No. 890,973. PATENTED JUNE 16, 1908.

P. FILIPPI.

SHIP'S PROPELLER.

APPLICATION FILED MAY 23, 1904.

2 SHEETS—SHEET 1.

Fig. 3

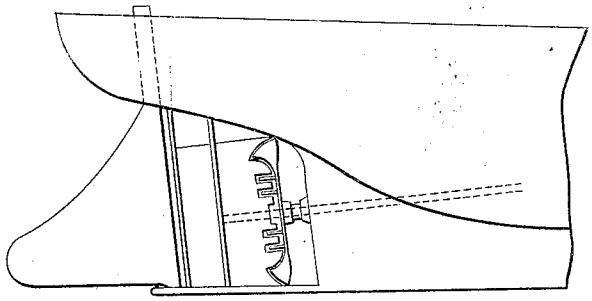


Fig. 2

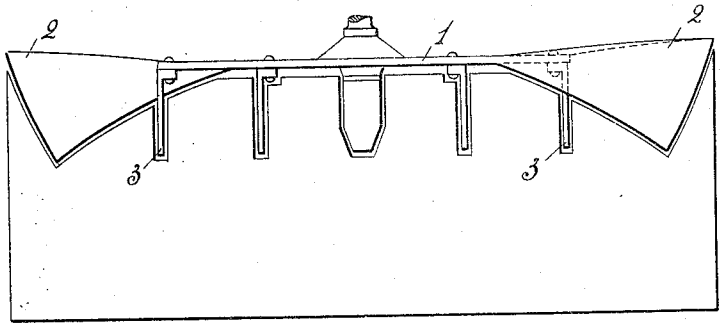
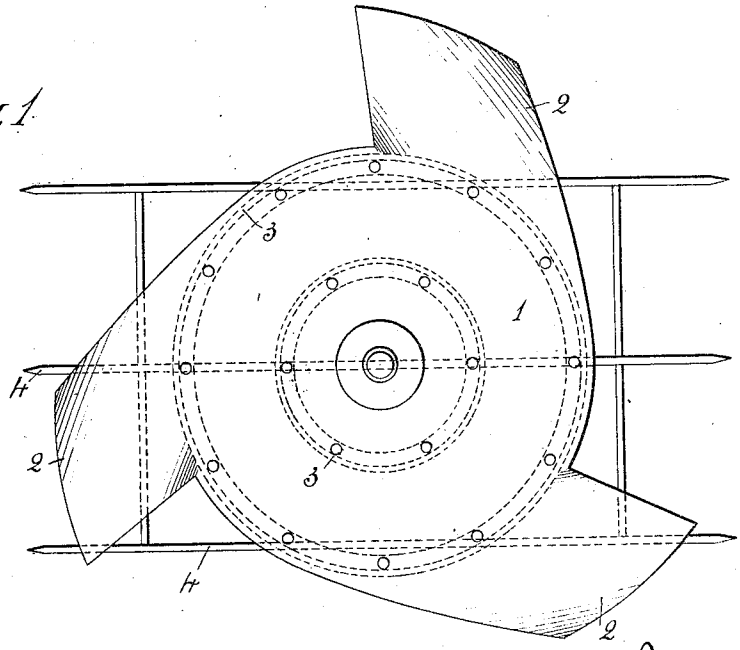


Fig. 1



Witnesses:-
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2 SHEETS—SHEET 2.

Fig. 5

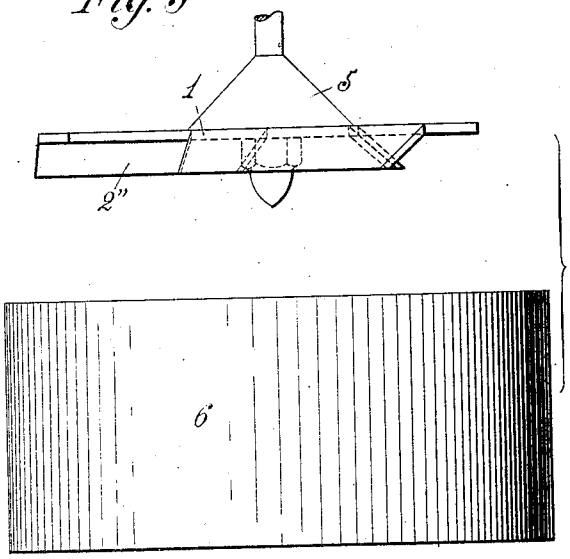


Fig. 6

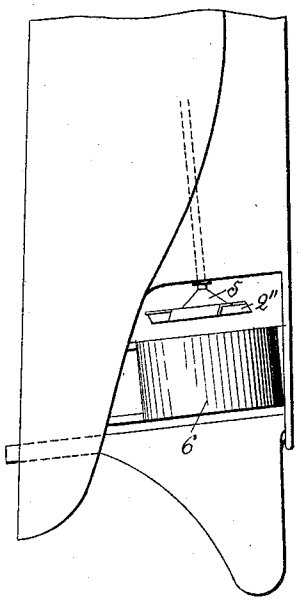
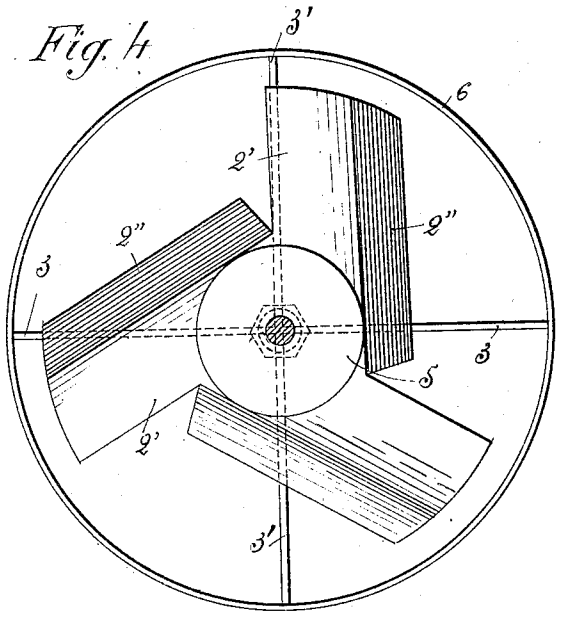


Fig. 4



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UNITED STATES PATENT OFFICE.

PADONE FILIPPI, OF PARIS, FRANCE.

SHIP'S PROPELLER.

No. 890,973. Specification of Letters Patent. Patented June 16, 1908.

Application filed May 23, 1904. Serial No. 209,367.

To all whom it may concern:

Be it known that I, PADONE FILIPPI, of the city of Paris, in the Republic of France, 5 Rue du Cambodge, have invented new and useful Improvements in Ships' Propellers, which are fully set forth in the following specification.

In ordinary ships' propellers of the screw-propeller type that part of the arms of the screw which is situated next the root namely, near the junction with the shaft, constitutes by reason of its thickness a useless and even injurious part of the propeller. It merely churns up the water and sends it towards the periphery.

Now in the improved propeller which forms the subject of the present invention this injurious part is done away with by the fact that the arms of the propeller take their rise from a full centerpiece that constitutes a plane surface perpendicular to the axis of rotation and does not present any impact surface whatever to the action of the water. On the other hand, the special form of the blades hereinafter described utilizes in the propulsion of the ship the centrifugal force of the water which it has acquired from the rotation of the centerpiece.

The propeller comprises further two new parts which are designed to suppress the eddies and vortexes which are produced on the rear portion in the ordinary screw propellers.

The accompanying drawings show two forms of the improved propeller.

Figure 1 is front elevation of the propeller, Fig. 2 is a side elevation thereof, and Fig. 3 is a general view showing the stern part of a ship provided with the improved propeller. Figs. 4, 5, and 6 are similar views showing a modification.

In the improved propeller, 1 is a kind of disk of metal constituting the centerpiece of the propeller and provided at its periphery with three blades 2 of special shape the backs of which project beyond the front or advancing surface of the centerpiece. This projecting of the backs of the blades 2 has the effect to cause the propeller in operation to catch up so to speak with the water arriving at the center of the forward surface so as to take a bearing upon said water. The relatively slight centrifugal force which is produced by the friction of the forward face upon the liquid thus helps to increase the efficiency by concentrating or accumulating the resistance of the water upon those portions of the propeller where this resistance is utilized in the most favorable manner.

Upon the rear face of the center piece there are bolted two or more plates 3, preferably in the form of concentric cylinders or they may assume the form of truncated cones having for object to prevent the water from flowing to the circumference and thus from hindering the action of the blades. It will thus be seen that the centrifugal action, which was allowed to develop upon the advancing face, is now counteracted upon the rear face. Three or more vertical plates 4 are fixed against the hull of the ship and are cut out according to the profile of the blades and of the cylinders or cones; they aid in preventing the water from forming eddies and opposing a greater resistance to the blades.

In the modification shown in Figs. 4, 5 and 6, the blades of the propeller are constituted by the combination of two plane surfaces 2^{I}, 2^{II}, the surface 2^{I} being merely the prolongation of the solid center piece, while the surface 2^{II} incloses a greater or smaller angle with it. All helicoidal surface is thereby caused to disappear. By reason of this arrangement the propelling surface is increased and the resistance of the water is diminished because the part 2^{I} prevents the water, that is struck by the propelling surface 2^{II}, from passing to the front of the propeller as is the case with the ordinary screw propeller.

Behind the propeller there is arranged and fixed in any suitable way to the hull or to the stern post, a drum or ring 6 carrying partitions 3, 3^{I}, which are perpendicular to each other and are adapted to fulfil the function of the vertical blades 4 shown in Figs. 1, 2 and 3. Like the said blades 4, the partitions 3, 3^{I}, destroy the effect of the centrifugal force at the rear of the propeller and by consequently preventing the water from revolving in the direction of the rotation of said propeller, they increase the resistance of this water to the action of the propelling parts 2^{II}, and thus increase the efficiency of the propeller. Finally, on the forward face of a propeller there is fixed a cone 5 which covers only the solid part 1 of the propeller in such a manner as to diminish the resistance to advancing motion, while facilitating the flow of the water from the forward face to the rear face of the propeller.

What I claim is:—

1. In a screw propeller, a broad flat circular disk constituting the central portion of the propeller, and a plurality of blades extending outward from the periphery of said central disk, the forward edge of each of said blades being substantially on a prolonged radius of the disk and the rear edge of each blade conforming approximately to a tangent of said disk, each of said blades having a rearwardly turned face whereby the water thrown outward by centrifugal force from the central portion of the propeller is received upon the face of the blades and the formation of vortexes at the rear of the propeller is prevented.

2. A propeller composed of a plane middle portion, propeller arms or blades projecting therefrom, and annuli attached to the rear face of said plane middle portion.

3. A propeller composed of a plane middle portion, and propeller arms and blades projecting therefrom, said arms comprising radial extensions with resistance pieces attached thereto.

In testimony whereof I have signed this specification in the presence of two subscribing witnesses.

PADONE FILIPPI.

Witnesses:

HENRI H. MORTEL,

HANSON C. COXE.