G. CARDOSA.

PROPELLER FOR SHIPS.

APPLICATION FILED JAN. 21, 1911.

1,086,274. Patented Feb. 3, 1914.

Fig. 1

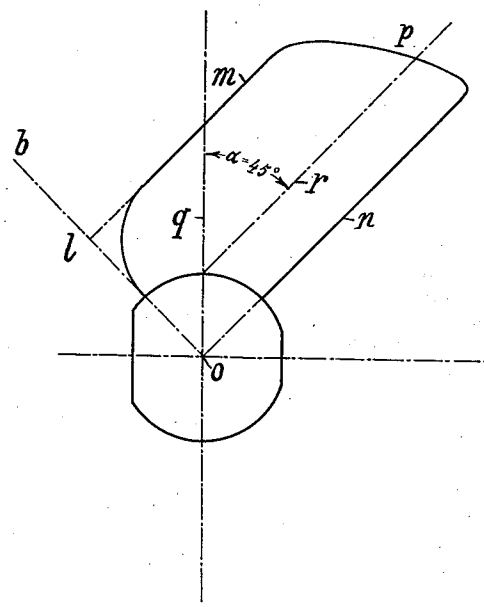


Fig. 2

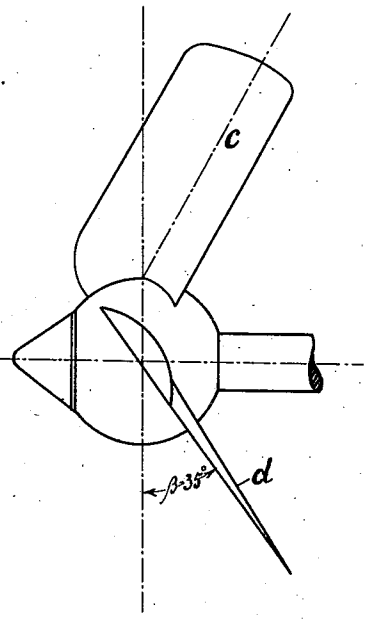
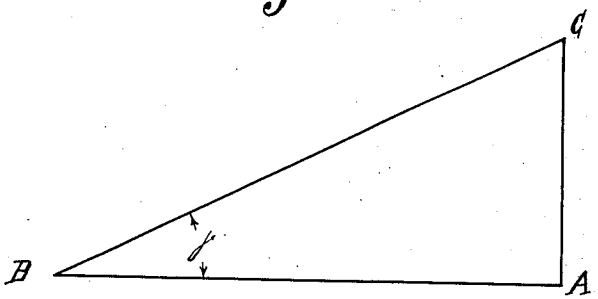


Fig. 3



Witnesses
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By Jno. Thurnie
Atty.

UNITED STATES PATENT OFFICE.

GIOVANNI CARDOSA, OF VENICE, ITALY, ASSIGNOR OF ONE-HALF TO NICOLO SPADA, OF VENICE, ITALY.

PROPELLER FOR SHIPS.

1,086,274. Specification of Letters Patent. Patented Feb. 3, 1914.

Application filed January 21, 1911. Serial No. 603,875.

To all whom it may concern:

Be it known that I, GIOVANNI CARDOSA, a subject of the King of Italy, and residing at S. Maria del Giglio, Venice, Italy, have invented certain new and useful Improvements in Propellers for Ships, of which the following is a specification, reference being had therein to the accompanying drawing.

The present invention relates to improvements in propellers for ships with flat blades which form with the axis of the propeller an angle of about 45° and whose parallel entrant and exit edges form an angle of 45° or close to 45° with the perpendicular line to the axis which passes through the plane of the blade.

The improvement which I have introduced in these propellers has for its object to construct an efficient propeller with the angle between the blades and the axis of the propeller other than 45°. According to this invention, this angle may be varied and may even exceed 80°, and its value is given geometrically by the angle which will be formed in the right angle triangle by the hypotenuse and a cathetus which is equal to the theoretical advance of the propeller, the other cathetus of this triangle being equal to twice the diameter of the said propeller.

A propeller constructed according to the present invention may be used also with motors of great power and with a relatively large number of revolutions. It is well known that when the number of revolutions of a motor with a given power is increased, the theoretical advance of the respective propeller must be diminished. If thus a ship is to be driven by a motor with large power and a large speed of rotation, this new propeller may advantageously be employed, also in those cases in which with an ordinary helix its theoretical advance must be necessarily so small that it could not give the required effect. If, on the other hand, in these cases a propeller were employed in which the angle between the blades and the axis of the propeller is 45°, it would be necessary, in order to obtain the required small theoretical advance, to vary the diameter of the propeller and therefore, to diminish the power employed, as the angle between the blades and the axis of the propeller may not be altered.

The improved propeller is shown in the accompanying drawings in which:

Figure 1 represents a blade whose plane is parallel to the plane of the paper, Fig. 2 is a projection of the blade and Fig. 3 shows diagrammatically the geometrical construction of the angle between the blade and the axis of the propeller.

c and *d* are two blades which have two sides *m* and *n* parallel to each other and an extremity *p*, preferably curved.

B is the angle between the blades and the axis of the propeller and may have any value up to and even exceeding 80°. It is formed by the hypotenuse C B and the cathetus C A of a right angle triangle, said cathetus being equal to the theoretical advance of the propeller, while the other cathetus is equal to twice the diameter of the propeller.

What I claim is:

A propeller for ships with flat blades whose parallel entrant and exit edges form an angle of 45° or close to 45° with the perpendicular line to the axis which passes through the plane of the blade, and in which the blades form with the axis of the propeller an angle of up to or exceeding 80°, this angle being given geometrically by the angle formed in a right angle triangle by the hypotenuse and a cathetus equal to the theoretical advance of the propeller, the second cathetus of this triangle being equal to twice the diameter of the said propeller.

In witness whereof I, said GIOVANNI CARDOSA, have signed this specification at Rome in the Kingdom of Italy this 7th day of January, 1911.

GIOVANNI CARDOSA.

In the presence of two witnesses:

LOSBORUTI FRANCESIO,

VALENTI ARMANOLO.