

(No Model.)

C. F. RODEEN.
SHIP'S STEERING APPARATUS.

No. 308,804.

Patented Dec. 2, 1884.

Fig. 1.

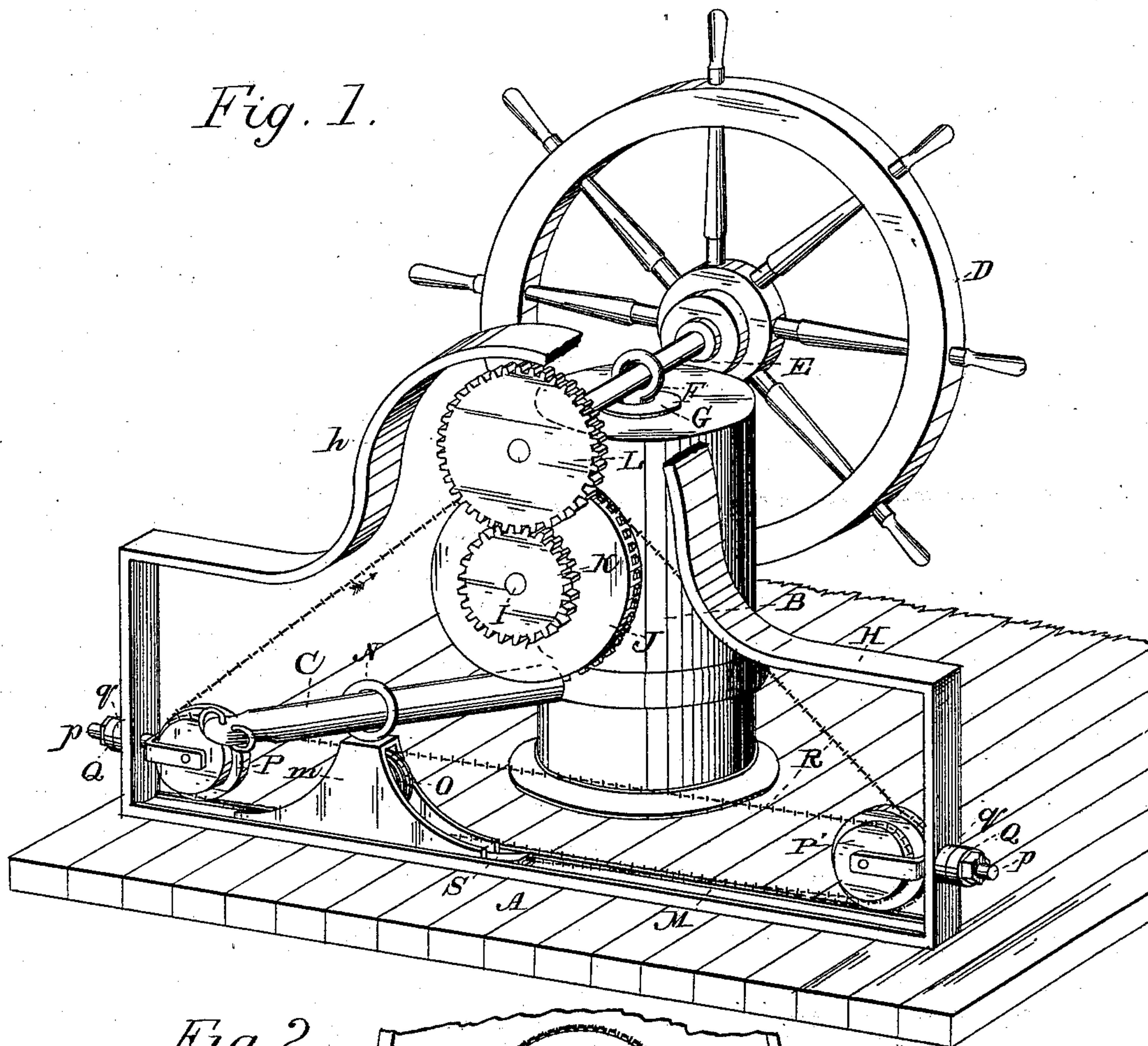
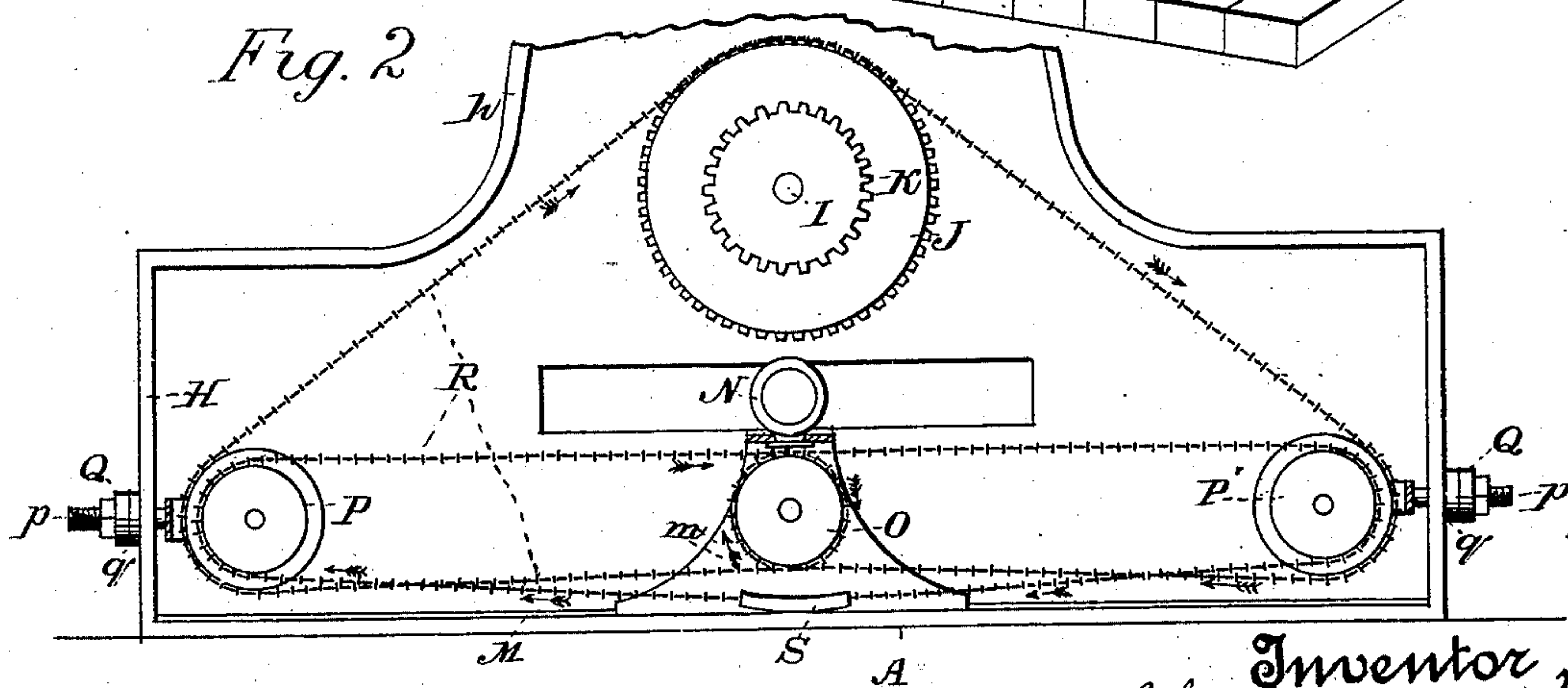


Fig. 2.



Witnesses,
J. T. House,
H. C. Lee

Inventor,
Chas. F. Rodeen
By *Devey & Co*
attys

UNITED STATES PATENT OFFICE

CHARLES F. RODEEN, OF SAN FRANCISCO, CALIFORNIA, ASSIGNOR OF
ONE-HALF TO CHARLES NELSON, OF SAME PLACE.

SHIP'S STEERING APPARATUS.

SPECIFICATION forming part of Letters Patent No. 308,804, dated December 2, 1884.

Application filed July 21, 1884. (No model.)

To all whom it may concern:

Be it known that I, CHARLES F. RODEEN, of the city and county of San Francisco, and State of California, have invented an Improvement in Ship-Steering Apparatus; and I hereby declare the following to be a full, clear, and exact description thereof.

My invention relates to that class of ship-steering gear in which an endless chain is employed to transmit power from the wheel to the tiller; and my invention consists in a reciprocating traveler connected with the tiller, and in a novel arrangement of blocks and sheaves and in the course of the endless chain, whereby the power is transmitted from the wheel through said chain to the traveler, all of which I shall hereinafter describe.

The object of my invention is to provide a means by which sufficient purchase can be brought to bear to readily operate the tiller and to hold the rudder in any given position to prevent its kicking.

Referring to the accompanying drawings for a more complete explanation of my invention, Figure 1 is a perspective view of my ship-steering gear, one side of the casing being removed to show the interior parts. Fig. 2 is a side elevation of the sheaves and blocks, showing the course of the endless chain.

A is the deck of the vessel. B is the rudder-head, and C is the tiller. D is a wheel having an axle, E, mounted in a suitable swivel, F, pivoted in a plate, G, secured on the top of the rudder-head. H is a casing or box secured to the deck, and having a rounded top, h, in which the axle E of the wheel is mounted.

Secured upon a short shaft, I, mounted in box H, is a chain-pulley, J, having upon its side a gear, K, with which a gear, L, mounted upon the end of the axle E of the wheel, engages. In the bottom of the box is a track, M, upon which is a traveler, m, adapted to have a reciprocating rectilinear motion upon said track. To the top of this traveler is swiveled an eye or ring, N, through which the tiller C loosely passes, whereby said tiller is connected with the traveler and is affected by its movement. The traveler m is hollowed out or slotted from end to end and carries within its slot a double-faced chain-pulley, O, mounted in a vertical plane.

P is a double-faced chain pulley or block, one face of which has a less diameter than the other, and P' is a similar pulley or block oppositely located. These pulleys are provided with stems p, which pass through the ends of the box or casing H, and are secured by nuts Q, between which and the exterior surfaces of the ends of the casing are rubber cushions or buffers q, whereby said pulleys may yield to strain and can be adjusted as desired to tighten the chain.

R is the endless chain, the course of which may be thus described: Beginning at a point upon the upper side of the chain-pulley J, thence passing downwardly, as indicated by the arrow, to and around the back of the larger face of pulley or block P', thence under said pulley to the near face of pulley O, up and around which it passes, and back to the small face of pulley or block P', thence downwardly around said face through a guide, S, in the bottom of the box or casing, to and around the smaller face of pulley or block P, back to the off-face of pulley O, around which said pulley it passes to the larger face of pulley or block P, from which it passes up to chain-pulley J, and to point of beginning.

The operation of the whole gear is as follows: Power is transmitted from wheel D through gears L and K to chain-pulley J, the rotation of which in one direction causes the traveler to move to one end of its track, the rotation in the other direction causing said traveler to move in the reverse way. The tiller, being connected with the traveler by the loosely-playing or swiveled eye or ring N, is caused to move with said traveler, and by reason of the connection described it is enabled to describe its arc while the traveler moves in a rectilinear line. The course or direction of the cable around the double-faced pulleys or blocks P P' and the intervening double-faced pulley O gives a purchase sufficient to enable the tiller to be moved with the exercise of but little power, and by reason of the construction of the pulleys or blocks P P', having a large and small face, it is prevented from slipping, and thus holds the rudder-head in any position to which it may be adjusted without calling for the exercise of any severe strength from the steersman, and prevents its kicking. The

chain is kept from rattling by the adjustable yielding blocks P P'. The gears L K transmit the power from the wheel to the chain-pulley J to the best advantage, and this power may be easily regulated by employing suitable gears.

Having thus described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. In a ship's steering-gear, the rudder-head B and the tiller C, in combination with the traveler *m*, the swiveled eye or ring N in the top of said traveler, through which the tiller loosely passes, and a suitable mechanism for reciprocating said traveler in a right line, consisting of a pulley, J, rotated by the steering-wheel, the double-faced pulleys or blocks P P', pulley O in said traveler, and the chain R, passing around said pulleys and blocks, substantially as herein described.

2. In a ship's steering-gear, the rudder-head B and the tiller C, in combination with a straight track, M, the traveler *m*, adapted to move upon said track, the swiveled eye or ring N upon said traveler, through which the tiller C passes, and a suitable mechanism for reciprocating said traveler, consisting of a pulley, J, rotated by the steering-wheel, the double-faced pulleys or blocks P P', pulley O within the traveler, and the endless chain R, substantially as herein described.

3. In a ship's steering-gear, the rudder-head B and the tiller C, in combination with the traveler *m*, having the swiveled eye or ring N, through which the tiller loosely passes, and the means for reciprocating said traveler, consisting of a chain-pulley, J, rotated by the steering-wheel, the fixed and oppositely-located double-faced pulleys or blocks P P', the double-faced pulley O in said traveler, and the endless chain R, passing over and around said pulleys or blocks in the direction or course described, substantially as and for the purpose herein described.

4. In a ship's steering-gear, the rudder-head B and tiller C, in combination with the trav-

eler *m*, having the swiveled eye or ring N, through which the tiller loosely passes, and a means for reciprocating said traveler, consisting of the chain-pulley J, rotated by the steering-wheel, the fixed and oppositely-located double-faced blocks, P P', having their faces of different diameters, as described, the double-faced pulley O in said traveler, and the endless chain R, passing over and around said pulleys and blocks in the direction or course described, substantially as and for the purpose herein described.

5. In a ship's steering-gear, the rudder-head B, having tiller C, and the wheel D, having axle E, mounted by swivel-connection F on top of said rudder-head, in combination with the traveler *m*, having swiveled eye or ring N through which the tiller loosely passes, and double-faced pulley O within said traveler, the double-faced pulleys or blocks P P', as described, and the chain-pulley J, the endless chain R, passing over said pulleys and blocks in the course, as shown and described, and the means by which power is transmitted from said wheel to the chain-pulley J, consisting of the gear L upon the axle E of the wheel, and the gear K upon the face of the chain-pulley J, substantially as herein described.

6. In a ship's steering-gear, the box or casing H, having track M, the traveler *m* on said track, and the mechanism for reciprocating said traveler, consisting of the double-faced pulley O, the double-faced pulleys or blocks P P' in the ends of the casing, and the chain-pulley J, in combination with the rudder-head B, tiller C, connected with the traveler, as described, the wheel D, axle E, and gears L K, all arranged and operating substantially as described.

In witness whereof I have hereunto set my hand.

CHARLES F. RODEEN.

Witnesses:

S. H. NOURSE,
H. C. LEE.