

J. Reed.
Steering.

N^o 7,126.

Patented Feb. 26, 1850.

Fig. 1.

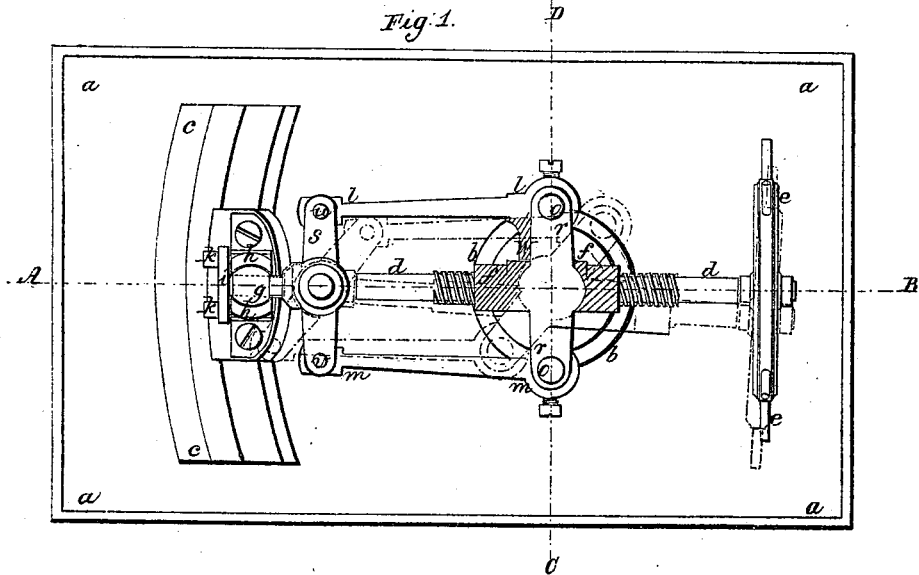


Fig. 3.

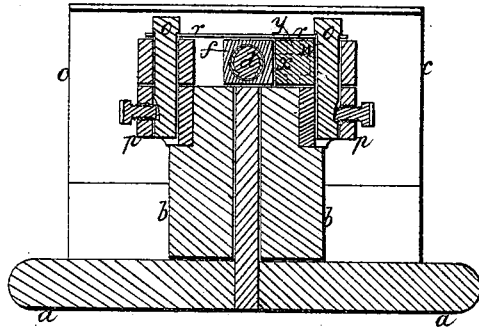
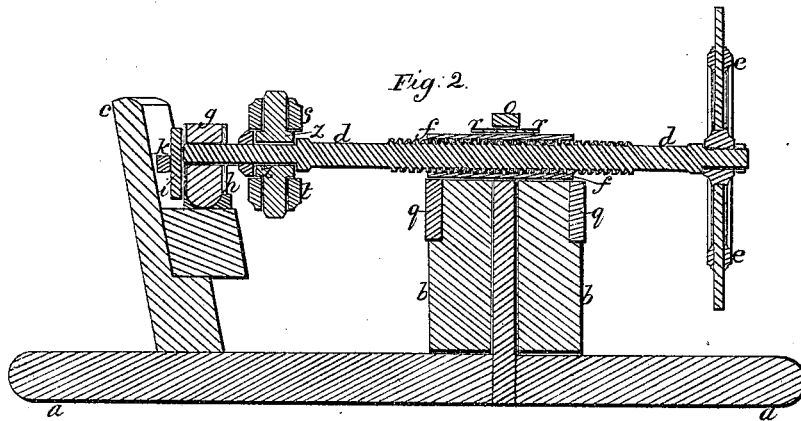


Fig. 2.



UNITED STATES PATENT OFFICE.

JESSE REED, OF MARSHFIELD, MASSACHUSETTS.

PARALLELOGRAM STEERING APPARATUS.

Specification of Letters Patent No. 7,126, dated February 26, 1850.

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 certain new and useful Improvements in Steering-Wheels; 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 invention, by which it may be distinguished from others of a similar class, together with such parts as I claim and desire to have secured to me by Letters Patent.

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

Figure 1 is a plan or top view of the same. Fig. 2 is a longitudinal vertical section taken in the plane of the line.

A B, Fig. 1; and Fig. 3 is a transverse vertical section of the apparatus taken in the plane of the line, C D, Fig. 1.

In all the various kinds of steering apparatus in which an endless screw is used to operate the parts, the connection of said screw with the rudder head or post, has invariably been such, as, when any great strain is on the apparatus, to tend to bend the screw shaft, and thereby obstruct, or destroy its agency, or, in other words, the strain does not act, or is not resisted, or overcome by a force acting constantly in the line of the axis of the screw but in some positions of the parts in a direction more or less diagonal to said line.

By my improvement, which consists in connecting the screw shaft with the rudder post by an arrangement of arms in the form of a parallelogram, and properly jointed to each other, the strain in turning the rudder, is always in the line of the axis of the shaft, or parallel thereto; and the lateral strain of a heavy sea &c, is brought near the gudgeon of the shaft, which renders it less liable to breakage &c.

In the drawings, *a a a a* represents the deck of the vessel, *b b*, the rudder post, and *c c*, the tafferel, *d d* is the screw shaft with the screw cut upon it, as usual, having the hand wheel, *e e*, on one end, and passing

through, and having one bearing in the elongated screw nut, *f f*, in which it works in a manner which will be well understood by inspection of the drawings, Figs. 1, 2 and 3. The rear end of this shaft has a bearing in the loose box, *g*, which is arranged to move freely up and down in the guides, *h h*, to allow a little play to the apparatus in case the heel of the rudder strikes the ground, and is raised in its bearings. The end of the shaft bears against an adjustable brace, *i*, Figs. 1 and 2, which can be moved forward and back, as occasion may require, by the set screws, *k k*, which work in the guides, *h h*, as shown in the drawings.

The arrangement of the connecting arms form the nut of the screw to the rudder head, is as follows: *l l m m* are the two long arms of the series, which are connected to the rudder head by the pins, *o o*, which pass through proper holes in the front ends of said arms, and the projections, *p p*, cast on the exterior of the metallic rin, *q q*, fitted closely on the top of the rudder head. A thin cross bar, *r r*, connects the front ends of these arms, *l l m m*, together, by having holes in its ends, through which the pins, *o o*, also pass, said bar sliding over the top of the screw nut, *f f*, when the arms move in opposite directions. The rear ends of these arms are connected together, near the rear bearing of the screw shaft, by the upper and under cross bars, *s t*, which have pins, *u v*, passing through their ends and the ends of the arms, *l l m m*, on which they turn freely. These cross bars also turn, or swivel at their centers on the top and bottom of the short shaft, *z*, through a proper hole in which the screw shaft passes, as shown in Fig. 2. In order to allow a perfectly free play to the several arms and cross-bars above described, it is necessary to connect the screw nut, (which, by its movements, operates them,) to the right angular projection, *w*, from the arm, *l l*, by means of a tenon, *x*, which fits in a proper mortise in said projection, and turns on the pin, *y*, passed through the whole, as shown by dotted lines in Fig. 3. The change of position which the parallelogram of arms will assume, when the screw, which revolves, but

does not advance, turns the rudder, is represented by the red lines in Fig. 1.

Having thus described my improvements, I shall state my claims as follows.

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

A steering apparatus in which the operating screw and nut are connected to, and turn the rudder post by means of a series

of parallel arms and cross-bars, arranged, 10 and combined together in the form of a parallelogram, and jointed together, so as to turn freely, substantially as hereinabove described.

JESSE REED.

Witnesses:

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