

M. TOWNSEND.
STEERING APPARATUS.

No. 171,449.

Patented Dec. 21, 1875.

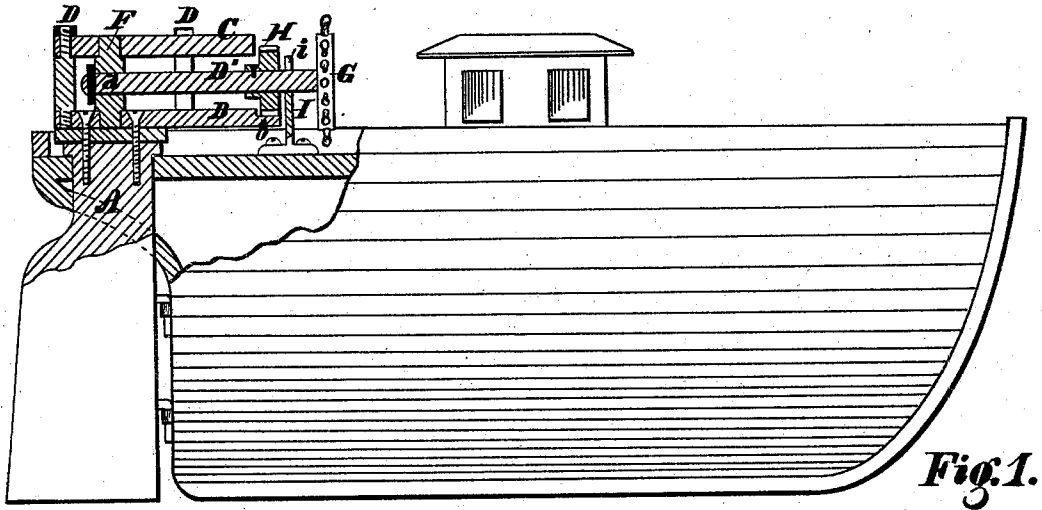


Fig. 1.

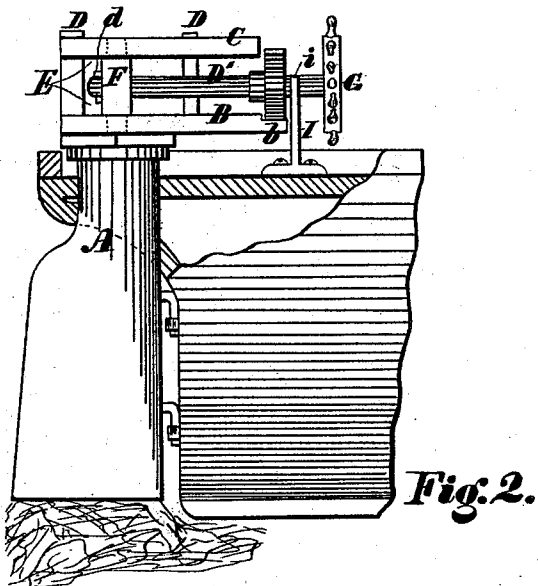


Fig. 2.

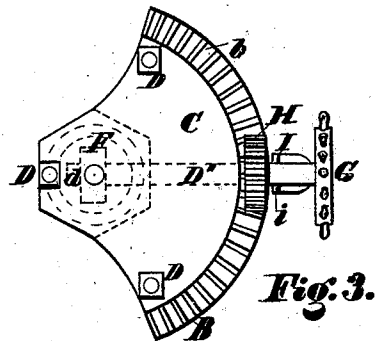


Fig. 3.

Witnesses
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UNITED STATES PATENT OFFICE.

MARK TOWNSEND, OF PORT NORRIS, NEW JERSEY.

IMPROVEMENT IN STEERING APPARATUS.

Specification forming part of Letters Patent No. **171,449**, dated December 21, 1875; application filed December 1, 1875.

To all whom it may concern:

Be it known that I, MARK TOWNSEND, of Port Norris, in the county of Cumberland and State of New Jersey, have invented certain new and useful Improvements in Steering Apparatus; and do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it pertains to make and use it, reference being had to the accompanying drawings, which form part of this specification, in which—

Figure 1 is a vertical longitudinal section. Fig. 2 is a side elevation. Fig. 3 is a plan of my invention.

The object of my invention is to provide a steering apparatus particularly designed for small vessels, which frequent shallow waters and have their rudders raised by striking bottom, my improvements being designed to obviate all danger of accident, as well as inconvenience, by this occurrence.

The nature of my invention consists in the peculiar construction and combination of parts, as hereinafter fully described.

Referring to the accompanying drawing, A designates a rudder-post, to which is made fast a segment, B, cogged, as shown at *b*. C represents a smaller segment, having a plain periphery in a line flush with a perpendicular let fall on the inner extremity of the cogs *b*. The segments B and C are firmly connected by standards D, allowing a space between them, designated by E. F is a vertical post swiveled in the segments B and C, and D' is a horizontal shaft, having its end *d* firmly fitted in or fastened to the post F, the opposite

end of said shaft being provided with a hand-wheel, G. H represents a pinion on the shaft D', gearing with the cogs *b* on the segment B, and I is a standard, having a vertical slot, *i*, in which said shaft fits and moves.

The operation is as follows: The vessel is steered, in the usual manner, by turning the hand-wheel G, the pinion H imparting movement to the segment B, and thereby rotating the rudder-post. The movement of the segments causes the shaft D' to traverse the space E, the swiveled post F turning in its bearings in said segments. The segment C prevents the shaft D' from being so raised as to allow the pinion H to fall out of gear with the cogs *b* when the rudder is raised by striking bottom. When the rudder does so rise the segments rise with it, the shaft D' keeping its assigned position in them or between them while moving vertically through the slot *i*, the pinion H keeping in gear with the cogs *b*, and all the parts working harmoniously and without undue straining.

What I claim as my invention is—

In combination with the rudder A, the segments B C, swiveled post F, shaft D', pinion H, and hand-wheel G, the several parts being constructed and arranged to operate substantially as shown and described.

In testimony that I claim the foregoing I have hereunto set my hand this 22d day of November, 1875.

MARK TOWNSEND.

Witnesses:

M. DANL. CONNOLLY,
CHAS. F. VAN HORN.