P. W. Robinson,

Steering.

No. 51,481. Patented Dec. 12, 1865.

Fig. 1.

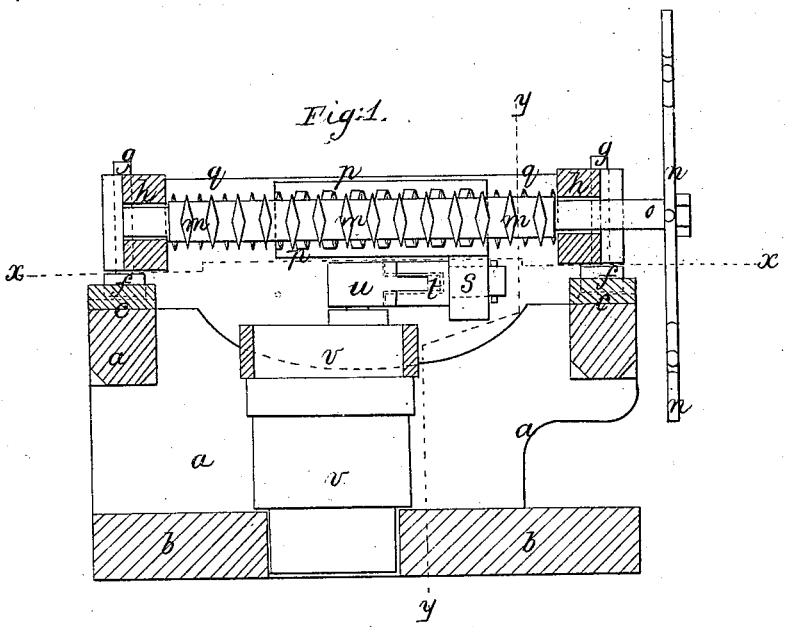


Fig. 2.

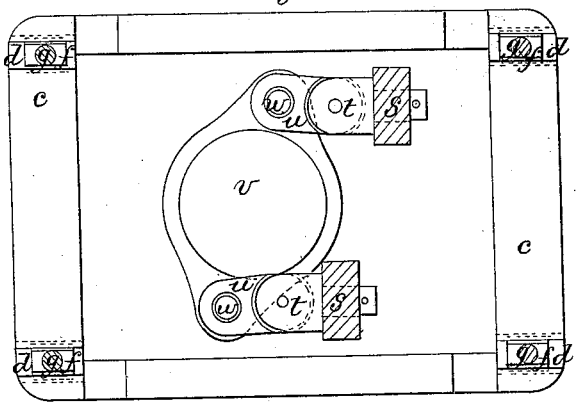
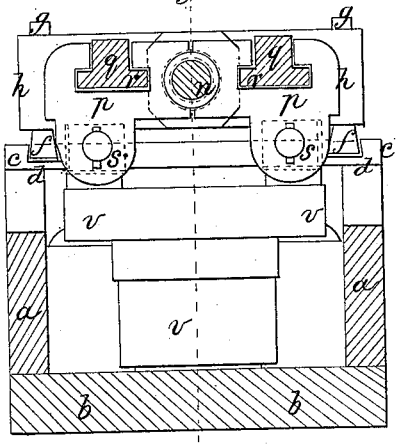


Fig. 3.



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UNITED STATES PATENT OFFICE.

PRINCE W. ROBINSON, OF NEW BEDFORD, MASSACHUSETTS.

IMPROVED STEERING APPARATUS.

Specification forming part of Letters Patent No. **51,481**, dated December 12, 1865.

To all whom it may concern:

Be it known that I, PRINCE W. ROBINSON, of New Bedford, in the county of Bristol and State of Massachusetts, have invented certain new and useful Improvements in Steering Apparatus; and I do hereby declare that the following is a full, clear, and exact description thereof, which will enable those skilled in the art to make and use the same, reference being had to the accompanying drawings, forming part of this specification.

The present invention consists in the use of a screw-shaft having a right and left screw cut on it, supported and turning in pedestals, and has arranged to move forward and backward on its two opposite sides two similar half-nuts, which nuts travel upon parallel fixed T-shaped guide-bars of the said pedestals, each of these nuts being connected with the top portion of the rudder-head, through toggle-jointed pieces, in such a manner that as the screw-shaft is either turned to the right or left the rudder shall be correspondingly moved, the supporting pedestals for the screw-shaft and nut guiding bars being arranged upon a suitable frame therefor, in such a manner as to allow it to play a little in a lateral direction fore and aft when the rudder is struck by a heavy sea.

In accompanying plate of drawings my improvements are illustrated, of which—

Figure 1 is a central longitudinal vertical section of the frame-work of the steering apparatus, showing its screw-shaft, rudder-head, and connecting-parts of the two in side view; Fig. 2, a horizontal section, taken in the plane of the line *x x*, Fig. 1; and Fig. 3, a transverse vertical section, taken in the plane of the line *y y*, Fig. 1.

a a in the drawings represent the supporting-frame for the steering apparatus, secured upon the deck-floor *b* in any proper manner. In the top pieces, *c c*, of this frame are dowel-shaped grooves *d d*, in which similar-shaped slides *f f* move, having upon their upright pins *g g*, and extending entirely across and from one pin to the other of each top piece, *c*, supporting pedestals *h h* for the right and left diamond-shaped screw-threaded shaft *m*, having one of the ordinary-constructed steering-wheels, *n*, at its end *o*, for facilitating the turning of the same.

Upon the two opposite sides of the screw-shaft *m* are similar-shaped parallel screw-nuts *p p*, each reaching around one-half, or nearly so, of the shaft and moving upon and guided by two parallel T-shaped bars, *q q*, extending across from one pedestal to another, and in which they are in any proper manner fixed, the nuts being made of the proper shape to nicely fit over and upon the cross-piece *r* of the T-bars.

In the under side of each nut *p* is a fixed staple, *s*, connected in each case, by toggle-jointed pieces *t* and *u*, with its side of the top or head of the rudder-post *v*, on studs or pins *w* of which the pieces are hung so as to freely turn or swing.

When desired to turn the rudder to the right or left, it is obvious it is only necessary to correspondingly move the steering-wheel of the apparatus, which, through the connecting devices above described, operates upon the rudder-post as desired, the toggle-jointed pieces allowing a free play of the rudder-post without any clattering, and with as little friction as any apparatus for the same purpose now in use.

By arranging the pedestal upon and in grooves of the supporting-frame of the steering apparatus, by which pedestal all the devices for operating the rudder-post are held, in case of any sudden strain upon the rudder from a heavy sea, it is apparent that the pedestals can play sufficiently in a lateral direction—that is, fore and aft—as to relieve the screw-shaft and other parts of all strain, the importance of which is well known to all ship-masters, as well as to all others conversant with the manufacture of ship machinery.

I claim as new and desire to secure by Letters Patent—

1. The parallel fixed T-shaped guide-bars for the traveling nuts, arranged substantially in the manner described.

2. The knuckle-jointed connecting-arms *t*, when used in combination with the traveling nuts working above the head of the rudder-post, substantially as described.

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Witnesses:

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