H. G. COOK & E. W. BARKER.

SCREW-PROPELLERS.

No. 170,937. Patented Dec. 14, 1875.

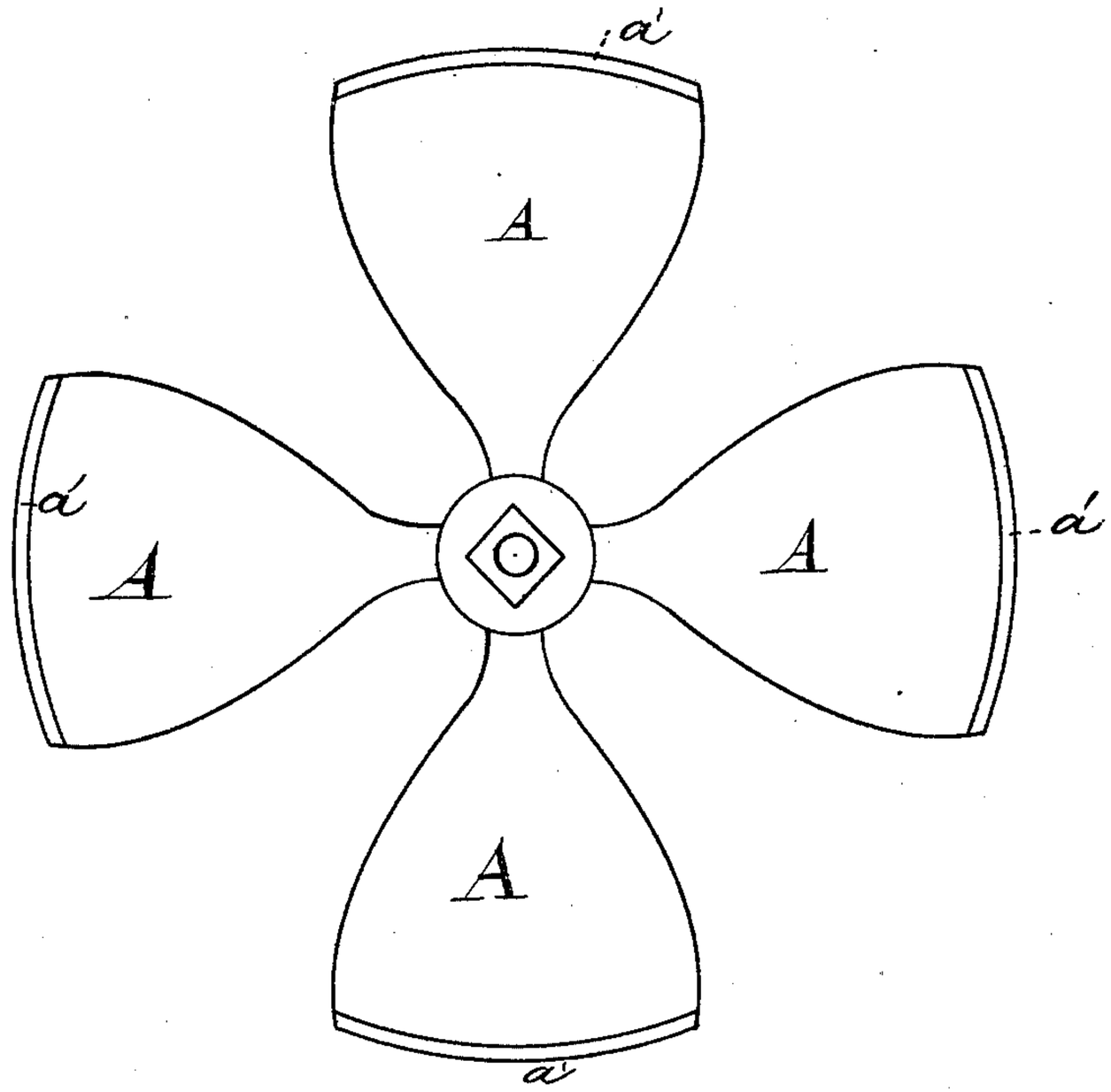


Fig. 1.

Fig 2

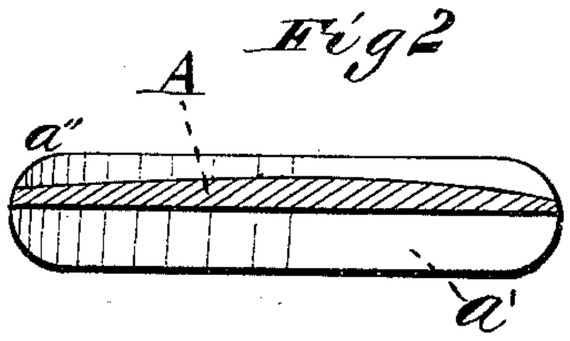


Fig. 3.

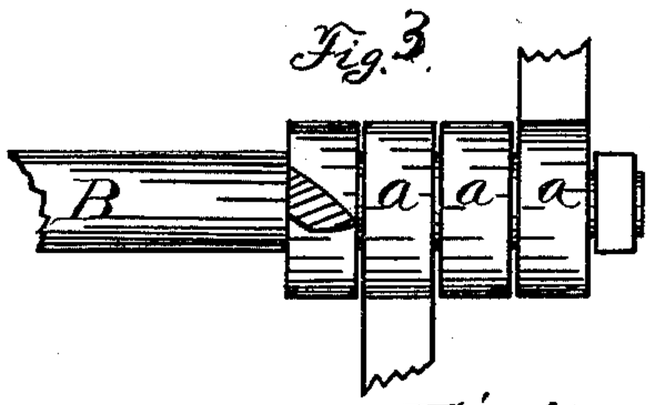
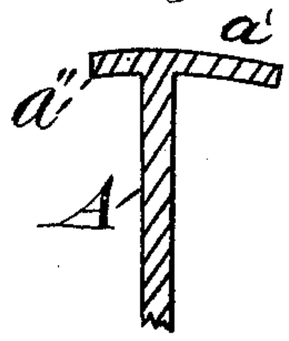


Fig 4



Witnesses:
Frank H. Jordan.
John L. Hussey

Inventors:-
Horatio G. Cook
Ezekiel W. Barker
per Wm. Henry Clifford
atty.

UNITED STATES PATENT OFFICE.

HORATIO G. COOK AND EZEKIEL W. BARKER, OF PORTLAND, MAINE.

IMPROVEMENT IN SCREW-PROPELLERS.

Specification forming part of Letters Patent No. **170,937**, dated December 14, 1875; application filed August 19, 1875.

To all whom it may concern:

Be it known that we, HORATIO G. COOK and EZEKIEL W. BARKER, both of Portland, in the county of Cumberland and State of Maine, have invented certain new and useful Improvements in Propeller-Wheels; and we do hereby declare that the following is a full, clear, and exact description thereof, which will enable others skilled in the art to which it pertains to make and use the same, reference being had to the accompanying drawings and to the letters of reference marked thereon, which form a part of this specification.

Figure 1 is a front view. Fig. 2 is a detail to show the flanges at the outer end of each blade. Fig. 3 is a detail view of the shaft, showing the arrangement of the blades. Fig. 4 is a detail view, showing the arrangement of the flange on the blades.

Same letters show like parts.

In the class of devices to which this invention belongs various methods of construction and arrangement have been used to render the blades more efficient in use, and to this end the several blades have sometimes been arranged one after or behind another on the propeller-shaft; or, in other cases, the ends of the blades have been provided with flanges on one side, or with angular flanges in the front and rear.

In our invention we have endeavored to perfect and utilize, by some essential changes in construction, both of these expedients in a single propeller; and to this end my said invention consists in such construction, combination, and arrangement of blades attached to individual sockets, and having at their outer ends flanges of uniform or nearly uniform width from end to end, projecting over the front and rear, that said blades shall be situated one behind the other, whereby a very efficient device is produced, all as will now be more specifically and in detail set out and explained.

The arrangement of the blades A is indicated in Fig. 2, where are shown the several sleeves or sockets *a*, fitting around the shaft B, and rigidly attached thereto, each of which sleeves carries one of the blades of the propeller. This disposition of the blades increases their propelling power. The arrangement of the flange is shown in Fig. 3 and Fig. 4, which are intended to show the flange a' a'', on the outer end of the blade, at nearly right angles to the plane of the same, and projecting more over the rear than the front face thereof.

When the wheel is in operation the effect of this flange is to hold the water and prevent it from flowing freely away from the blades. The water, being thus to an extent confined or held stationary, affords to the blades a more fixed substance upon which to act, and thus enables the blades to transmit an increased power or force to the shaft, and thus to impart more speed to the vessel from the same number and velocity of revolutions than they would do if the water were not thus held and confined. The smaller flange on the front of the blades aids in backing.

The arrangement of the blades upon the shaft and the flanges in combination greatly improves the power of the propeller, because the arrangement of the blades gives each one its own water, and enables the flanges to the same to act undisturbed by the action of the other blades.

Any number of blades may be employed, and any desired pitch or inclination given to the blades.

What we claim as our invention, and desire to secure by Letters Patent, is—

In the propeller-wheel herein described, the combination of blades A A, attached to the shaft one after the other, each upon its individual socket, and each having at its outer end flanges a' a'', of uniform or nearly uniform width from end to end, projecting front and rear, substantially as and for the purposes set forth.

In testimony that we claim the foregoing as our own we affix our signatures in presence of two witnesses.

H. G. COOK.
EZEKIEL W. BARKER.

Witnesses:
CHARLES E. CLIFFORD,
FRANK H. JORDAN.