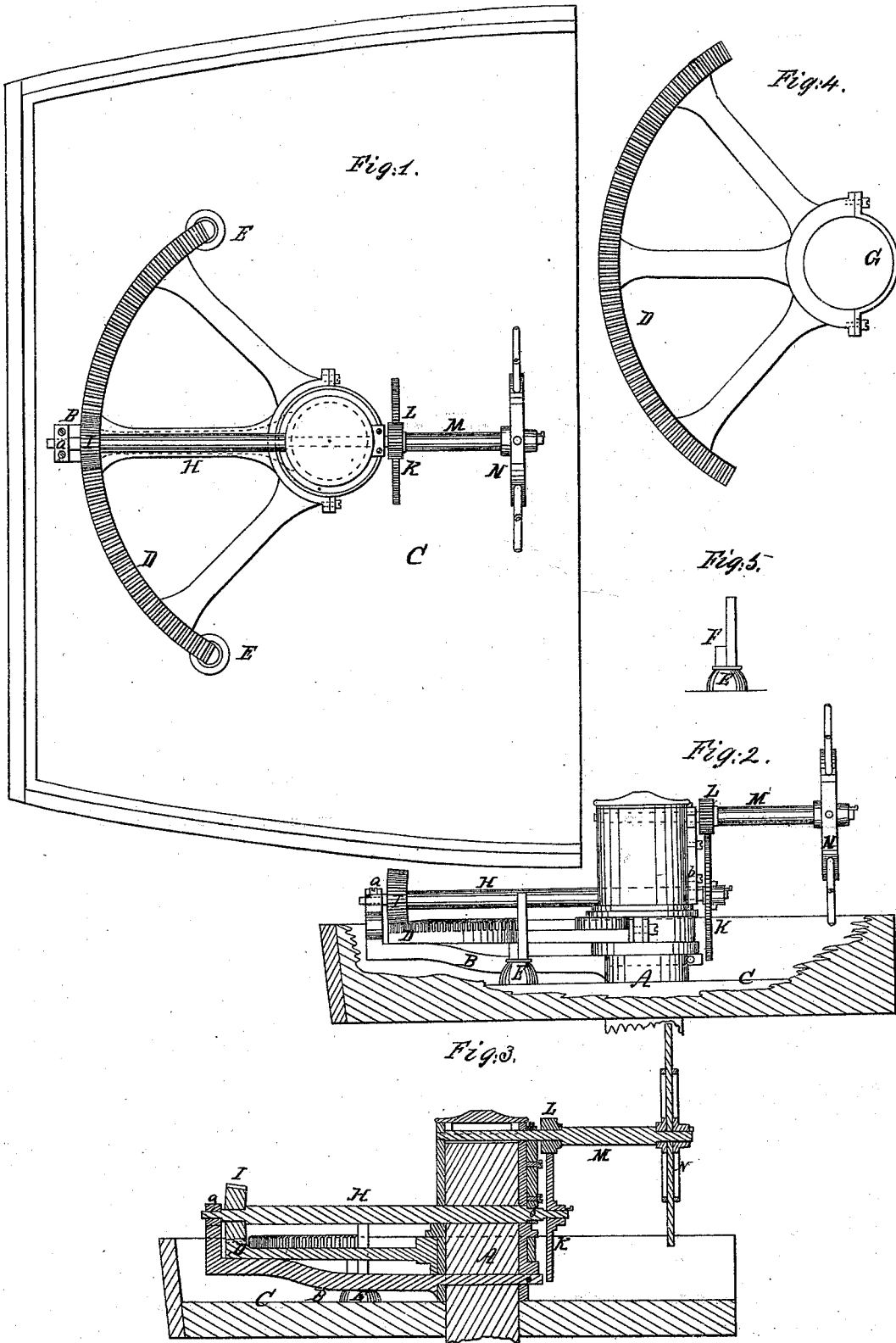


J. Stowell
Steering.

N^o 11,088.

Patented June 13, 1854.



UNITED STATES PATENT OFFICE.

JOHN STOWELL, OF CHARLESTOWN, MASSACHUSETTS.

STEERING APPARATUS.

Specification of Letters Patent No. 11,088, dated June 13, 1854.

To all whom it may concern:

Be it known that I, JOHN STOWELL, of Charlestown, in the county of Middlesex and State of Massachusetts, have invented a new and useful Improvement in Steering Apparatus for Navigable Vessels; and I do hereby declare that the same is fully described and represented in the following specification and the accompanying drawings, letters, figures, and references thereof.

Of the said drawings, Figure 1, denotes a top view of my improved steering apparatus as applied to the rudder head and deck of a vessel. Fig. 2, is a side elevation of it. Fig. 3, is a vertical, central, and longitudinal section of it.

In the said drawings, A, represents the rudder head having a tiller, B, extended backward from it.

C exhibits the deck of a vessel.

The rudder head has a sectoral beveled tooth rack, D, so applied to it as to be supported in part by it, while it is also supported by shoulders of posts E, E, erected on the deck. The rudder head is made to revolve freely in the eye of the rack, the two extremities of the cogged rack being made respectively to rest on the bastion of shoulders F, F, made on the posts.

A top view of the sectoral rack as separated from the rudder head is given in Fig. 4, the circular eye of the rack being therein seen at G. The sectoral rack is further so applied to the rudder head as to be elevated by it whenever the rudder is lifted upward, such a movement for a short distance occasionally occurring while a vessel is at sea.

The ends of the rack simply rest on the shoulders of the posts, such posts being so formed as not only to permit the rack to rise freely upward, but at the same time to rest against its extreme ends and operate as stops to prevent any lateral movement of it in a horizontal direction. A side view of one of these posts is given in Fig. 5. A horizontal shaft H extends through the rudder head and above the rack and the tiller, as seen in the drawings, it having its journals supported and made to revolve in boxes a, b, applied respectively to the tiller and the rudder head. This shaft carries at or near one end a beveled pinion I, which is made to engage with the rack. Upon the other extremity of the shaft a spur gear K is fixed.

Above the said spur gear, there is a spur pinion, L, that engages with the gear K, and is fixed on the wheel shaft M, which is sustained by the rudder head and carries the

hand wheel N. By rotating the hand wheel the rudder will be set in motion either to larboard or starboard as occasion may require.

In my improved steering apparatus, the whole of the working parts are so connected with the rudder head that they are movable with it, or, in other words, if it is raised upward they rise with it, the rack being held in place by the posts against the force of operating to turn the rudder.

By such an application of the rack and mechanism to the rudder and the deck, the steering apparatus is not liable to be strained or injured by the action of any heavy wave upon the rudder such as will tend to elevate it relatively to the deck or vessel.

The advantages therefore of this apparatus may thus be stated. It has great power and at the same time quickness of motion, which is equal throughout its whole range. It is not liable to get out of order, being attached to the rudder head and independent of the deck with the exception of two lateral bearings. It is not liable to be deranged by any motion of the rudder, and should the rudder be lifted it will not effect the well working of the steering mechanism. Should such mechanism get out of order it could easily be repaired, and it is susceptible of many temporary arrangements. It occupies but little room and is easily applied to either old or new vessels. With it the man at the wheel can always judge of the strain on the rudder, and can ease the rudder to such, much better than with many kinds of steering apparatus. It can be furnished at a moderate price.

What I claim as my invention is—

The application of the curved sectoral rack, and the rest of the steering mechanism directly to the rudder head so that such can rise with and be elevated or depressed by such rudder head, in combination with supporting the rack upon the deck by posts formed with shoulders as described or by such contrivances as will not only prevent it from moving laterally in a horizontal direction, but permit it to rise upward with the rudder head as specified.

In testimony whereof, I have hereunto set my signature this eighth day of May A. D. 1854.

JOHN STOWELL.

Witnesses:

R. H. EDDY,
F. P. HALE, JR.