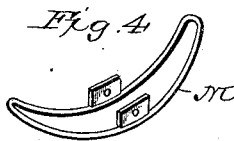
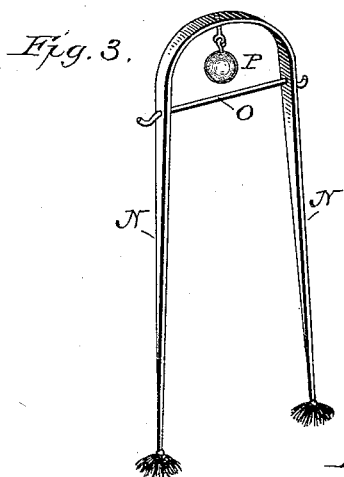
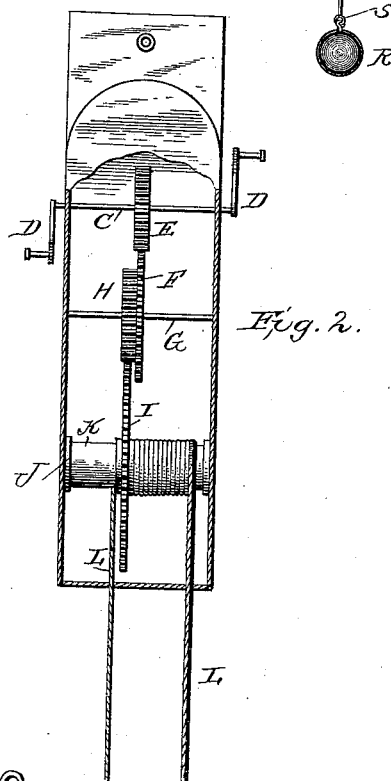
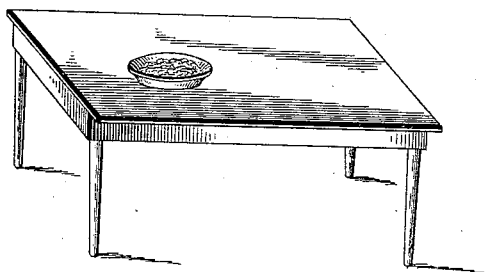
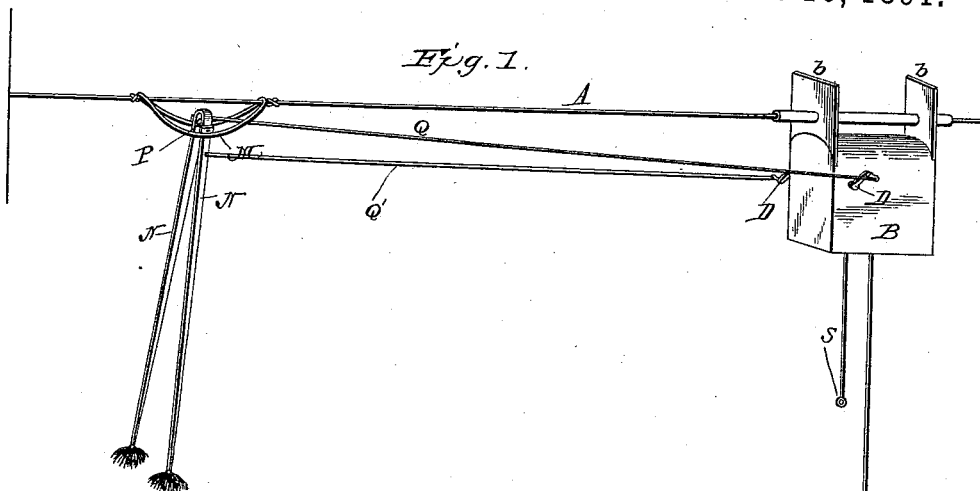


(No Model.)

T. R. EVANS.
AUTOMATIC FAN.

No. 446,204.

Patented Feb. 10, 1891.



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AUTOMATIC FAN.

SPECIFICATION forming part of Letters Patent No. 446,204, dated February 10, 1891.

Application filed November 5, 1890. Serial No. 370,422. (No model.)

To all whom it may concern:

Be it known that I, THOMAS ROBESON EVANS, a citizen of the United States, residing at Society Hill, in the county of Darlington and State of South Carolina, have invented certain new and useful Improvements in Automatic Fans; and I do declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to the letters of reference marked thereon, which form a part of this specification.

My invention has relation to improvements in automatic fans.

The object is to produce a simple and economical device of this character in which the movement of the fan is entirely automatic and the operating-cords self-winding.

The invention consists in the improved construction and combination of parts, as hereinafter more fully described in the specification, and pointed out in the claims.

In the accompanying drawings, Figure 1 is perspective view showing the device complete. Fig. 2 is a side elevation of the casing, a portion being broken away to illustrate the interior gearing. Fig. 3 is a perspective view of the brush upon an enlarged scale, the transverse wire upon which the brush is balanced being in relative position; and Fig. 4 is a detail view of the guide.

Like letters of reference refer to like parts throughout the several views.

Referring to the drawings, the letter A indicates the upper supporting-wire, which runs the length of the room, and B the casing or box for the operating mechanism. This box is provided with upwardly-extending apertured lugs or ears *b*, through which the supporting-wire passes, thus holding the casing in a suspended position.

In the upper part of the casing is a shaft C, the outer ends of which project through the sides of said casing and have secured thereto cranks D D. This shaft also carries a pinion E, which meshes with a gear-wheel F upon a second shaft G. This shaft G is further provided with a pinion H, meshing with a large gear-wheel I upon a third shaft J. This latter has formed upon each side of wheel I

drums K K, having attached thereto the upper ends of operating-cords L L, which are adapted to be alternately wound and unwound upon said drums.

The letter M indicates a looped guide, which is of crescent shape and has its ends secured to the supporting-wire in any desired manner.

The brush consists of a wire N, bent at its center into an approximate U shape and tapering toward each end. Passing through a perforation formed in each arm of the brush near the upper bend is a transverse supporting rod or wire O, said wire having its ends hooked or bent to engage the sides of the guide M. It will be understood that the arms of the brush pass through the looped guide, and in this position the ends of the supporting-rod O engage the side piece of the loop, so that provision is made for a free swinging movement of the brush. In the upper bend of the brush I suspend a small weight P, by means of which I am enabled to balance the same—that is, equalize the weight above and below the supporting-wire O or the fulcrum-point.

Connection is made between the arms or cranks D D and the brush by means of small wires Q Q', the upper wire Q having one end secured to the brush at a point near the central bend and the lower wire Q' secured to the opposite arm of the brush at a point somewhat below the supporting-rod O. The other ends of the wires being secured to the cranks, it is of course obvious that the rotation of said cranks will cause a backward-and-forward movement of the brush.

The letter R indicates an interchangeable weight for the operating-cords, preferably of three pounds. The free end of each cord is provided with a suitable ring S, to which this weight may be attached.

The above being the construction of my improved device, its operation is as follows: In the first place the cords are wound upon their respective drums and the weight attached to the end of one of said cords. This will cause a slow rotation of the drum and a consequent unwinding of the cord. As the drum rotates, the gear-wheel carried by the same will mesh with the pinion upon the central shaft and impart rotary motion thereto. The gear-wheel F, also located upon this shaft, in turn

meshing with the pinion E of the upper shaft, will cause said shaft to rotate and with it the cranks D D upon the ends thereof. As these cranks are thus actuated, of course a to-and-fro movement is given to the brush through the intermediary wires Q Q'. The unwinding of the cord to which the weight is attached, it will be understood, is quite slow and gradual, and as it is thus slowly unwound the other cord is simultaneously wound upon its drum. After the unwinding of one of the cords has been completed the weight is simply changed from said cord to the other cord, which of course will be fully wound upon the drum and the same operation thus repeated. It will also be noticed that the operating-cords have secured thereto the small weights or rings S, of about one ounce, which aid in securing a smooth winding.

My device is comparatively simple in construction and exceedingly inexpensive of production.

The construction employed provides a free backward-and-forward movement of the brush, and, furthermore, I am not compelled to wind the operating mechanism, inasmuch as the device is a self-winder, and all that is necessary to be done to keep the device continuously in motion is to change the weight at the stated intervals. This latter feature I consider of importance, inasmuch as in all devices for a similar purpose, so far as I am aware, the necessity for winding the mechanism by hand exists.

Having thus described my invention, what I claim, and desire to secure by Letters Patent of the United States, is—

1. The combination of a supporting-wire, a casing or box suspended thereby, operating mechanism within said box, a loop-guide having its ends secured to the supporting-wire,

a brush having a central band forming depending arms which pass through the loop-guide and are pivoted thereto, and wires for connecting said brush to the operating mechanism, substantially as set forth.

2. The combination of a supporting-wire, a casing or box suspended thereby, operating mechanism within said box, a loop-guide having its ends secured to the supporting-wire, a brush having a central bend forming depending arms, said arms adapted to pass through the loop-guide, the wire forming said brush gradually tapering toward the ends, a transverse supporting wire or rod passing through the arms of the brush and provided with hooked ends adapted to engage the opposite sides of the loops, a weight suspended from the central bend of the brush, and wires for connecting the brush with the operating mechanism, substantially as set forth.

3. The combination of a supporting-wire, a brush suitably connected thereto, so as to have a free swinging motion, a casing or box suspended from the supporting-wire, a lower shaft journaled in said casing, carrying a central gear-wheel and drums upon each side of said wheel, an operating-cord attached to each drum and adapted to be simultaneously wound and unwound thereon, said cords having their free ends provided with a small weight, gearing in said casing or box meshing with the cog of the lower shaft, wires connecting the gearing with the brush, and an interchangeable weight for attachment to the operating-cords, substantially as set forth.

In testimony whereof I affix my signature in presence of two witnesses.

THOMAS ROBESON EVANS.

Witnesses:

W. W. SUMNER,
J. B. WINTERS.