

G. A. OGRISSEK.
PROPELLER.

APPLICATION FILED JULY 23, 1919.

Patented Aug. 1, 1922.

1,424,672.

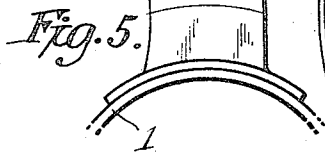
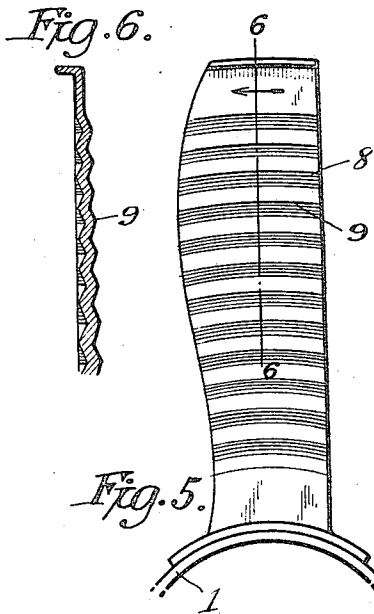
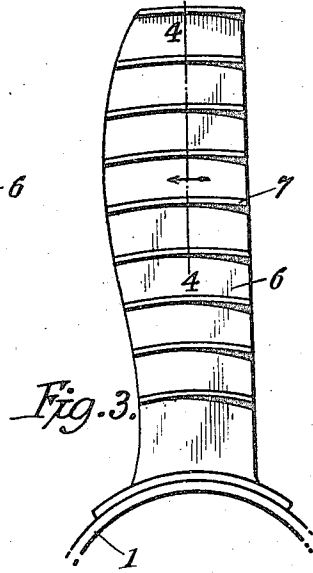
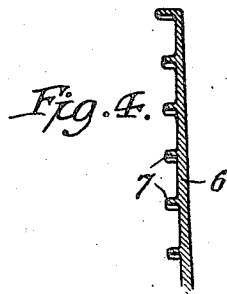
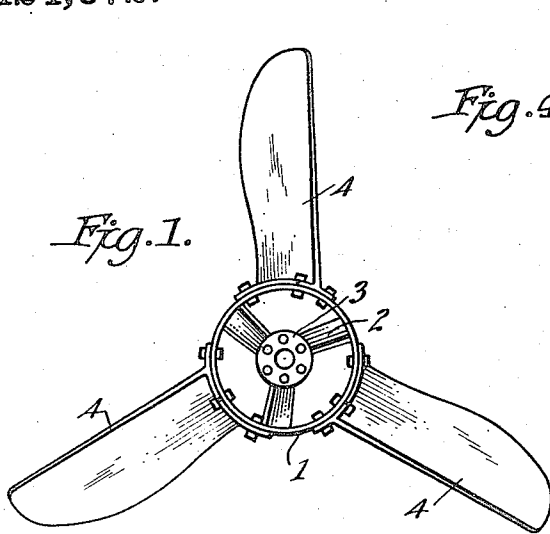
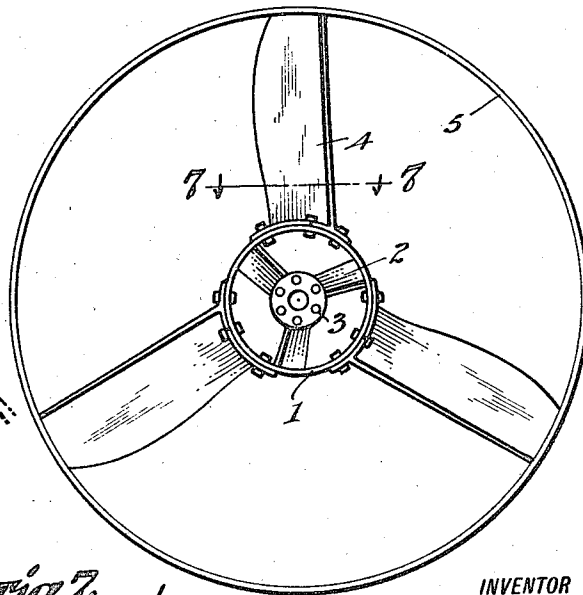
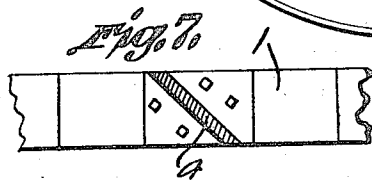


Fig. 2.



WITNESSES
A. R. Appelman
A. L. Kitchen.



INVENTOR
George A. Ogrissek
BY Mumm & Co
ATTORNEYS

UNITED STATES PATENT OFFICE.

GEORGE A. OGRISSEK, OF JERSEY CITY, NEW JERSEY.

PROPELLER.

1,424,672.

Specification of Letters Patent. Patented Aug. 1, 1922.

Application filed July 23, 1919. Serial No. 312,656.

To all whom it may concern:

Be it known that I, GEORGE A. OGRISSEK, a citizen of the United States, and a resident of Jersey City, in the county of Hudson and State of New Jersey, have invented a new and useful Propeller, of which the following is a full, clear, and exact description.

This invention relates to propellers and has for an object the provision of an improved construction wherein efficient results are secured either in the air or in water.

Another object of the invention is to provide a propeller in which the blade has a gradual change of angle of pitch throughout its length whereby an even pull or push is produced.

A further object of the invention is to provide a construction in which vibration is eliminated by reason of the angle of incidence and the arrangement of their inner and outer rims, or both inner and outer rims assuring the correct position of the respective blades.

An additional object is to provide a propeller in which the blades may be formed somewhat corrugated or ribbed for engaging in a better manner the air or water as the propeller is rotated.

In the accompanying drawings:

Figure 1 is an elevation of a propeller disclosing an embodiment of the invention.

Figure 2 is a view similar to Figure 1, but showing an outer rim connected to the outer ends of the respective propeller blades.

Figure 3 is a fragmentary side view of one of the propeller blades showing a ribbed construction, embodying certain features of the invention.

Figure 4 is a fragmentary sectional view through Figure 3 on line 4—4.

Figure 5 is a view similar to Figure 3, but showing a slightly modified construction involving the corrugation of part of the blade.

Figure 6 is a fragmentary sectional view through Figure 5 on line 6—6.

Fig. 7 is a fragmentary view indicating a cross section of the blade 4 through Fig. 2, line 7—7.

Referring to the accompanying drawing by numerals, 1 indicates a ring which may be of any desired size to which the outer ends of the inner blades 2 are secured in any suitable manner. The inner ends of blades 2 are secured to a suitable hub 3 which may

be arranged to be secured to the shaft of a ship or to the shaft of an engine used on an airship. Secured to the ring 1 by bolts, or otherwise, are a plurality of outer blades 4, said blades being preferably arranged to extend radially from a point substantially half way between the respective blades 2. It will be observed that all of these blades are twisted uniformly from one end to the other so as to give an even pull without vibration. It will be noted that the angle of incidence adjacent the hub is greater than at the outer or tip end of the blades because of the difference in speed between the inner and outer ends of the blade. To more thoroughly realize or secure the effect of no vibration or little vibration an outer rim or band 5 may be secured to the blades 4 as shown in Figure 2, so that there will be an inner and outer rim, said rims being of a width equal to the blades. The outer rim 5 also acts as means for preventing any one from being accidentally struck by the blades 4 as well as acts as means for preventing any article from entering the blade space laterally.

When the propeller is being used the water or air, as the case may be, is engaged at the front of the blade and forced rearwardly so as to give a maximum push instead of causing an agitation of the water and forcing the same laterally or substantially radially of the blades.

In Figures 3 and 4 a slightly modified form of the invention is shown which is intended to augment, and in different ways, assist the blades 4 in giving a thrust. The blade 6 shown in Figure 3 is constructed substantially as blade 4 shown in Figure 1, except that a plurality of outstanding beads or webs are provided, said webs being arc-shaped, the center of the arc being the center of the propeller. This arrangement retains the air or water against the blade surface so that it must pass from the front to the rear of the blade surface instead of passing in a radial direction whereby the maximum pulling or pushing effect is secured.

In Figures 5 and 6 a slightly modified structure to that shown in Figure 3 is presented wherein the blade 8 is provided with a number of corrugations or raised portions 9, said corrugations being concentric with the rim 1. The action here is similar to that of the structure shown in Figure 4 as it causes the water or air engaging the blade

to follow the curve of the corrugations 9 and thereby permits the propeller to act against the water or air for producing the thrust desired.

5 The inner blades 2, as shown in Figures 1 and 2, are the same width throughout and are formed flat, but set at an angle so as to act on a maximum volume of water, or air. The outer blades 4 are likewise flat, 10 though the rear edge of the blades is preferably somewhat rounded to allow the air or water to slip off easily. In constructing the propeller the outer blades and inner blades also are made of wood, though they may be 15 formed of metal without departing from the spirit of the invention. Preferably the rings 1 and 5 are metal so as to secure the proper strength without presenting an objectionably thick construction. It will also 20 be noted that the outer blades are bolted or otherwise removably secured to the inner ring 1 so that in case any of the outer blades should become broken or injured that particular blade may be removed and a new one 25 substituted quickly and easily. The blades 4 are preferably bolted rigidly in place at the desired angle, though if preferred the openings in the rim 1 may be elongated so as to vary the angle of incidence if desired. 30 What I claim is:

1. A propeller comprising a hub, an inner series of radiating flat blades substantially the same width throughout extending from 35 said hub, a ring secured to the outer ends of said blades, and an outer series of flat blades extending radially from said ring, said last mentioned blades having straight forward edges and convexly curved rear edges, said curved edges approaching said 40 straight edges toward the outer ends thereof.

2. A propeller comprising a hub, an inner series of radiating flat blades substantially the same width throughout extending from 45 said hub, a ring secured to the outer ends of said blades, and an outer series of flat blades extending radially from said ring equidistantly between the inner series of blades,

said outer series of blades having flanges secured to the ring, and an outer rim connecting the outer series of blades and the ex- 50 tremities thereof, said ring and rim being of a width equal to the width of the blades, said last mentioned blades having straight forward edges and convexly curved rear edges, said curved edges approaching said 55 straight edges from a medial point to the outer ends thereof.

3. A propeller comprising a hub, an inner series of radiating flat blades substantially the same width throughout extending from 60 said hub, a ring secured to the outer ends of said blades, and an outer series of flat blades extending radially from said ring, said outer blades tapering toward their outer ends and being of less pitch at their outer ends than 65 at their inner ends to avoid vibration, said last mentioned blades having straight forward edges and curved rear edges, said rear edges being concaved at their inner portions and convex at their outer portions and the 70 blades being tapered slightly toward their free ends.

4. A propeller comprising a hub, an inner series of radiating flat blades substantially the same width throughout extending from 75 said hub, a ring secured to the outer ends of said blades, and an outer series of flat blades extending radially from said ring, said outer blades being of less width at their outer 80 ends than at their inner ends, said last mentioned blades having straight forward edges and curved rear edges, said rear edges being concaved at their inner portions and convex at their outer portions and the blades being tapered slightly toward their free ends, said 85 edges being of compound curvature, and said outer blades being corrugated so as to present passageways extending from the front edge to the rear edge of the respective blades and concentric with the center of the 90 propeller, substantially as and for the purposes specified.

GEORGE A. OGRISSEK.