

M. B. COYNE & J. GILFILLAN.

## Automatic - Fans.

No. 153,753.

Patented Aug. 4, 1874.

Fig. 1.

*Fig. 2.*

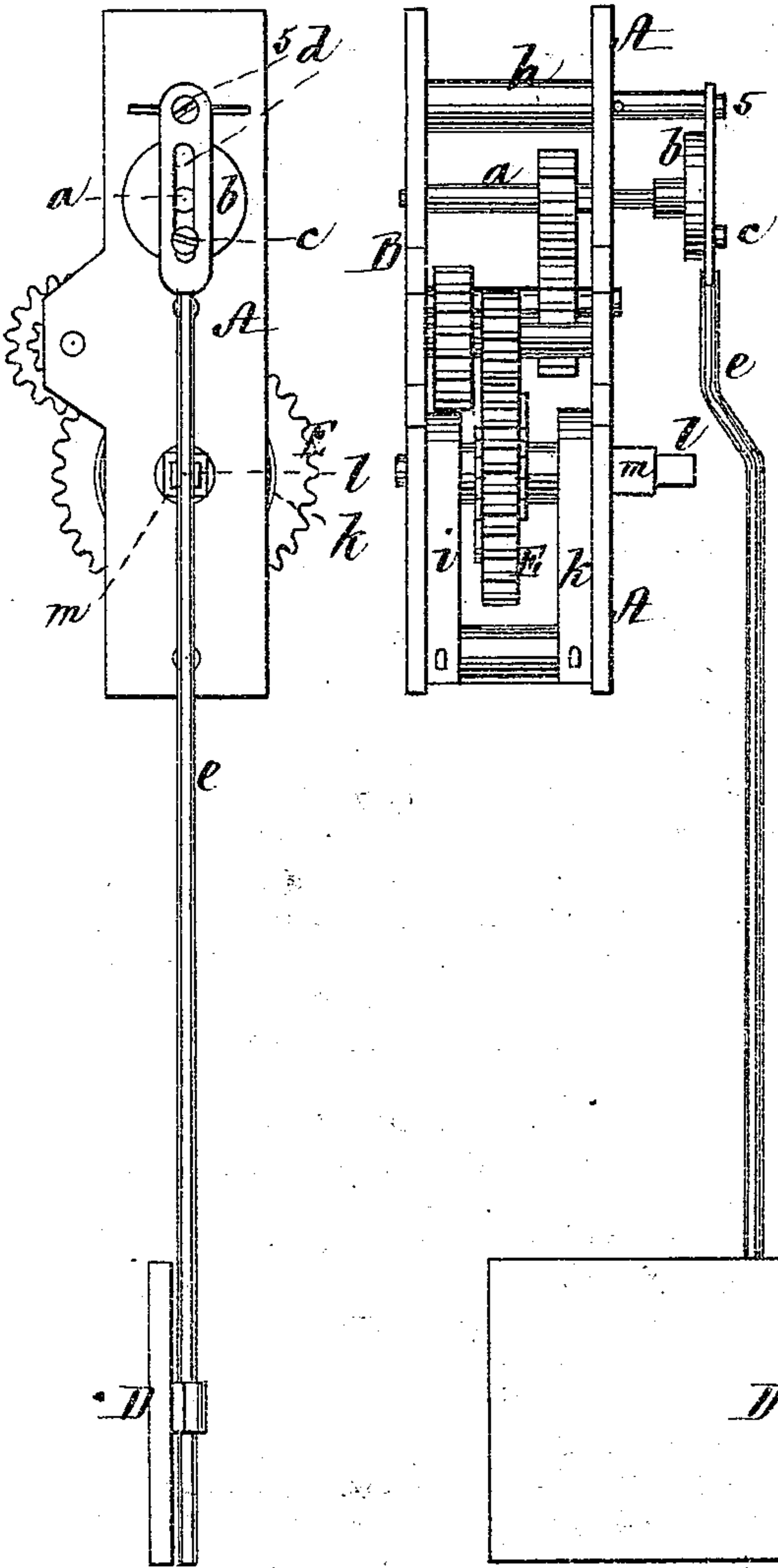
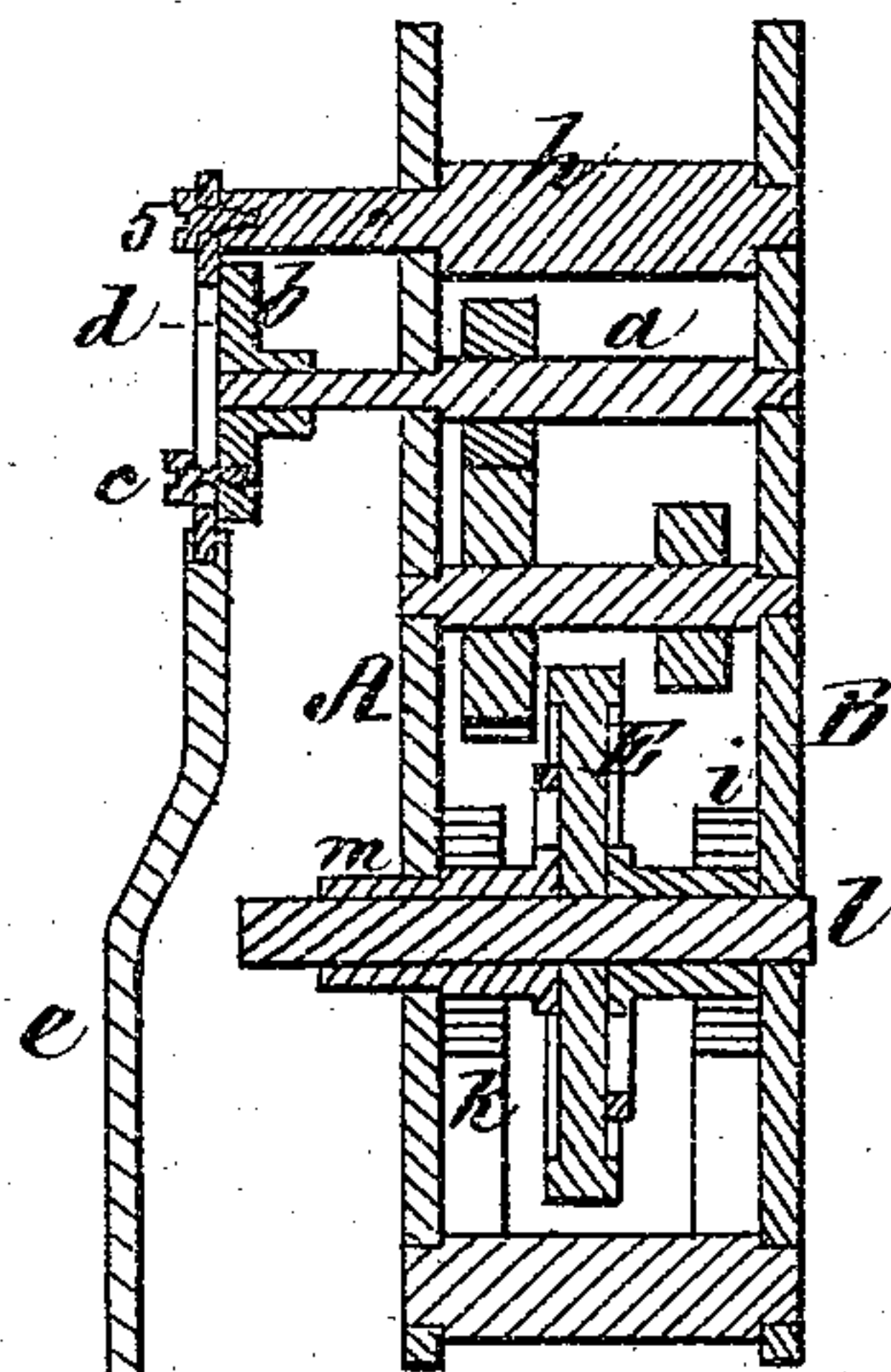


Fig. 3.



Witnesses,  
W. J. Cambridge

App. Bonenstuhl

Inventors,  
Michael B. Coyne,  
James Kilfillan,

Per Teschemacher & Stearns,  
Attorneys.

# UNITED STATES PATENT OFFICE.

MICHAEL B. COYNE AND JAMES GILFILLAN, OF BOSTON, MASS.

## IMPROVEMENT IN AUTOMATIC FANS.

Specification forming part of Letters Patent No. **153,753**, dated August 4, 1874; application filed June 24, 1874.

*To all whom it may concern:*

Be it known that we, MICHAEL B. COYNE and JAMES GILFILLAN, of Boston, in the county of Suffolk and State of Massachusetts, have invented an Improvement in Automatic Fans for Cooling and Ventilating Apartments, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, making a part of this specification, in which—

Figure 1 is a front elevation of our automatic fan. Fig. 2 is a side elevation of the same. Fig. 3 is a vertical section through the center of the same.

Our invention relates to a mechanism of peculiar construction, by means of which the rotary motion of a series of wheels actuated by a spring or weight is caused to vibrate the shaft of a fan for cooling and ventilating an apartment; and our invention consists in driving the wheels by means of two springs, each having a separate and independent winding-arbor and retaining-pawl, the arbors being arranged one within the other, and the springs and pawls being placed on opposite sides of the main or driving wheel, by which means less power is required to wind up the two springs than if a single spring of the aggregate strength of both were employed.

To enable others skilled in the art to understand and use our invention, we will proceed to describe the manner in which we have carried it out.

In the said drawings, A B are two parallel plates, between which is arranged a series of toothed wheels and shafts. The upper shaft *a* extends out beyond the plate A, and has secured to its outer end a circular plate or disk, *b*, from which projects a crank-pin, *c*, which passes through a longitudinal slot, *d*, formed in the upper end of the arm *e*, which is pivoted at 5 to a stud, *h*, extending out from the plate A, the lower end of the arm *e* being provided with a fan, D, of wood or other suitable material.

This fan may be of any suitable size or shape, and may be trimmed with a fringe or otherwise ornamented.

From the foregoing it will be seen that as the disk *b* is revolved the motion of the crank-pin *c* within the slot *d* will cause the arm *e* and its fan D to be vibrated so as to produce a strong current of air, and thus cool and ventilate the apartment, as required.

The mechanism by which the rotary motion of the wheels is caused to operate the fan D is simple, cheap, and not liable to get out of order.

The wheels are driven by two springs, *i k*, arranged on opposite sides of the main or driving wheel E, the end of one spring, *i*, being attached to the inner winding-arbor *l*, which passes through the outer winding-arbor *m*, to which the end of the other spring *k* is attached. Each arbor is provided with a separate and independent ratchet-wheel and pawl. (See Fig. 3.)

By the employment of two springs, which can be wound up independently of each other, the aggregate power of two springs is obtained, while the force required in the operation of winding is only half of that required to wind up a single spring of equal power with the two combined.

If desired, the fan D with its slotted arm *e* and crank-pin *c* may be dispensed with, and a rotary fan be employed instead, driven by a belt passing over a grooved pulley secured to its shaft, and over the disk *b* grooved to receive it.

What we claim as our invention, and desire to secure by Letters Patent, is—

In combination with the fan D and a train of gearing, the driving-wheel E and springs *i k* arranged on opposite sides thereof, and each provided with a separate winding-arbor, ratchet-wheel, and retaining-pawl, substantially as and for the purpose described.

Witness our hands this 16th day of June, A. D. 1874.

MICHAEL B. COYNE.  
JAMES GILFILLAN.

In presence of—

P. E. TESCHEMACHER,  
N. W. STEARNS.