No. 710,940. Patented Oct. 14, 1902.

B. BLUM.

ELECTRIC FAN.

(Application filed Feb. 4, 1902.)

(No Model.)

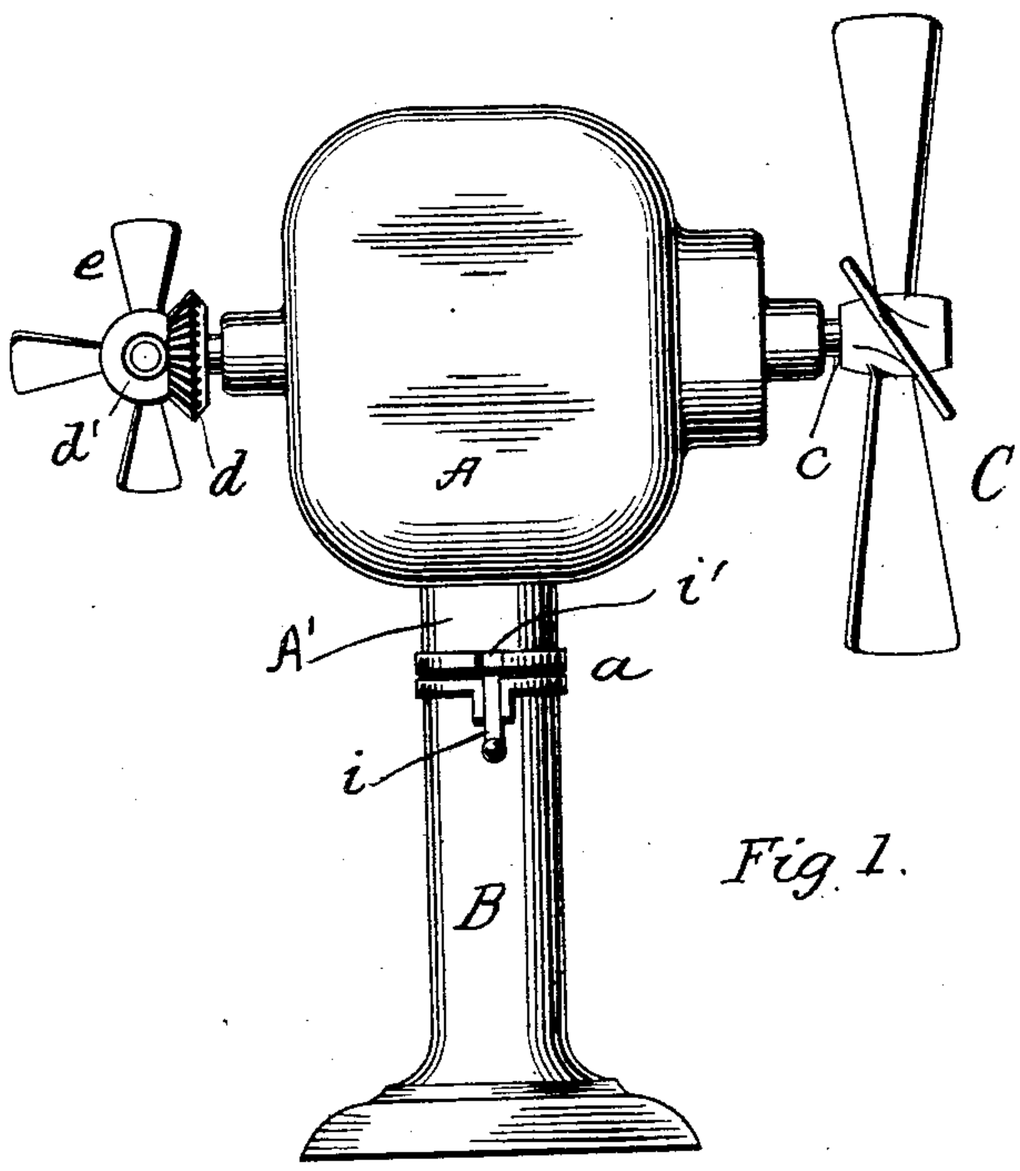

Fig. 1.

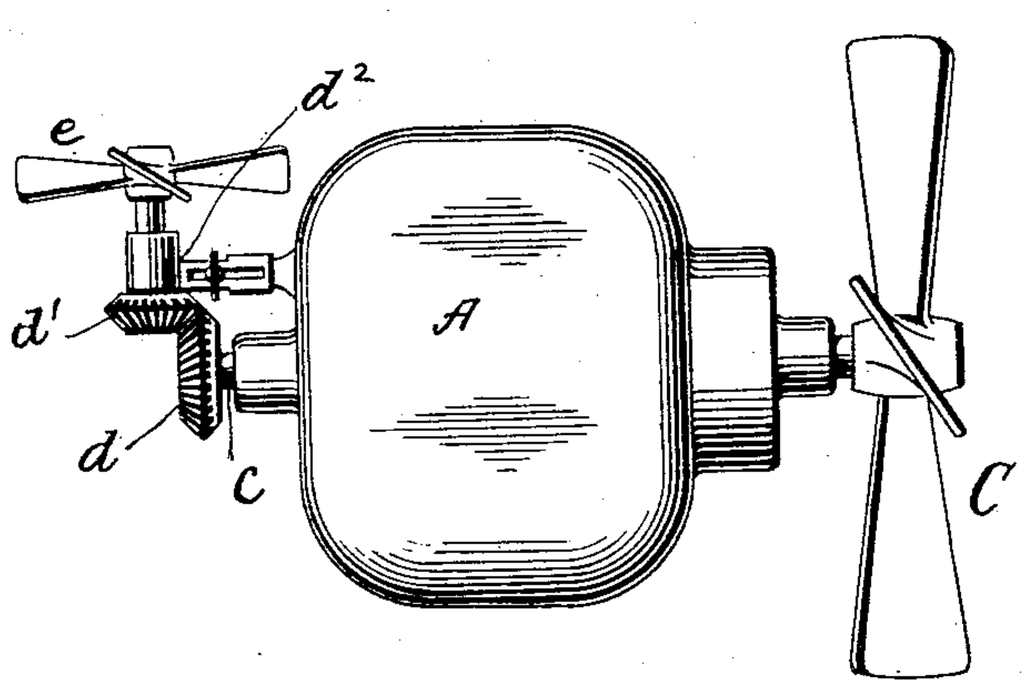

Fig. 2.

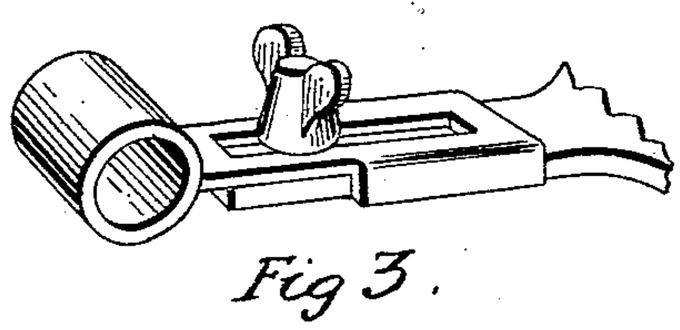

Fig 3.

Witnesses
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UNITED STATES PATENT OFFICE.

BENJAMIN BLUM, OF NEW YORK, N. Y.

ELECTRIC FAN.

SPECIFICATION forming part of Letters Patent No. 710,940, dated October 14, 1902.

Application filed February 4, 1902. Serial No. 92,556. (No model.)

To all whom it may concern:

Be it known that I, BENJAMIN BLUM, a citizen of the United States, residing at the city of New York, in the borough of Manhattan and State of New York, have invented certain new and useful Improvements in Electric Fans, of which the following is a full, clear, and exact description.

This invention relates to electric fans, the object being to provide a simple and cheap form of mechanism whereby the motor and its fan will be continuously rotated bodily to cause the room or space in which the fan is located to be intermittently swept by the blast of air created by the blades of the fan.

In the accompanying drawings, Figure 1 is a side elevation of my improved fan-motor. Fig. 2 is a plan of the same, and Fig. 3 is a detail.

The motor A, having a rotatable support A′, is mounted on a pedestal or base B, between which and the motor-support is interposed a bearing *a*, affording the motor a motion upon a vertical axis. The type of motor is not material; but a common form having a spherical field-magnet is the type illustrated. The armature-shaft *c* extends through each side of the field-magnet and carries on one end the regular ventilating or air-circulating fan C and at the other end a small bevel-pinion *d*. This bevel-pinion engages with a smaller pinion *d′*, mounted upon a short shaft at right angles to the armature-shaft in a bearing in a bracket d^2, projecting from the field-magnet frame. The opposite end of this short shaft carries a comparatively small fan or air-propeller *e*, which is rotated by the motor at the same time the larger fan is rotated. Since the axis of this small fan is at right angles to the vertical axis of the motor, the small fan will bodily rotate the motor on its vertical axis whenever it is permitted to turn with the armature-shaft. The fan-motor will therefore have a constant rotary motion on its axis *a* and the blast of air sent out by the larger fan C will sweep the apartment or space in which the motor is placed at regular intervals. It is desirable, however, to be able to use a fan of this character in the ordinary way—that is, without the bodily rotation—and for this purpose I have provided means for throwing the bevel-gears out of mesh when desired. This consists in making the bracket d^2 in two parts, d^3 and d^4, as shown in Fig. 3, and connecting the parts by headed screw d^5 and slot d^6, so that by loosening the screw that portion of the bracket carrying the pinion *d′* can be moved outward until the pinion is out of mesh with the pinion *d*, in which condition the small fan will remain stationary, while the larger one runs. It is also sometimes desirable to run both fans at once while the motor is prevented from turning bodily, thus creating two blasts of air flowing outward from the motor in directions at right angles to each other. To accomplish this, I use the small sliding bolt *i*, (indicated in Fig. 1,) which is moved upward to engage with the notch *i′*. When the motor is used in this way, a larger-sized fan can be substituted for the fan *e* in order to make the two blasts of air more alike in force.

It is obvious that this invention is adapted as well for ceiling-fans as for those which rest upon a pedestal.

The construction of a ceiling-fan will be well understood by viewing Fig. 1 upside down.

Having described my invention, I claim—

1. The combination with an electric motor and a rotatable motor-support, of two fans carried by the support and driven by the motor, one having its axis radial to the motor-support and the other tangential thereto.

2. The combination with an electric motor and a rotatable motor-support, of two fans carried by the support and driven by the motor and mounted on opposite sides of the axis of the support and to revolve in vertical planes at right angles to each other.

In witness whereof I subscribe my signature in presence of two witnesses.

BENJAMIN BLUM.

Witnesses:

THOMAS G. FROST,

CHAS. R. HALE.