J. Reed.

Steering.

No. 4,940. Patented Jan. 26, 1847.

Fig. 1.

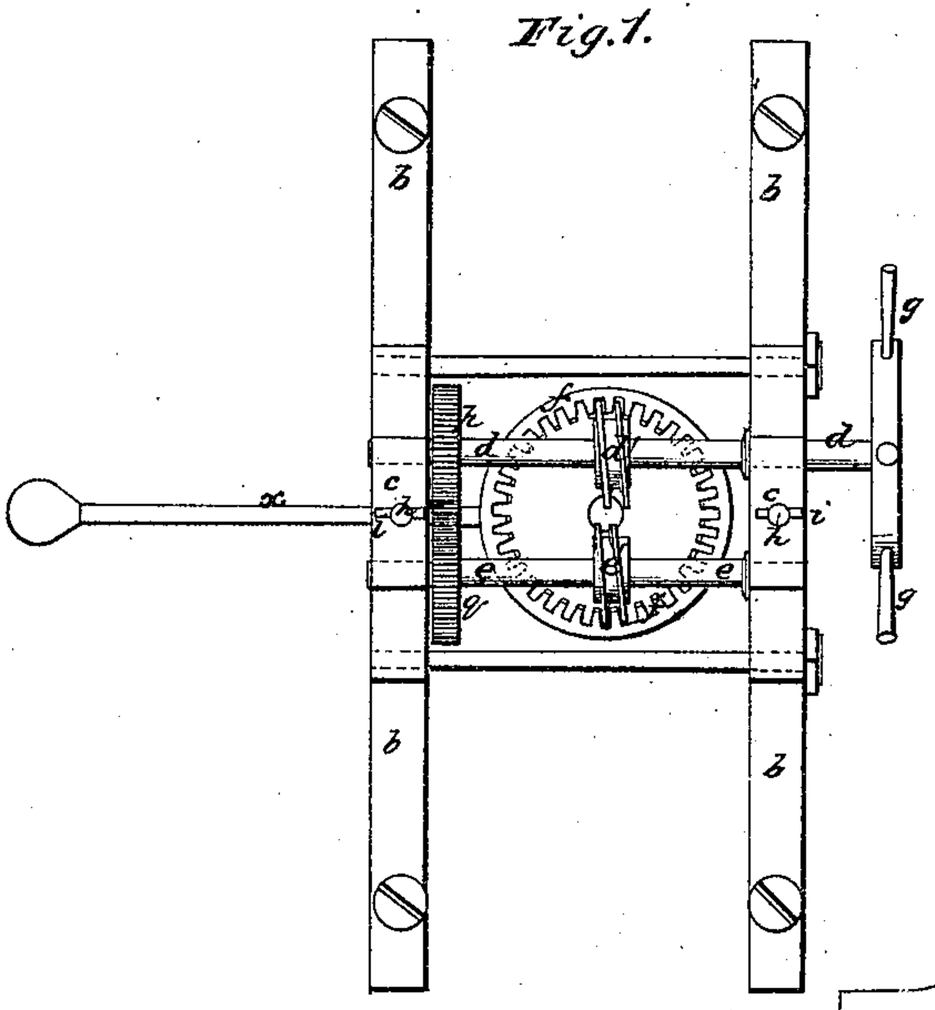


Fig. 3.

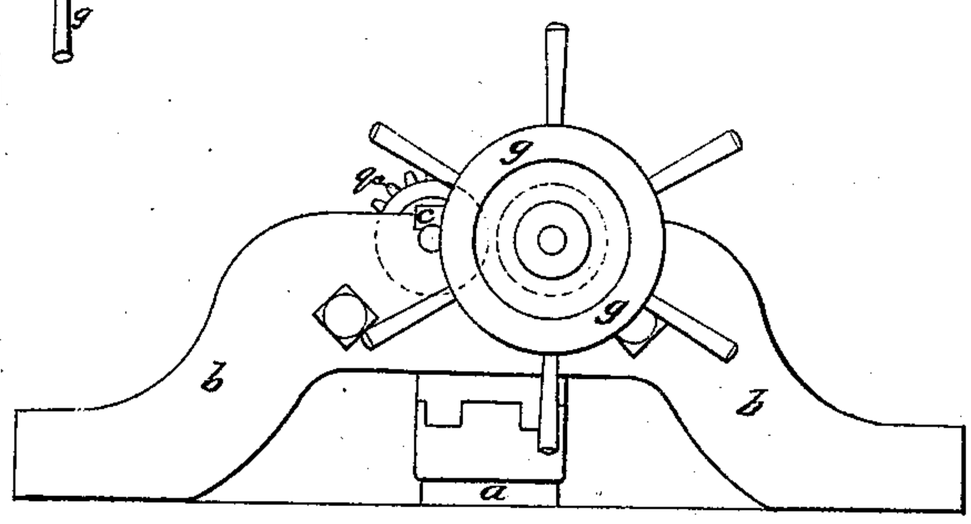
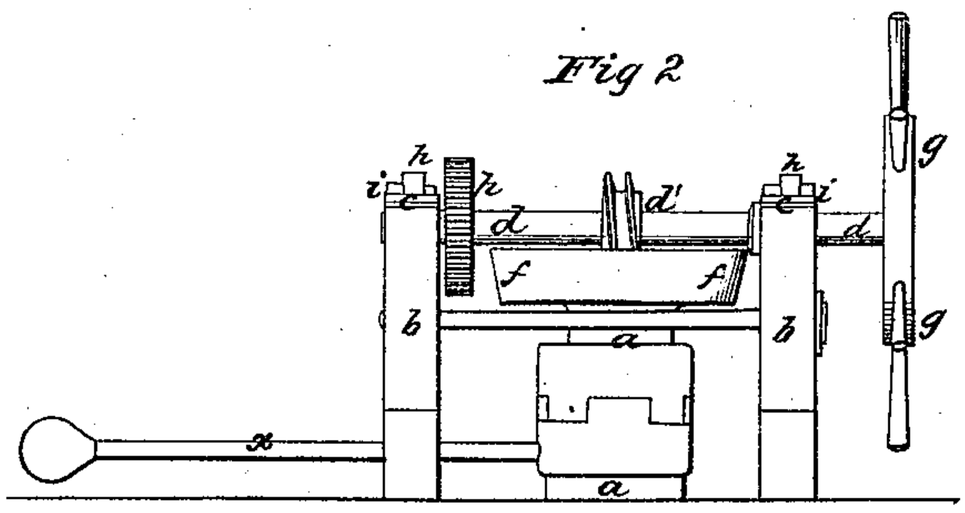


Fig 2



UNITED STATES PATENT OFFICE.

JESSE REED, OF MARSHFIELD, MASSACHUSETTS.

STEERING APPARATUS FOR VESSELS.

Specification of Letters Patent No. 4,940, dated January 26, 1847.

To all whom it may concern:

Be it known that I, JESSE REED, of Marshfield, in the county of Plymouth and State of Massachusetts, have invented a new and useful Improvement in Steering Apparatus or Wheels for Ships, &c., and that the following description, taken in connection with the accompanying drawings hereinafter referred to, forms a full and exact specification of the same, wherein I have set forth the nature and principles of my said improvement by which my invention may be distinguished from others for a similar purpose, together with such parts or combination as I claim and desire to have secured to me by Letters Patent.

It has long been a desideratum with shipowners and builders to procure some steering apparatus, which, while it shall supersede the old tiller ropes and tackle that have long been used for moving the rudder, shall operate by some more sure mechanical agents; and while it works more directly on the rudder post, shall be capable of resisting the various strains that will come upon it in rough weather. To secure these ends various combinations have been devised in which an endless screw, in some of its modifications is the essential or moving element, the other parts being generally geared wheels and racks, or levers moved by said screws and operating on the rudder. These arrangements have generally been such as to operate on both sides of the rudder post so that while the machinery on one side shall press or push the rudder around, that on the other shall pull or draw, as it were and thereby equalize the strain. But all these several kinds of apparatus have worked usually with, or by having, the teeth on the exterior of a wheel placed on the top of the rudder post, and when there is a strain on one side of the rudder, it may throw the machinery on the other side out of gear or create considerable extra friction which must be overcome. By my improvement such a tendency or liability as I have above suggested is entirely obviated, and said improvement consists in a combination of two endless screws with a geared wheel on the top of the rudder-post with teeth formed on the interior of the periphery of said wheel as it will be explained in the sequel.

The figures of the accompanying plate of drawings represent my improvement.

Figure 1, is a plan of the same, Fig. 2, is a side elevation and Fig. 3 is a front view.

a a is the rudder post arranged in the usual way and having a tiller *a'*, which can be used in case of accident to the apparatus.

b b, *b b* are two standards or stanchions for the support of the operative or turning parts of the machinery, said stanchions being firmly secured to the deck of the vessel. On the top of each of these stanchions is fitted a box or bearing *c c* Fig. 1, for the support of the journals of the shafts *d d*, *e e* of two endless screws *d'*—*e'*.

Immediately beneath the above named screws is the toothed wheel *f f* above referred to, which is firmly secured to the top of the rudder post *a a* in any suitable manner as seen in Fig. 2, and the top of which is countersunk or turned or cut out so as to permit the formation of the teeth or the interior of the periphery of said wheel as shown in Fig. 1. On one end of the shaft *d d* of the endless screw *d'* is the usual hand wheel *g g* Figs. 1, 2 and 3, having radial arms as in the ordinary mode of construction for such parts. On the other end of said shaft is a toothed pinion *p* which gears into a similar pinion *q* on the shaft *e e* of the screw *e'* as shown in Fig. 1. The two screws *d'*—*e'* gear into the toothed wheel *f f* on opposite sides of the same, and by reason of the connection between them above stated, they revolve in opposite directions, so that when one presses or tends to turn the wheel in either direction, the other draws and tends to turn it in the same direction, while by reason of the formation of the teeth on the interior of the periphery of said wheel *f f*, any undue strain on one screw of the apparatus is counteracted by the other and the combined arrangement operates easily and effectually to turn the rudder, and without the intervention of any other gearing racks &c., and saving a great amount of friction over all other wheels which have been devised.

The boxes *c c* which support the journals of the screw shafts are secured to the stanchions *b b b b* by means of the vertical pins *h h* passing through said boxes and having suitable holes in them for the insertion of wedges *i i* of wood or other material which will yield to any very great force, when there is a tendency to unship the rudder so that no more important part will break. In

such a case the apparatus may be easily replaced and new wedges inserted.

Having thus described my improvement in steering wheels I shall state my claim as follows.

What I claim as my invention, and desire to have secured to me by Letters Patent is—

The arrangement or combination of two endless screws, (geared together as described, with a wheel on the top of the rudder post, having teeth on the interior of its rim or periphery as set forth, and also any contrivances varying therefrom but substantially the same and combined substantially in the same manner and for the same purpose.

JESSE REED.

Witnesses:
JOHN FORD,
REBECCA S. SPRAGUE.