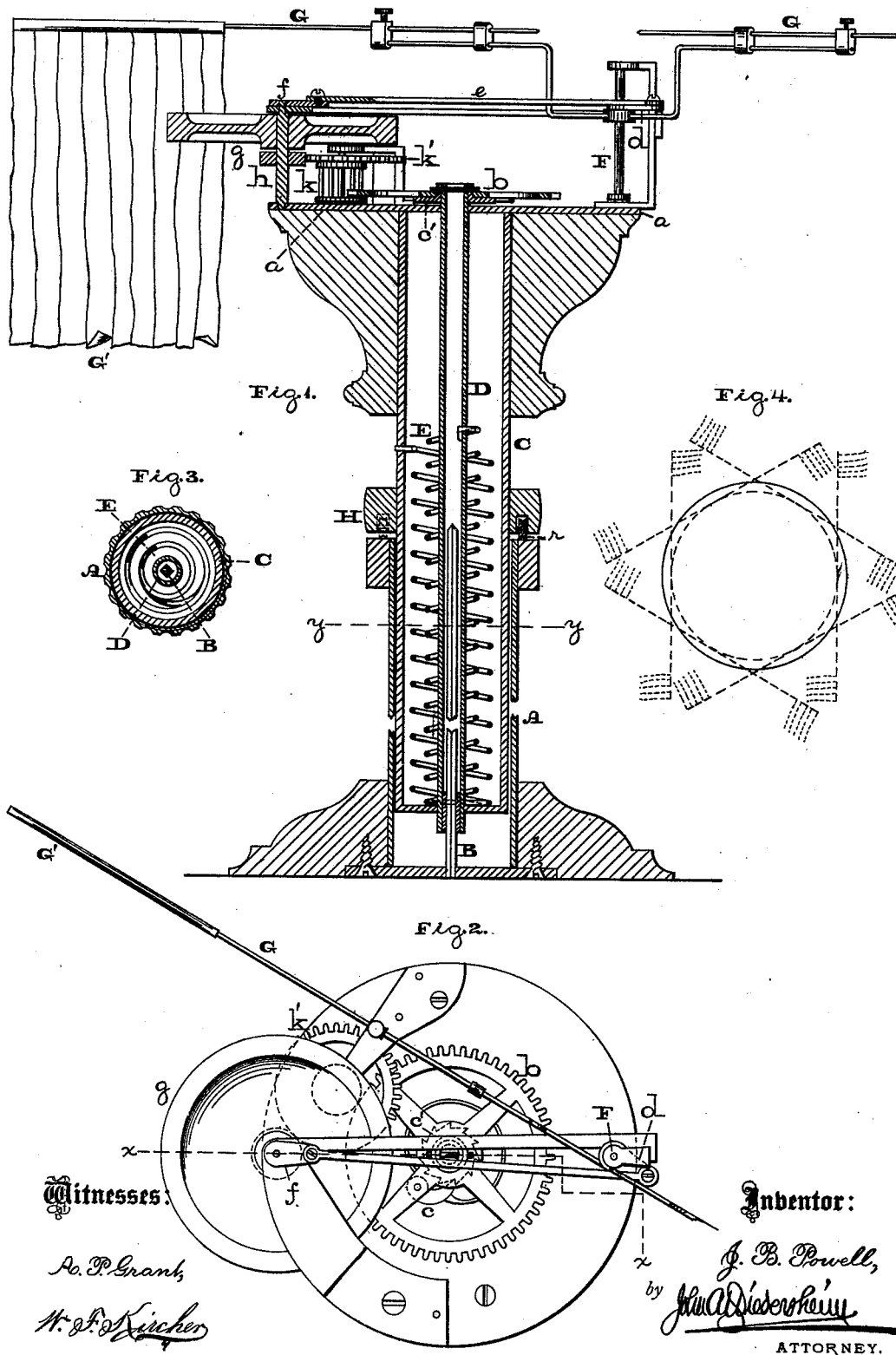


J. B. POWELL.
Automatic Fan or Fly Brush.

No. 214,445.

Patented April 15, 1879.



Witnesses:

R. P. Grant,

H. J. Fisher

Inventor:

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ATTORNEY.

UNITED STATES PATENT OFFICE.

JOHN B. POWELL, OF PHILADELPHIA, PENNSYLVANIA, ASSIGNOR OF ONE-HALF HIS RIGHT TO JOHN C. SHERBORNE, OF SAME PLACE.

IMPROVEMENT IN AUTOMATIC FANS OR FLY-BRUSHES.

Specification forming part of Letters Patent No. **214,445**, dated April 15, 1879; application filed November 18, 1878.

To all whom it may concern:

Be it known that I, JOHN B. POWELL, of the city and county of Philadelphia, and State of Pennsylvania, have invented a new and useful Improvement in Fly-Fans, which improvement is fully set forth in the following specification and accompanying drawings, in which—

Figure 1 is a vertical section of the fan embodying my invention in line *xx*, Fig. 2. Fig. 2 is a top view of a portion thereof. Fig. 3 is a horizontal section in line *yy*, Fig. 1. Fig. 4 is a diagram illustrating the motions of the fans.

Similar letters of reference indicate corresponding parts in the several figures.

My invention relates to an oscillating fan which is mounted in such a manner that during the oscillations it is automatically carried around a circle, and thus correspondingly sweeps over the table or support, whereby the motions or shadow of the fan will readily drive away flies and other insects at various parts of said table or support.

The invention consists of a mechanically-rotated tube containing a spring-connected stem, and supporting the oscillating fan and gearing thereof, whereby the parts are compactly arranged and the gearing is readily accessible from the outside of the tube and the supporting-stand.

It also consists of a base or stand supporting the parts of the fan, and adapted as the winding mechanism of the power-spring.

It further consists of the adjusting-collar provided with rollers for easing the motion of the same as it rotates on the base or stand.

Referring to the drawings, A represents a cylindrical or other shaped hollow stand, within which rises a spindle, B, which is angular in cross-section. C represents a hollow cylinder or other shaped tube, which is fitted telescopically to the stand A, and has within it a loosely-attached hollow stem, D, which is angular in cross-section, and is adapted to receive the spindle B telescopically. A spring, E, encircles the stem D, and one end is secured to said stem and the other end to the tube C, or is otherwise arranged so that its

power will be imparted to said tube C. The top of the tube C is preferably formed with an enlargement, and it is provided with a supporting-plate, *a*, through which projects loosely the upper end of the stem D, and said end carries a toothed wheel, *b*, which is fitted loosely on the stem, and is provided with a pawl, *c*, which engages with a ratchet, *c'*, secured to the stem, whereby, while the wheel and stem may be rotated independently of each other, they will be coupled for necessary purposes.

Mounted on the plate *a* is a vertical pin, F, to which are connected the fan-arms G of suitable fans G' and a crank, *d*, to which is jointed one end of a rod, *e*, whose other end is jointed to a crank, *f*, on the axis of a balance-wheel, *g*, said axis being properly mounted on the plate *a*, and carrying a spur-wheel, *h*, which, by means of the wheels *k* *k'*, is geared with the wheel *b* at the top of the stem D.

The operation is as follows: The tube C and stand A are each grasped by hand and the stand rotated, whereby, owing to the spindle B, the stem D is likewise rotated, and the spring E is properly wound. In this movement the ratchet *c'* is rotated with the stem D, the pawl *c* riding freely over the ratchet. The stand is now placed where the fan is required, and the power of the spring E is exerted on the tube C. As the stem D is fixed to the immovable spindle B, and the tube C is loosely connected to the stem D and stand A, the tube is caused to rotate. Owing to the pawl *c* coupling the wheel *b* to the stem D, now immovable, the said wheel is likewise immovable, and as the tube C rotates, the wheel *k*, moving therewith and meshing with the wheel *b*, is rotated, and the motion is communicated by means of the wheel *k'* to the axis of the balance-wheel *g*, and thence to the crank *f*, rod *e*, crank *d*, and axial pin F, the power being exerted on the fan-arms G, which, owing to the two cranks *f* *d*, receive rotary reciprocating or oscillating motions. The fan-arms, and consequently the fans, while they thus oscillate, are also carried around with the rotary tube, and thus caused to describe a circle, whereby they sweep correspondingly over the table or support, and thus the motions or

shadows of the fan will readily drive away flies and other insects at various parts of said table or support.

H represents a collar, which is fitted to the tube C by a sliding joint and rests on the upper end of the stand A, so as to support the tube and appurtenances. By shifting said collar the height of the fan may be adjusted as required or desired, the telescopic connection of the tube and stand and stem and spindle readily permitting such adjustment.

Rollers *r* are interposed between the collar H and the upper end of the stand, or a fixed collar thereon, for easing the rotation of the tube D.

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

1. The mechanically-rotated tube C, containing the spring-connected stem D, and supporting the oscillating fan and gearing thereof, in combination with the stand A, substantially as and for the purpose set forth.

2. The stand A, with spindle B, the tube C, with stem D, and the spring E, in combination with the oscillating fan and intermediate gearing, substantially as and for the purpose set forth.

3. The fan-supporting tube C and stand A, in combination with the adjustable collar H, provided with rollers *r*, substantially as and for the purpose set forth.

JOHN B. POWELL.

Witnesses:

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