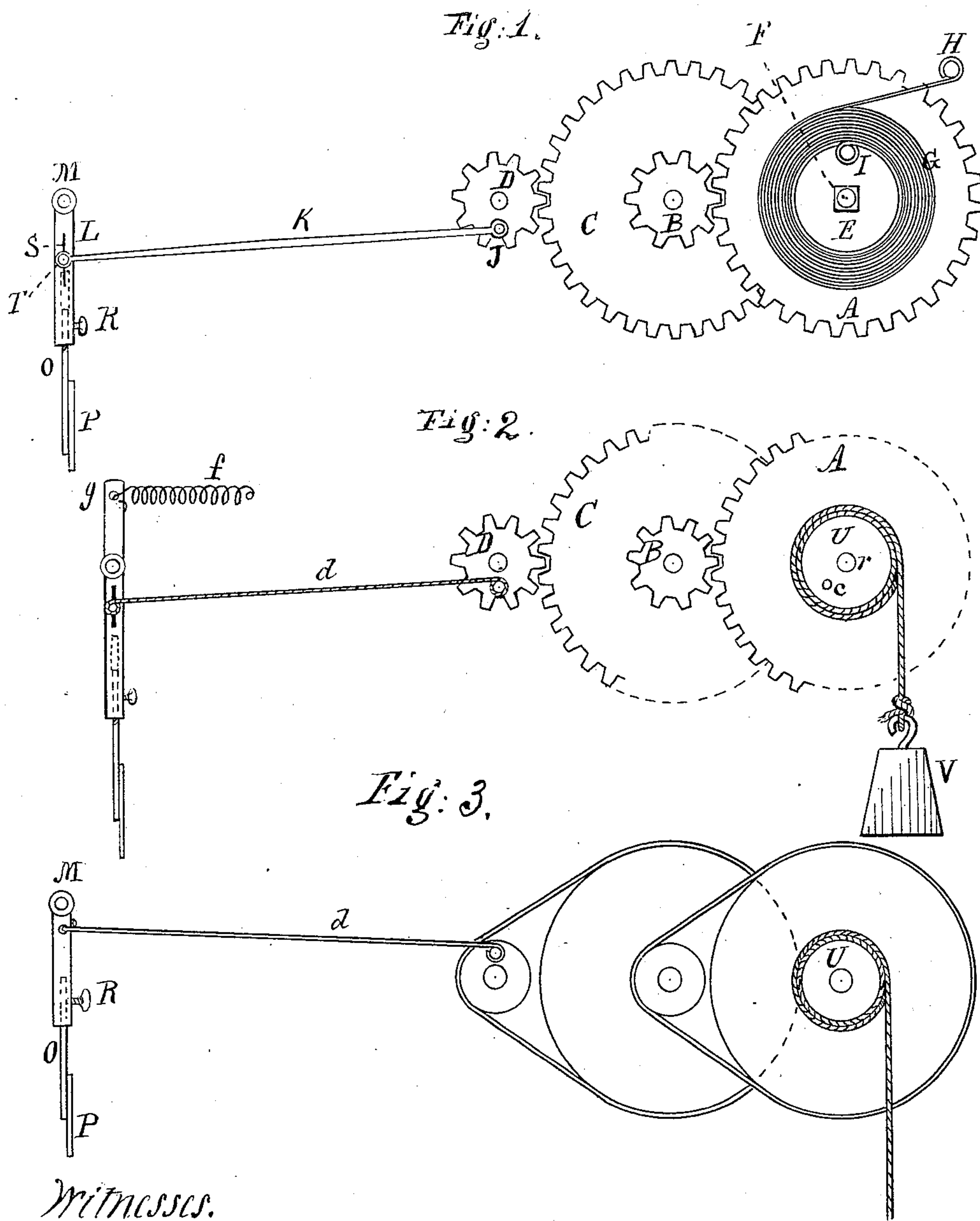


(No Model.)

T. HEATON.
AUTOMATIC FAN.

No. 258,753.

Patented May 30, 1882.



Witnesses.
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AUTOMATIC FAN.

SPECIFICATION forming part of Letters Patent No. 258,753, dated May 30, 1882.

Application filed February 8, 1882. (No model.)

To all whom it may concern:

Be it known that I, THOMAS HEATON, of Cornwall, county of Orange, and State of New York, have invented new and useful Improvements in Automatic Fans; and I do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawings, making part of this specification, in which—

Figures 1, 2, 3 represent different methods of actuating the fan, Fig. 1 being a system of cog-wheels in elevation, operated by a coiled spring; Fig. 2, also a system of cog-wheels driven by a weight; and Fig. 3, a system of pulleys and belts also driven by a weight, but which is omitted in the drawings for convenience.

A B C D represent a system of cog-wheels through which the required number of vibrations or movements back and forth of the fan may be obtained, and by which the apparatus may continue in operation for a specified time.

It will be seen that the number of cog-wheels may be multiplied so as to move the fan for a period of twenty-four hours, if required. To rotate this system of cog-wheels by which the fan is set in motion back and forth, a drum, E, is placed on the shaft F of the cog-wheel A, around which is coiled a spring, G, one end of which is secured to the frame at H and the other end attached to the wrist-pin I on the face of the drum E—the same arrangement as in clock-movements. This spring counterbalances the resistance of the fan, and is of sufficient power to rotate the system of cog-wheels steadily and continuously for a stated period of time. On the face of the last cog-wheel, D, of this system is placed a wrist-pin, J, to which is coupled a rod, K, the opposite end of which being secured to the vibrating arm L of the fan, through which pin and connecting-rod, as the pinion D revolves, a vibrating or back-and-forth movement is imparted to the fan. The vibrating arm L is pivoted at M, and for convenience may be made of tubing in order to receive and hold the sliding rod O, to which the blade P of the fan is secured, so that the rod O with its blade P may be adjustable up and down, and secured in any required position by means of the thumb-nut R. By rendering the blades of the fan adjustable up and down, as represented,

the length of the stroke of the fan is regulated to increase or diminish the agitation of the air, as may be found necessary and desirable.

To govern the back-and-forth movement of the fan when adjusted at any desired height by means of the sliding rod O and thumb-nut R, and thus increase or diminish the agitation of the air as may be required, is to render adjustable perpendicularly by means of a slot, S, or otherwise, the end T of the flexible connecting cord or rod K, so that by moving the end of this cord or rod up and down the length of the stroke of the fan is regulated, and the agitation of the air thus governed.

Having described the construction and operation of my automatic fan in detail, as driven by a system of cog-wheels and spring, it is proper to state that instead of the coiled spring a weight and cord may be substituted therefor, as represented in Fig. 2 in the annexed drawings, in which case a drum, U, is placed upon the shaft *r* of the cog-wheel A, and so arranged that it may revolve freely when the cord is being wound thereon in raising the weight, as represented in the annexed drawings, Fig. 2, and when the weight is raised thereby may be secured to the face of the cog-wheel A, and thus by the weight V set the whole system of wheels in motion, and thereby operate the fan.

A simple pin, *c*, to pass through the drum and into the face of the wheel A, may be employed to attach the drum and cog-wheel, and withdrawn when the cord is being wound thereon. By the employment of this flexible connecting-cord *d* the fan may be operated at any distance from the driving mechanism, and will obviate any noise and objectionable movement necessarily accompanying a rigid connecting-rod. By connecting one end of this cord to the wrist-pin J on the pinion D and securing its opposite end to the adjustable pin S in the slotted bar L, the fan will be drawn in one direction, and to effect the return movement thereof a coiled spring, *f*, may be provided and connected to the upper projecting end of the bar at *g*, so that at every revolution of the wheel D, carrying the wrist-pin, the fan may make two full movements, one back and the other forward, being drawn in one direction by the cord *d*, and returned by the action of the spring, as represented in Fig. 2.

If preferred, a system of pulleys and belts may be substituted in place of the cog-wheels, and driven as represented in Fig. 3, employing either a weight or spring to operate them.

5 Having thus fully described my improvements in automatic fans, what I claim therein as new, and desire to secure by Letters Patent, is—

10 In an automatic fan, the combination of the driving mechanism, adjustable blades so con-

structed that they may be raised and lowered, and the adjustable flexible connecting-cord *d* and return-spring *f*, to operate the fan back and forth, constructed and arranged substantially in the manner herein set forth.

THOMAS HEATON.

Witnesses:

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