

J. C. COTTINGHAM.
Steering-Gear for Vessels.

No. 213,629.

Patented Mar. 25, 1879.

Fig. 1.

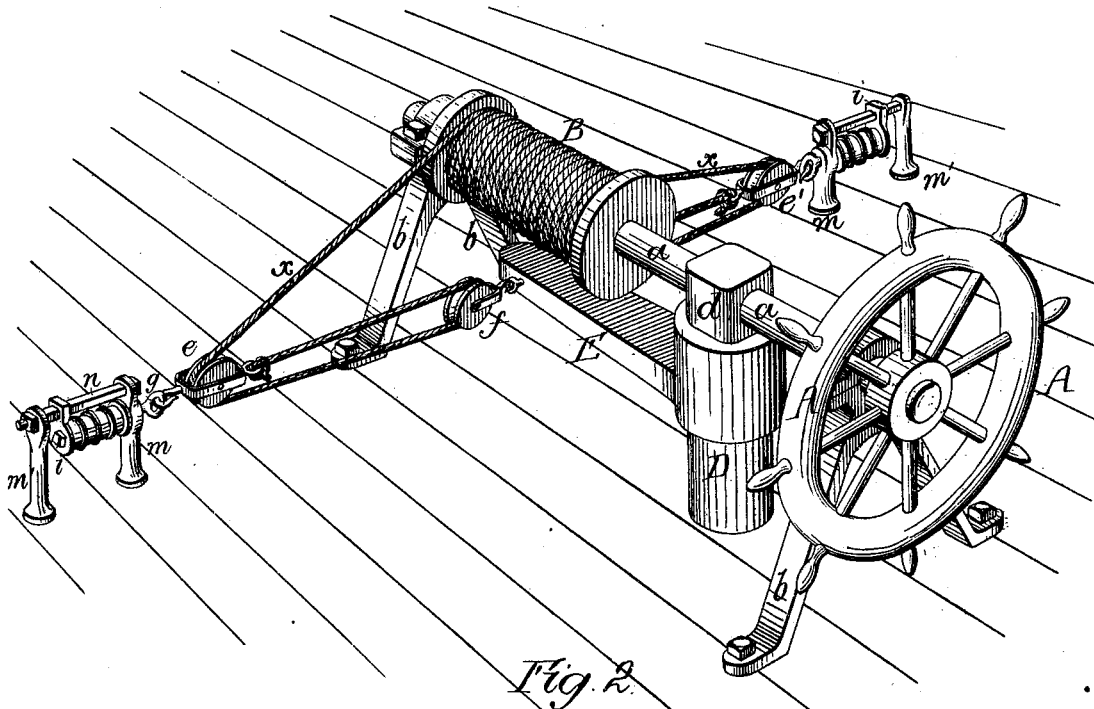
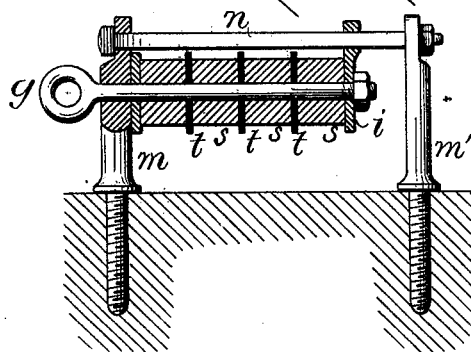


Fig. 2.



Witnesses
M. Damer
Harry Smith

Inventor
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by his Attorneys
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UNITED STATES PATENT OFFICE.

JOHN C. COTTINGHAM, OF PHILADELPHIA, PENNSYLVANIA, ASSIGNOR TO
HIMSELF AND FRANCIS SHUBERT, OF SAME PLACE.

IMPROVEMENT IN STEERING-GEAR FOR VESSELS.

Specification forming part of Letters Patent No. **213,629**, dated March 25, 1879; application filed
February 21, 1879.

To all whom it may concern:

Be it known that I, JOHN C. COTTINGHAM, of Philadelphia, Pennsylvania, have invented a new and useful Improvement in Steering-Gear of Vessels, of which the following is a specification:

My invention relates to an improvement in yielding fastenings for pulley-blocks of steering-tackle; the object of my invention being to provide a secure fastening for the blocks without interfering with its elasticity.

This object I attain in the manner which I will now proceed to describe, reference being had to the accompanying drawings, in which—

Figure 1 is a perspective view of ordinary steering apparatus provided with my improved pulley-block fastening; and Fig. 2, a vertical section of the fastening, drawn to a larger scale.

In Fig. 1, A represents the steering-wheel; *a*, its shaft; B, the rope-drum; D, the rudder-head, and E the tiller, the shaft *a* being adapted to bearings on the standard *b*, and to the swiveled bearing *d* on the rudder-head, as usual.

One portion of the rope *x* passes from the drum round the pulley of the block *e*, thence round a pulley, *f*, connected to the tiller, and thence to the strap of the block *e*, to which the end of the rope is secured. The other portion of the rope passes round the pulley of a block, *e'*, thence round a pulley attached to the tiller, and thence to the strap of the block *e'*, to which the end of the rope is secured.

Each of the blocks *e e'* is connected to an eye on a bolt, *g*, the latter passing through an opening in a standard, *m*, which is screwed into the deck and deck-beams.

In line with the standard *m*, but at some little distance therefrom, is another standard, *m'*, which is also screwed into the deck and deck-beams, the upper ends of the two standards being rigidly connected together by means of a cross-bar, *n*.

The inner end of the bolt *g* is furnished with a nut, which bears upon a plate, *i*, the latter having an opening for the reception of the bar *n*, by which the said plate is guided.

Between the cap *i* and the standard *m* intervene a series of rubber rings, *s*, and washers *t*, the rubber rings forming springs, which permit the bolt to yield when any sudden strain is exerted upon it, so that when a sea strikes the rudder and causes a sudden movement of the tiller in one direction, or the other the shock is absorbed by the rubber springs *s*, instead of being transmitted directly to the drum B and wheel A. Thus the steersman is protected from the dangerous effects which are frequently due to a sudden movement of the wheel, caused by the action of the sea on the rudder.

The strain on the bolt *g* is exerted through the medium of the springs *s* upon the standard *m*, but is resisted by both standards *m m'*, owing to the fact that their upper ends are rigidly connected together by the bar *n*.

By this means a second bearing for the bolt is insured, and the risk of tearing the fastenings from the deck is materially lessened.

I claim as my invention—

1. The combination of the two standards *m m'*, connected together by a bar, *n*, with the spring-bolt *g*, to which is hung a pulley-block, forming part of the steering-tackle, as set forth.

2. The combination of the standards *m m'*, the connecting-bar *n*, the bolt *g*, carrying the pulley *f* of the steering-tackle, the plate *i*, guided by the bar *n*, the springs *s*, and washers *t*, all as specified.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

JOHN C. COTTINGHAM.

Witnesses:

WM. J. COOPER,
HARRY SMITH.