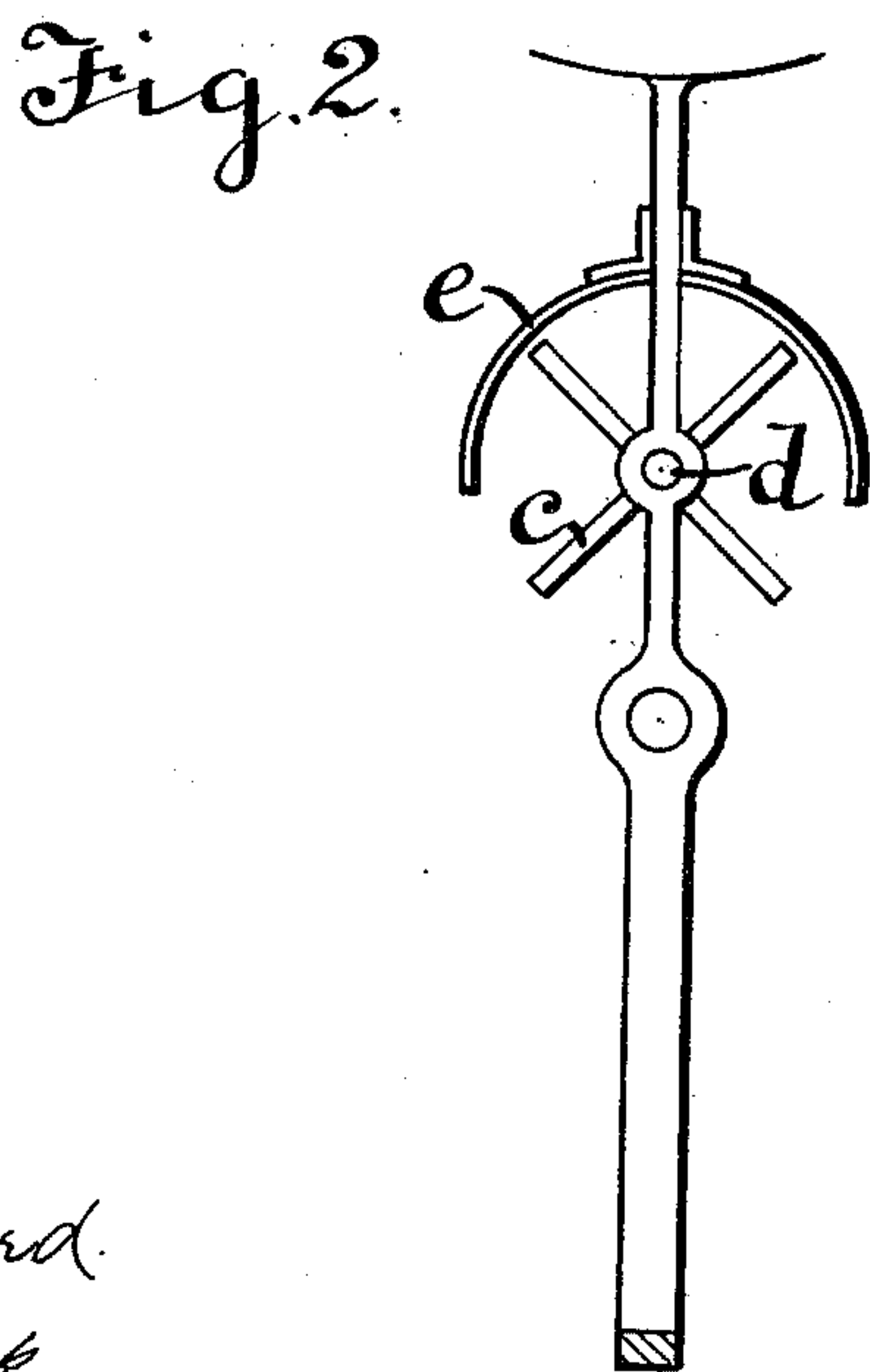
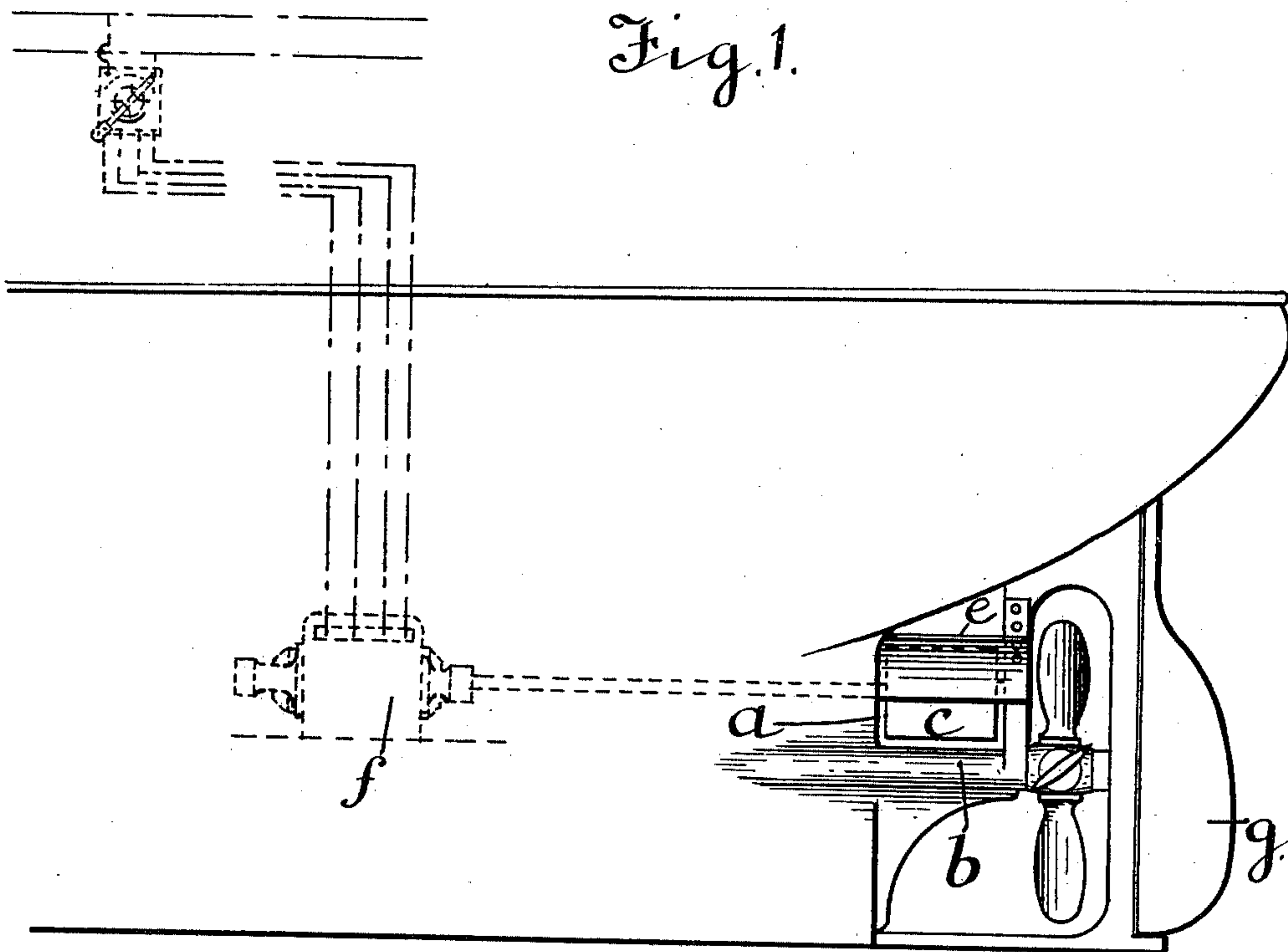
No. 619,329.

Patented Feb. 14, 1899.

T. W. MOORE.
STEERING APPARATUS FOR VESSELS.

(Application filed Apr. 4, 1898.)

(No Model.)



WITNESSES:

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THOMAS W. MOORE, OF NEW YORK, N. Y.; ELRIC L. MOORE, GEORGE N. MOORE, AND JOHN N. MOORE, EXECUTORS OF SAID THOMAS W. MOORE, DECEASED, ASSIGNORS OF THREE-FIFTHS TO JAMES GILBERT FOSTER AND MATTHEW BRUCE, OF SAME PLACE.

STEERING APPARATUS FOR VESSELS.

SPECIFICATION forming part of Letters Patent No. 619,329, dated February 14, 1899.

Application filed April 4, 1898. Serial No. 676,321. (No model.)

To all whom it may concern:

Be it known that I, THOMAS W. MOORE, a citizen of the United States of America, and a resident of New York, (Brooklyn,) county of Kings, and State of New York, have invented certain new and useful Improvements in Steering Apparatus for Vessels, of which the following is a specification.

My invention consists of a paddle-wheel located at the stern of the vessel below the water-level on an axis parallel with the keel, with one-half, or thereabout, preferably the upper half, covered by a hood and geared with a suitable motor within the ship for rotating it in either direction at will, so that the side not covered by the hood will cause lateral divergence of the stern one way or the other, according to the direction of rotation of the wheel, as hereinafter described, reference being made to the accompanying drawings, in which—

Figure 1 is a side elevation of a stern portion of a ship with my improved steering apparatus applied, and Fig. 2 is a detail in rear elevation.

Behind the stern-post *a*, and preferably above the tail-bearing *b* of the propeller-shaft in the case of a steamship, I mount a small paddle-wheel *c* on an axis *d* parallel with the keel, with a hood *e* over the upper half, more or less, of the wheel, said wheel being geared in any approved way with an electric or other suitable driving-motor *f* within the ship for rotating it more or less rapidly either way at the will of the pilot, whereby the paddles will while passing through the lower portion of their circuit impel the stern sidewise, the direction being determined by the direction in which the wheel is rotated. The hood over the upper part of the wheel deflects the water escaping from it, so that its reactionary effect does not materially oppose the lateral impulse which the paddles get in the lower part of their course.

This improved steering device may be used as auxiliary to a rudder *g* or as the sole means of steering, and it is applicable to sailing vessels and paddle-wheel boats, as well as screw-propellers.

The hood may be located over the upper side of the wheel or under the lower side with practically the same results; but at the present time it is believed to be preferable to locate it as represented in the drawings, or practically so.

Although I have represented and described the steering-wheel as located at the stern of the vessel, it is obvious that it will give practically the same results if located at the bow, and I do not limit myself in this respect, but will locate it at either end, as preferred, and I may employ such a wheel at each end, especially in the case of vessels that may be required to turn in small circles.

It is to be noted that with such means of steering a vessel may be turned when not under headway. An especial advantage of it is to avoid collisions in an emergency and to facilitate working the vessel into slips and changing her position therein. It will avoid the necessity of putting out cables and pulling on them by the men or the windlass.

I claim—

The combination with the hull of a vessel, of an exterior steering-wheel, located at one end, below the water-level with its axis parallel with the keel, and with a part covered by a hood and geared with a motor for rotating it in either direction substantially as described.

Signed by me at New York this 31st day of March, 1898.

THOMAS W. MOORE.

Witnesses:

A. P. THAYER,
J. HOWARD.