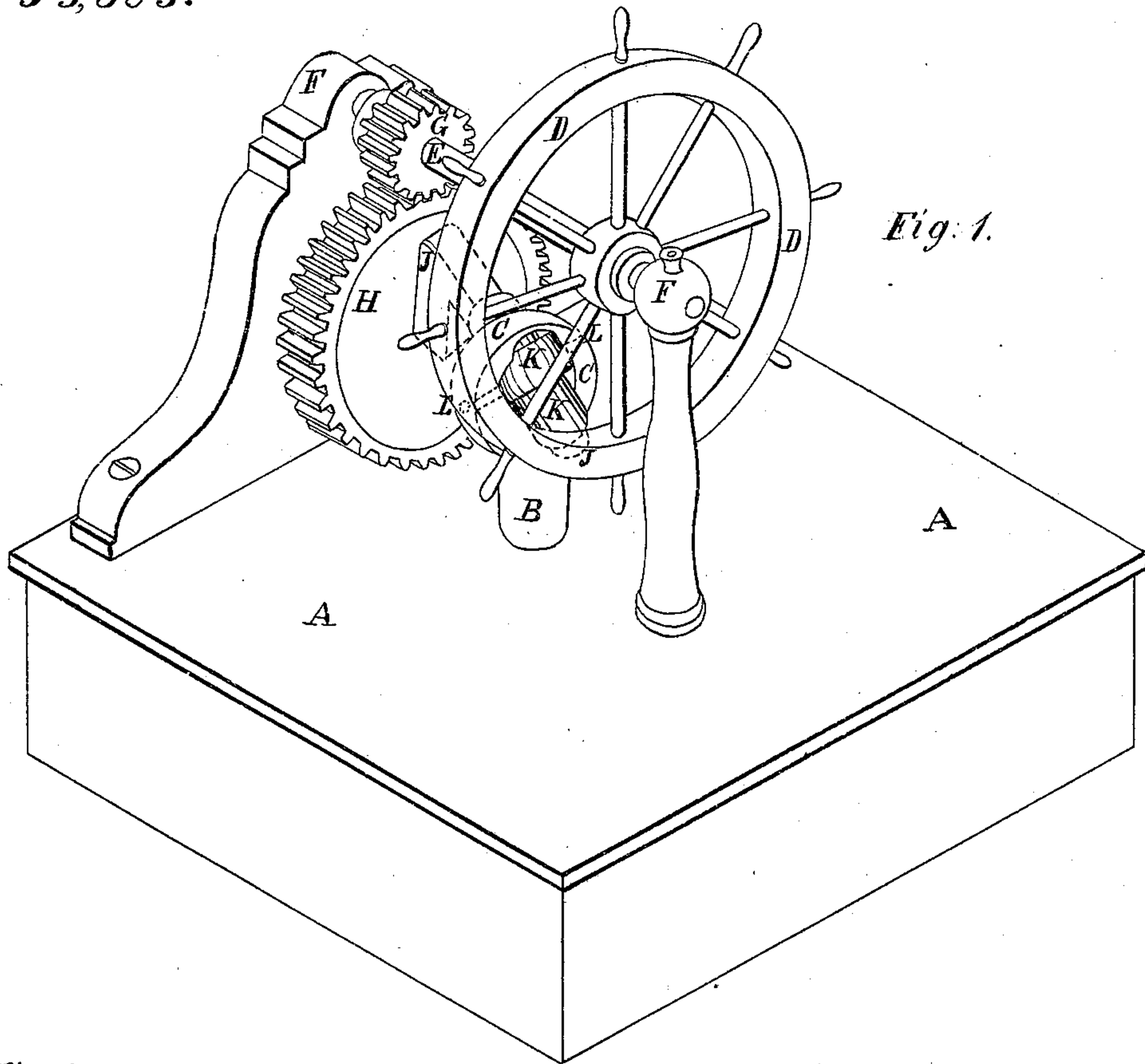


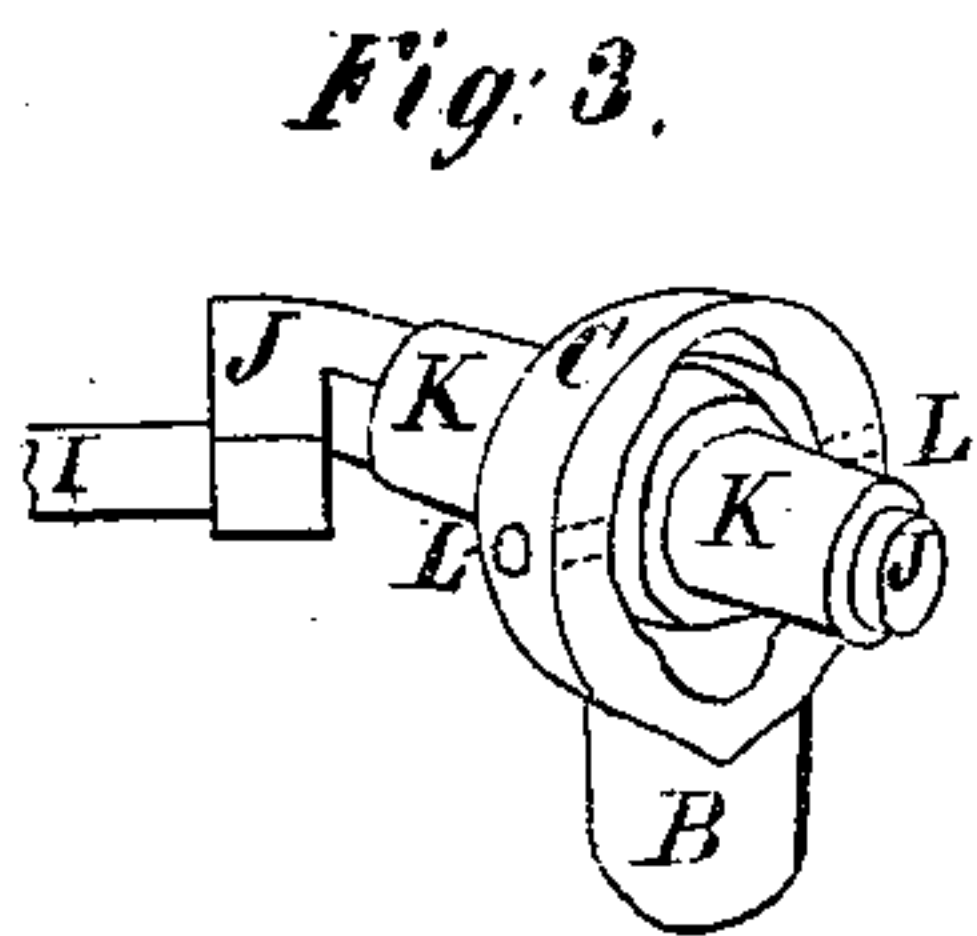
*G. R. Moore.*  
*Steering.*

*N<sup>o</sup> 2,679.*  
*33,683.*

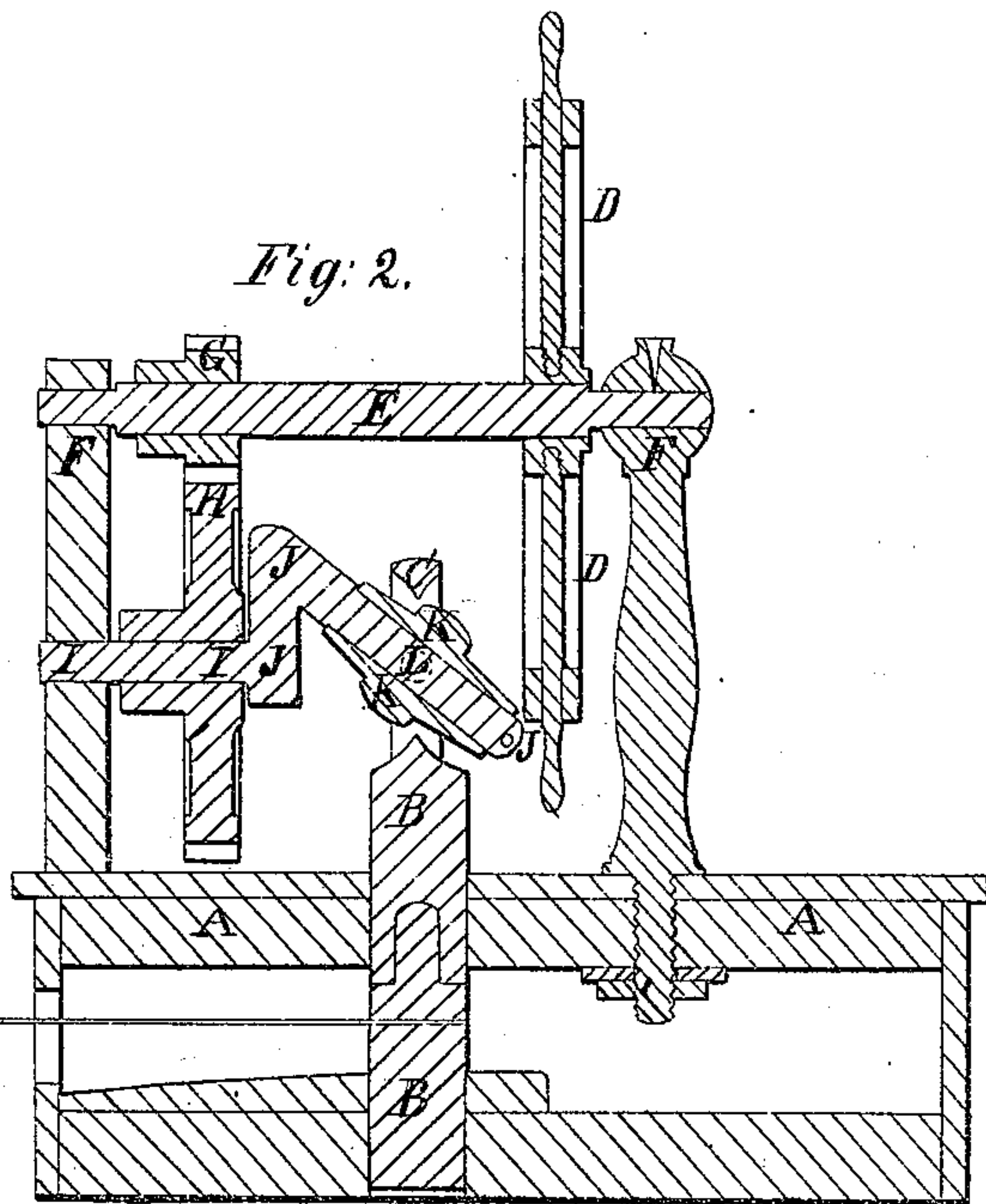
*Patented Nov. 5, 1861.*



*Fig. 1.*



*Fig. 3.*



*Fig. 2.*

*Witnesses:*

*Thos. B. Roach*  
*Edmund Mason.*

*Inventor:*

*Sam. Cooper*  
*attorney for*  
*Geo. R. Moore*

# UNITED STATES PATENT OFFICE.

GEORGE R. MOORE, OF WESTFORD, ASSIGNOR TO ALFRED B. ELY, OF NEWTON, MASSACHUSETTS.

## IMPROVED STEERING APPARATUS.

Specification forming part of Letters Patent No. 33,683, dated November 5, 1861.

*To all whom it may concern:*

Be it known that I, GEORGE R. MOORE, of Westford, in the county of Middlesex and State of Massachusetts, have invented certain new and useful Improvements in Steering Apparatus for Vessels and otherwise, of which the following specification is a full description, in connection with the accompanying drawings.

Figure 1 is a perspective view. Fig. 2 is a perpendicular section through the middle of the steering-wheel and rudder. Fig. 3 is a view of the rudder-head and crank, the angle of the crank being laid horizontal.

My invention consists in an improved method of imparting motion to or actuating the rudders of vessels or otherwise. It may be used for other purposes.

In the drawings, A A represent the deck of a vessel; B B, the rudder-post; C C, a circular ring-head to the rudder-post, (or it may be a hollow square, or even two standards, one on each side.)

D D is the steering-wheel; E, the axis of that wheel, resting in boxes at F F. G is a small gear-wheel fixed on this axis and meshing into a larger gear-wheel H, revolving upon an axis I I, which last axis, prolonged and bent first at a right angle and then at an acute angle, forms an acute-angled crank J J J. This crank passes through and moves freely in a sleeve K K, which sleeve is hung on pivots on each side in the circular ring-head of the rudder-post at L L.

As the steering-wheel D D is revolved in one direction the gear-wheel H is revolved in

an opposite direction, and the acute-angled crank I J, (the angle of which may be varied, as desired,) revolving with the wheel H and in the pivoted sleeve K K, causes the rudder-post to turn to one side. By the peculiar arrangement of the joint the continuous turning of the wheel in one direction will cause the rudder after it has turned to one side to change its direction and turn to the other side without changing the turning direction of the steering-wheel, if desired, or the turn of the wheel can be changed, as may be convenient.

I am aware that devices somewhat similar have been used for other purposes; but in those cases the power has been applied through and at the end of the arm of the lever or crank which passes through the sleeve, and they have been used to impart circular motion to or at the end of this arm; but my invention consists in applying the power from the crank through the sleeve to the object to which the sleeve is pivoted, and for the purpose of imparting reciprocating motion to the post or object to which the sleeve is pivoted.

What I claim, then, and desire to secure by Letters Patent, is—

Imparting a reciprocating motion to the rudder of a vessel by means of the acute-angled crank and pivoted sleeve, substantially as described.

GEORGE R. MOORE.

Witnesses:

SAMUEL A. HAMLIN,  
GEORGE WRIGHT.