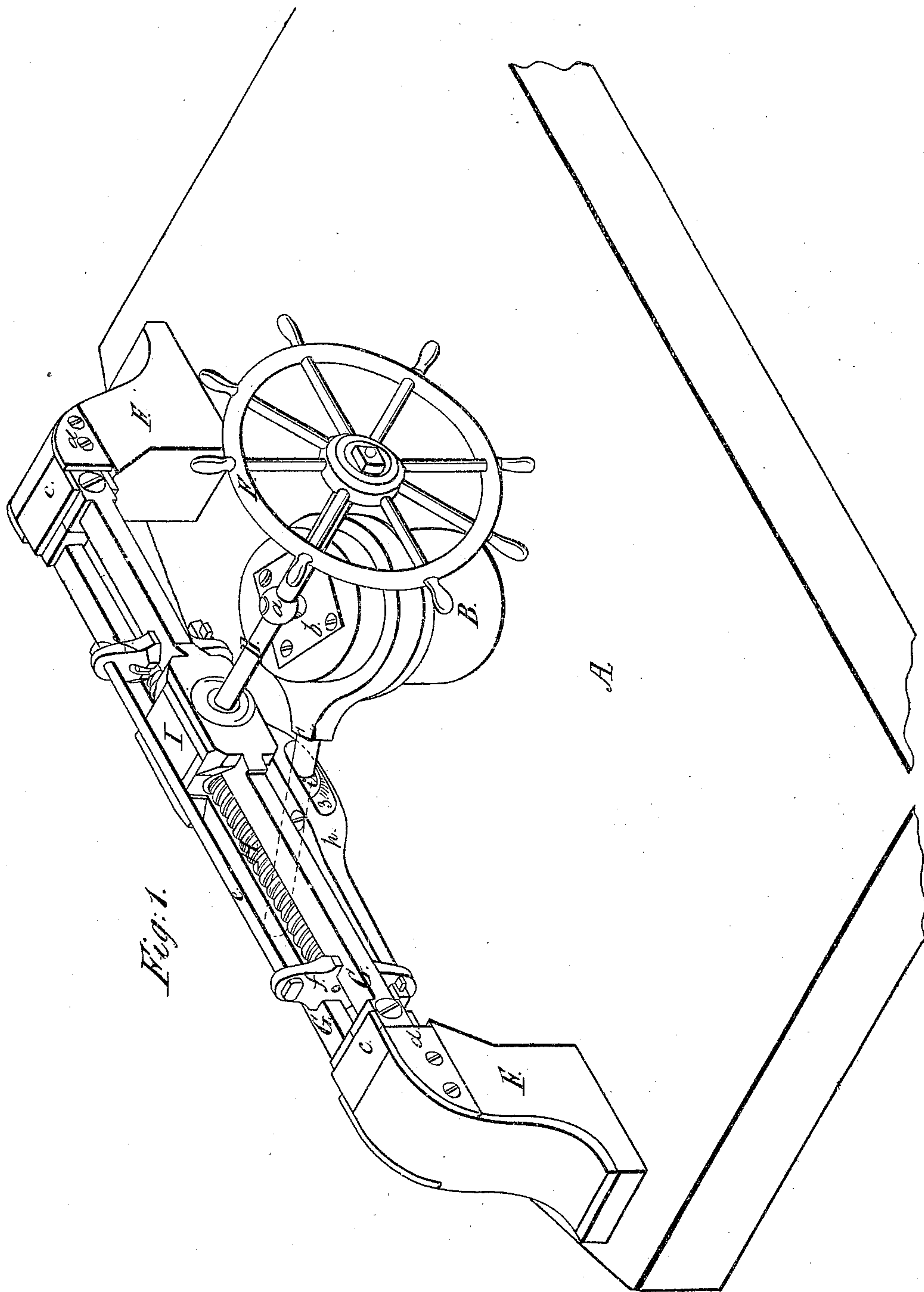
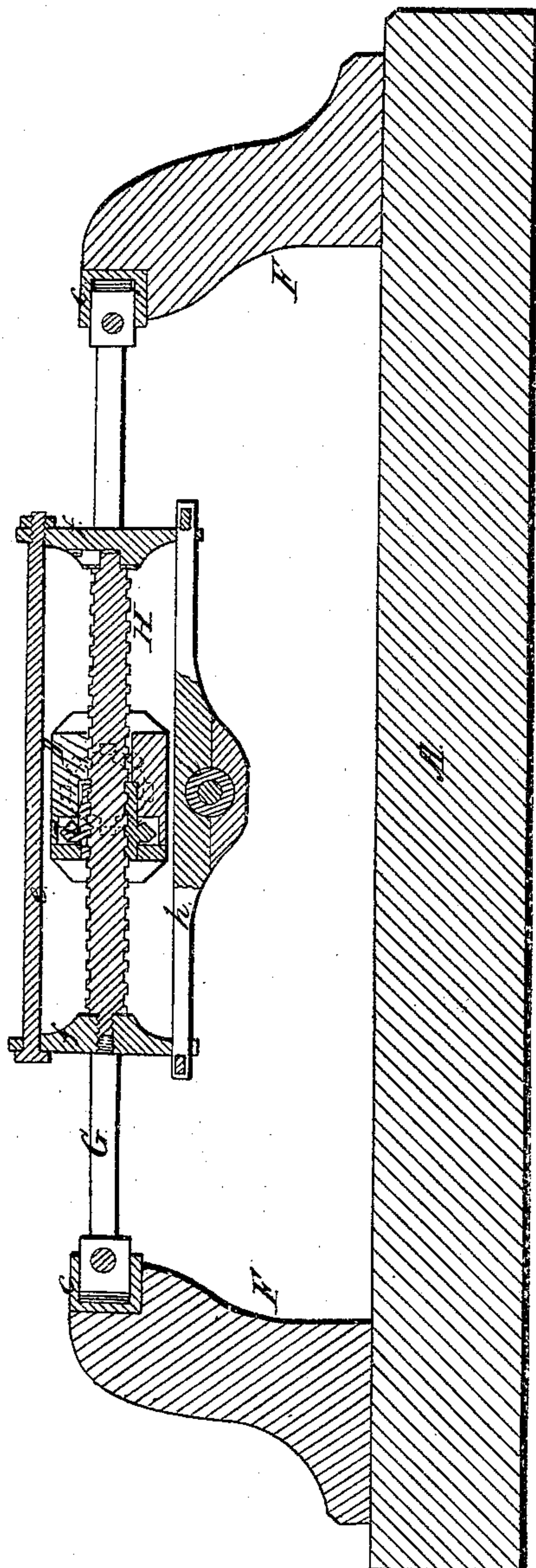


*D. Jones. Sheet 1, 4 Sheets.*  
*Steering App's.*  
*N<sup>o</sup> 27,223. Patented Feb. 21, 1860.*

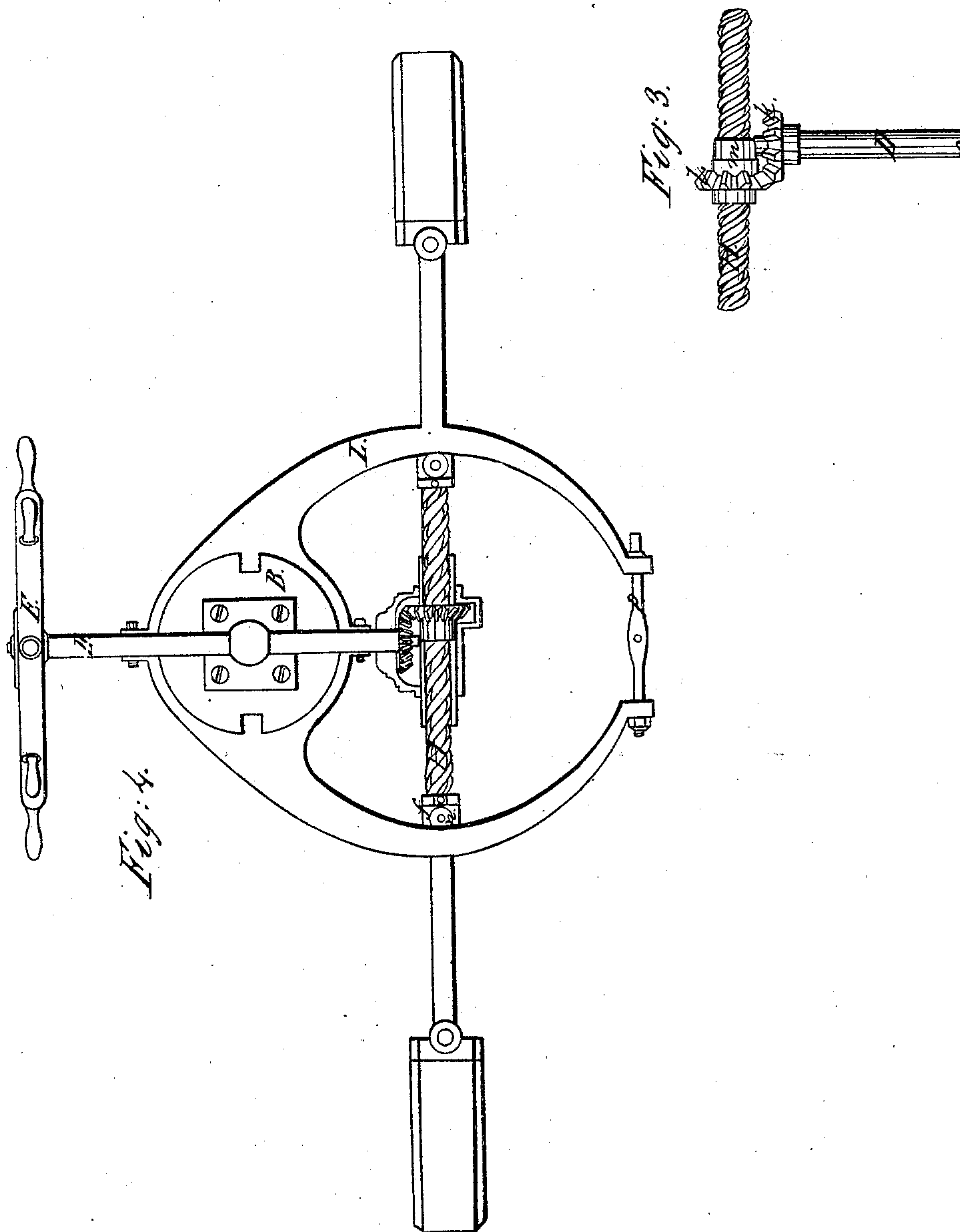


*D. Jones. Sheet 2, 4 Sheets.*  
*Steering App's.*  
*N<sup>o</sup> 27,223. Patented Feb. 21, 1860.*

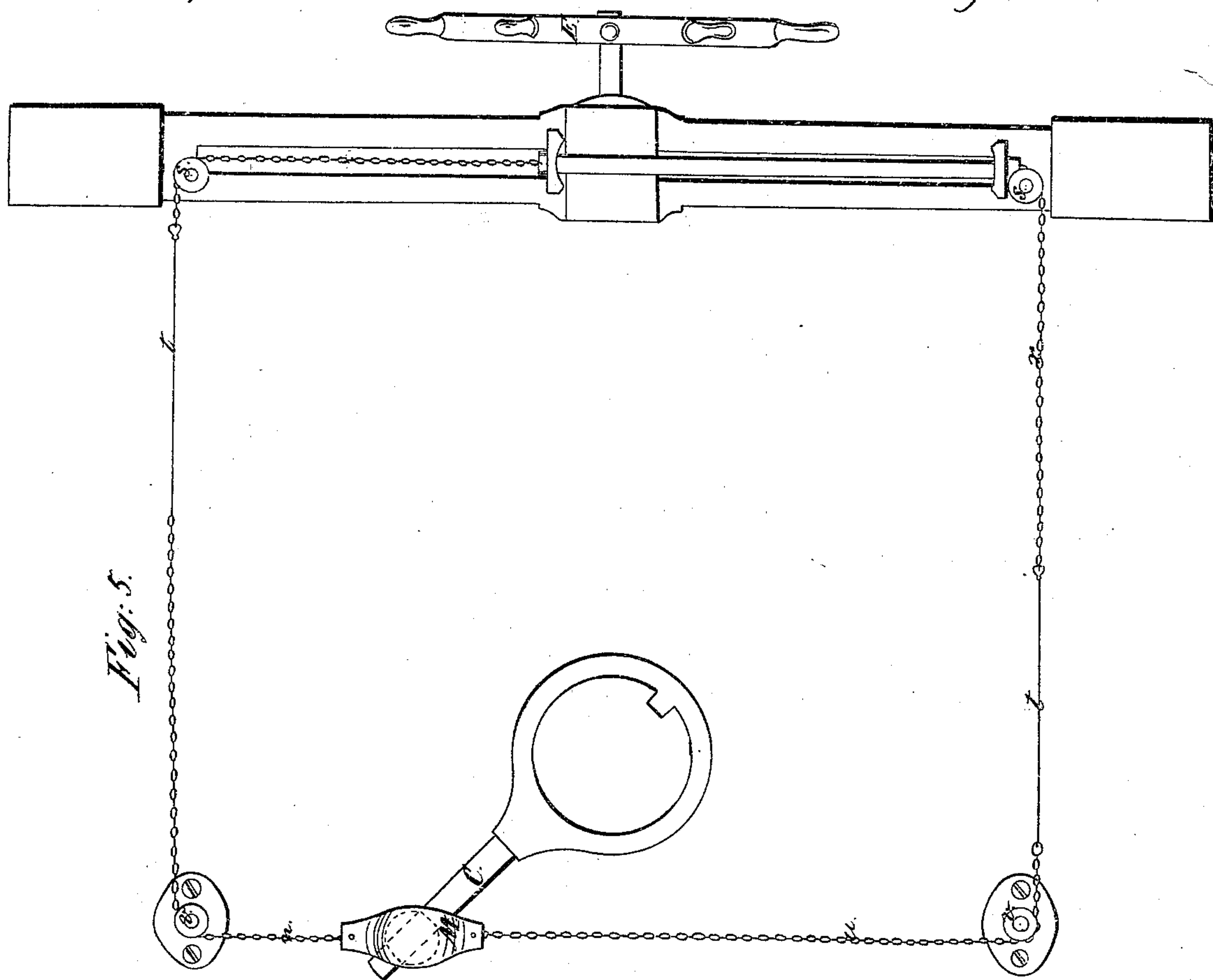
*Fig. 2.*



*D. Jones. Sheet 3, 4 Sheets.*  
*Steering App's*  
*N<sup>o</sup> 27,223. Patented Feb. 21, 1860.*



*D. Jones. Sheet 4, 4 Sheets.*  
*Steering App's.*  
*No 27,223. Patented Feb. 21, 1860.*





# UNITED STATES PATENT OFFICE.

DANIEL JONES, OF BOSTON, MASSACHUSETTS.

## STEERING APPARATUS.

Specification of Letters Patent No. 27,223, dated February 21, 1860.

*To all whom it may concern:*

Be it known that I, DANIEL JONES, of Boston, in the county of Suffolk and State of Massachusetts, have invented an Improved Steering Apparatus for Vessels, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, making part of this specification, in which—

Figure 1 is a perspective view of the steering apparatus; Fig. 2 is a section through the same, taken longitudinally through the screw; Fig. 3, detail to be referred to hereafter; Figs. 4 and 5, modifications of my improved apparatus.

The object of my present invention is to secure a direct thwartship action of a screw upon the tiller, and at the same time to leave the tiller in a condition to be readily operated by block and tackle, in case of an accidental derangement of the steering apparatus.

That others skilled in the art may understand and use my invention, I will proceed to describe the manner in which I have carried it out.

In the said drawings A represents the deck of a vessel; B the rudder head, to which is attached a tiller C projecting aft. On top of the rudder head is a knob *a*, the shank of which turns freely in a plate *b* let into the rudder head, this knob *a* serves as a bearing for the shaft D, which carries the steering wheel E. Two heavy stanchions F rise from the deck, one on each side of the rudder head, and in a line a little abaft of it. These stanchions serve as supports for a pair of heavy, metal ways G, which are connected together at each end at *c* and rest in housings *d* in the stanchions F. (This allows the ways G and parts connected therewith to be raised with the rudder head, if that should be lifted.) Two blocks *f* slide between the ways G and carry between them a screw H the ends of which are secured in the blocks; a rod *e* braces these blocks above the ways G, and a stouter bar *h* below the ways is attached at each end to one of the blocks *f*, and has in the middle of its length where it is thickest a swiveling ball *i* through which the tiller C, passes, and in which it slides freely, so that as the blocks *f* are moved along the ways G the tiller C, is vibrated to one side or the other and the rudder post B is turned as required. The bar *h* is cut away on each side of the ball *i*

as shown at 3, Fig. 1, to give room for the movement of the tiller C. The blocks *f* are moved longitudinally on the ways G in the following manner: A box I is attached to the middle of the ways G; one side of this box serves as a bearing for the shaft D, which enters it, and carries on its end inside of the box a beveled gear *k* (see Fig. 3 and in red Fig. 2) which engages with a corresponding gear *l* on a nut *m* which embraces the screw H, and which turns in a recess formed to receive it in the box I, as shown in Fig. 2, the thrust of the nut being received by the box. The box I being stationary, as the shaft D is revolved by the wheel E, the nut *m* is turned and the screw H is moved longitudinally through the box I, which has a hole through it sufficiently large for the screw to pass freely.

In Fig. 4 is shown a modification of my invention in which instead of the tiller C a yoke L is attached to the rudder post B. The screw H is moved in the manner before described, each of the blocks *f*, carrying a friction roll *n* which bears against the inside of the yoke L, so that as the screw is moved longitudinally in either direction the rudder post will be turned. A rod and screw nut serve to tighten up the yoke when it has worn.

In Fig. 5 is shown the manner in which my invention may be applied to vessels which have their steering apparatus placed near the forward end, as in river steamers. A chain *r* attached to each end of the screw H is led over suitable pulleys *s*, and is connected by rods *t* running to the after part of the vessel, where a chain *u* passes over pulleys *v* and is attached to a block M through which the tiller C passes in the same manner as through the bar *h*, Figs. 1 and 2. The screw and ways may be placed forward of the rudder post when more convenient, and the tiller C may be placed either above or below the screw H.

In case of any derangement of this steering apparatus it may be readily removed and tackle may be attached to the eyes *x*, on the end of the tiller C.

In small vessels where the strain on the blocks *f* is not so great, the rod *e* and bar *h* may be dispensed with, and chains or ropes connected directly with the blocks *f* may be led over pulleys on the stanchions F and be attached to a block similar to M, Fig. 5, in which the tiller C will play.

I am aware that a traversing screw and stationary nut have before been used, and therefore I do not claim these broadly. My arrangement of steering apparatus, however, differs from all others with which I am acquainted, in applying the power of the traversing screw directly to the tiller or yoke at the same time that the steering wheel operates the screw by a single wheel and pinion and still is placed on the middle line of the ship instead of on either side of that line,—a matter of great importance to correct steering. Other forms of apparatus either place the wheel on one side of the middle line, or work the rudder by a multiplication of gear.

What I claim, therefore, is—

1. The direct application of the power of the traversing screw H to the tiller C or yoke tiller, L, in the manner described, when the steering wheel operates the screw H by single gear and is placed on the middle line of the ship as specified and shown.

2. I also claim, the cam yoke tiller L in combination with the above arrangement constructed and operated substantially as described.

DANIEL JONES.

Witnesses:

THOS. R. ROACH,  
THOS. L. GLOVER.