

(No Model.)

B. PALMER.
Mechanism for Propelling Vessels.

No. 234,607.

Patented Nov. 16, 1880.

Fig. 1.

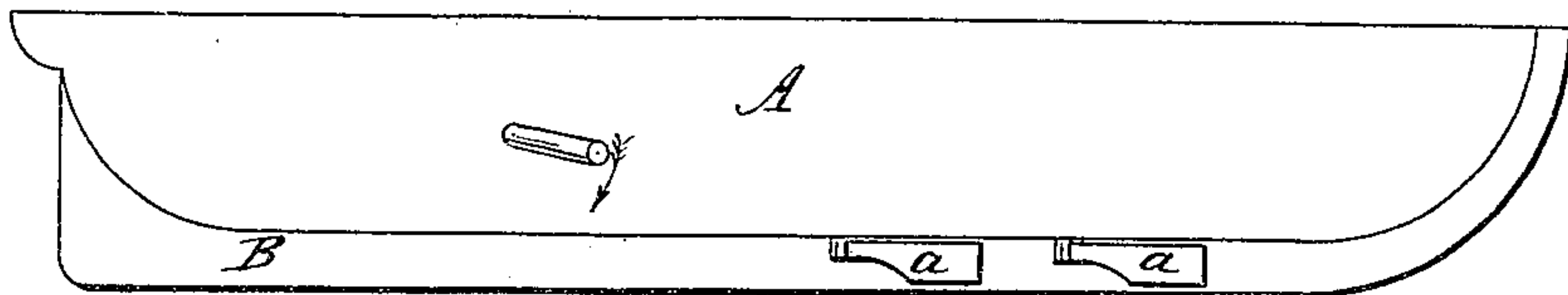


Fig. 2.

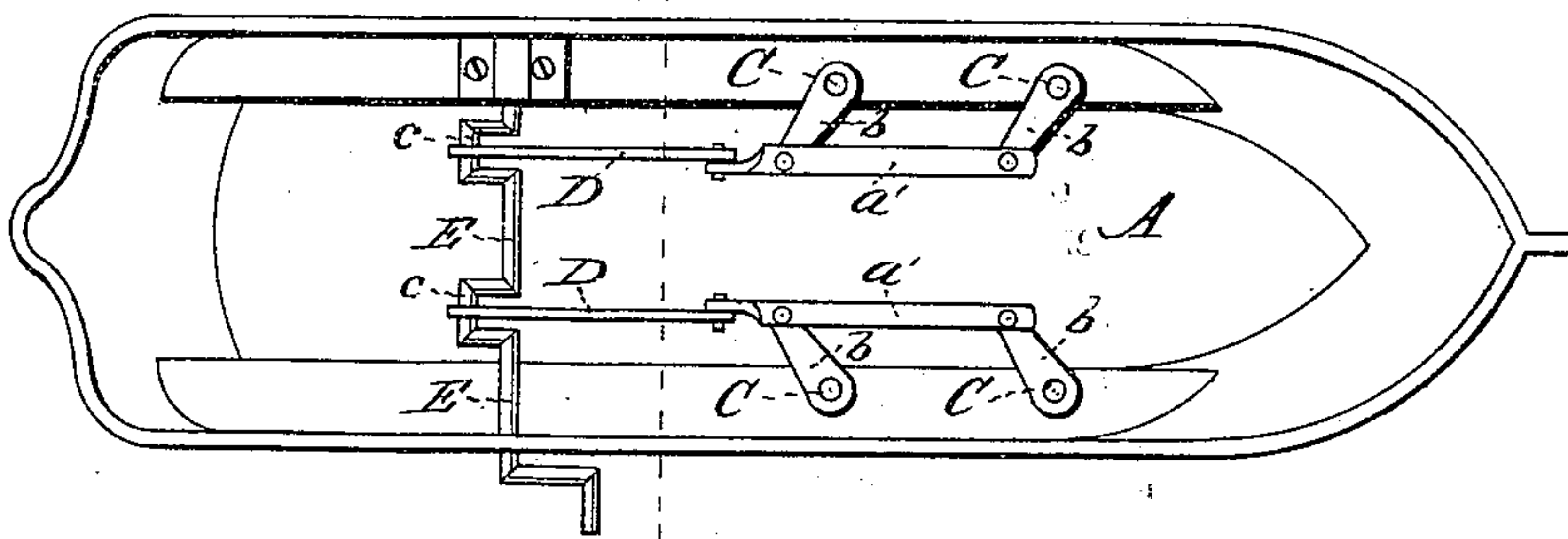


Fig. 3.

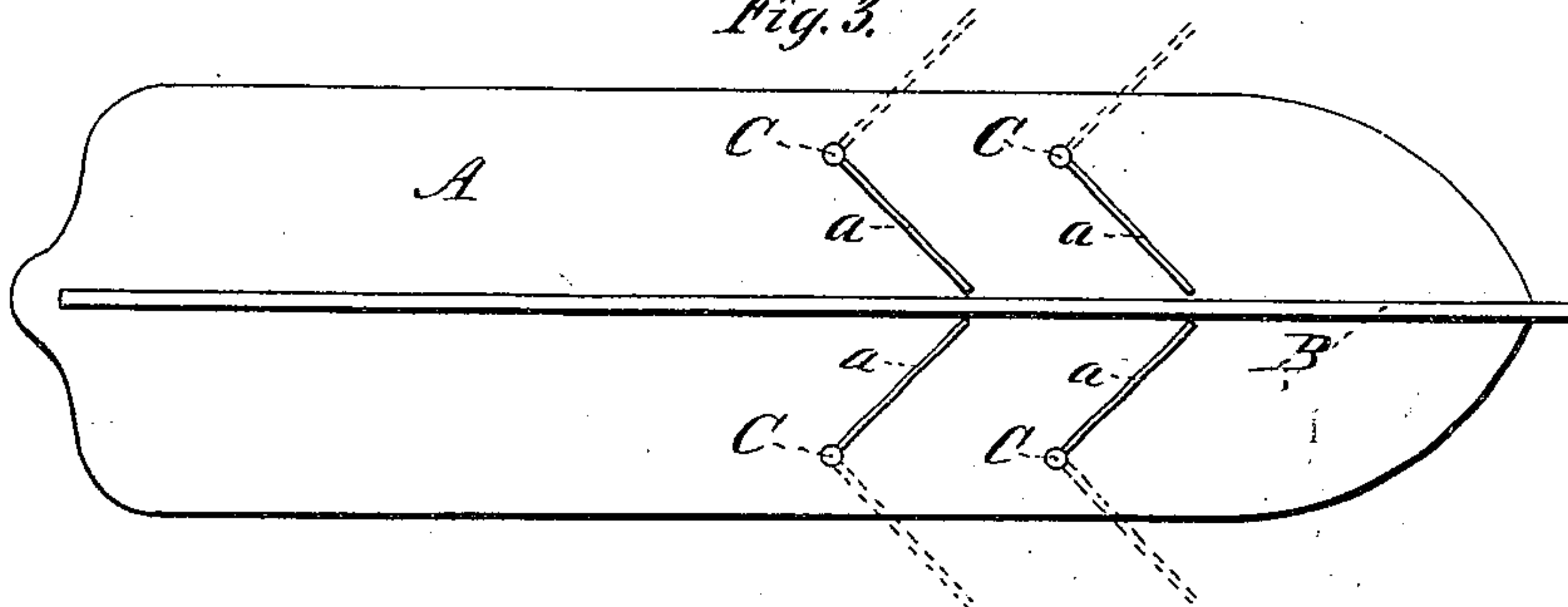


Fig. 4.

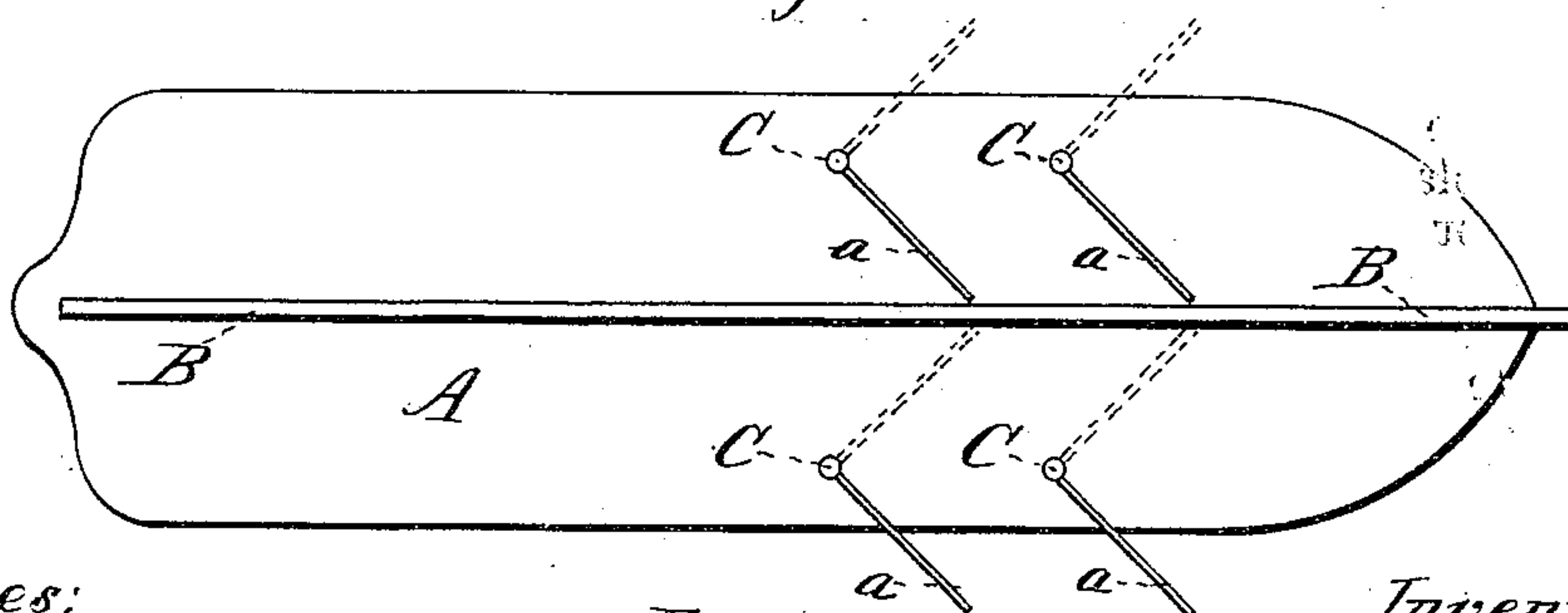
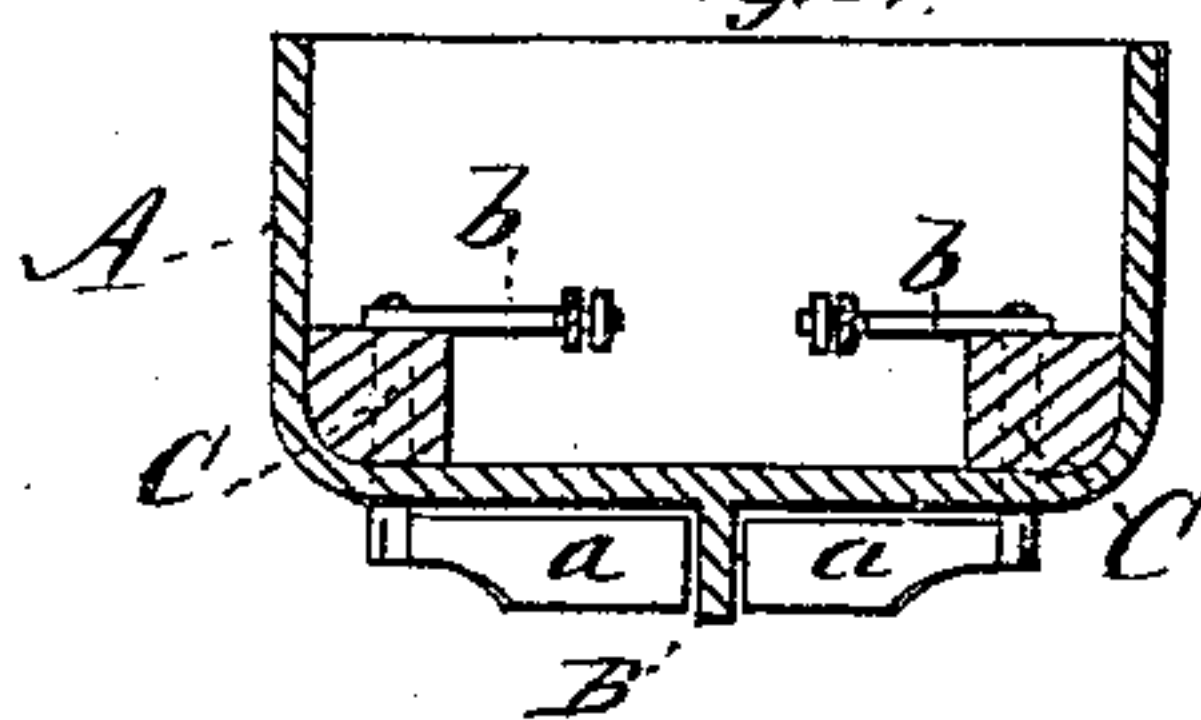


Fig. 5.



Witnesses:

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UNITED STATES PATENT OFFICE.

BENJAMIN PALMER, OF CHICAGO, ILLINOIS.

MECHANISM FOR PROPELLING VESSELS.

SPECIFICATION forming part of Letters Patent No. 234,607, dated November 16, 1880.

Application filed March 22, 1880. (No model.)

To all whom it may concern:

Be it known that I, BENJAMIN PALMER, of Chicago, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in Mechanism for Propelling Vessels, of which I hereby declare the following to be a full, clear, and exact description thereof, which will enable others skilled in the art to which it appertains to construct and operate the same, reference being had to the accompanying drawings, and to letters of reference marked thereon, which form a part of this specification.

Figure 1 is a side elevation of the hull of a vessel or boat embodying my improvement. Fig. 2 is a view, looking from above, of the interior of the hull, showing the arrangement of the propelling mechanism; Figs. 3 and 4, inverted or bottom views of the hull, showing the propeller-blades, and Fig. 5 a transverse section in the plane *x x*, Fig. 2.

The object of this invention is the construction of certain improved mechanism for the propulsion of vessels, and is designed to be operated in connection with steam or other motive power, the exact arrangement and construction of which will be hereinafter more fully explained in detail.

The nature of this invention consists in employing a series of propelling-blades, arranged underneath the hull of the vessel, having a vibratory action, and which move or oscillate in a transverse direction relative to the longitudinal position of the keel of the vessel. These propeller-blades may be made of any suitable metal, but preferably of steel, and possess a greater or less degree of flexibility, as practical working may require.

In referring to the drawings, A represents the hull of a vessel or boat, and B the keel. *a a a a* are a series of flexible propeller-blades, which are placed upon the bottom and stern of the vessel, and are located on both sides of the keel B, as shown in Figs. 3 and 4 of the drawings. These propelling-blades have a vibratory or oscillating motion and move in a horizontal plane.

The propelling-blades *a* are attached to the vertical shafts C, which extend from the exterior to the interior of the vessel. To the upper or inner ends of the vertical shafts C are attached the crank-arms *b b*, which in turn

are connected to the parallel guide-arms *a' a'*. The horizontal connecting-rods D D form the connection between the guide-arms *a' a'* and the crank-shaft E. This crank-shaft is provided with the double cranks *c c*, which, as shown in Fig. 2 of the drawings, are placed on the same side of the crank-shaft E, which causes the propelling-blades to move outward from both sides of the keel at the same time. I, however, do not strictly confine myself to any particular movement of the propeller-blades, but may so construct the operating mechanism as to produce an alternate action of the propellers—that is, when one of the blades is moving out from the keel the next blade adjacent to it on the same side of the keel will be moving inward, and so on through the series of blades employed; or the blades may be so arranged as to impart an alternate movement to the propeller-blades relative to the keel of the vessel—that is, when the series of propellers on the one side of the keel move outward therefrom the propellers on the opposite side of the keel are moving inward, as shown in Fig. 4 of the drawings.

I propose to employ any number of the propelling-blades that practical working may require, and usually locate them near the after part of the vessel.

I may employ gear-wheels to cap the vertical shafts C, instead of the crank-arms herein shown, or make use of any proper connecting mechanism that may be the most efficient in transmitting the power from the motor to the propelling-blades.

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

In mechanism for propelling vessels, the combination, with the hull A and keel B, of the series of flexible propeller-blades *a a*, arranged in regular order on the under side of the hull, on both sides of the keel, and vibrating in a horizontal plane relative thereto, and adapted to have either a regular or alternate action relative to the blade or blades placed opposite each other, substantially as herein shown and described.

BENJAMIN PALMER.

Witnesses:

LYMAN GUINNIP,
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