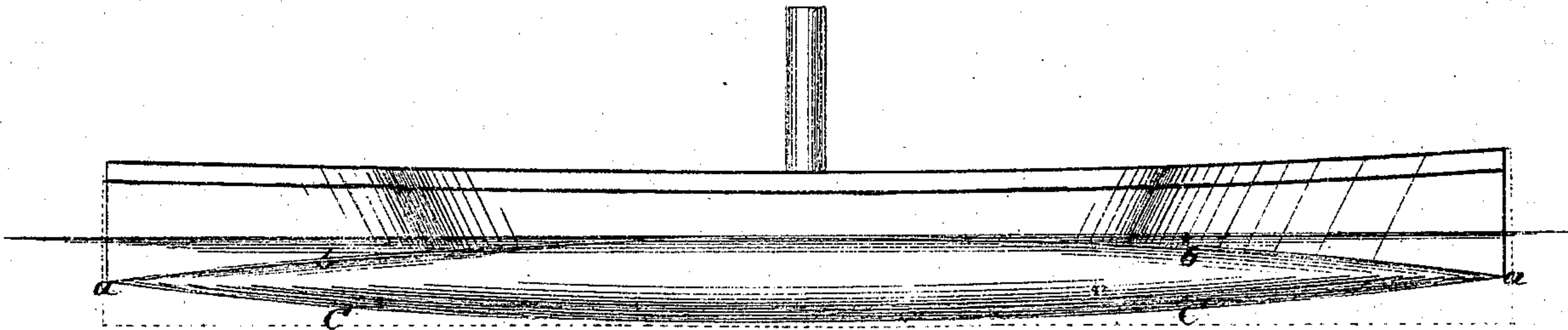


# *E. M. Strange, Hulls of Vessels.*

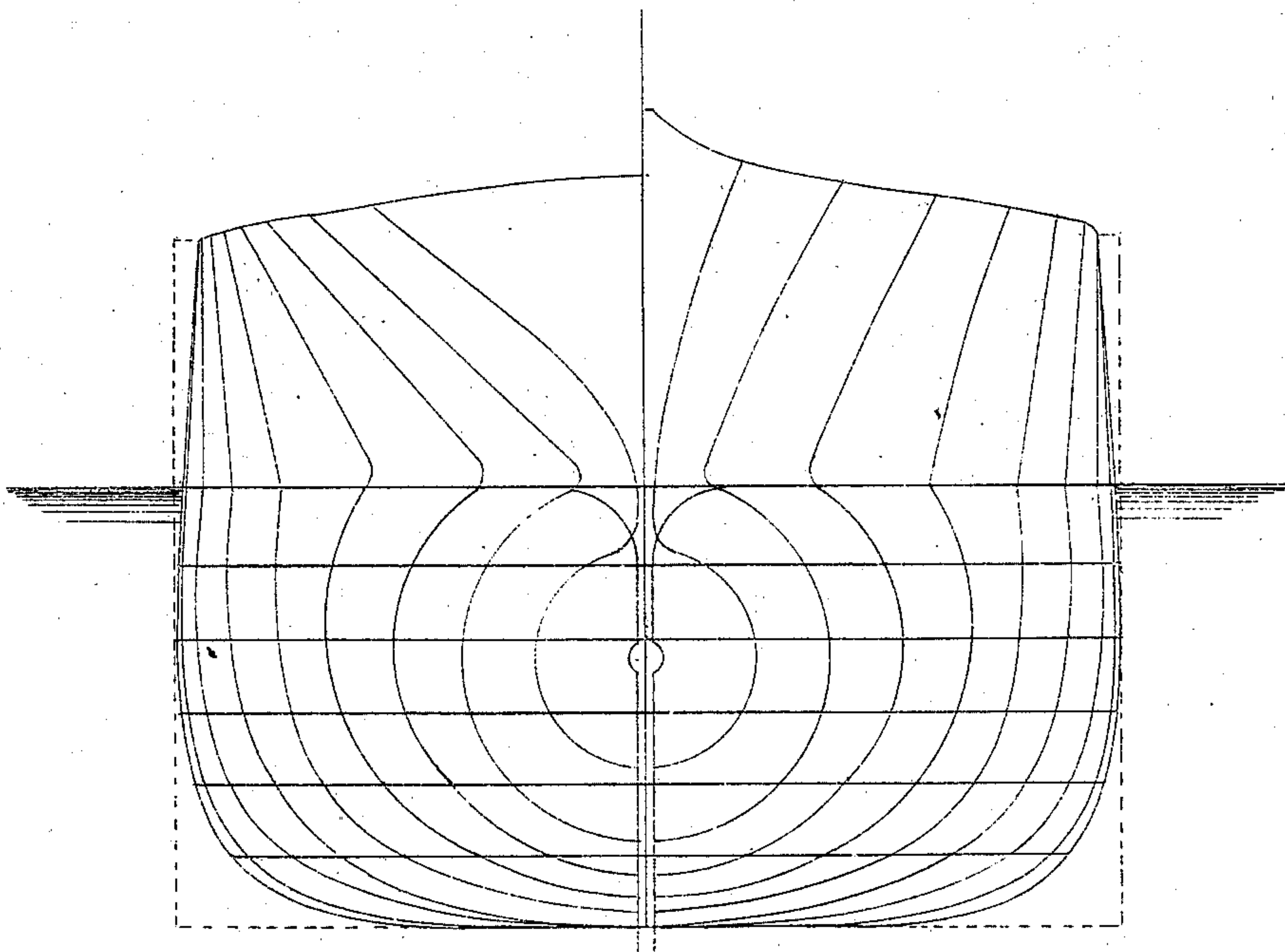
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PATENTED JUL 25 1871

*Fig:1.*



*Fig:2.*



**Witnesses:**

*M. Vorländer*  
*Wm. H. C. Smith*

**Inventor:**

*E. M. Strange.*

**PER**

*Wm. H. C. Smith*  
**Attorneys.**

## UNITED STATES PATENT OFFICE.

EDWARD M. STRANGE, OF NEW YORK, N. Y.

## IMPROVEMENT IN SHIP-BUILDING.

Specification forming part of Letters Patent No. 117,345, dated July 25, 1871.

*To all whom it may concern:*

Be it known that I, EDWARD M. STRANGE, of the city, county, and State of New York, have invented a new and useful Improvement in the Hulls of Vessels; and I do hereby declare that the following is a full, clear, and exact description thereof, which will enable others skilled in the art to make and use the same, reference being had to the accompanying drawing forming part of this specification.

This invention relates to improvements in the hulls of vessels; and it consists in a modeling of the submerged portion of the hull on a circular or other equivalent form around the axial line of the center of displacement, the said circular or other form beginning amidship or thereabout, and tapering on fine lines to a point on each end, the object being that the lifting tendency of the water on the lower planes shall be neutralized by the impact on the upper planes of the said circular or other form, and the displacement caused to commence at the center of resistance, and operate in all directions, or nearly so, to avoid emersion, thereby causing the stationary and traveling load-line to be the same, so that all the weight of ship and cargo will be wholly sustained by the water, and the engines relieved of any lifting tendency, and their whole power utilized for speed or displacement.

Figure 1 is a side elevation of the hull of a vessel modeled according to my improvements, and Fig. 2 is an end elevation.

Similar letters of reference indicate corresponding parts.

From the point *a*, which is supposed to be the center of displacement, the hull is modeled in the circular double-pointed form shown in the drawing, increasing from the points toward the center upon very gradual and fine lines to the breadth of the hull, or thereabout, to provide upper planes *b*, whereon the impact of the water shall counteract the lifting tendency of the impact on the lower planes *C*, so that the displacement shall be from the center line thereof each way alike.

This construction will, as I expect, completely neutralize the lifting of the vessel while in motion above the stationary line, or nearly so, and thereby cause the power of the engines to be wholly expended in propelling the vessel.

Having thus described my invention, I claim as new and desire to secure by Letters Patent—

The hull *a b C*, when constructed and proportioned as described, and for the purpose specified.

Witnesses: EDWARD M. STRANGE.

GEO. W. MABEE,

T. B. MOSHER.