

T. P. BYRAM.  
 RUDDER.

APPLICATION FILED DEC. 29, 1902.

NO MODEL.

2 SHEETS—SHEET 1.

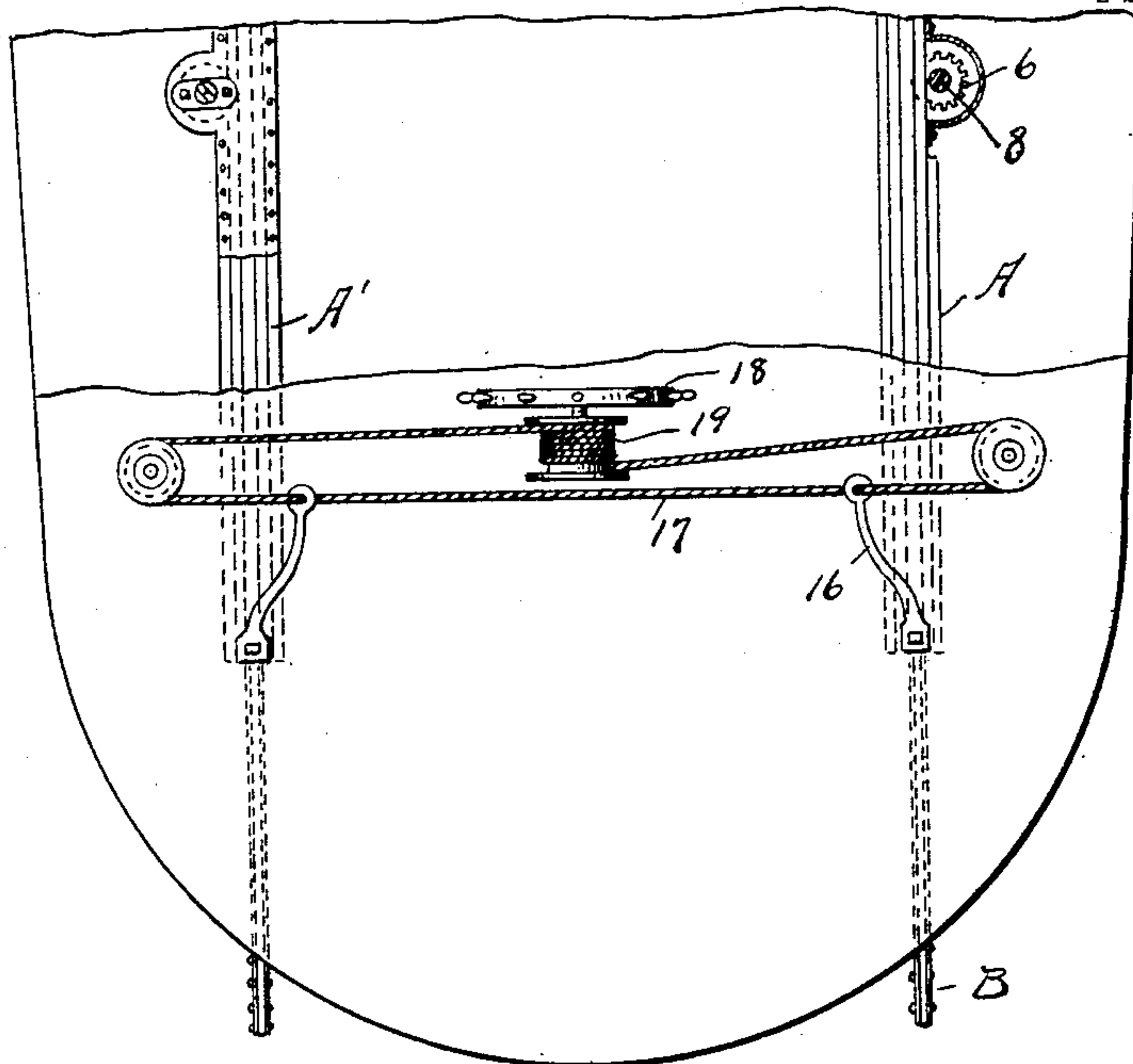


Fig. 1.

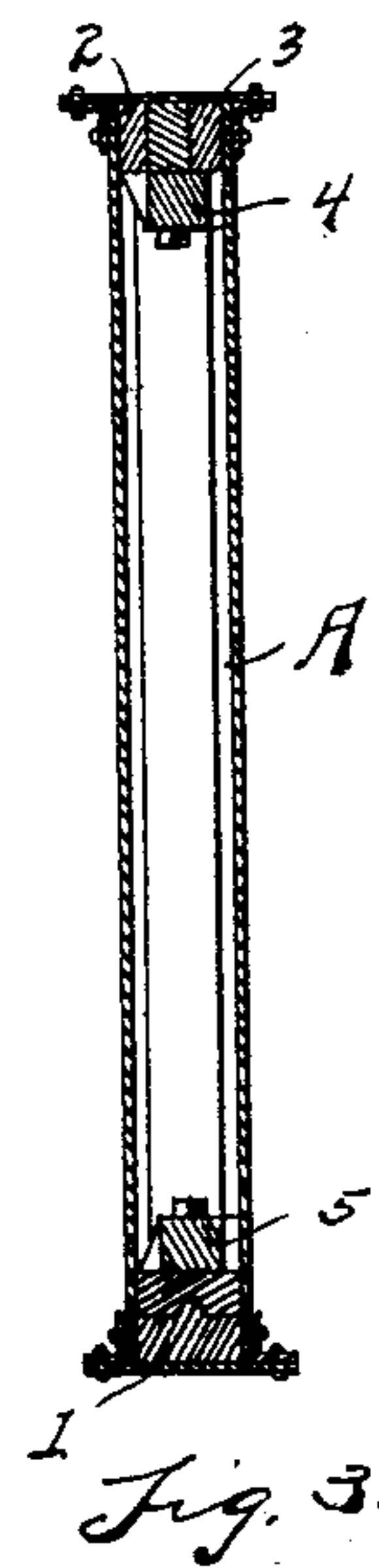


Fig. 3.

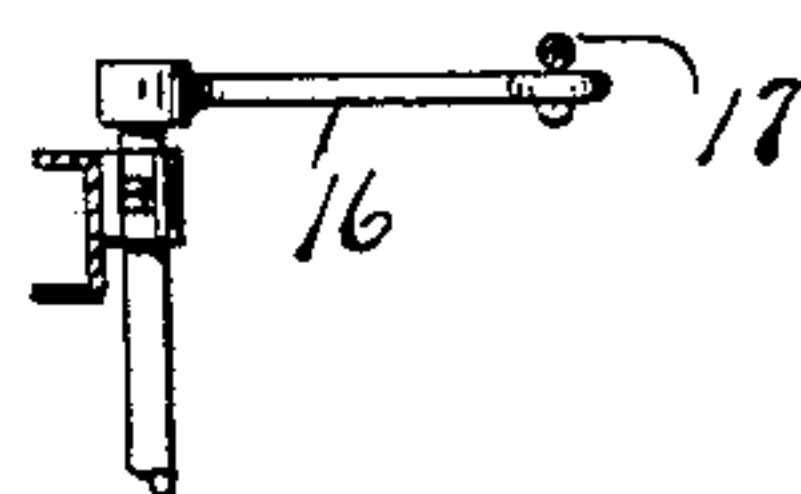


Fig. 4.

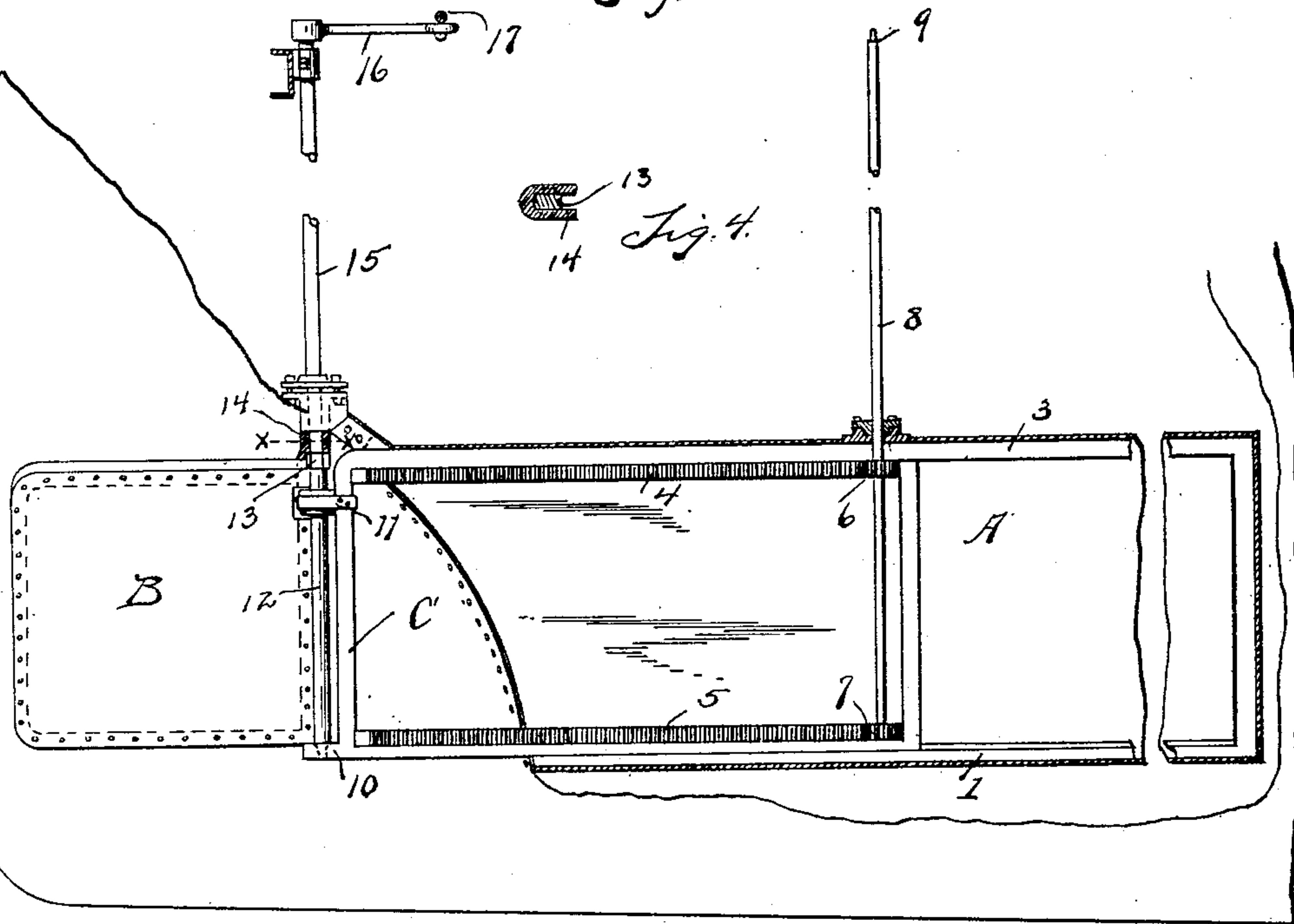


Fig. 2.

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No. 750,592.

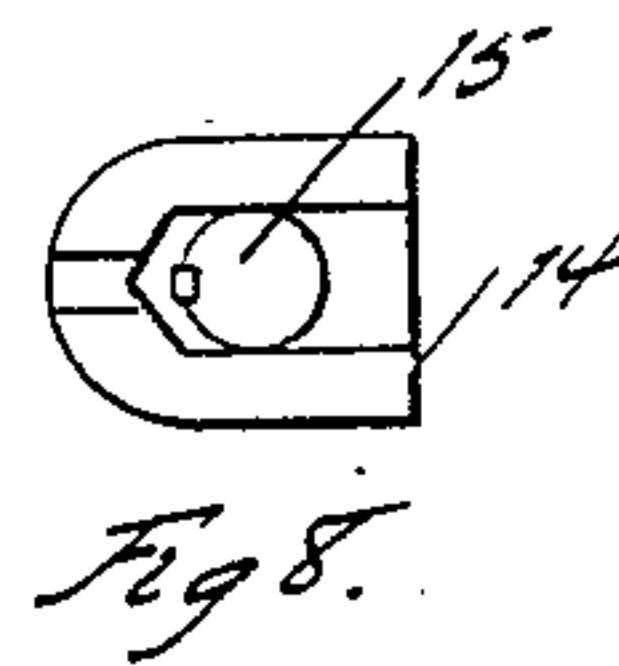
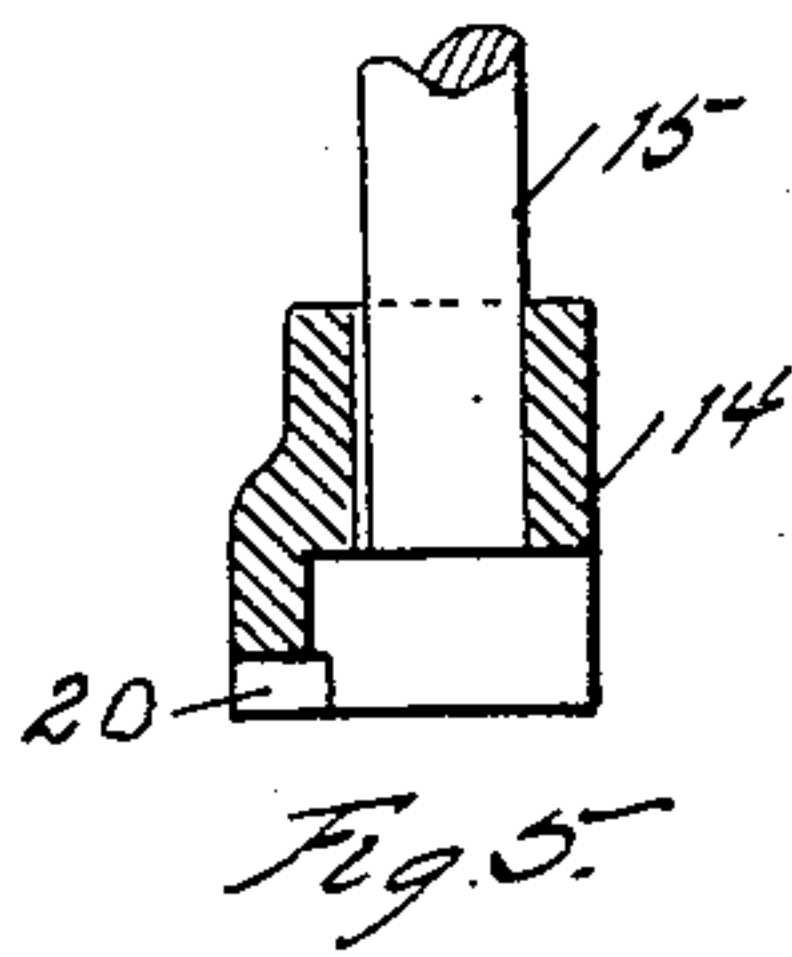
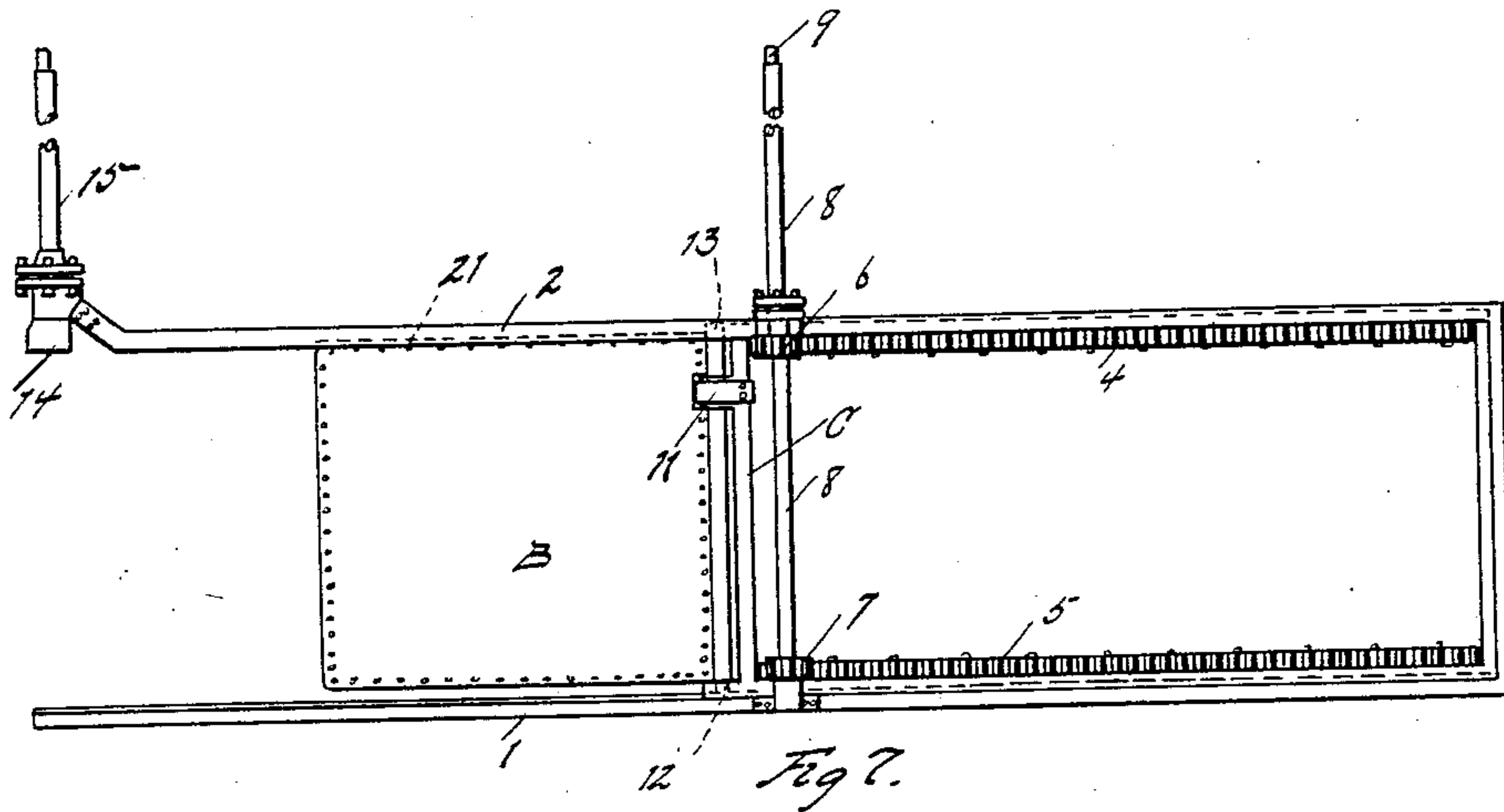
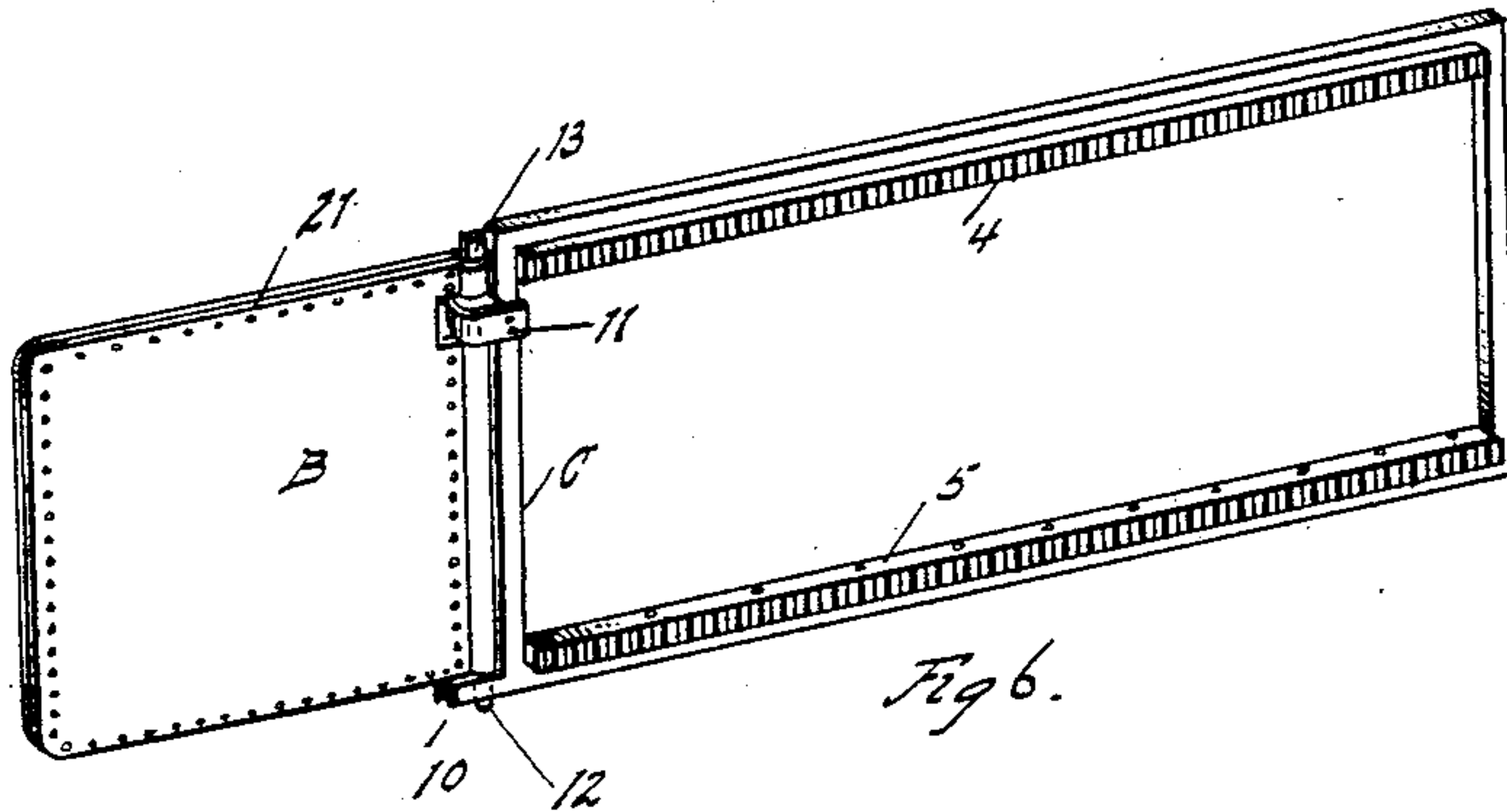
PATENTED JAN. 26, 1904.

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2 SHEETS—SHEET 2.



WITNESSES  
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# UNITED STATES PATENT OFFICE.

THEODORE P. BYRAM, OF DETROIT, MICHIGAN.

## RUDDER.

SPECIFICATION forming part of Letters Patent No. 750,592, dated January 26, 1904.

Application filed December 29, 1902. Serial No. 136,896. (No model.)

*To all whom it may concern:*

Be it known that I, THEODORE P. BYRAM, a citizen of the United States, residing at Detroit, county of Wayne, State of Michigan, have invented a certain new and useful Improvement in Rudders; and I declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it pertains to make and use the same, reference being had to the accompanying drawings, which form a part of this specification.

This invention relates to steering-gear for vessels, and has for its object an auxiliary rudder intended to be used for emergency purposes.

In the drawings, Figure 1 is a plan view of the stern of a vessel, and it indicates the location of a pair of auxiliary rudders. Fig. 2 is a side elevation of the rudder with the posts by which it is actuated. Fig. 3 is a vertical cross-section showing the chamber in which the rudder is withdrawn and ordinarily carried. Fig. 4 is a cross-section of the foot of the rudder-post used with the auxiliary rudder. Fig. 5 is a vertical section of the foot of the rudder-post. Fig. 6 is a perspective of the rudder and frame. Fig. 7 is a side elevation of rudder and frame and shows its relation to the post. The vessel and chamber are not seen in this drawing. Fig. 8 is a view of the bottom of the foot of the rudder-post.

In the hull of the vessel is a water-tight chamber opening outward through the hull of the vessel, with the opening arranged to allow for the projection of the auxiliary rudder, which normally and ordinarily is carried confined within the chamber. Generally and preferably there are two such chambers A and A', located at equal distances from and at each side of the fore and aft middle line of the vessel. These chambers and the rudders contained in them are duplicates and similar in all respects. The chamber A extends from front to rear for a distance somewhat greater than twice the length of the rudder that is to be used, and a rudder B is arranged to slide into the chamber on a track 1 on the floor of the chamber, and its upper edge is provided with a feather which engages guides 2 and 3 on the ceiling

of the chamber. The rudder B is hinged to a frame C, that is provided along its upper edge and along its lower edge with racks 4 and 5, and with these racks engage pinions 6 and 7 on a vertical shaft 8, that projects upward through the deck of the vessel or to some convenient place above the chamber, where it is arranged to be actuated by means of a crank or a hand-wheel that engages with the wrench-hold 9. At the rear of the frame there is at the under side a projecting step 10 and near the upper edge a projecting ear or bearing 11, through which engages a vertical shaft 12 of the rudder B. The upper end of the shaft is provided with a wrench-hold 13, that engages in a socket 14 at the foot of a vertical shaft 15, and the vertical shaft 15 projects upward through the vessel to a convenient place of actuation and is provided at its upper end with suitable tiller or crank connections 16, arranged to be engaged with a tiller-rope 17 and to be actuated by the tiller-wheel 18 and drum 19. Normally, and except in cases of emergency, it is intended that this rudder shall be withdrawn into the chamber A; but in case of emergency it is run out from the chamber by means of the racks and pinions until the wrench-hold 13 engages in the wrench-like lower terminal or foot of the post 15, after which it is capable of being utilized like an ordinary ship-rudder.

Along the upper edge of the auxiliary rudder B is a feather 21, that engages through a notch 20 in the bottom of the socket 14. The notch 20 is not deep enough to permit the wrench-hold 13 to pass through it.

What I claim is—

1. In combination with a vessel, an auxiliary rudder, a chamber in the vessel into which to withdraw said rudder, a bearing-frame to which said rudder is hinged, means arranged to reciprocate the frame, and a fixed tiller normally disconnected from but adapted to be connected to the rudder, substantially as described.

2. In combination with a vessel provided with a chamber into which to withdraw an auxiliary rudder, a frame arranged to carry said rudder, a rudder hinged thereto, an auxiliary fixed tiller-post normally disengaged

from but provided with means for engaging the auxiliary rudder and actuating the same, substantially as described.

3. An auxiliary rudder, a shaft to said rudder, a rudder-compartment, means for actuating the rudder to withdraw it into and project it from said compartment, a fixed rudder-post adapted to engage the rudder-shaft, substantially as described.

10 4. In combination, a fixed rudder-post extending below the plating of the vessel, a rudder adapted to be normally withdrawn into a

chamber formed in the plating of the vessel, means for projecting the rudder and bringing it into operative engagement with the post, 15 substantially as described.

In testimony whereof I sign this specification in the presence of two witnesses.

THEODORE P. BYRAM.

Witnesses:

CHARLES F. BURTON,  
MAY E. KOTT.