Sept. 4, 1923. 1,467.227

G. M. CAPELL

AIR IMPELLER OR PROPELLER

Filed Sept. 2, 1921

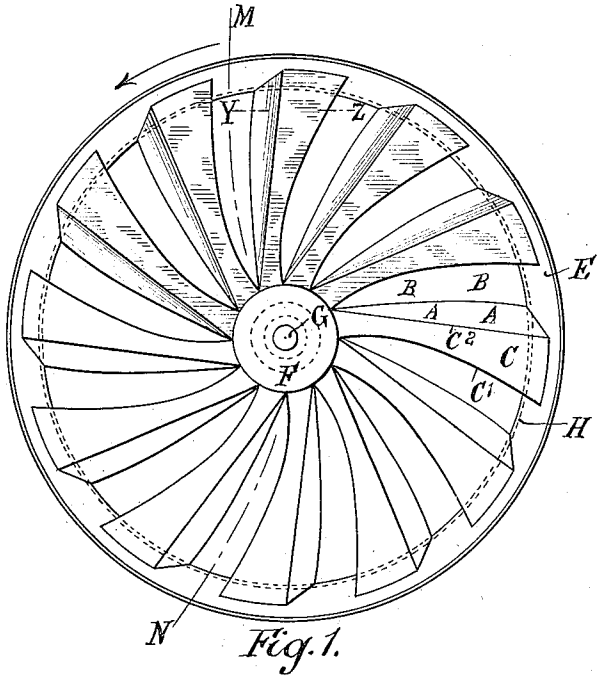


Fig. 1.

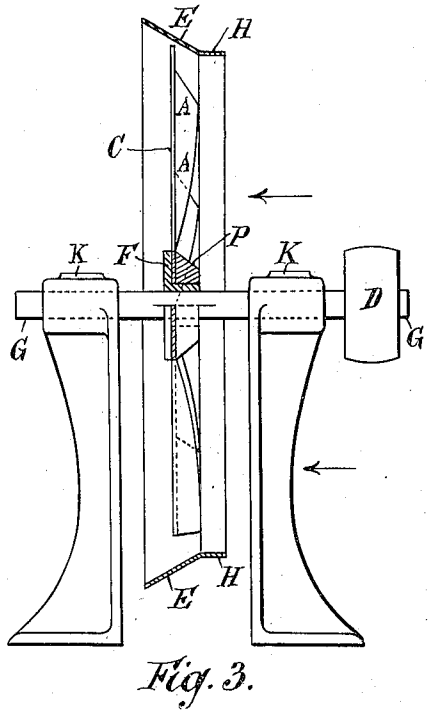


Fig. 3.



Fig. 4.

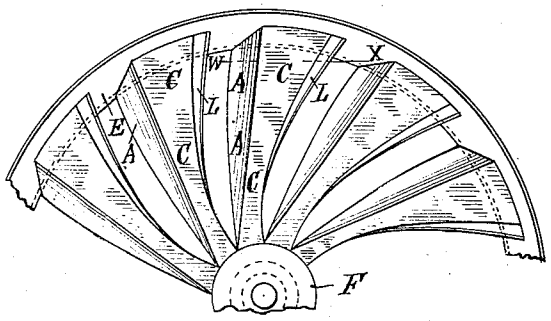


Fig. 2.

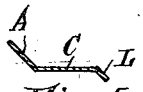


Fig. 5.

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ATTY.

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UNITED STATES PATENT OFFICE.

GEORGE MARIE CAPELL, DECEASED, LATE OF PASSENHAM, NEAR STONY STRATFORD, ENGLAND; BY ROBERT ALFRED BLAKE, TRUSTEE AND LEGAL REPRESENTATIVE.

AIR IMPELLER OR PROPELLER.

Application filed September 2, 1921. Serial No. 498,096.

To all whom it may concern:

Be it known that GEORGE MARIE CAPELL, deceased, subject of the King of Great Britain, late residing at Passenham, near Stony Stratford, in the county of Bucks, England, has invented new and useful Improvements in and Relating to Air Impellers or Propellers, of which the following is a specification.

This invention relates to air impellers or propellers and consists of certain improvements hereinafter expressed, in the type of impeller or propeller adaptable to and capable of:—(*a*) creating a current of air when caused to rotate in stationary mountings, (*b*) advancing through the air when mounted and caused to rotate as the propeller of an aeroplane and (*c*) being itself rotated by a current of air when mounted as in a windmill or as in an anemometer, and constructed of blades one part of each of which lies in a plane at right angles to the shaft while the other part is bent at an angle thereto.

In order that the invention may be understood and carried into practical effect the same will now be described with the aid of the accompanying diagrammatic drawings, throughout which like reference characters denote like parts and which drawings are to be deemed part of this specification.

The invention consists in providing a conical containing ring around the blades and in some instances providing in such form of impeller a lip upon one edge of the blades.

Figure 1 is an elevation of an impeller or propeller constructed with the improved containing ring. Figure 2 shows a portion of an impeller constructed with the improved containing ring and improved blades. Figure 3 is a section on tortuous line M—M Figure 1 looking from right to left and showing a method of mounting. Figure 4 is a section at Y—Z Figure 1, and Figure 5 is a section at W—X Figure 2, showing the improved blade.

As previously proposed the blades may be formed by cutting suitable slots in a disc C and bending the parts A of the blades obliquely out of the plane of the disc C.

According to the present invention the outer extremities of the blades A C are suitably attached to the interior of a conical containing ring E, converging in the direction of the portions A. This ring E may have a cylindrical extension H beyond the portions A of the blades. The disc C is attached at its centre to a flanged sleeve F which is fixed and carried upon a shaft G. The sleeve may be contained within a cone-shaped member P thus forming a cone shaped boss which guides the air to the blades.

The shaft G may be journalled in bearings as shown at K.

A modified blade is formed by bending the edges of the portions of the disc C remote from the portions A obliquely out of the plane of the disc to form lips as shown at L in Figures 2 and 5 this bend being in a reverse direction to that of the portions A.

What is claimed is—

1. In an air impeller, blades each consisting of a portion of a disc perpendicular to the axis of said impeller and a portion oblique to said axis, and on the leading side of said perpendicular portion, and a conical ring converging in the direction of said oblique portions secured to the outer extremities of said blades.

2. In an air impeller, blades each consisting of a portion of a disc perpendicular to the axis of said impeller and a portion oblique to said axis and on the leading side of said perpendicular portion, a conical ring converging in the direction of said oblique portions secured to the outer extremities of said blades and a cylindrical extension of said ring.

3. In an air impeller, blades each consisting of a portion of a disc perpendicular to the axis of said impeller, a portion oblique to said axis and on the leading side of said perpendicular portion, and an oblique lip remote from and oppositely directed to said oblique portion.

4. In an air impeller, blades each consisting of a portion of a disc perpendicular to the axis of said impeller, a portion oblique to said axis and on the leading side of said perpendicular portion, an oblique lip remote from and oppositely directed to said oblique portion, and a conical ring converging in the direction of said oblique portions secured to the outer extremities of said blades.

5. In an air impeller, blades each consisting of a portion of a disc perpendicular to the axis of said impeller, a portion oblique to said axis and on the leading side of said perpendicular portion, and an oblique lip remote from and oppositely directed to said oblique portion, a conical ring converging in the direction of said oblique portions secured to the outer extremities of said blades and a cylindrical extension of said ring.

In testimony whereof I have signed my name to this specification.

ROBERT ALFRED BLAKE.

Trustee and legal representative of George Marie Capell, deceased.