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Patented July 11, 1899.

F. S. CORMIER.

RUDDER FRAME AND GEAR FOR SHIPS.

(Application filed Mar. 2, 1898.)

(No Model.)

Fig. 1.

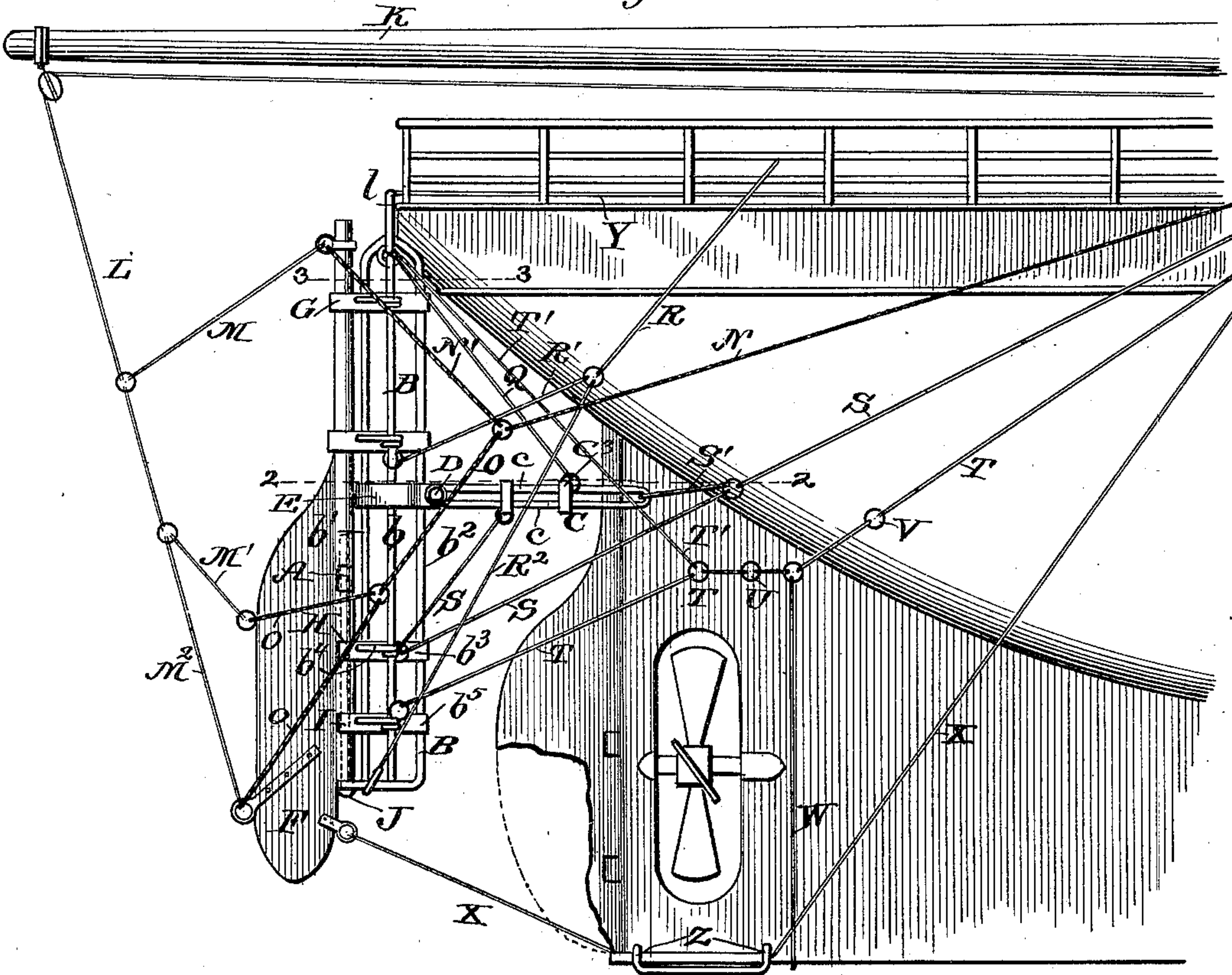


Fig. 2.

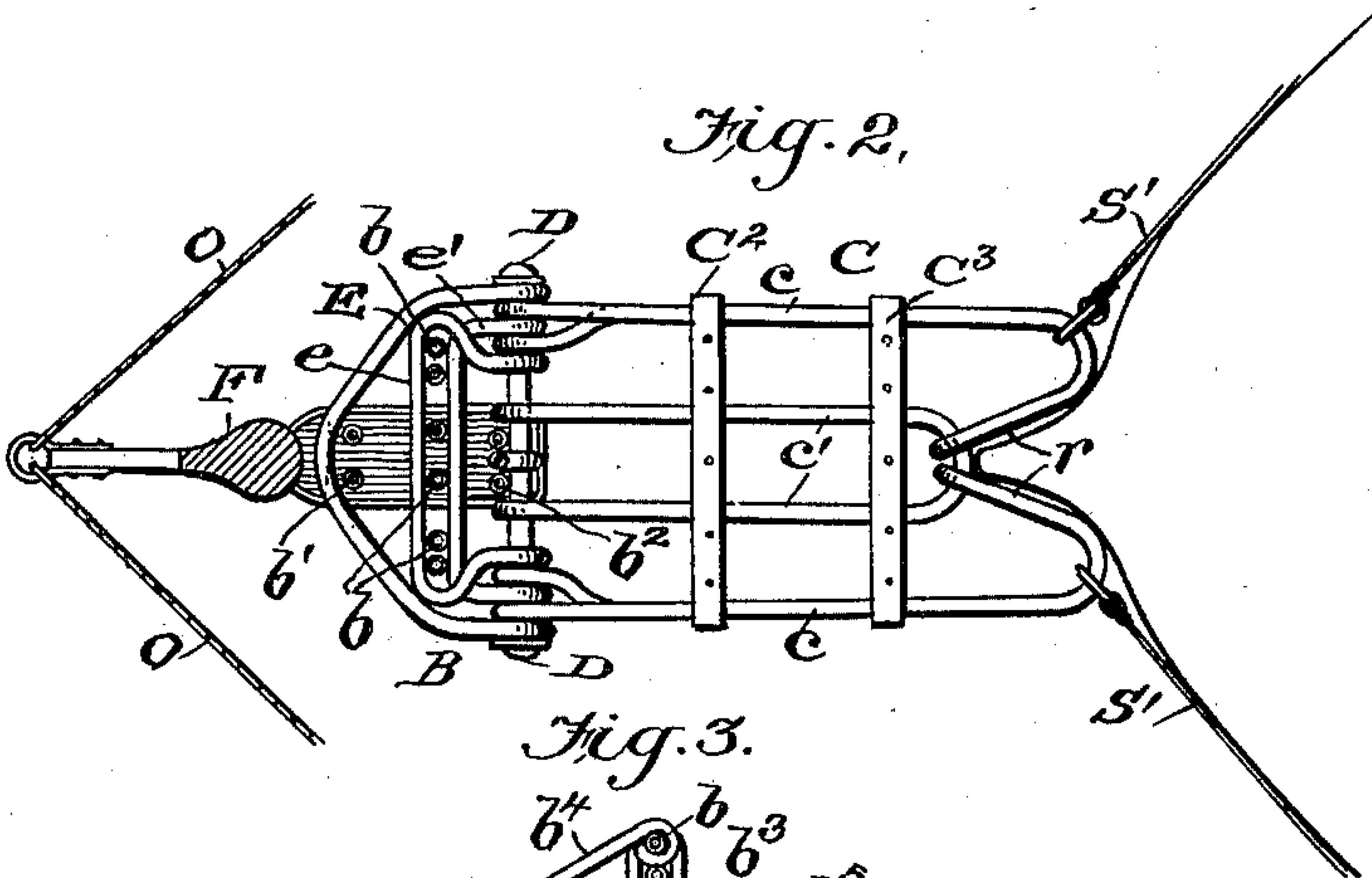
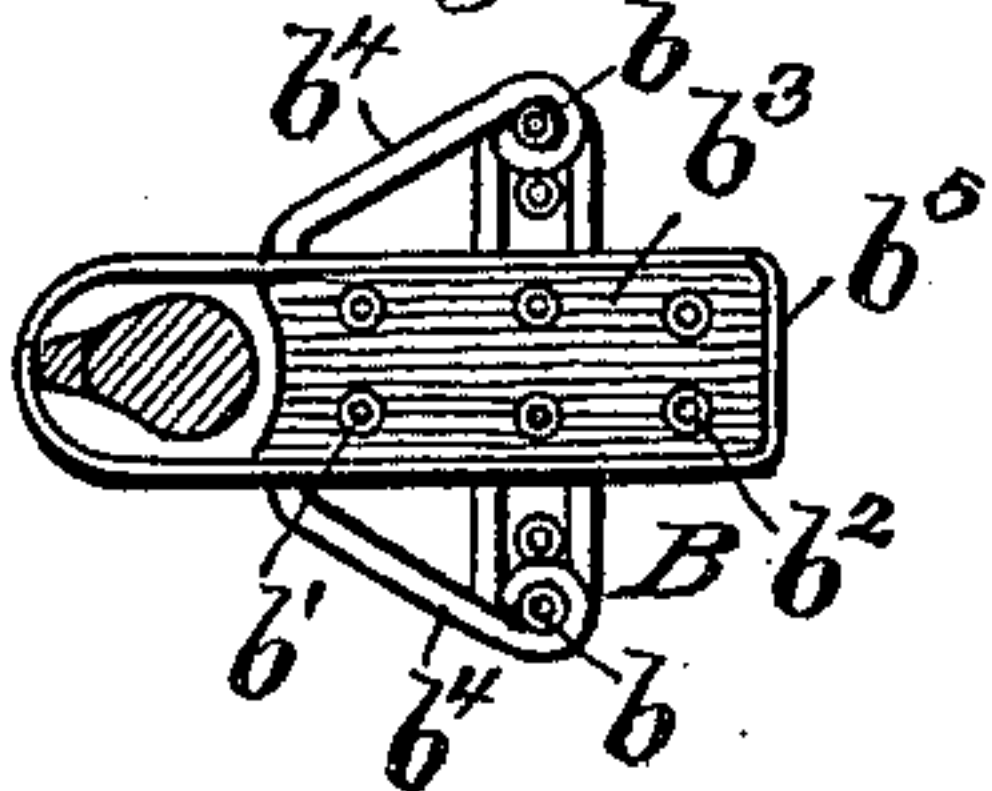


Fig. 3.



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FRANK S. CORMIER, OF MONCTON, CANADA.

## RUDDER FRAME AND GEAR FOR SHIPS.

SPECIFICATION forming part of Letters Patent No. 628,767, dated July 11, 1899.

Application filed March 2, 1898. Serial No. 672,258. (No model.)

*To all whom it may concern:*

Be it known that I, FRANK S. CORMIER, a subject of the Queen of Great Britain, residing at Moncton, New Brunswick, Canada, have invented a new and useful Improvement in Rudder Frames and Gears for Ships, of which the following is a specification.

My invention is designed for temporary use on ships and vessels of every kind whether propelled by sails, steam, or otherwise, and is designed to be attached to a vessel when the rudder may have been carried away, injured, displaced, or broken. It is intended to be carried on the vessel during the voyage and can be folded up when not in use. It can be put in place and attached to the vessel by means of the gear, guys, &c., attached to the rudder-frame.

The invention consists in the peculiar construction and arrangement of the rudder-frame, the rudder, and anchorage and operating-guys, as will be hereinafter fully described with reference to the drawings, in which—

Figure 1 is a side view of a rear portion of a ship having a disabled rudder and with my invention applied to take its place. Fig. 2 is a horizontal section taken through the line 2 2 of Fig. 1, and Fig. 3 is a horizontal section on line 3 3 of Fig. 1.

Referring to the drawings, F is the substitute rudder, B its supporting-frame, and C an attaching-brace for holding it in place at the stern of the vessel.

The frame B is a skeleton or cage-like upright frame composed, preferably, of vertical hollow metal tubes  $b$   $b'$   $b^2$ , arranged parallel to each other and connected together as a rigid integral frame by stay-blocks  $b^3$  and braces  $b^4$ , as shown in cross-section in Fig. 3. Around the stay-blocks  $b^3$  there is an encompassing metal strap  $b^5$ , and the upper one of these (shown at G, Fig. 1) forms the upper bearing for the rudder-post, while the lower ones, H and I, form bearings for the pintle-rod J, which is the axis about which the rudder works.

C is a brace made as a skeleton frame of bent iron rods or tubes. This brace is joined to the rudder-frame about midway its length and forms a strut that bears at its front end against the ship, being for that purpose bifur-

cated or formed with a recess  $r$  at its front end, so as to straddle and fit over the stern-post of the ship and be thus held against lateral displacement, as shown in Fig. 2. This brace consists of two outer rods  $c$  on each side and an inner loop  $c'$ , the rods  $c$  being bent inwardly at the front end and joined by eyes to the middle bend of the loop  $c'$ . The rear ends of these rods  $c$  and loop  $c'$  are formed into eyes that receive a hinge-rod D, by which it is adjustably attached to the rudder-frame, so as to fold up against the same into parallel position and compact form for storage. For connecting this brace to the frame-bars of the rudder-frame a bail E (see Fig. 2) passes around the frame B and is formed with eyes at its ends that receive the hinge-rod D. Two other smaller bails  $e$  and  $e'$  are formed with similar terminal eyes that receive the hinge-rod D, and one of these bails,  $e$ , rests upon one side of the vertical frame-bars  $b$  and the other,  $e'$ , on the other side of the same.

The rudder-frame B may be raised or lowered in relation to the brace C, and the rudder F may be raised or lowered in relation to the frame B. For this latter purpose the rudder is formed with a hinge-opening A above the bearings H and I, and when the rudder is to be lowered on frame B the notch or hinge-opening A is brought down to the level of the hinge-strap at H.

The rudder-frame B is slung over the stern of the ship by means of a loop or shackle  $l$  at the top of the same and a cable Y. It is solidly braced against the stern of the ship by the brace C and is maintained in this position by the tension of a number of guy-lines, as follows:

A guy R on each side of the ship runs from the deck and has a branch  $R'$ , that leads to a hook on the frame B a little above the brace C, and has another branch  $R^2$ , that runs to and is attached at the bottom of frame B. A guy S on each side of the ship runs from the deck to an eye on the frame B, below the brace, and, passing through the same, extends to a terminal fastening on the bottom of the brace C. A short branch  $S'$  also extends from the guy to the front end of the brace C. A guy T on each side of the ship runs from the deck to a terminal connection near the bottom of the frame B and has a branch  $T'$ , that runs



to the top of said frame. A loop or sling W passes under the keel of the ship and has a ring in each end, the ring being secured loosely upon the guy-lines T, between the stop-rings U V on each side. A guy X passes from the deck to the rear end of the keel and then passes through guides Z and extends to an eye on the front edge and bottom end of the rudder. A rearwardly-projecting boom K carries at its rear end a block, over which passes a guy L, that has one branch M leading to a terminal connection at the top of the rudder-post and has also two other branches M' and M<sup>2</sup>, that extend to terminal connections at the rear edge of the rudder. The tension of these rear guys M' M<sup>2</sup> is opposed by the tension of the guy X; but still enough flexibility is allowed in the same to permit the turning of the rudder about its axis. To turn the rudder to the right or left in steering, guy N extends from the deck on each side and has a branch N' leading to the top of the rudder-post, and another branch O, which in turn divides into two and connects with the anchorage-eyes on the rear edge of the rudder that receives the guys M' M<sup>2</sup>.

Q is a guy that runs from a ring on the top of the brace C to the upper end of the rudder-frames. The device is lowered into the water by the boom K and guy L and the loop l and guy Y and is there held in place by tightening the other guys R S T. Now by pulling on one of the guys N on one side of the ship and relaxing tension on the corresponding one on the other side of the ship it will be seen that the rudder may be turned on its relatively stable

frame, so as to take the place of the broken rudder and steer the ship.

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

1. A temporary steering device for ships, comprising a cage-like rudder-frame, a strut-brace hinged to the front side of the rudder-frame and having a bifurcated forward end fitting on each side of the stern-post of the ship, a rudder hinged to the rudder-frame, a series of guys for holding the rudder-frame and brace in place, and means for turning the rudder substantially as and for the purpose described.

2. The rudder-frame B consisting of a series of vertical parallel metal rods having transverse connections forming a rigid skeleton frame, a brace C composed of metal rods having a bifurcation or opening at the front end to receive the stern-post of the ship, a hinge-pin D with bails E e' connecting the brace to the rudder-frame, and guys for holding the rudder-frame and turning the rudder substantially as and for the purpose described.

3. The combination of the rudder-frame B, the forward brace C, and rudder F, with the boom K the slinging-guys Y and L M M' M<sup>2</sup>, the stiffening-guys R S T W and X attached to the frame, and the steering-guys N and O attached to the rudder substantially as and for the purpose described.

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Witnesses:

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