3 Sheets. Sheet 1.

G. Seymour,

Steering App's.

No. 106,217. Patented Aug. 9. 1870.

Fig: 2.

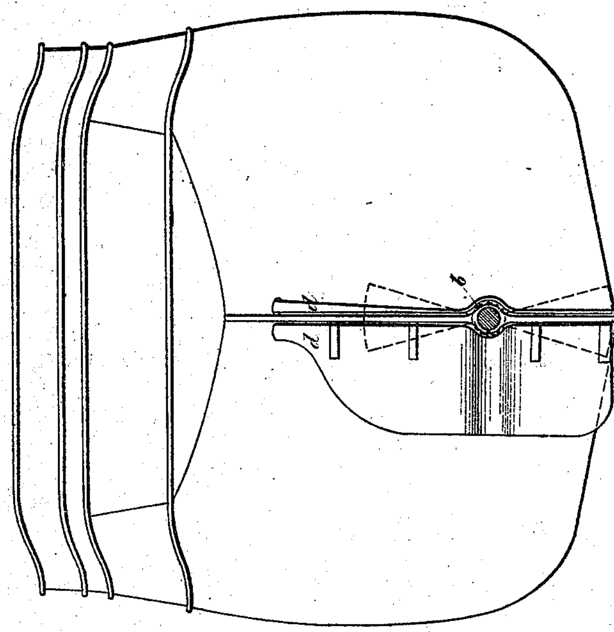
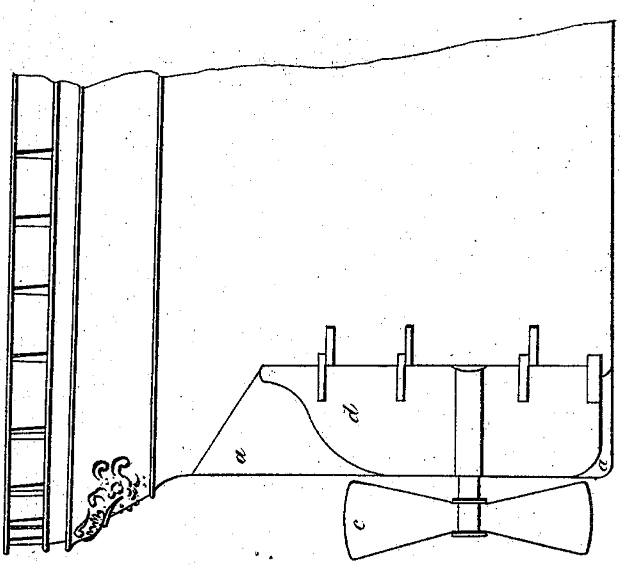


Fig: 1.



Witnesses

Inventor

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3. Sheets, Sheet. 2.

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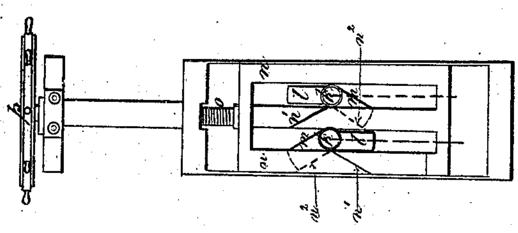

Fig: 6.

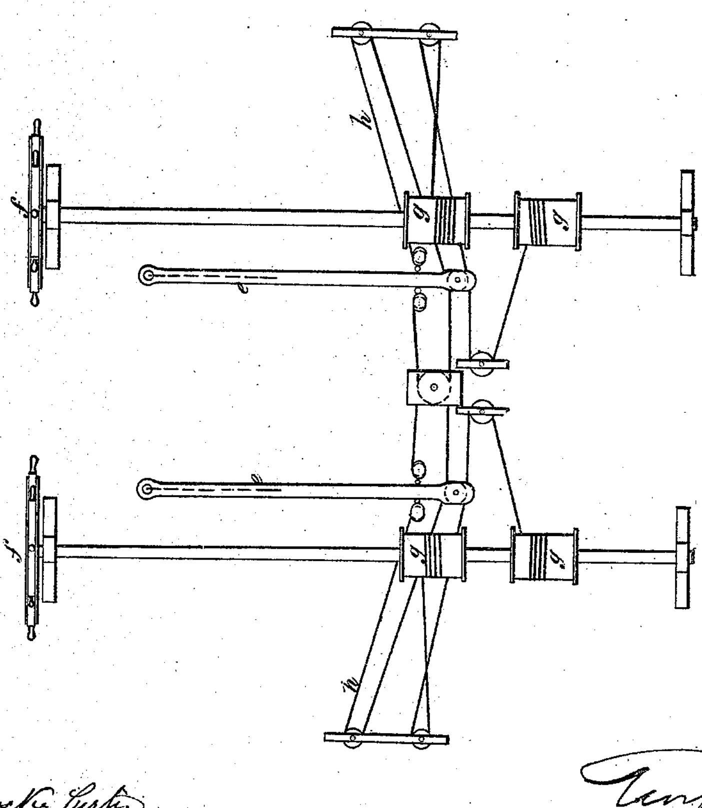

Fig: 5.

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Fig. 4.

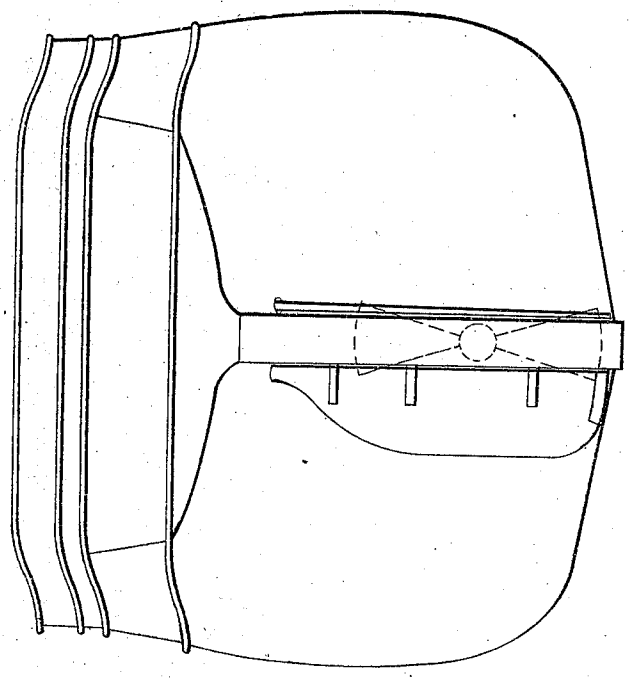
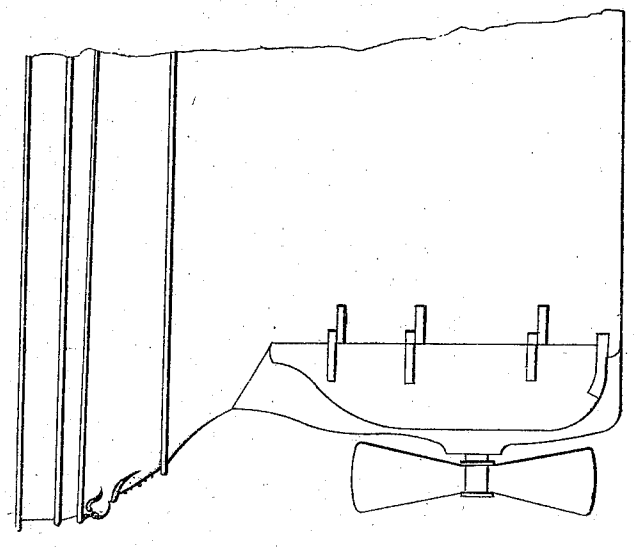


Fig. 3.



Witnesses:

Inventor:

United States Patent Office.

GEORGE SEYMOUR, OF LONDON, ENGLAND.

Letters Patent No. 106,217, *dated August* 9, 1870.

IMPROVEMENT IN STEERING APPARATUS.

The Schedule referred to in these Letters Patent and making part of the same.

To all to whom it may concern:

Be it known that I, GEORGE SEYMOUR, of No. 54 Lime street, in the city of London, England, a subject of the Queen of Great Britain, have invented or discovered new and useful Improvements in the construction of Ships and Vessels to facilitate the steering and propelling the same; and I, the said GEORGE SEYMOUR, do hereby declare the nature of the said invention, and in what manner the same is to be performed, to be particularly described and ascertained in and by the following statement thereof; that is to say—

In constructing ships or vessels according to my invention, I extend the stern-post somewhat further aft than now usual, and on each side of the stern-post at its fore part, I hang a rudder, which can be back against the stern-post, and can also be moved out to an angle, to steer the ship. Through the stern-post, and between the two rudders, I carry a propeller-shaft, which at its end, has a screw propeller upon it; by this arrangement I am enabled to place the screw propeller further aft than was practicable with the screw before the rudder.

When the screw propeller is used as an auxiliary propeller, I prefer that it should be formed with two blades, and I then form the stern-post of somewhat greater width than usual, so that, when the propeller is out of use, it may be set with its blades in a vertical position, so that the propeller-blades may be behind the stern-post and not project beyond or to any great extent beyond it. The two rudders may act independently one of the other and be worked by separate steering-wheels.

And, in order that my said invention may be most fully understood and readily carried into effect, I will proceed to describe the drawing hereunto annexed.

Description of the Drawing.

Figure 1 is a side view of the stern of an iron ship, constructed according to my invention, with a double rudder in front of the propeller, and hung on either side of an extended stern-post.

Figure 2 is an end view of the same.

a a is a deep but thin stern-post with the propeller-pipe *b* passing through it.

c is the propeller; and

d d the double-rudder, the two flaps or parts of which are capable of folding close in against the stern-post, they being suitably hollowed for the reception of the propeller-pipe.

Figure 3 shows a side view, and

Figure 4 in end view, a modification of the arrangement applicable especially to wooden or composite ships with auxiliary power, or iron ships with box or solid stern-posts. The stern-post is here made thick as well as deep, so that the propeller, when out of use, may be placed upright and sheltered behind it. The flaps of the double-rudder, in this case, can be made flat.

Figure 5 shows in plan the arrangement I prefer for working the double rudder.

e e are tillers upon the rudder-heads; and

f f are two steering-wheels with barrels *g g* on their axes, on which the steering-ropes *h* are wound and unwound alternately. There are four of the ropes *h*, one on either side of each tiller; it is made fast to the tiller at one end, then it passes around a fixed pulley to a sheave on the head of the tiller, from whence it returns around another fixed pulley to one of the barrels *g*, on which it is wound and to which its end is fixed.

The drawing represents the tillers as they stand, when both the rudder-flaps are lying close against the stern-post; by turning one of steering-wheels the corresponding rudder-flap will be acted on, its tiller being drawn over by the winding up of one of the ropes *h* on its barrel *g*, whilst the other is unwound; or the two tillers may be worked by screw-gear of any ordinary construction, each tiller having its own gear.

Another arrangement is shown, in plan, in Figure 6, by means of which the two rudder-flaps may be worked by one steering-wheel.

k k are the heads of the main pieces of the rudders, each provided with two arms, *l* and *m*.

The rudder-heads are received into slots in the sliding frame *n*, which is carried in fixed guides, and is capable of being traversed by the screw *o* and steering-wheel *p*.

The arms *l* are above the level of the frame *n*, but, as the frame travels, they are acted on by projections *n' n'* rising from the upper surface of the frame.

Similarly, the arms *m* are below the level of the frame *n* and are acted on by projections, n^2, beneath it.

Vessels propelled by twin screws, paddle-wheels, hydraulic mechanism, or sails, may be similarly constructed.

I claim—

The combination of the double rudder and stern-post, substantially as described.

Also, the combination of the double rudder, stern-post, and screw propeller, substantially as described.

GEORGE SEYMOUR.

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