A. Sherrier.

Steering.

No. 5,162. Patented Jun. 19, 1847.

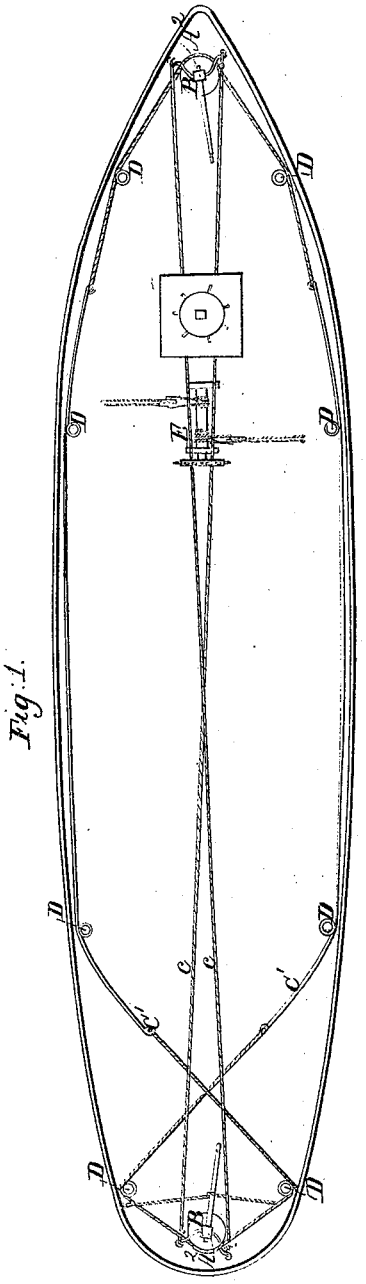

Fig. 1.

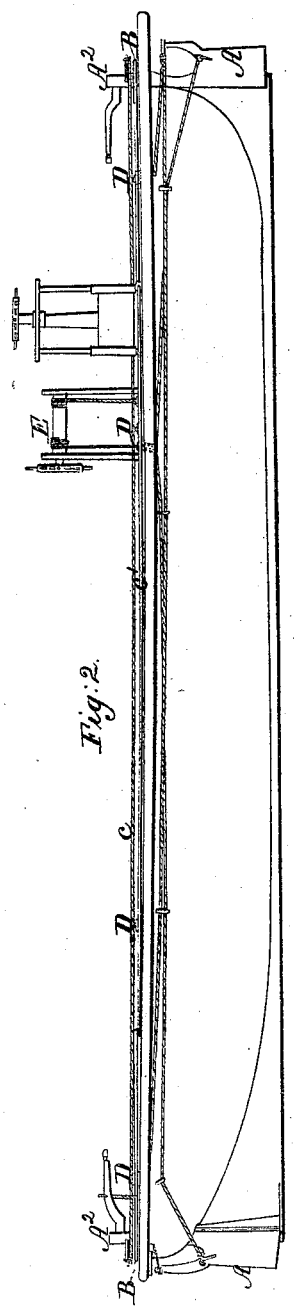

Fig. 2.

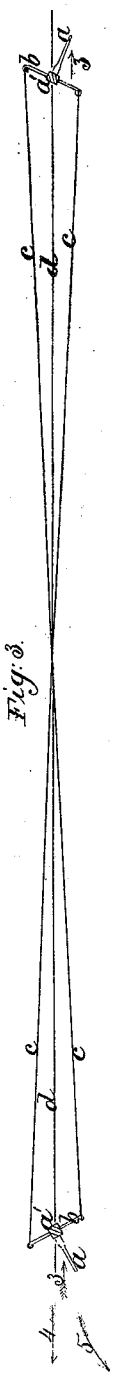

Fig. 3.

UNITED STATES PATENT OFFICE.

ANTHONY SHERMER, OF PHILADELPHIA, PENNSYLVANIA.

APPARATUS FOR STEERING VESSELS.

Specification of Letters Patent No, 5,162, dated June 19, 1847.

To all whom it may concern:

Be it known that I, ANTHONY SHERMER, of the city and county of Philadelphia and State of Pennsylvania, have invented a new and useful Improvement in Steering Vessels by Means of Connected Bow and Stern Rudders Operated Simultaneously, which is described as follows, reference being had to the annexed drawings of the same, making part of this specification.

Figure 1 is a top view of a vessel, showing the manner of connecting the bow rudder with the stern rudders. Fig. 2 is a side view. Fig. 3 is a diagram showing the manner in which the bow and stern rudders of a vessel under head or stern way are acted on by the water so as to produce an equilibrium, or balance of forces, against the two rudders rendering very little power necessary to operate either rudder.

Similar letters refer to corresponding parts in the several figures.

The nature of this invention and improvement consists in so connecting the bow and stern rudders by means of chains, rods, ropes, or other suitable connecting links, crossed and attached to arms, tillers, or levers, inserted into the rudder heads, or to the peripheries of wheels affixed thereto, so that when the stern rudder is turned toward either side of the vessel, the bow rudder will be caused to turn simultaneously to the same side and at the same angle with the line of the kilson—the action or resistance of the water against one of the rudders in its angular position being counterbalanced by the pressure of the water against the surface of the other rudder—the force or pressure of the water being transmitted from one rudder to the other by the connecting links, arms, or levers, aforesaid, by which mode of connecting the rudders a perfect equilibrium or balance of forces will be produced—the balancing or turning point of the vessel being equidistant between the rudders, when the rudders are of the same area, or size, rendering the management of the rudders quite easy, in comparison with the old mode of disconnected rudders; and putting it in the power of the helmsman to control the direction of the vessel, when accidentally driven sternwise; in which case it is well known that it becomes very difficult to change the position of the rudder as ordinarily arranged and operated.

The annexed diagram Fig. 3 fully illustrates my invention.

a, *a* are the rudders. *b*, *b*, the arms, tillers, or levers, inserted into the rudder heads at right angles to the rudders. *c*, *c*, the connecting chains, or links, of equal length and crossed and attached to the ends of the said arms, tillers, or levers; or to the circumference of the rudder heads, or other convenient place, by which the rudders are made to turn simultaneously. *d*, shows the central line of the keel. *a'* represents the axes of the rudders. The arrows 3 show the direction of the water against the rudders—the force against one rudder being transmitted to the other rudder by the connecting links, in counteracting the force of the water against it and producing the equilibrium above mentioned. The arrow 4 shows the direction of the kilson. The arrow 5 shows the direction the vessel will be caused to take, by the position of the rudders as represented.

The rudders A A are made and arranged in the usual manner. The rudder heads A^2 are provided with arms, levers, or tillers B B to which the chains *c c* are attached—said chains being crossed at any convenient place on deck and carried thence to the opposite tillers, or levers, to which they are attached. The chains may be carried below the deck, instead of above it, in any convenient way, or required direction, by means of guide pulleys or other suitable and proper contrivances.

Separate chains may be used, having their ends attached to the peripheries of wheels or pulleys, fixed to the rudder heads, running fore and aft—having short transverse chains attached to the longitudinal chains running athwart ship and attached to a windless placed near the middle of the vessel, so that by turning the windlass one of the short chains is wound on the barrel while the other is unwound, causing one of the longitudinal chains to be contracted while the other is extended, at the same time causing the rudders to turn toward each other on the same side of the vessel. See E Figs. 1 and 2.

The chain may be wound around the pulley on the rudder head at the stern, crossed, and carried thence inside or outside of the vessel to the bow rudder to which its ends are made fast in any convenient way, so that

when the rudder at the stern is turned, that at the bow will also move at the same time, and toward the same side of the vessel. See C′ Fig. 1.

Ropes, straps, or flexible iron rods may be used instead of the chains above named, wherever preferred; or rods and chains combined,—may be used, being so crossed and arranged, in combination with the tillers or wheels of the rudders as to cause one rudder to resist the other always and thus produce the balance or equilibrium aforesaid.

What I claim as my invention and desire to secure by Letters Patent is—

Connecting the bow and stern rudders of vessels by an endless chain, or by separate chains, crossed between the rudders, so that by turning one rudder in one direction, the other rudder will be caused to turn simultaneously toward the same side of the vessel, forming the same angle with the vertical longitudinal plane as above described and set forth, for producing the effect herein stated, whether the chains be arranged in the particular manner above stated, or in any way which is substantially the same, and by which analogous results are produced.

ANTHONY SHERMER.

Witnesses:
WM. P. ELLIOT,
A. E. H. JOHNSON.