

CHARLES E. TRIPLER

Propelling Apparatus for Steam Canal Boats, &c

PATENTED JUN 27 1871

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Figure 1.

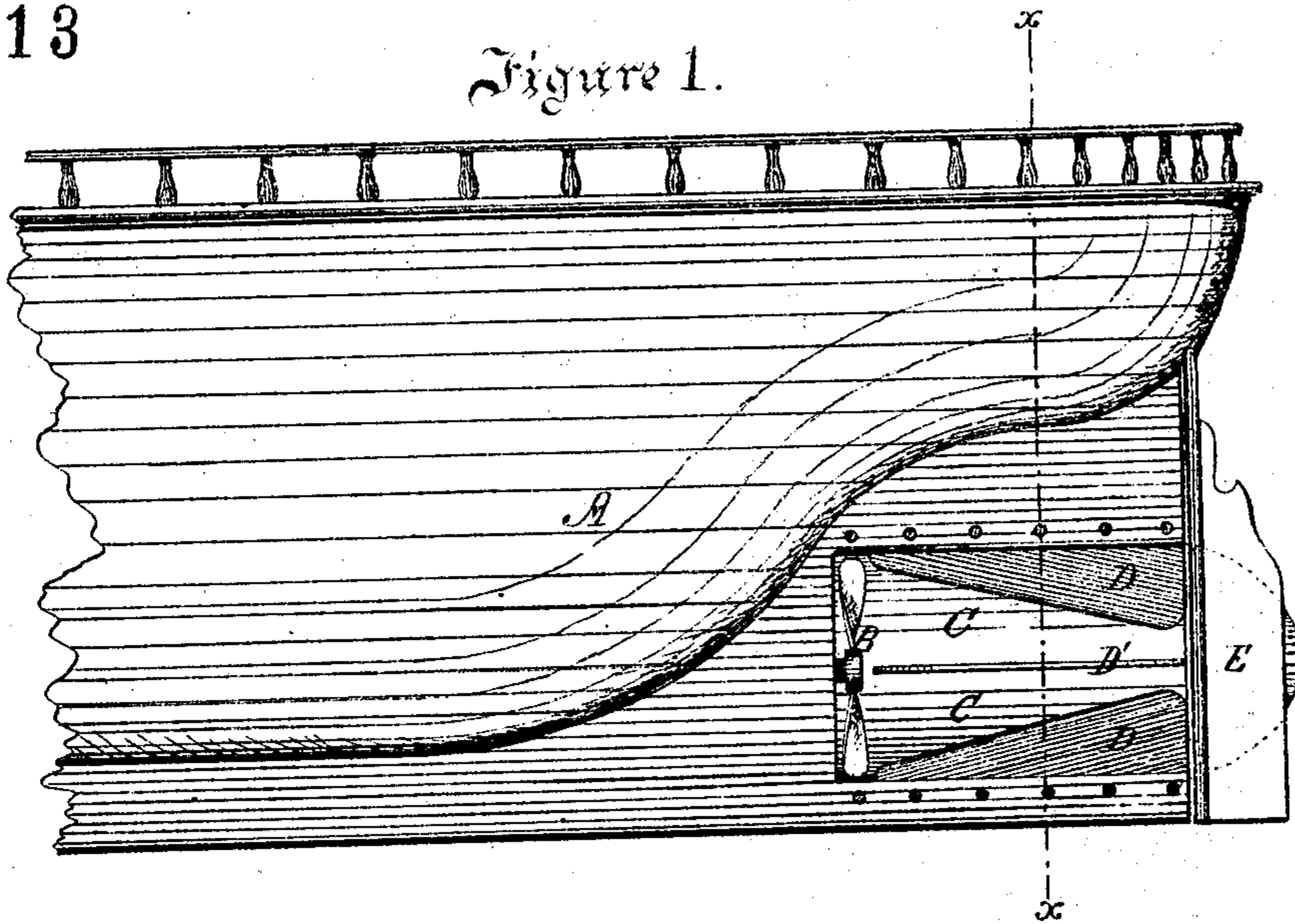


Figure 2.

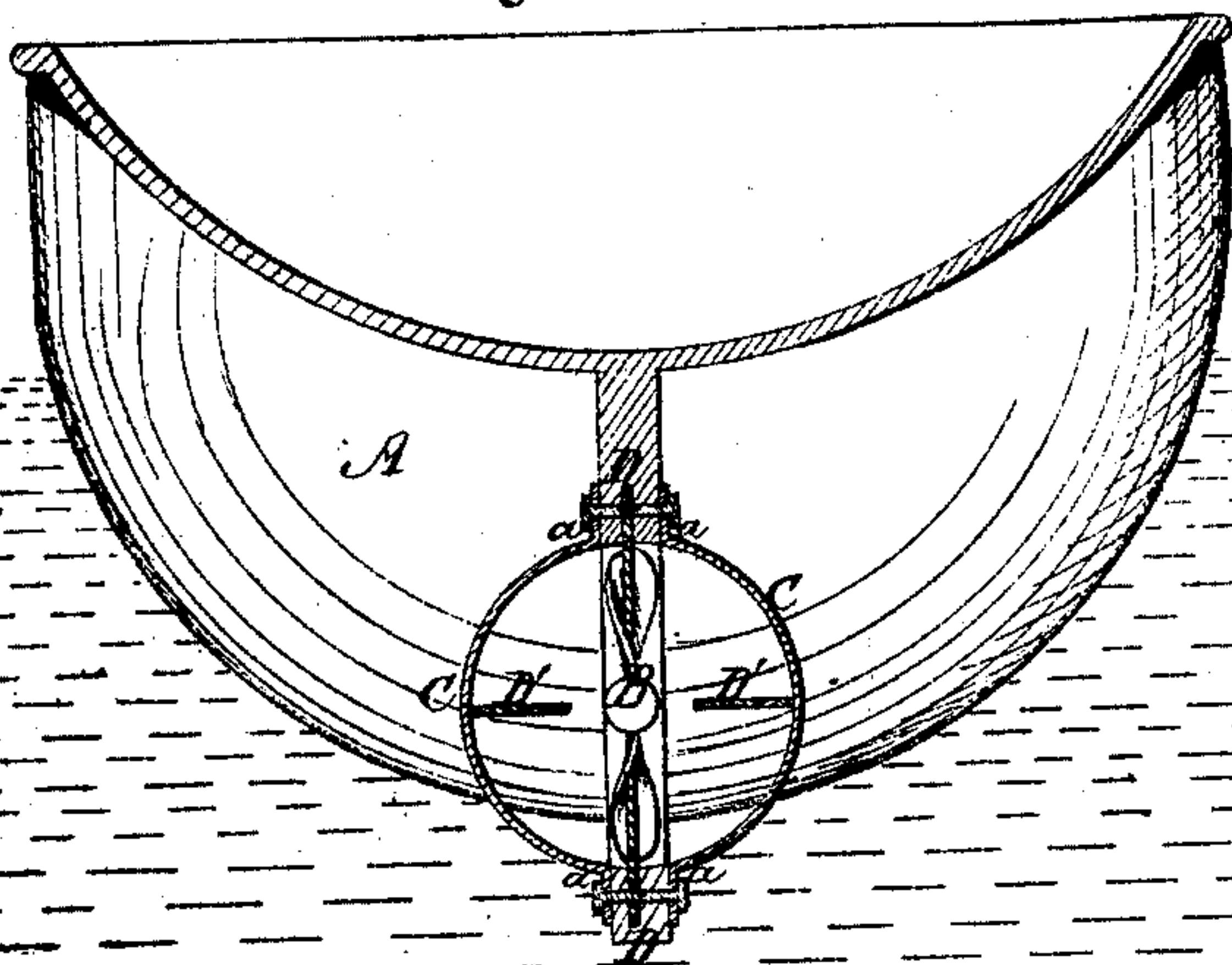
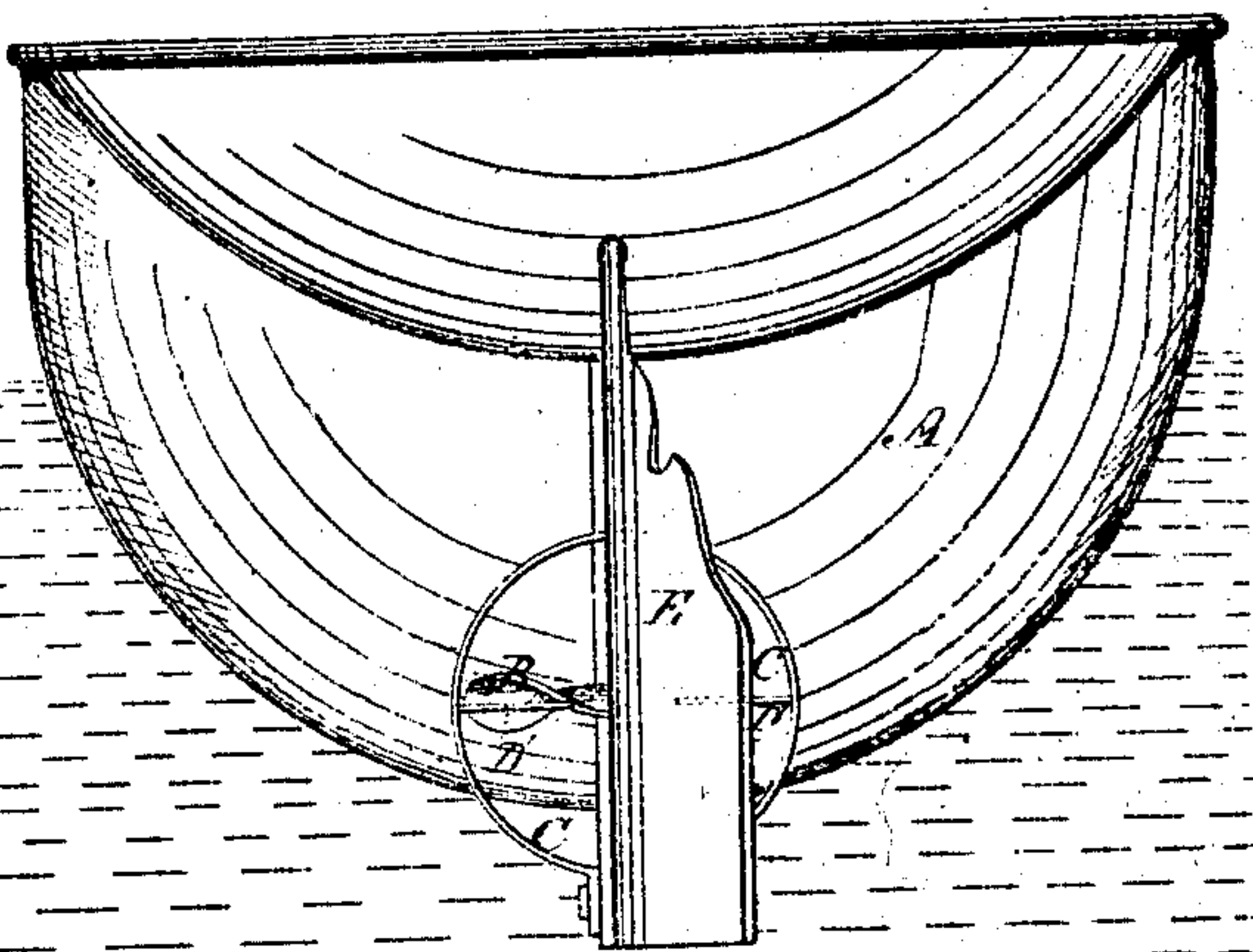


Figure 3.



Witnesses.
H. H. Young
Chas. C. Upferman

Inventor.
Charles E. Tripler,
By his Attorney,
J. H. Upferman.

UNITED STATES PATENT OFFICE.

CHARLES E. TRIPLER, OF NEW YORK, N. Y.

IMPROVEMENT IN PROPELLING APPARATUS FOR VESSELS.

Specification forming part of Letters Patent No. 116,513, dated June 27, 1871.

To all whom it may concern:

Be it known that I, CHARLES E. TRIPLER, of the city, county, and State of New York, have invented certain new and useful Improvements in the Propelling Apparatus of Steam Canal-Boats and other vessels; and I do hereby declare that the following is a full, clear, and exact description of the same, reference being had to the accompanying drawing which makes part thereof, and in which—

Figure 1 represents a side elevation of a portion of the hull of a vessel, one side of the fixed cylindrical inclosing-case of the propeller being removed to show the vanes or wings for interrupting the revolving motion of the water. Fig. 2 is a transverse vertical section of the same through the line *x x* of Fig. 1. Fig. 3 is a rear elevation, showing the rudder turned to one side to more clearly illustrate the action of the water thereon in its escapement in the wake of the vessel.

My invention relates to the propelling apparatus of steam canal-boats and other vessels; and it consists in so forming or cutting away the keelson of the stern of the vessel as that a rectangular opening is left therein, bounded only by three sides of said keelson, with an uninterrupted passage to the rear, and bolting to said keelson on either side, at the top and bottom of said opening, flanged semi-cylinders provided on their interior surface with radial wings or vanes, which act upon the water put in commotion by the revolution of the propelling-screw in a manner and for a purpose that will be hereafter fully described. My invention also consists in elongating the sides of the cylindrical casing to a point beyond the arc of the circle described by the turning of the rudder, whereby a confined body of water is acted upon by said rudder, thus insuring the perfect management of the boat, whether its speed be slow or rapid. My invention also consists in bolting two of the series of the vanes or wings of the casing to the keelson itself by the same bolts which secure said casing, whereby the latter is strengthened in its attachment to the keelson, as will be more fully explained.

In the accompanying drawing, A represents a section of the hull of a vessel as ordinarily constructed, and provided at its stern with an opening in the keelson to receive the usual propelling-screw B, which is placed therein on its shaft, connecting with the operative mechanism of the

engine. The opening in the keelson is not closed at its rear end, but is uninterrupted to afford an easy egress for the water in the line of motion of the vessel. At the top and bottom of this opening, on either side of the keelson, are bolted semi-cylindrical plates or sheets of metal C, the same being provided with flanges *a* to facilitate their ready and secure attachment, as desired. These plates, being permanently secured in their position, form a cylindrical inclosing-case for the propelling-wheel B, and are extended rearward a certain distance, for a purpose which will be hereafter explained. Within a slot in the timber of the keelson, at the top and bottom of the opening cut or formed therein, are inserted metallic projections D, which project into said opening a suitable distance, and, in connection with others, D', secured to the interior surface of the cylindrical casing C, form radial wings or vanes for interrupting the revolving current given to the water by the revolution of the screw, and direct it back in the wake of the vessel in line with its motion, where it is gently diffused into and with the water at rest. The wings or vanes D D', at their points of attachment nearest the screw, are nearly flush with the interior circle of the inclosing-case, and are gradually extended inwardly and radially until they more or less approach the center of said casing. The object of such a construction is that the water nearest the screw B is more violently agitated and whirled, and would exert a strong destructive force on the said vanes were they of uniform projection; but, as they are constructed, they are increasing in their action to interrupt the revolution of the water, while the latter is losing its force to injure them by wrenching or twisting them from their attachment to the casing. To the stern of the vessel the rudder E is attached, as usual, and the sides of the cylindrical casing are extended so as to project rearward and beyond it, so that the movement of the rudder in arc of the circle shall always be within the casing and against a positive body of water passing through said casing. This is a feature of my invention worthy of special mention, inasmuch as the speed of the vessel does not detract from the effectiveness of the rudder, while the dead water is comparatively lessened.

I will proceed to state the advantages of my improved construction of propelling apparatus, more particularly with reference to canal-boats,

where the wash of the banks and bottom of the canal has heretofore been an insuperable objection to their adoption. To remedy this objection is one of the features of my invention, while I avoid the loss of speed occasioned by a "slip" of the water (as termed) from the blades of the screw, which is known to be from ten to thirty per cent., according to the construction of the screw. In my invention the water, while the screw is acting upon it, is confined within the fixed cylindrical casing C; consequently there can be no slip, for the screw is acting against a positive body of water. The latter is forced rearward, and would make its egress from the casing violently agitated were it not for the radial vanes or wings D D'. Their action is such as to interrupt the whirling or revolution of the water, gradually increasing their power of action as the water recedes from the screw, and effecting its egress from the casing in a line with the motion of the vessel. This entirely avoids the wash of the banks or bottom of the canal, while, at the same time, the screw, acting within a fixed casing and against a positive body of water, propels the boat with a less expenditure of power and without the loss occasioned by the slip, as heretofore. I have referred to and described my invention as being specially applicable to canal-boats, but it is obvious that it may be applied to any description of steam-vessels. I also contemplate, as a feature of my invention, the slitting or perforating of the rear portion of the inclosing casing C, in connection with the radial wings or vanes, that the water may not only readily es-

cape at the rear of said casing, but at its sides after its revolution has been checked in the manner described.

Having described my invention, I claim—

1. The cylindrical casing C secured to the keelson of a vessel, and provided with interior interrupting wings or vanes D D', said wings or vanes being arranged radially therein, and having little or no projection at their forward points of attachment, but gradually increasing in such projection as they extend rearward, in combination with the propelling-screw B working therein, in the manner and for the purpose herein described.

2. The arrangement of the vanes D, forming part of the series of interrupting vanes or wings of the cylindrical casing within slots in the keelson, so that they are secured in position by the same bolts which secure the semi-cylindrical plates or sheets, thus strengthening the attachment of the parts, as herein described and shown.

3. The combination of the cylindrical casing C, having its sides elongated rearward, and provided with projections D', forming, with those D, secured to the keelson, as described, interrupting vanes or wings for altering the motion of the water in its exit from the casing, and the rudder E, the whole constructed, arranged, and operating as herein described and shown.

In testimony whereof I have hereunto signed my name.

CHARLES E. TRIPLER.

Witnesses:

H. H. YOUNG,

EDM. F. BROWN.