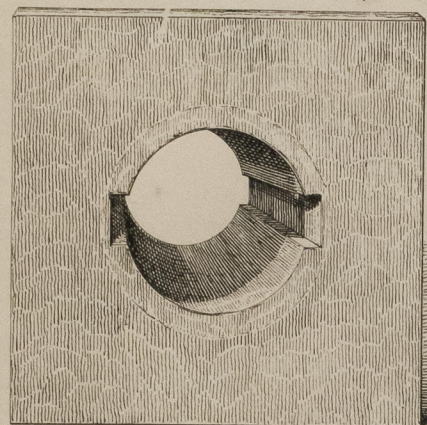
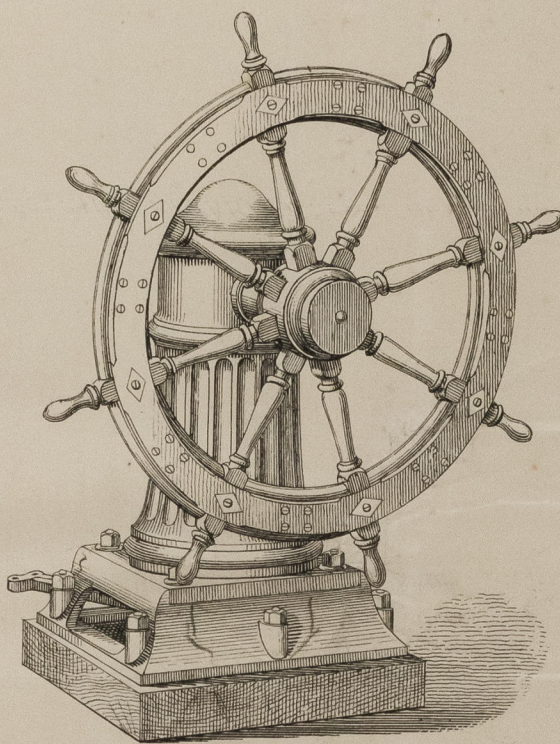


# SKINNER'S PATENT VERTICAL STEERING APPARATUS.

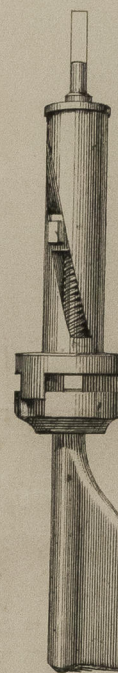
OFFICES:— 124, FENCHURCH STREET, LONDON, E.C.



Cross Section of the Base of the outer Cylinder, shewing the Vertical Grooves in which the Cross-head works.

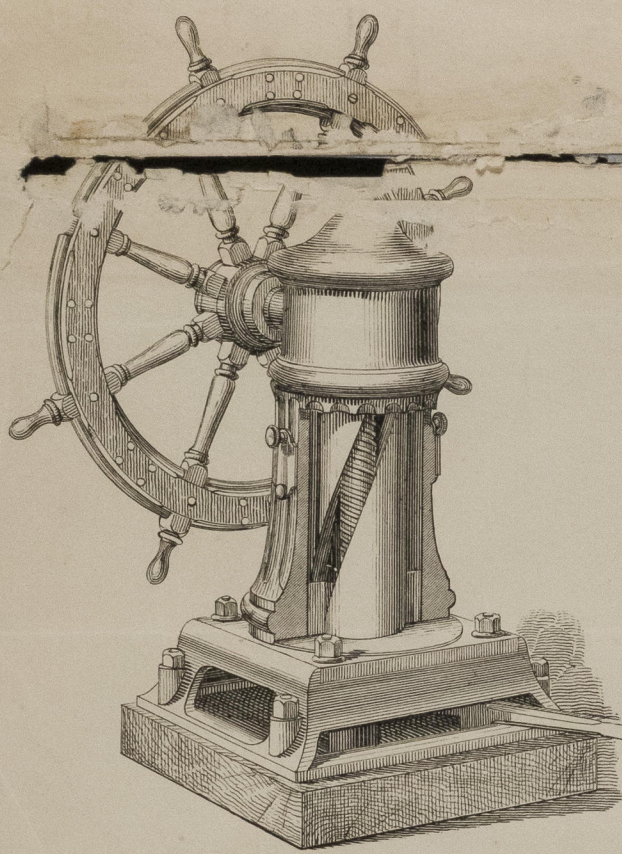


All covered in as fixed on a Vessel. Helm:— hard-a-port.

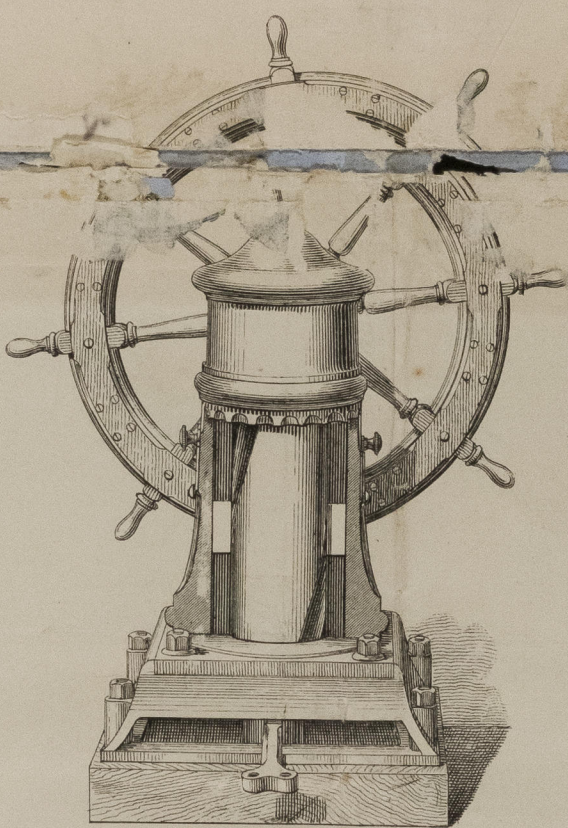


Inner Cylinder with a Rudder, shewing how the bottom of the Cylinder is attached to the Coupling on the Rudder-head.

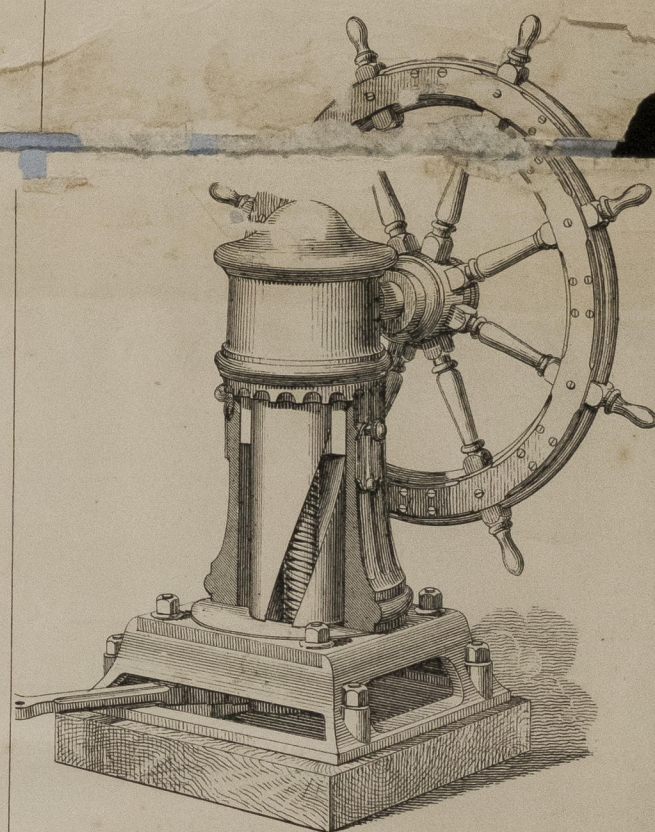
*Coupling on lower cross head. Rudder head flush with top bar.*



From Aft. Helm:—hard-a-port. N.B. The Helm can by this plan be got over to 45 degrees either way.



After part of outer Cylinder cut away to shew the Inner Cylinder with the Cross-head. Helm:—a-mid-ship.



From Aft. shewing the Screw which works the Cross-head up and down the Convoluted Grooves of the Inner Cylinder. Helm:—hard-a-starboard.

The Special Correspondent of the "Shipping and Mercantile Gazette" in the Paper of May 14<sup>th</sup> 1867, writes as follows in reference to "STEERING APPARATUSES" in the Marine display at the Paris Exhibition after referring to several others.

"SKINNER'S PATENT STEERING APPARATUS" is a very admirable adaptation of mechanical principles to the wants of the Marine. It is the most compact, for its enormous power, of all Steering Apparatuses I have seen, as it occupies but 2½ feet square of space for a Vessel of 1000 Tons. It would be difficult to describe without Drawings, but the power is derived from a combination of two Screws, working one within the other. Both Screws are vertical, and form, in fact, a continuation of the Rudder-head. The Inner-Screw is worked by a bevel Wheel on the shaft of the Steering Wheel itself. On this Screw a Block, containing a Female Screw, travels up or down, according to the motion given to the Wheel. Two projecting arms from this Block travel in spiral slots cut out of an outer Iron casing. This casing is itself fixed to the Rudder-head. It is evident that the movement of the Inner-Screw, causing the Travelling Block to rise or fall, will give a right or left movement to the Rudder. There is no loss of leverage through any part of the movement, & the whole Apparatus is neatly cased in, making a most ornamental appearance."

FOR PRICE,—State Diameter of Rudder-head. Iron or Wood, Steam or Sailing, & Gross Tonnage.



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