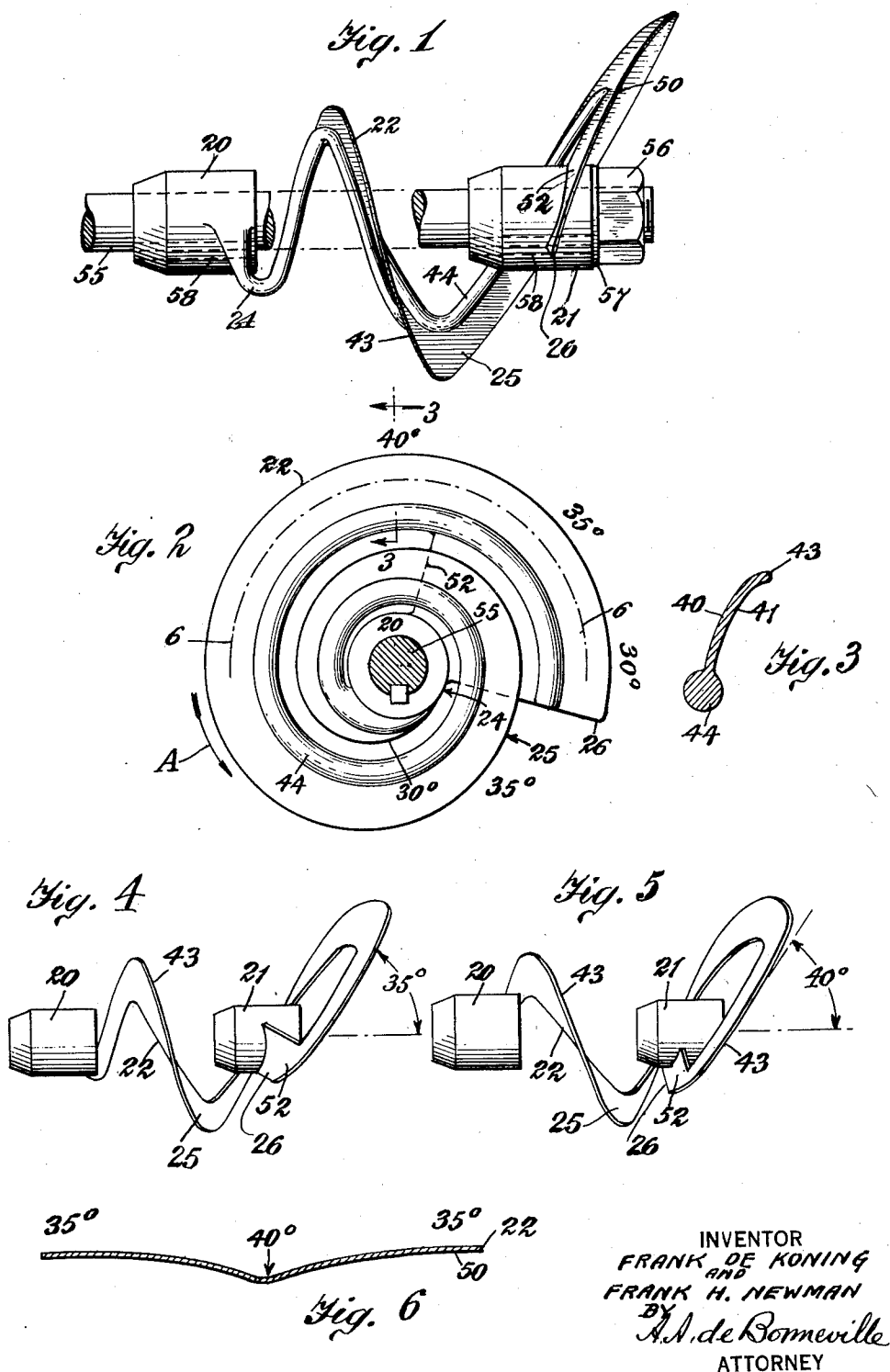


June 5, 1934.

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CONICAL SPIRAL SCREW PROPELLER

1,961,415

Filed Oct. 8, 1932



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1,961,415

CONICAL SPIRAL SCREW PROPELLER

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Application October 8, 1932, Serial No. 636,872

3 Claims. (Cl. 170—156)

This invention relates to a conical spiral screw propeller.

The object of the invention is the production of a conical spiral screw propeller, in which the 5 portion of the blade for one revolution thereof is laterally spaced from the adjacent revolution, by which the different revolutions of the propeller blade operate in independent zones of the air or fluid in which the propeller operates.

10 The second object of the invention is the production of a conical spiral screw propeller, having a varying pitch, in opposite directions.

The third object of the invention is the production of a propeller that has integral therewith 15 a loop at the rear portion thereof.

The fourth object of the invention is the production of a propeller, which may be used to drive an aeroplane in the air, or a vessel in the water.

20 The fifth object of the invention is the production of a propeller, which can be used in a sweeper and for various other purposes.

In the accompanying drawing Fig. 1 represents a side view of the conical spiral screw propeller, 25 exemplifying the invention; Fig. 2 shows a left hand view of Fig. 1; Fig. 3 indicates an enlarged section of Fig. 2 on the line 3, 3; Fig. 4 shows a view similar to Fig. 1 with the strengthening rib removed and the propeller turned on its longitudinal axis to show a different pitch angle; Fig. 5 shows a view similar to Fig. 4 showing 30 another pitch angle and Fig. 6 shows an enlarged fragmentary curved section as on the line 6, 6 of Fig. 2.

35 The conical spiral screw propeller is indicated having the front hub 20 and the rear hub 21. The propeller blade 22 is indicated with the first revolution of the blade extending from a point 24 on the hub 20 to a point 25, and the second 40 revolution of the blade extends from the point 25 to the rear end 26 thereof. The portion of the blade between the points 25 and 26 is laterally spaced from the portion of the blade between the points 24 to 25 when viewed in the direction 45 of the longitudinal axis of the propeller. The first revolution of the blade of the propeller gradually increases in pitch from the point 24 to the point 25, from 30 degrees to 35 degrees, and the second revolution of the blade of the propeller 50 from the point 25 to the portion indicated by the line 3, 3 gradually increases from 35 degrees to forty degrees pitch, and from the line 3, 3, to the rear end 26 gradually decreases in pitch from 40 degrees to 30 degrees.

55 The outer or upper face of the blade is shown at 40 and the lower or working face is shown at 41. The outer edge of the blade is indicated at 43. A strengthening rib 44 is integral with the inner edge of the blade, and the blade is con- 60 caved so that its lower face presents a concaved

face to the medium in which the propeller operates. The second revolution of the screw propeller from the portion indicated by the section line 3, 3 to the rear end 26 and constitutes a loop 50. By means of the loop the skin friction 65 of the blade is reduced and the medium in which the blade operates is efficiently forced therefrom to secure an efficient propeller.

A connecting member 52 extends between the rear portion of the blade 22 and the rear hub 70 21. A shaft 55 extends through and is connected to the hubs 20 and 21, and a nut 56 and washer 57 are indicated on the rear end of the shaft 55, the said nut being in threaded engagement with said shaft. Keys 58 lock the hubs 20 and 21 to 75 the shaft 55.

Referring to Figs. 4 and 5 in which the strengthening rib 44 is omitted, the hubs are again indicated at 20 and 21, the blade at 22 with its edge 43. The pitch angle of 35 degrees is shown 80 in Fig. 4 and in Fig. 5 the pitch angle is indicated at 40 degrees. The connecting member is again shown at 52.

Referring to Fig. 6 a portion of the blade is indicated at 22 having the pitch angles of 40 85 and 35 degrees, and a portion of the loop 50.

It will be noted that the rotation of the propeller in this exemplification is anti-clockwise as indicated by the arrow A in Fig. 2.

Various modifications may be made in the invention and the present exemplification is to be taken as illustrative and not limitative thereof.

Having described our invention we claim:

1. A propeller comprising a blade in the form of a conical spiral and a loop integral with the 95 rear end portion of said blade.

2. A propeller comprising a front hub and a rear hub, a blade with a plurality of revolutions having one end connected to the said front hub and its other end connected to said rear hub, the 100 said blade gradually increasing in pitch from the end connected to the front hub for a portion of the length of the blade and then decreasing in pitch to the rear end of the blade, and a loop formed with the working face of the blade ex- 105 tending from its greatest pitch to the rear end thereof.

3. A propeller comprising a blade in the form of conical spiral, a strengthening rib integral with said blade, and a loop integral with the 110 rear end portion of the blade.

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