

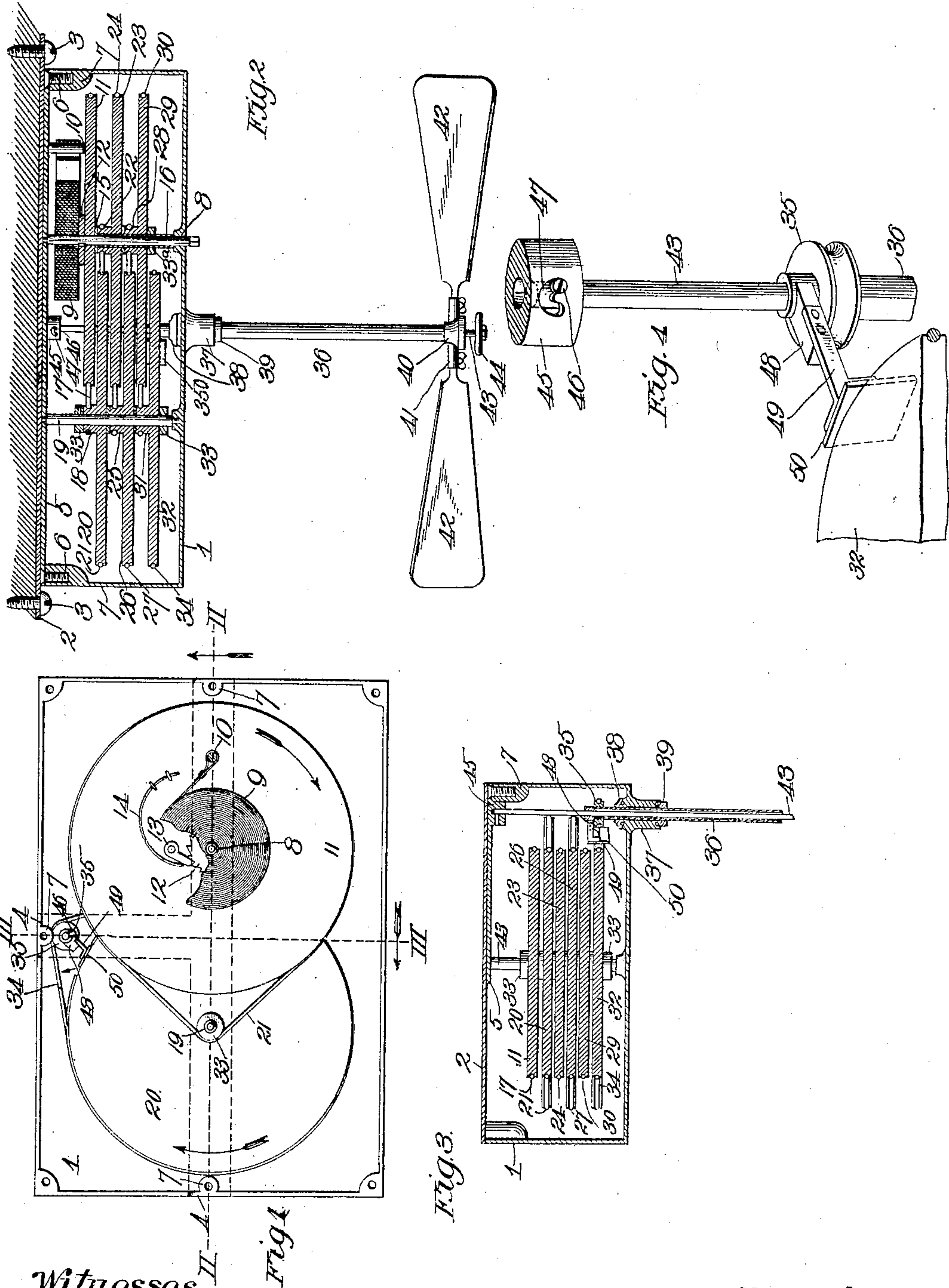
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C. R. BROCK.

FAN MOTOR.

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UNITED STATES PATENT OFFICE.

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FAN-MOTOR.

No. 814,267.

Specification of Letters Patent.

Patented March 6, 1906.

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To all whom it may concern:

Be it known that I, CLARENCE R. BROCK, a citizen of the United States, residing at Perry, in the county of Jefferson and State of Kansas, have invented certain new and useful Improvements in Fan-Motors, of which the following is a specification.

This invention relates to fan-motors; and my object is to produce a machine of this character which operates efficiently and reliably, without noise, and may be easily and quickly started or stopped whenever desired.

With this object in view the invention consists in certain novel and peculiar features of construction and organization, as hereinafter described and claimed, and in order that it may be fully understood reference is to be had to the accompanying drawings, in which—

Figure 1 is a top plan view of the machine with the top plate and skeleton frame omitted. Fig. 2 is a vertical section on the line II II of Fig. 1. Fig. 3 is a vertical section on the line III III of Fig. 1. Fig. 4 is an enlarged detail perspective view to show the brake mechanism.

In the said drawings, 1 indicates a rectangular casing with its top plate 2 projecting beyond the walls and secured by screws 3 or in an equivalent manner to a ceiling or other support.

4 indicates recesses in the upper edge of the ends and one of the side walls to receive the T-shaped or skeleton frame 5, screw-bolts 6 extending through said frame and into threaded ears 7 of casing 1 to secure said frame reliably in place.

8 indicates a shaft journaled at its lower end in the bottom of the casing and at its upper end in the skeleton frame and having its lower end squared to receive a crank when it is desired to wind up the spring 9, coiled around the upper portion of the shaft and secured rigidly to the same at its inner end in any suitable manner, its outer end being secured to the pin 10, depending from said frame. 11 is a relatively large belt-wheel journaled on said shaft just below the spring, and 12 a ratchet-wheel keyed on the shaft between the belt-wheel and spring and engaged by a pivoted pawl 13, held operative by a spring 14, secured to the belt-wheel. By this arrangement it is obvious that the shaft 8 may be turned by the crank or other-

wise and the spring wound up without turning the belt-wheel 11, the pawl-and-ratchet mechanism of course preventing the unwinding of the shaft unless such movement is accompanied by corresponding movement on the part of the belt-wheel.

15 is a washer upon shaft 8 below wheel 11 and on the upper end of a sleeve 16 upon said shaft.

17 is a belt connecting wheel 16 with a small wheel 18, journaled on stationary shaft 19 and rigid with a large belt-wheel 20, in turn connected by a belt 21 to a small belt-wheel 22, journaled on sleeve 16. Wheel 22 is rigid with a large wheel 23, and the latter is connected by a belt 24 with a small belt-wheel 25, journaled on shaft 19, and rigidly connected to a large belt-wheel 26, connected by a belt 27 to a small belt-wheel 28, journaled on sleeve 16. Said wheel 28 is rigid with a large wheel 29, connected by a belt 30 to a small belt-wheel 31, journaled on shaft 19, rigid with a large belt-wheel 32. Collars 33 on shaft 19 hold the belt-wheels thereon in proper relative positions, and a collar 33^a on the sleeve holds the belt-wheels thereof in the proper relative positions.

34 is a belt connecting wheel 32 with a small belt-wheel 35, rigidly secured to the upper end of a vertical shaft 36, extending through a ball-bearing 37, the caps 38 and 39 of said bearing being secured rigidly to the shaft.

40 is a casting secured to the lower end of shaft 36 and provided with arms 41, engaged by the stems of the fan-blades 42.

43 is a rod extending loosely up through shaft 36 and provided with a handle 44 at its lower end by which it may be turned. At its upper end the rod projects into a cylindrical boss 45, depending from frame 5, and is provided at said end with a radial pin 46, engaging an inverted-U-shaped slot 47 in the boss.

48 is an arm rigid on the rod 43, just above belt-wheel 35, and 49 is a resilient arm or spring secured to said arm 48 and carrying at its outer end a brake-shoe 50. When the machine is at rest, the brake-shoe is engaged with the periphery of wheel 32, as shown in Fig. 1, the pin 46 of rod 43 at such time being in engagement with the right-hand end of the U-shaped slot 47 of boss 45. The U-shaped slot necessitates initially an upward move-

ment of the rod, which is then turned to effect the release of the brake and drawn down to cause the pin to engage the other arm of the slot to lock the brake in operative position. As soon as the brake is released by swinging the brake-shoe in the direction indicated by the adjacent arrow, Fig. 1, the spring begins to turn in the direction indicated by the arrow *a*, same figure, this unwinding movement through the pawl-and-ratchet mechanism likewise turning belt-wheel 11, the slow movement of which through the gearing shown rotating the belt-wheel 35, and consequently the fan, at an exceedingly high speed. The strength and length of the spring and the proportionate size and number of the wheels of course determine how long the fan will operate in one unwinding movement of the spring. The length and strength of the spring and the number and size of the wheels are therefore unimportant as regards this invention.

When it is desired to arrest the fan, the operator simply grasps handle 44 and pushes the rod upward and at the same time turns it to the right, this turning movement to the right throwing the brake in the opposite direction to that indicated by the adjacent arrow, Fig. 1, and against the periphery of wheel 32, the spring 49 permitting the brake-shoe to be applied with sufficient force to instantly arrest said wheel. The rod is then pulled down to cause the pin to enter the other arm of the slot to lock the brake in operative position.

From the above description it will be apparent that I have produced a fan-motor possessing the features of advantage enumerated as desirable, and which obviously is susceptible of modification in its form, proportion, detail construction, and arrangement of the parts without departing from the principle of construction involved.

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

1. A fan-motor, comprising a suitable casing, a fan-carrying shaft projecting into the casing and suitably journaled, a yieldingly-driven shaft geared to the fan-carrying shaft to operate the latter, a rod extending through the fan-carrying shaft and provided with a handle, and a resilient arm supported from and movable with said rod and provided with

a brake-shoe for engagement with a movable part of the gearing to arrest the same.

2. A fan-motor, comprising a suitable casing, a fan-carrying shaft projecting into the casing and suitably journaled, a yieldingly-driven shaft geared to the fan-carrying shaft to operate the latter, a rod extending through the fan-carrying shaft and provided with a handle, a resilient arm supported from and movable with said rod and provided with a brake-shoe for engagement with a movable part of the gearing to arrest the same, and means for locking the brake-shoe in or out of engagement with said movable part of the gearing.

3. The combination of a suitable casing, a fan-carrying shaft projecting into the casing and suitably journaled, a boss therein having an inverted-U-shaped slot and a longitudinal passage opening into said slot, a driven wheel suitably journaled within the casing, a rod projecting into the casing and the passage of the boss, and having longitudinal and rotary movement, a radial pin secured to the rod and engaging said U-shaped slot, a resilient arm or spring supported from and movable with the rod, and a brake-shoe secured to the outer end of said resilient arm or spring.

4. The combination of a suitable casing, a winding-shaft therein, a spring upon and secured at its inner end to the shaft and at its outer end to a point fixed with relation to the casing, a ratchet-wheel rigid on said shaft, a train of gearing suitably journaled in the casing and one member thereof provided with a spring-actuated pawl engaging said ratchet-wheel, a shaft suitably journaled and provided with a fan and with a wheel geared to a member of the train of gearing, a rod extending up through said shaft and having rotary and longitudinal movement therein, a resilient arm supported from and movable with said rod and provided with a brake-shoe to engage the periphery of one member of the train of gearing, and means to lock said shaft at either extreme of its rotary movement.

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

CLARENCE R. BROCK.

Witnesses:

WILLIAM C. INGLE,
MAX DONTREVILL.