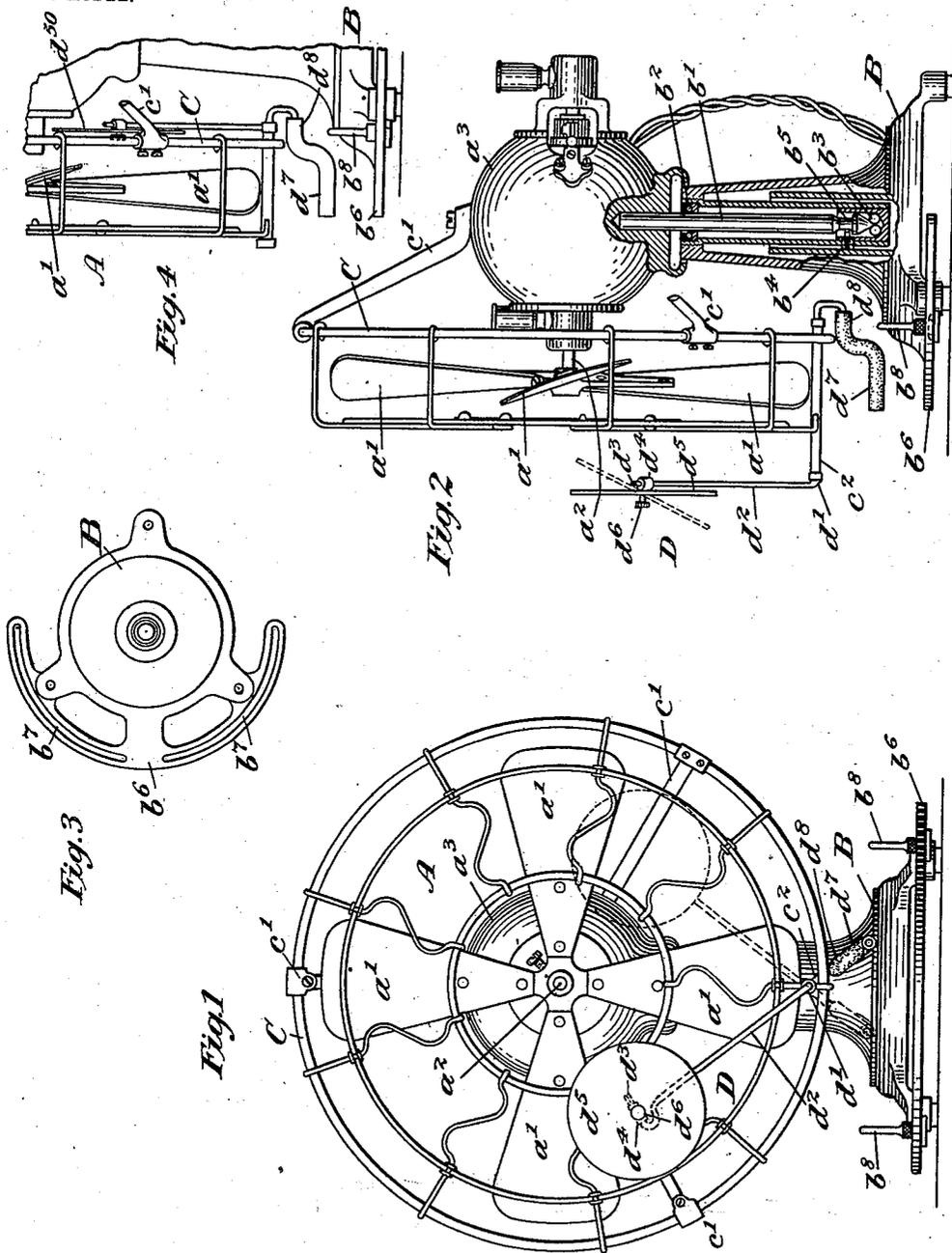


C. A. ECK.  
FAN.

APPLICATION FILED OCT. 15, 1902.

NO MODEL.



Witnesses  
*Chas. D. King*  
*Fredric D. Pangborn*

Inventor  
*Chas. A. Eck*  
 By his Attorney  
*John V. Becken*

# UNITED STATES PATENT OFFICE.

CHARLES A. ECK, OF BELLEVILLE, NEW JERSEY.

## FAN.

SPECIFICATION forming part of Letters Patent No. 723,994, dated March 31, 1903.

Application filed October 15, 1902. Serial No. 127,381. (No model.)

*To all whom it may concern:*

Be it known that I, CHARLES A. ECK, a subject of the King of Sweden and Norway, and a resident of Belleville, Essex county, New Jersey, have invented certain new and useful Improvements in Fans, of which the following is a specification.

My invention relates generally to fans, and has more particular reference to means whereby a fan will be caused to oscillate or turn from one side to the other as it rotates.

The object of my invention is to produce a structure which is simple, inexpensive, and efficient and one which will not mar the appearance of the fan.

In carrying out this object my invention consists in a vane for oscillating the fan, which is adapted to be moved alternately in the same plane into operating position on either side of the center of the fan, and also in means for regulating the distance and the speed of the oscillation.

I shall describe a fan adapted to oscillate in the manner set forth embodying my invention and afterward point out the novel features in the claims.

In the drawings I have embodied my invention in a suitable form; but changes in construction may of course be made within the scope of the claims.

In the said drawings, Figure 1 is a front view of a fan embodying my invention. Fig. 2 is a side view of Fig. 1. Fig. 3 is a plan view of the base of the fan-motor. Fig. 4 shows a modification.

A represents a fan comprising the vanes  $a'$ , mounted on the armature-shaft  $a^2$  of the motor  $a^3$ . The motor  $a^3$  is of any suitable construction and is mounted loosely, so that it can turn from one side to the other on the upright stem  $b'$  of the base B, which rests in the ball-bearings  $b^2$  and  $b^3$ . The motor is prevented from becoming detached from the base by the screw  $b^4$ , which projects into the circumferential groove  $b^5$  of the stem  $b'$ . The base B further carries the circular track  $b^6$ , which is provided with two arc-shaped slots  $b^7$  of any desired length and with stops  $b^8$ , which are conveniently in the form of set-screws adapted to be adjusted in the said slots to regulate the distance of the oscillation.

The fan is, as is usual, inclosed in a wire

guard C, which is attached to the motor by means of the arms  $c'$ . At the lower side of this wire guard and in substantially the same vertical plane as the center of the fan is a horizontal sleeve  $c^2$ , into which is inserted the arm  $d'$  of the oscillating device or vane D. From the arm  $d'$  extends the arm  $d^2$ , provided with a hook, as  $d^3$ , inserted into the bushing  $d^4$  of the vane proper,  $d^5$ , and held there by means of the screw  $d^6$ . From the other end of the arm  $d'$  extends the projection  $d^7$  to engage alternately with the stops  $b^8$  of the base B.

If the vane  $d^5$  now be on the right-hand side of the center of the fan, as shown in Fig. 1, the force of the air coming from the fan as it rotates will turn the said fan until the projection  $d^7$  engages with one of the stops  $b^8$ , which has the effect of stopping the turning motion and of causing the vane  $d^5$  to be moved over to the other side of the center of the fan, when the latter is turned back again until it is reversed by the engagement of the projection  $d^7$  with the other stop  $b^8$ , when the operation is repeated. To vary the speed of the oscillation, the vane  $d^5$  is inclined more or less or not at all, as shown in Fig. 2, the set-screw  $d^6$  permitting such adjustment.

The vane  $d^5$  will preferably be placed in front of the fan, so as to receive the blast coming from the same. It may, however, as shown in Fig. 4, where the vane is marked  $d^{50}$ , be placed in the rear of the fan, as the current of air produced by the said fan would turn it whether the vane is placed in front or in rear of the fan.

Obviously several vanes may be used, or the vane  $d^5$  may be composed of several blades or disks. The shape of the vane  $d^5$  is shown in the form of a disk; but it may of course be of any shape suitable for the purpose.

Having thus described my invention, what I claim is—

1. The combination with a fan, of means, for causing it to oscillate as it rotates, comprising a vane in the path of the current of air produced by the fan, and means for moving the said vane alternately into operating position, in the same plane, on either side of the center of the fan.

2. The combination with a fan, of means, for causing it to oscillate as it rotates, comprising a vane in the path of the current of

air produced by the fan, means for moving the said vane alternately into operating position, in the same plane, on either side of the center of the fan, and means for adjusting the vane thereby regulating the speed of the oscillation.

3. The combination with a fan, of means, for causing it to oscillate as it rotates, comprising a vane in the path of the current of air produced by the fan, adjustable stops for moving the said vane alternately into operating position, in the same plane, on either side of the center of the fan, and for regulating the distance of the oscillation.

4. The combination with a fan, of means, for causing it to oscillate as it rotates, comprising a vane in the path of the blast produced by the fan, and means for moving the said vane alternately into operating position, in the same plane, on either side of the center of the fan.

5. The combination with a fan, of means, for causing it to oscillate as it rotates, comprising a vane in the path of the blast produced by the fan, means for moving the said vane alternately into operating position, in the same plane, on either side of the center of the fan, and means for adjusting the vane

thereby regulating the speed of the oscillation.

6. The combination with a fan, of means, for causing it to oscillate as it rotates, comprising a vane in the path of the blast produced by the fan, adjustable stops for moving the said vane alternately into operating position, in the same plane, on either side of the center of the fan, and for regulating the distance of the oscillation.

7. The combination with a fan, of means, for causing it to oscillate as it rotates, comprising a horizontal sleeve in substantially the same vertical plane as the center of the fan, a vane loosely mounted in said sleeve, stops on either side of the center of the fan, and a projection carried by the vane for engaging with the said stops to move the vane alternately into operating position, in the same plane, on either side of the center of the fan.

Signed at Belleville this 6th day of October, 1902.

CHARLES A. ECK.

Witnesses:

JOHN C. LA FAUCHERIE,  
AXEL V. BEEKEN.