(No Model.)

C. W. DE MOTT.

ELECTRIC VENTILATING FAN.

No. 517,214. Patented Mar. 27, 1894.

Fig. 1.

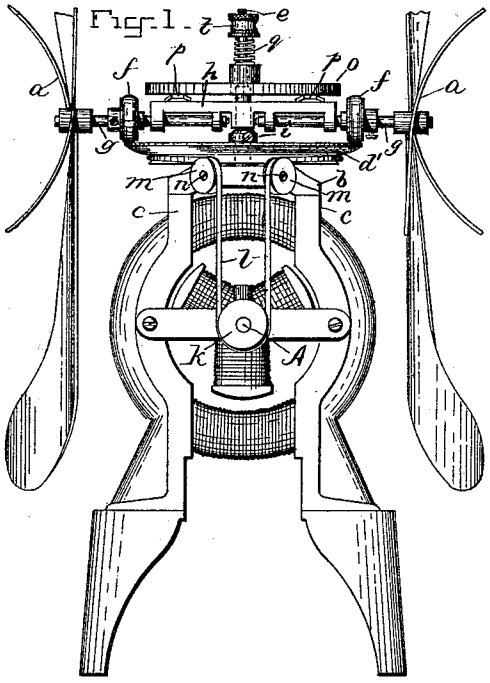


Fig. 2.

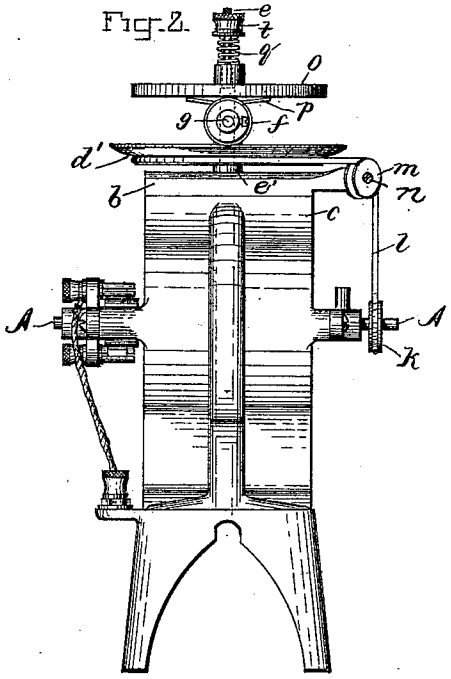
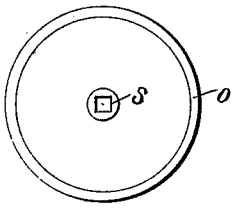


Fig. 3.

Fig. 4.



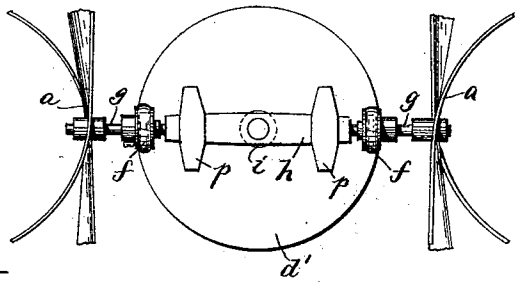
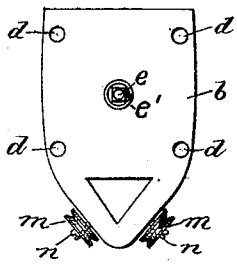


Fig. 5.



WITNESSES-

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ELECTRIC VENTILATING-FAN.

SPECIFICATION forming part of Letters Patent No. 517,214, dated March 27, 1894.

Application filed April 17, 1893. Serial No. 470,617. (No model.)

To all whom it may concern:

Be it known that I, CHARLES W. DE MOTT, a citizen of the United States, and a resident of Brooklyn, in the county of Kings and State of New York, have invented new and useful Improvements in Electric Ventilating-Fans, of which the following is a specification.

My invention relates to one or more fans on a horizontal or approximately horizontal shaft rotatable on its own axis for imparting the usual rotary motion to the fans, and at the same time turning slowly around a vertical axis for distributing the air currents for the benefit of a circle of people as sitting around a dining or other table, the fan being located within the circle, and it consists of improved simple gearing apparatus connecting the fan with the motor for effecting these movements, an electric motor being preferably employed, all as hereinafter fully described reference being made to the accompanying drawings in which—

Figure 1, is a side elevation of my improved fan and the motor supporting and operating it. Fig. 2, is also a side elevation, but in a plane at right angles to that of Fig. 1. Fig. 3, is a plan view, with part of the brake apparatus detached. Fig. 4, is a plan of the brake disk detached from the rest of the machine, and Fig. 5, is a plan view of the bed plate of the fan attachment.

A represents the armature shaft of a motor on the top of which I mount one or more spiral fans *a*, suitably for blowing the air horizontally or approximately so, and so as to be geared with the motor shaft in a simple way, and also so as to be slowly shifted around the vertical axis of the fan supports to direct the currents from the position of the fan in all directions laterally. In this example I have mounted the bed plate *b*, of the fan apparatus on the top of the housings *c*, of the motor frame and secured it with screws *d*. From the center of said bed plate a vertical stationary pivot *e*, extends a suitable height and on it is pivoted next above said bed plate a pulley *d'* the hub of which rests on the boss *e'* of the bed plate and the upper margin of which is a friction driver for communicating motion to the fans *a*, by means of the friction pinions *f*, mounted on the fan shafts *g*, and bearing on said friction driving face with suitable pressure for effecting rotation of the fans, two of which are employed in the machine represented, but there may be three or four or only one as preferred. The fan shafts are fitted in bearings in a cross-bar *h*, also pivoted on the standing pivot *e*, so as to rotate in a horizontal plane, being supported at a suitable height on the collar *i*, which is adjustable up and down on said pivot with a set screw *j*, to secure it with relation to the requisite pressure of the pinions on the friction driving surface of pulley *d'*. The pulley *d'* is geared with the motor shaft by the pulley *k* thereon, and the endless belt *l*, said belt passing over the guide pulleys *m*, on the fixed studs *n*, projecting from the bed plate *b*. It will be seen that the driver *d'* will rotate the fans and also serve as a turn table to cause them to swing around the standing pivot *e*, by the effect of its driving force on the pinions *f*, which besides rotating the fans will turn the bar *h*, around its pivot *e* also, the rotation of the fans being proportionately less according to the rapidity of the movement of the fan supporting bar around the pivot, so that if the motion of the fans around the pivot be unrestricted such motion would be too great, and the rotation of the fans would be too slow for best results. I therefore employ a brake to limit such movement around the vertical axis and to increase the speed of the fans, which brake may be constructed and applied in various ways. What I represent in this case consists of a disk *o*, fitted on the standing pivot *e*, above the cross bar so as to rise and fall freely but not to rotate, as by an angular hole *s*, through the center of the disk and an annular section of the standing pivot, or it may be a round hole in the disk and a feather key in the pivot, also round in the section on which the disk works, with springs as *p*, on the upper side of the bar bearing against the under side of the disk, and with a coiled spring *q*, and adjusting nut *t*, to adjust the pressure of the disk on the springs of the cross bar. Excessive pressure of the disk on the springs will wholly prevent motion of the fans around the vertical axis, and the motion of the driver *d'*, will be wholly expended in rotating the fans; the motion of the fans around the vertical axis may therefore be graduated as desired by graduating

the pressure of the disk *o*, on the spring brakes. The pinions *f* are faced with rubber for good friction material and for noiseless action.

I claim—

1. The combination with the horizontal pulley geared with the motor shaft, of the horizontal fan shafts and friction pinions of said shafts resting on the upper surface of the pulley, in the relation for being thereby rotated on their own axis, and also carried around the vertical axis of the said pulley, and a brake retarding the movement around the pulley substantially as described.

2. The combination of the electric motor, the pulley mounted on the vertical axis on the top of the motor and geared with the motor shaft, a fan or fans mounted on the pivoted horizontally rotating bar, and geared with the pulley by the friction pinions, the brake springs on said bar, and the vertically adjustable friction disk and adjusting devices coacting with said brake springs substantially as described.

In testimony that I claim the foregoing as my invention I have signed my name, in presence of two witnesses, this 13th day of April, 1893.

CHARLES W. DE MOTT.

Witnesses:
W. J. MORGAN,
C. E. WHITNEY.