(No Model.)

M. O. MILTZLAFF.

SCREW PROPELLER.

No. 515,479. Patented Feb. 27, 1894.

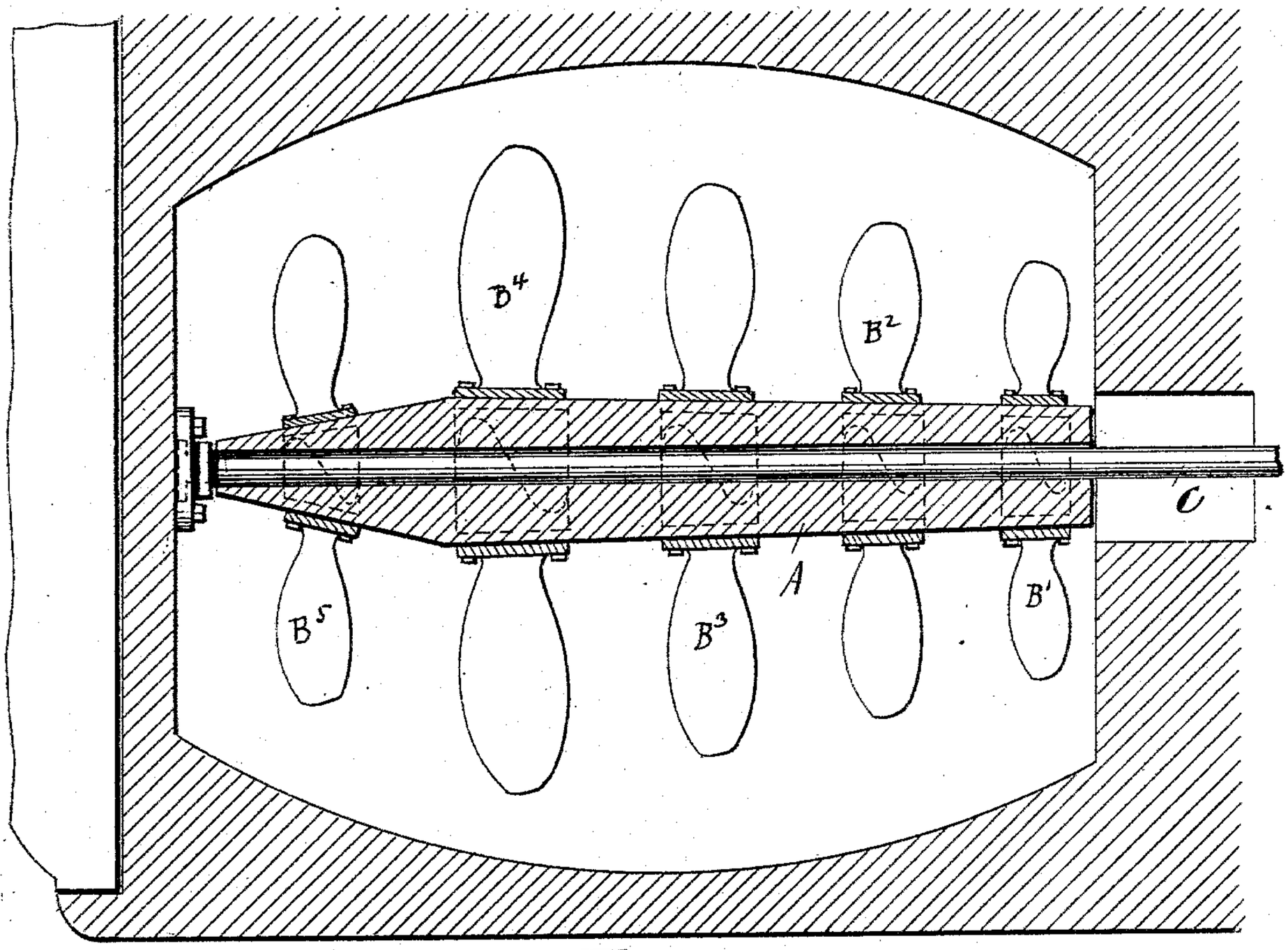

Fig: 1.

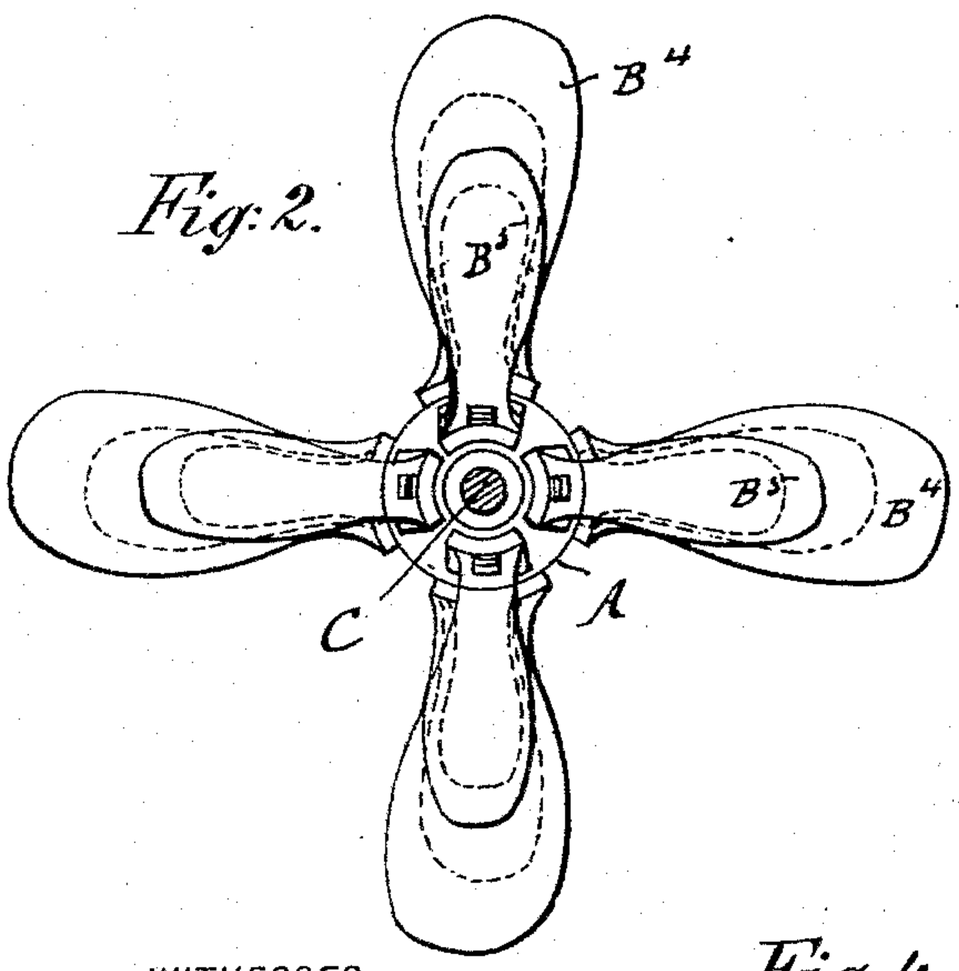

Fig: 2.

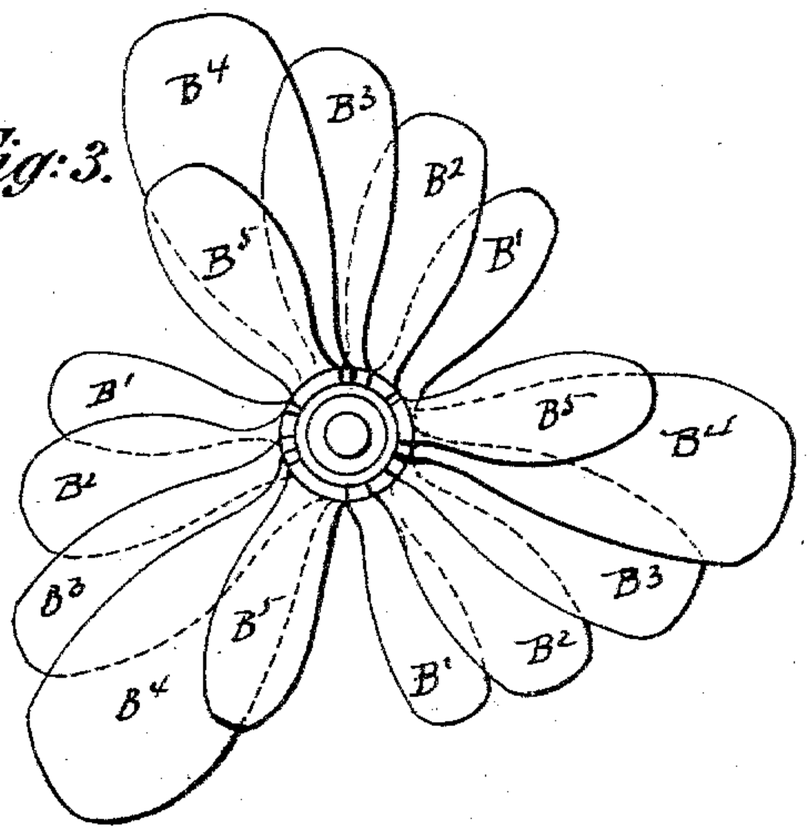

Fig: 3.

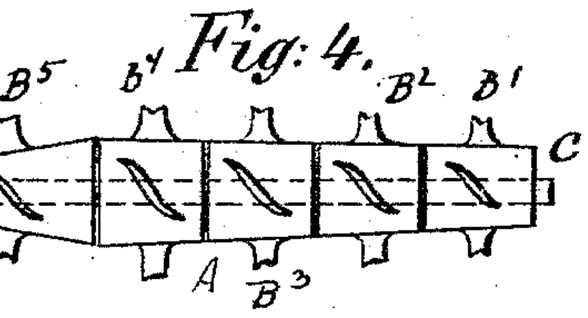

Fig: 4.

WITNESSES:

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MAX O. MILTZLAFF, OF EGGESIN, GERMANY.

SCREW-PROPELLER.

SPECIFICATION forming part of Letters Patent No. 515,479, dated February 27, 1894.

Application filed March 8, 1893. Serial No. 465,111. (No model.)

To all whom it may concern:

Be it known that I, MAX O. MILTZLAFF, a subject of the Emperor of Germany, and a resident of Eggesin, Germany, have invented certain new and useful Improvements in Screw-Propellers, of which the following is a specification.

This invention relates to improvements in screw-propellers; and the object of my invention is to provide a new and improved screw-propeller, which gives greater effectiveness, does not thump, and which operates advantageously both in a quiet and in a heavy pitching sea.

The invention consists of a hub and a series of blades secured thereon, the lengths of the several blades increasing from the front of the propeller to a point near the rear end, and then again decreasing toward the rear.

The invention also consists in the construction and combination of parts and details which will be fully described hereinafter and finally pointed out in the claim.

In the accompanying drawings, Figure 1 is a longitudinal sectional view of my improved ship's propeller. Fig. 2 is a rear view of the same. Fig. 3 is a similar view of a propeller having sets of three blades arranged in a different manner, and Fig. 4 is a longitudinal sectional view, showing a modification of the hubs.

Similar letters of reference indicate corresponding parts.

The propeller is constructed with a hub A increasing in diameter from the front end to a point about one quarter of the length of the hub from the rear end, from which point the diameter of the hub again decreases toward the rear end. On said hub a series of sets of propeller blades B' B^2 B^3 B^4 B^5 of any approved shape are bolted, the lengths of the blades increasing from the front to the point of greatest diameter of the hub and the last series again having less length, as shown. Each series forms a propeller in itself, but all are fixed on the same propeller shaft C and rotate together.

As the propeller is tapered toward the rear end, the water can run off very rapidly and the great suction at the rear end of the screw caused by the water is completely avoided. As the pressure on the screw is distributed over a greater surface the individual blades can be made lighter.

In a heavy, rolling and pitching sea the long blades of the propellers frequently leave the water and when they again strike they exert an undue strain on the shaft, (causing a breaking of the same) and also momentarily an undue speed of the engine, even if a governor is used. This also causes a great loss of power and produces the disagreeable thumping of the propeller.

With my improved propeller the smaller blades always remain immersed and at all times offer sufficient resistance to prevent an undue speed of the engine, and thus prevent the longer blades from striking the water with such force as to cause breakage or mending of the shaft or breaking of the blades.

As shown in Fig. 3, the blades need not necessarily be in line lengthwise but can be each displaced slightly laterally, so that the screw does not strike so heavily. As shown in Fig. 4, the hub can be made of several sections, as well as of a continuous piece.

My improved propeller can be placed lower than the ordinary propeller, as it has considerably less diameter.

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

A screw propeller, composed of a hub increasing in diameter from the front end to a point about a quarter of the length of the hub from the rear end, a series of blades secured on said hub, the length of the blades increasing from the front of the hub to the greatest diameter of the same and then decreasing toward the rear, substantially as set forth.

In testimony that I claim the foregoing as my invention I have signed my name in presence of two subscribing witnesses.

MAX O. MILTZLAFF.

Witnesses:

A. HARRASSOWITZ,

G. R. MEYER.