E. ROBBINS.
Ship's Rudder.

No. 205,506. Patented July 2, 1878.

Fig. 1.

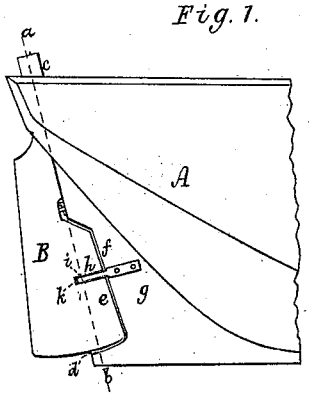
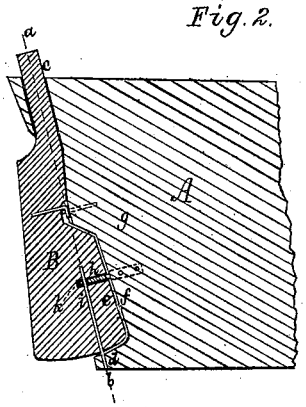


Fig. 2.



Witnesses.
S. N. Pipus
John R. Snow

Inventor
Elisha Robbins.
by his attorney.
R. H. Eddy

UNITED STATES PATENT OFFICE.

ELISHA ROBBINS, OF COTUIT, MASSACHUSETTS.

IMPROVEMENT IN SHIPS' RUDDERS.

Specification forming part of Letters Patent No. **205,506**, dated July 2, 1878; application filed May 27, 1878.

To all whom it may concern:

Be it known that I, ELISHA ROBBINS, of Cotuit, of the county of Barnstable, of the State of Massachusetts, have invented a new and useful Improvement in Navigable Vessels and Rudders therefor; and do hereby declare the same to be described in the following specification and represented in the accompanying drawings, of which—

Figure 1 is a side view, and Fig. 2 a vertical section, of the stern and rudder of a vessel with my invention or improvement, in the carrying out of which the rudder-blade is extended forward as well as backward of its axis of motion, and the stern-post or part or run against which the blade is arranged is recessed to receive the part of the blade that projects forward of the axis of motion of the rudder. Furthermore, the part of the rudder-blade so projecting is recessed or notched to receive the intermediate pivotal bearing-arm projecting from the stern-post or run.

In the drawings, A denotes the stern portion of the hull of a vessel, and B the rudder, of which *a b* represent the pivotal axis, or that of the rudder-post *c* and the lower pintle *d*.

The rudder-blade projects forward as well as aft of such axis, the part *e* extending forward of it being, when the rudder is amidships, received into a corresponding recess, *f*, formed in the stern-post or run *g*, as represented.

In case of it being necessary for the rudder to have one or more pivotal supports between the lower pintle and the rudder-post, I form the rudder-blade with a notch or recess, *h*, for each of such supports, such notch or recess opening through the forward edge of the blade and extending back of the axis thereof, and I fasten to the run and project into the recess a pivotal bearing, *k*, through which I extend the intermediate pivot *i*.

While the rudder so made and applied is in the act of being turned to larboard and the vessel is moving ahead, water from the starboard side of the run will impinge against the auxiliary part *e* of the blade and aid in turning the rudder as well as in moving the stern to starboard. So, when the rudder is turned to starboard, water on the larboard side of the run will act against the said auxiliary part of the rudder and aid in turning the rudder as well as in moving the stern to larboard. Thus it will be seen that the said forward extension or auxiliary part *e* of the rudder, besides answering to increase the bearing-surface of the blade, operates, through the action of the water, to aid the rudder in being turned either way, and thereby enables the rudder to be moved and supported in any position with much less power than would be required were the rudder without any such extension of its blade forward of its axis of motion.

I claim as my invention as follows:

1. The hull provided with the run-recess *f* and the rudder-post and foot-bearings, arranged in line as set forth, in combination with the rudder having the pivotal post *c* and the blade-extension *e* disposed relatively to the said bearings in manner as represented.

2. The hull provided with the run-recess *f* and the intermediate pivotal bearing *k*, in combination with the rudder provided with the forward extension *e* of its blade and the notch or recess *h* therein to receive such bearing *k*, as specified.

ELISHA ROBBINS.

Witnesses:
R. H. EDDY,
JOHN R. SNOW.