

No. 722,208.

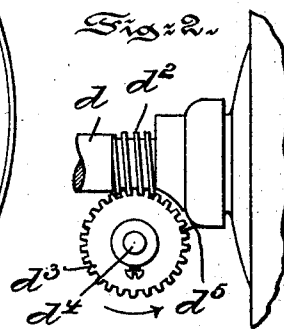
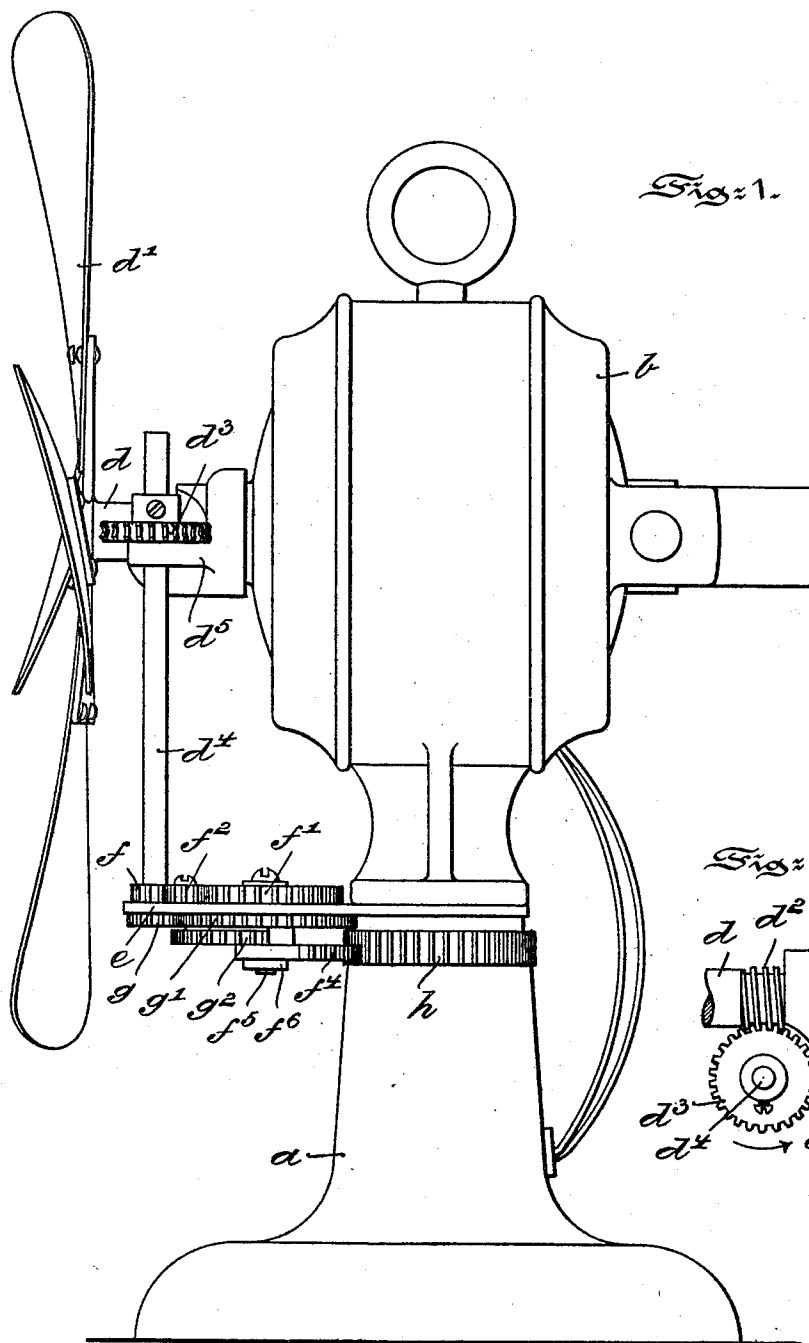
PATENTED MAR. 10, 1903.

R. P. CHANDLER.
ELECTRIC FAN.

APPLICATION FILED MAY 13, 1902.

NO MODEL.

2 SHEETS—SHEET 1.



Witnesses:
Wilhelm Togh
Thomas M. Smith

Inventor:
Richard P. Chandler
By Walter Dwyer
Attorney

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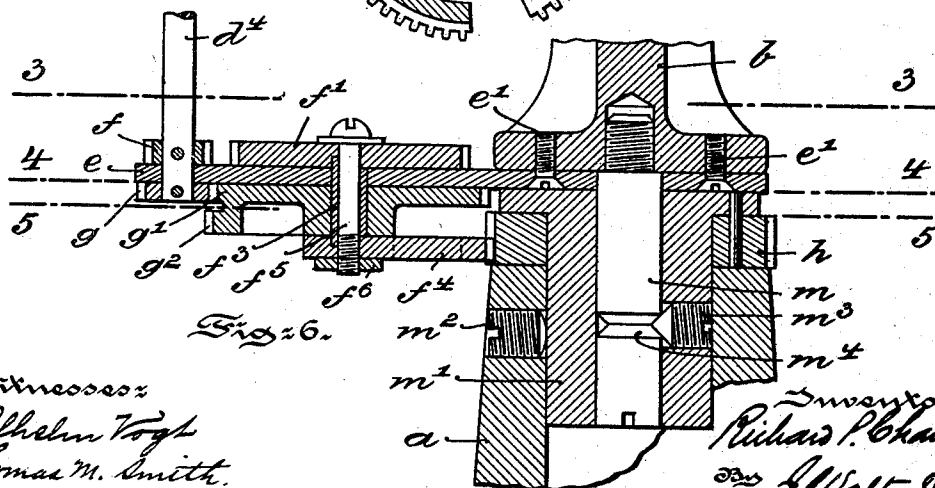
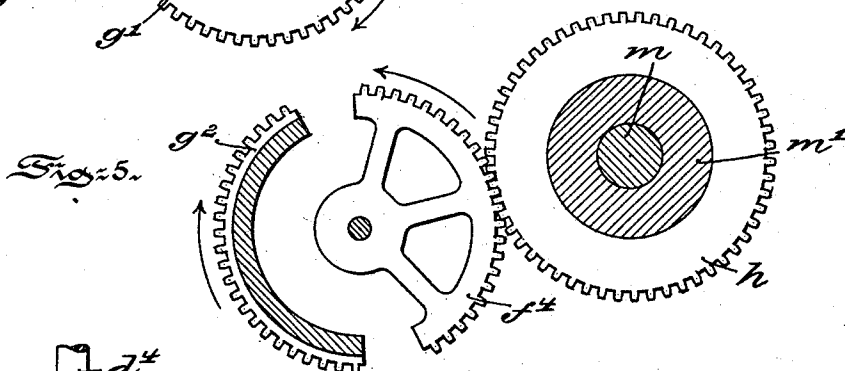
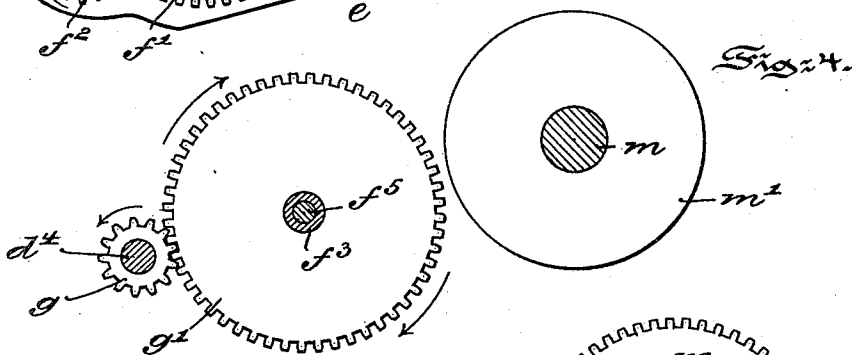
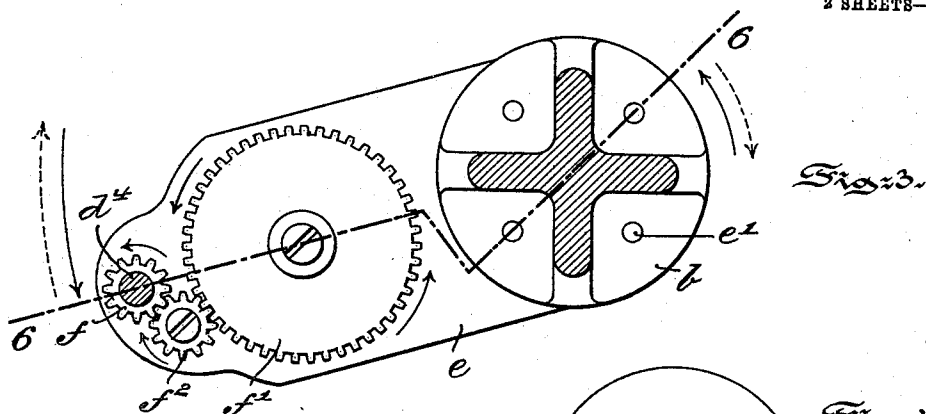
R. P. CHANDLER.

ELECTRIC FAN.

APPLICATION FILED MAY 13, 1902.

NO MODEL.

2 SHEETS—SHEET 2.



Witnesses:
 Wilhelm Vogt
 Thomas M. Smith.

Inventor:
 Richard P. Chandler
 J. Walter Dwyer
 Attorneys.

UNITED STATES PATENT OFFICE.

RICHARD P. CHANDLER, OF PHILADELPHIA, PENNSYLVANIA.

ELECTRIC FAN.

SPECIFICATION forming part of Letters Patent No. 722,208, dated March 10, 1903.

Application filed May 13, 1902. Serial No. 107,121. (No model.)

To all whom it may concern:

Be it known that I, RICHARD P. CHANDLER, a citizen of the United States, residing at the city of Philadelphia, in the county of Philadelphia and State of Pennsylvania, have invented certain new and useful Improvements in Electric Fans, of which the following is a specification.

My invention has relation to an electric fan of the type or class wherein means are provided whereby the fan is not only rotated upon its axis, but in addition thereto the body of the fan may be oscillated in a horizontal plane; and in such connection it relates to the construction and arrangement of parts constituting such an electric fan.

The principal object of my invention is to provide a simple, efficient, and relatively cheap mechanism whereby the rotary movement of the fan axis or shaft may be utilized to oscillate the frame or body carrying the fan and its shaft or axis, so that the current or volume of air discharged from said fan may be directed toward desired parts of the room or apartment.

The nature and scope of my invention will be more fully understood from the following description, taken in connection with the accompanying drawings, forming part hereof, in which—

Figure 1 is a side elevational view of a fan embodying main features of my invention. Fig. 2 is a detail view showing in plan the connection between the worm on the fan-shaft and a gear and shaft controlling the oscillating mechanism. Figs. 3, 4, and 5 are horizontal sectional views taken on the lines 3-3, 4-4, and 5-5, respectively, of Fig. 6; and Fig. 6 is a vertical sectional view, enlarged, of the oscillating mechanism, the section being taken on the line 6-6 of Fig. 3.

Referring to the drawings, *a* represents the base of the fan, and *b* the body or frame, pivotally supported upon said base *a* in the manner hereinafter described. Within the frame *b* is secured a motor of any construction (not shown) and adapted to rotate the shaft or axis *d*, to one end of which the fan-blades *d'* are secured in any preferred manner. On the shaft or axis *d*, outside the frame or body *b*, is formed a worm *d²*, meshing with a gear *d³*, secured at or near one end of a vertical shaft

d⁴. This shaft *d⁴* has an upper bearing *d⁵*, formed as an extension to the frame *b*, and a lower bearing in a plate *e*. This plate *e* forms an extension of the lower portion of the frame *b*, to which it is secured by screws *e'* or otherwise, as desired, and rotates or oscillates with said frame *b*.

Upon the lower end of the vertical shaft *d⁴* are secured two pinions *f* and *g*, respectively. The pinion *f* drives a gear *f'* in one direction through an intermeshing pinion *f²*, as illustrated in Fig. 3. The other pinion *g* drives a gear *g'* in an opposite direction to that in which the gear *f'* is driven and meshes, preferably, directly with said gear *g'*. The gear *f'* is provided with a tubular extension or arbor *f³*, extending through the plate *e*, and rigidly connected with this arbor *f³* is a sector *f⁴*. A simple means for connecting the gear *f'*, arbor *f³*, and sector *f⁴* consists of a headed screw-pin *f⁵*, traversing the gear, arbor, and sector and locking these three parts together by means of the nut *f⁶*, as clearly illustrated in Fig. 6. The other gear *g'* has secured to its under face a second sector *g²*, containing teeth preferably equal in number to the teeth in the sector *f⁴*. The two sectors *f⁴* and *g²* are adapted to mesh alternately with a notched or toothed ring *h*, secured directly upon the exterior of the frame *a* of the fan. In the drawings the sector *f⁴* is illustrated as in mesh with this ring *h*. The operation of the device when the sector *f⁴* is thus in mesh is as follows: The rotation of the vertical shaft *d⁴*, by the revolution of the fan shaft or axis *d*, will cause both pinions *f* and *g* to rotate. The pinion *f*, through the gear *f'*, which it turns through the intermediate pinion *f²*, will turn the sector *f⁴* in the direction in which the gear *f'* is rotating. As the sector *f⁴* is in mesh with the stationary ring *h*, the sector *f⁴* will travel over said ring *h* and will carry with it the plate *e*, secured to the frame or body *b* of the fan. This plate *e* and the fan-body thus turn upon the base *a* in one direction so long as the sector *f⁴* remains in mesh with the ring *h* and the fan shaft or axis *d* continues to rotate. While the gear *f'* and its sector *f⁴* are turning in one direction, the gear *g'* and its sector *g²* are being turned in the opposite direction, so that as the sector *f⁴* leaves the stationary ring *h* the

sector g^2 begins to mesh therewith. The sector g^2 and gear g' turning, as before explained, in a direction opposite to that in which the sector f^4 and gear f' are turning, it follows
 5 that as soon as the sector g^2 meshes with the ring h the plate e , and consequently the fan body or frame b , will be turned in an opposite direction to that in which they traveled when the sector f^4 was in mesh with the ring
 10 h . Hence according to whether the sector f^4 or sector g^2 is in mesh with the ring h the plate e and frame b will turn in one direction or the other, thus giving to the frame b and to the fan and its axis or shaft d an oscillating movement upon the stationary base a of
 15 the fan.

A preferred means for pivotally supporting the frame or body b upon the base a is illustrated in Fig. 6. It consists, essentially, in
 20 securing to the bottom of the frame or body b a pin m , entering a sleeve or gland m' in the base a . This sleeve m' is locked to the base a by a set-screw m^2 , and the pin m is permitted to rotate in the sleeve m' , but not
 25 to be withdrawn therefrom, by means of a set-screw m^3 , entering the sleeve m' and engaging a channel m^4 in the pin m .

Having thus described the nature and object of my invention, what I claim as new,
 30 and desire to secure by Letters Patent, is—

1. In an electric fan, a base, a fan-body pivotally supported in said base, a plate or extension secured to said body, two oppositely-arranged sectors carried by said plate, a sta-

tionary toothed ring secured to the base of 35 the fan and adapted to be in mesh with each sector alternately, a fan shaft or axis rotating in the fan-body, and means controlled by said fan-shaft and arranged to drive the sectors in opposite directions. 40

2. In an electric fan, a stationary base having secured thereto a toothed ring, a fan-body pivotally supported upon said base, two oppositely-arranged sectors carried by said body and adapted to alternately mesh with said 45 ring, a fan-shaft rotating in said fan-body and mechanism controlled by said shaft and arranged to drive the sectors in opposite directions.

3. In an electric fan, a stationary base having a toothed ring secured thereto, a fan-body pivotally supported upon said base, a plate extending from said body, a fan-axis rotating in said body, a shaft driven by said fan-axis, and having a bearing in said plate, two 55 gears adapted to be driven in opposite directions by said shaft, and each having a support in said plate, and two sectors, each driven respectively by one of said gears and arranged to alternately mesh with the toothed ring. 60

In testimony whereof I have hereunto set my signature in the presence of two subscribing witnesses.

RICHARD P. CHANDLER.

Witnesses:

J. WALTER DOUGLASS,
 THOMAS M. SMITH.