

(Model.)

G. C. PARINI.
PROPELLER FOR NAVIGABLE VESSELS.

No. 553,131.

Patented Jan. 14, 1896.

Fig. 1.

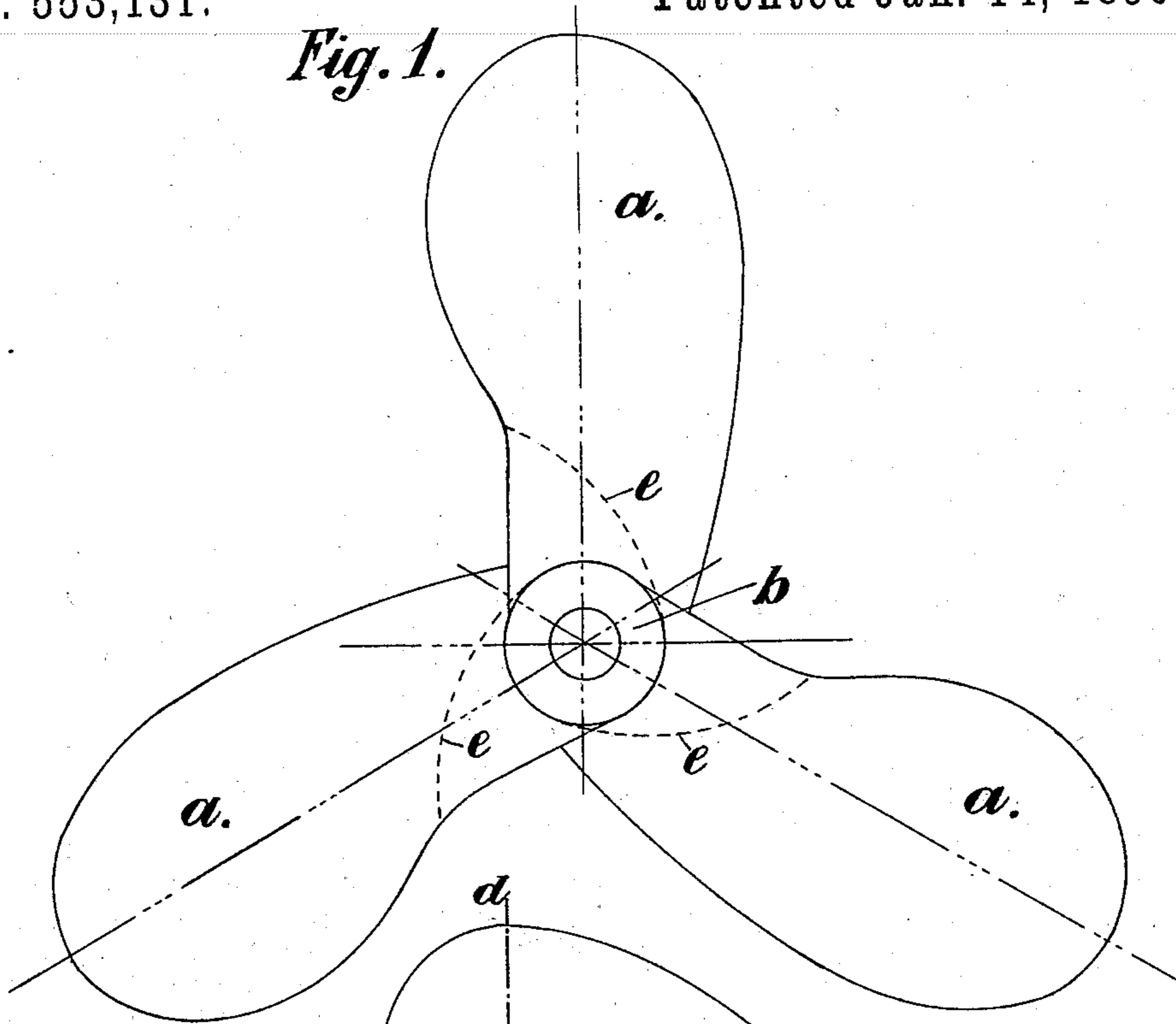
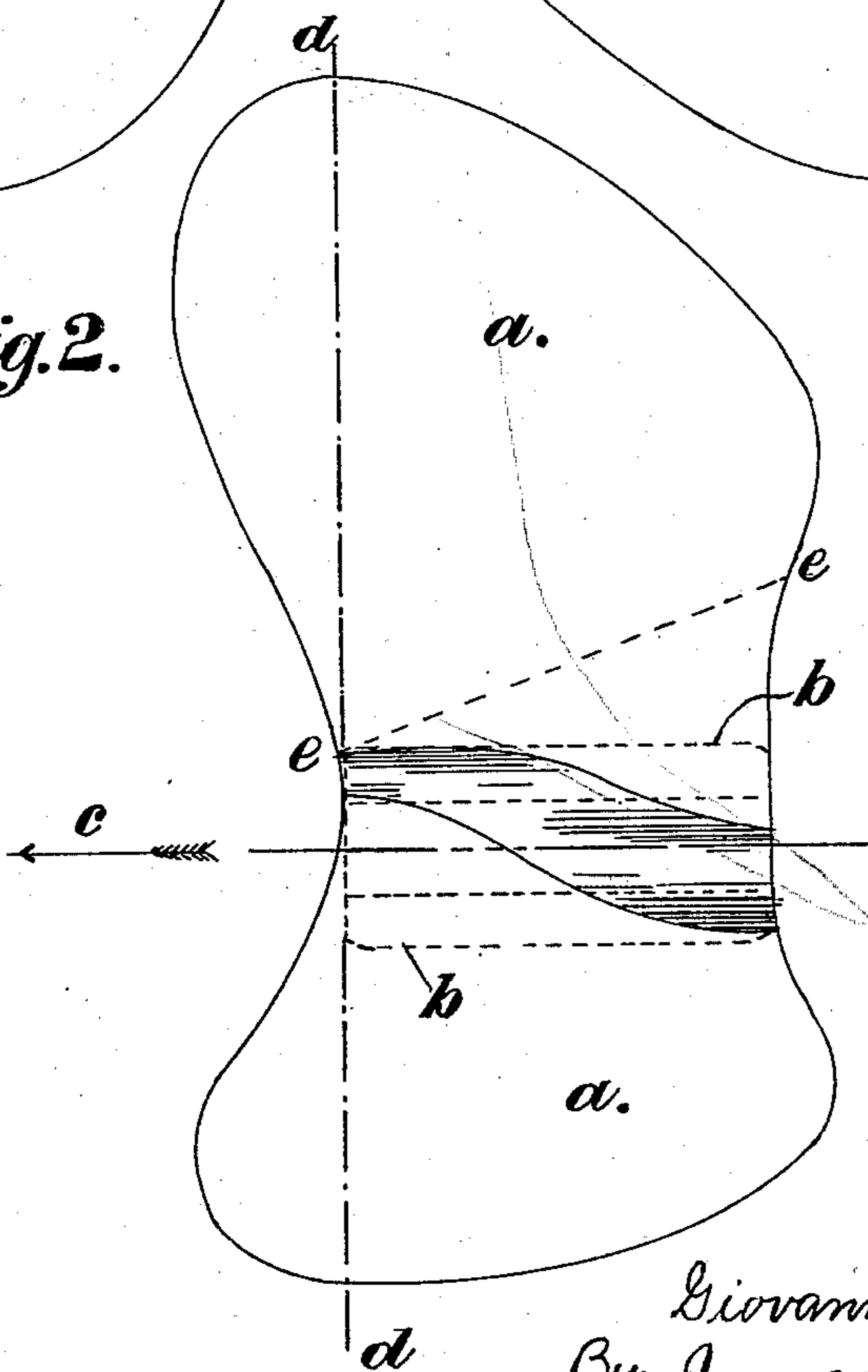


Fig. 2.



Witnesses.
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UNITED STATES PATENT OFFICE.

GIOVANNI COSTANTE PARINI, OF LIVERPOOL, ENGLAND.

PROPELLER FOR NAVIGABLE VESSELS.

SPECIFICATION forming part of Letters Patent No. 553,131, dated January 14, 1896.

Application filed June 4, 1894. Serial No. 513,468. (Model.) Patented in England May 5, 1891, No. 8,825.

To all whom it may concern:

Be it known that I, GIOVANNI COSTANTE PARINI, a subject of the Queen of Great Britain and Ireland, residing at Liverpool in the county of Lancaster, England, have invented new and useful Improvements in Propellers for Navigable Vessels, (for which I have obtained Letters Patent in Great Britain, No. 8,825, dated May 5, 1891,) of which the following is a specification.

This invention has for its chief object to so form, construct, or arrange the blades of ships' screw-propellers that their action on or in connection with the water shall be such as to produce useful propulsive effect in passing through it, and that the non-effective or non-propulsive work and the harmful or retrogressive action, such as commonly happens with propellers of ordinary kind—viz., the carrying round of water by and about the roots and lower parts of the blades of the propeller, and the resultant effect of the thrusting or pushing forward through the water of a large body of water in front of the propeller and the lifting or depressing of bodies of water up and down by the propeller when the vessel is pitching—shall be obviated, while the useful propulsive effect is the gripping of the blades of the water throughout its forward edge, the direct discharge of the water astern as solid or unbroken water and its general clean and efficient working in all directions.

According to this invention the blades, with the exception of triangular parts toward and at the root of the blades—that is, the parts within a line lying between the fore part of the blades at the boss and a point about one-third the length of the blade at the after or rear edge—are of any known suitable pitch or degree of inclination, but are of a special form or construction, the leading edges of the blades being carried forward and projecting beyond the boss and leaning toward the ship.

The propeller is illustrated in the annexed drawings, of which—

Figure 1 is a back end view, and Fig. 2 a side elevation.

Referring to the drawings, *a* generally designates the blades of the propeller, while *b* is the boss. The direction of the line of motion

along which the propeller travels when on the ship is that shown by the arrow *c*—that is, this arrow represents the direction of the ship to which the propeller is fitted through the water.

The forward or leading edges of the blades are, as stated above, carried or project forward of the front of the boss, the vertical plane in which the said front lies being illustrated by the dotted line *d d* in Fig. 2. Thus the portion of each of the blades to the left hand of this line is the portion which is carried or projects forward of the boss, the bulk of this portion being disposed nearer to the tips of the blades than to the boss.

The dotted line *e e* (shown in Fig. 2) is drawn at the part of the blades above and below which the form thereof is different—namely, the portion above it is of an ordinary pitch or inclination, while the triangular part below—i. e., between such lines and the boss—is of a less pitch than the upper part, it being arranged at about forty-five degrees to the axis of the propeller. By the latter portions the water at and about the boss is prevented from being carried round by the blades when rotating, as happens with ordinary propellers, and when the ship lifts and falls the resistance to the propeller in being forced through the water vertically up and down is diminished and the large amount of strain which exists with ordinary propellers is thus obviated. By this portion also the direct discharge of water astern is effected in a solid and unbroken manner.

By the formation of the leading edges of the propeller-blades, as described, the gripping of the blades with the water throughout its forward edge or part is increased.

The upper edges of the blades *a* are cut away or sloped downward from the front to the back, while the back edges of the blades are carried slightly aft.

From Fig. 1 it will be seen that from the back end of the propeller the two formations of blades described give it the appearance of an elbow or bend.

The formation and arrangement of the portion of the blades below the line *e e* provide for the root of the blades at the points of their connection with the boss being carried

round a suitable portion of the boss. By this construction of the propeller—that is, connection of the blades and boss—greater strength is afforded, and by this means the thickness of the blade at this part will be less than that of an ordinary propeller, and so the resistance offered to its passage through the water is diminished.

The triangular portion of the propeller-blade, arranged as hereinbefore described, prevents the carrying round or churning of the water at the boss, and at the same time it does not act as a drag on the ship, nor does it introduce any defective action. In practice the propeller-blade produces an improved efficiency in propelling effect, as has been ascertained by numerous tests.

What is claimed in respect of the herein-described invention is—

The herein described screw propeller consisting of a boss and a number of blades each of which, adjacent to said boss, is formed with a triangular section standing at one angle of pitch with respect to the axis of said boss, the outer face of the remaining part of each of said blades standing at a greater angle of pitch with respect to the axis of said boss, substantially as described.

In testimony whereof I hereunto affix my signature in presence of two witnesses.

GIOVANNI COSTANTE PARINI.

Witnesses:

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R. ALFRED HAMPSON.