

J. A. WATT.
 COMBINED AUXILIARY RUDDER AND BRAKE FOR SHIPS.
 APPLICATION FILED JULY 22, 1910.

988,233.

Patented Mar. 28, 1911.

Fig. 1.

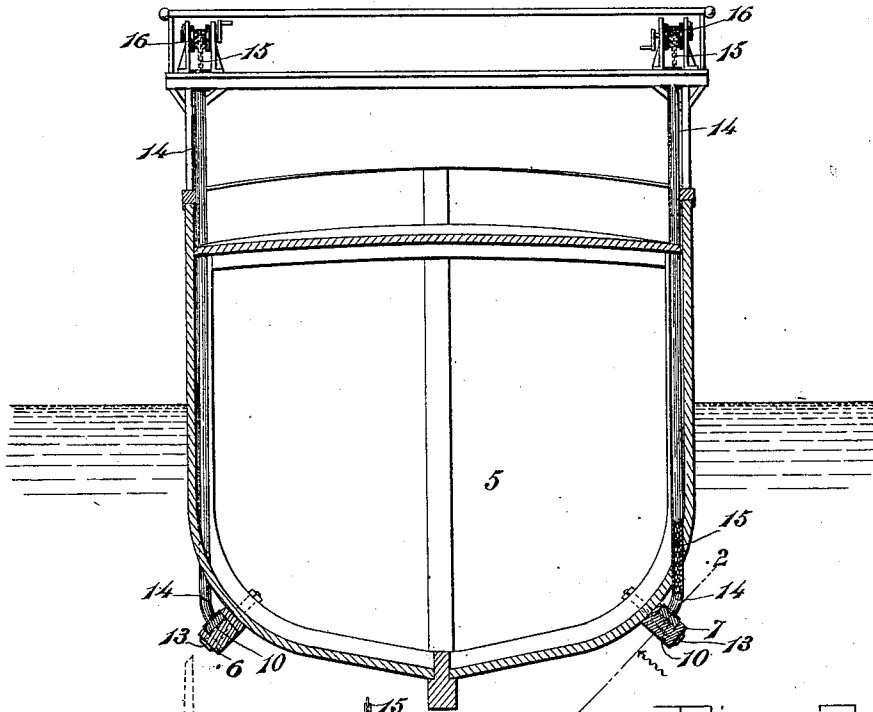


Fig. 2.

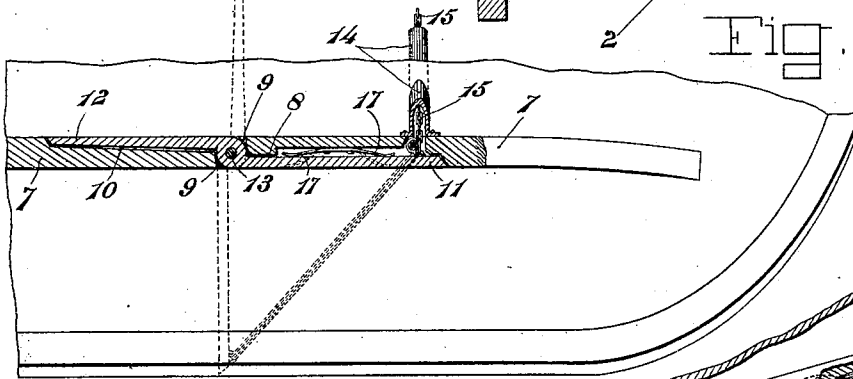
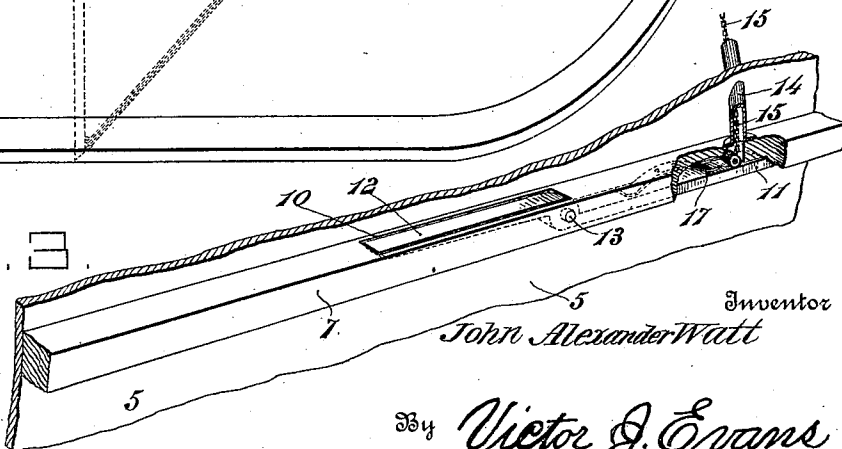


Fig. 3.



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COMBINED AUXILIARY RUDDER AND BRAKE FOR SHIPS.

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Specification of Letters Patent.

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To all whom it may concern:

Be it known that I, JOHN A. WATT, a subject of the King of Great Britain, residing at Halifax, in the Province of Nova Scotia and Dominion of Canada, have invented new and useful Improvements in Combined Auxiliary Rudders and Brakes for Ships, of which the following is a specification.

This invention relates to improvements in combined auxiliary rudders and brakes for ships, and has for its object the provision of a device of that kind to be applied to the bilge keel of a ship and operable from the engine-room or bridge to move at right angles to the bilge keel to which it is applied in order to check the momentum of a moving vessel, or act as an auxiliary rudder as desired.

With these and other objects in view which will more fully hereinafter appear, the present invention consists in certain novel details of construction and arrangement of parts, hereinafter fully described, illustrated in the accompanying drawings, and more particularly pointed out in the appended claims; it being understood that various changes in the form, proportion, size, and minor details of the device may be made, within the scope of the appended claims, without departing from the spirit or sacrificing any of the advantages of the invention.

In the accompanying drawings, forming part of the specification;—Figure 1 is a transverse sectional view taken through the hull and bilge keels of a ship and showing my improved device applied thereto. Fig. 2 is a longitudinal sectional view on the line 2—2 of Fig. 1. Fig. 3 is a detail perspective of the device.

Similar numerals of reference are employed to designate corresponding parts displacement.

The hull of the ship is designated in general by the numeral 5 and the bilge keels by the numerals 6 and 7.

The device forming part of the subject matter of the present invention is applied to the bilge keels in a manner to be presently described.

By reference now to Fig. 2 it will be seen that the bilge keel is provided on its lower face with a longitudinal groove 8, the said groove extending for a suitable distance and terminating at one end in a vertical opening 9, which extends through the opposite faces

of the keel. Formed in the upper face of the bilge keel is a centrally disposed longitudinal groove 10 one end of said groove ending in the opening 9, while the opposite end extends toward that end of the bilge keel opposite to the end nearest to the outer end of the first-named groove 8, in other words the lower groove 8 extends forward, while the upper groove 10 extends aft.

The combined rudder and brake is shown to be of a length substantially equal to the combined lengths of the grooves 8 and 10 and includes what will subsequently be termed a pair of side members designated by the numerals 11 and 12. The lower of these side members 11 is somewhat greater in length than the upper side member 12 and at one end is provided with an offset which is formed integral or otherwise secured to a similar offset at one end of the upper side member 12. The thickness of the device at the juncture of the sides corresponds approximately to the thickness of the bilge keel, while the dimensions of the side members 11 and 12 correspond approximately to the dimensions of the grooves 8 and 10, so that when the side members are parallel with the bilge keel their outer surfaces will be co-incident with the upper and lower faces of the bilge keel. The connecting portions of the side members are provided with a transverse opening which alines with lateral openings in the bilge keel, these openings receiving a pivot pin 13 which supports the device against displacement.

Owing to the difference in lengths between the side members 11 and 12, it will be evident that the normal position of the longer side unless restrained, will be vertically downward. In order, however, to hold the side members parallel with the bilge keel until it is desired to release the lower side member the following construction is employed:—By reference now to the drawings it will be seen that passing upwardly from the outer end of the lower groove 8 is a pipe 14, this pipe, as shown in the drawings extends to the bridge of the vessel, or if desired the pipe may extend to the engine-room. Passing through the pipe is a chain or other flexible element designated by the numeral 15, one end of the chain passing through the bilge keel and being fixedly secured to the free end of the lower side member 11. Positioned above the upper end of

the pipe is a drum 16 operated by a crank handle and trained around the drum is the opposite end portion of the chain 15. With this construction it will be manifest when
 5 the restraining means for the drum, which may be an ordinary pawl or ratchet, is released the longer side member 11 will move downwardly to a position at right angles to the bilge keel 6, whereupon its flat surface will be presented to the water and the
 10 resistance offered by the member will check the momentum of the vessel, assuming that the latter is moving.

In order to impart an initial downward
 15 movement to the lower side member a leaf spring 17 is employed, one terminal of which is secured to the floor of the lower groove 8, and the free terminal of which bears on the
 20 free end portion of the lower side member 11, so that when the restraining means of the drum is released, as before described, the spring 17 will move outwardly thus aiding the side member 11 in its downward movement.

It will be observed when each keel is
 25 equipped with the device just described that by alternately lowering the said devices to a predetermined degree the heading of the vessel will be changed, which will be very
 30 advantageous in the event of the rudder or the keel thereof becoming defective while at sea.

From the foregoing, it is evident that I
 35 have provided a device which is comparatively simple in structure and inexpensive in

manufacture, embodying few parts and these so arranged that the danger of derangement will be reduced to a minimum.

I claim:—

1. In a combined auxiliary rudder and
 40 brake for ships, the combination with a keel having in its upper and lower faces longitudinal grooves, the inner ends of which terminate in a vertical opening; of a member extending through said opening and
 45 pivoted adjacent to its intermediate portion within the opening, the said member corresponding in dimensions to the combined dimensions of the grooves, and means for adjustably securing the member at various
 50 angles to the keel.

2. In a combined auxiliary rudder and
 brake for ships, the combination with a keel having in its upper and lower faces longitudinal grooves, the inner ends of which
 55 terminate in a vertical opening; of a member having its intermediate portion pivoted within the opening, the said member corresponding in length to the combined lengths of the grooves, a spring in the lower of said
 60 grooves having one terminal bearing on one end portion of the member, and means for adjustably securing the said member at various angles to the keel.

In testimony whereof I affix my signature
 65 in presence of two witnesses.

JOHN ALEXANDER WATT.

Witnesses:

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