

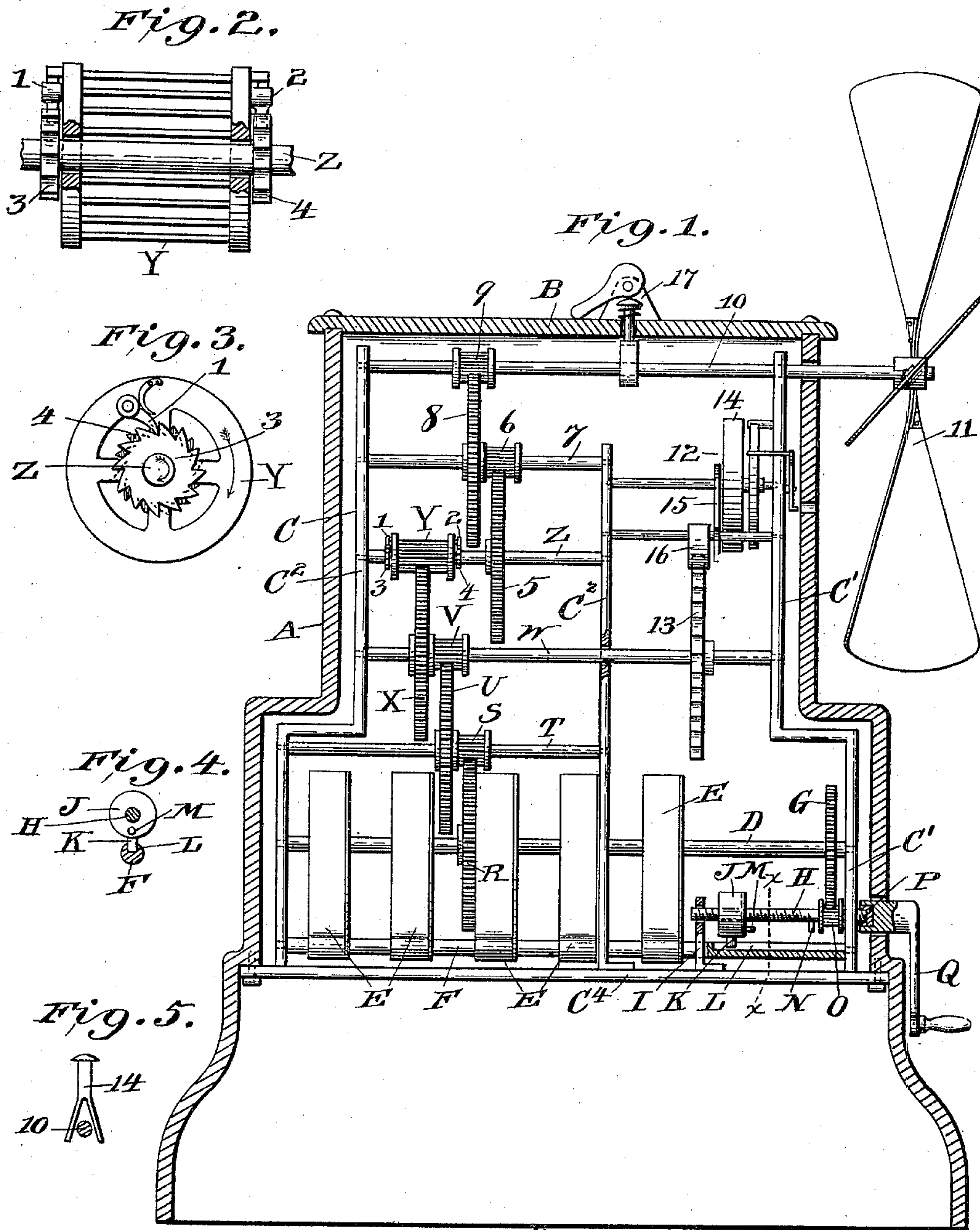
No. 687,897.

Patented Dec. 3, 1901.

P. NEAGLE.
SPRING MOTOR FOR FANS.

(Application filed Mar. 22, 1901.)

(No Model.)



Witnesses
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UNITED STATES PATENT OFFICE.

PICKENS NEAGLE, OF WASHINGTON, DISTRICT OF COLUMBIA.

SPRING-MOTOR FOR FANS.

SPECIFICATION forming part of Letters Patent No. 687,897, dated December 3, 1901.

Application filed March 22, 1901. Serial No. 52,385. (No model.)

To all whom it may concern:

Be it known that I, PICKENS NEAGLE, a citizen of the United States, residing at Washington, in the District of Columbia, have invented certain new and useful Improvements in Spring-Motors for Fans, of which the following is a specification.

My invention relates to improvements in spring-motors for fans, and has for its object to provide a spring-motor having means for imparting a continuous uninterrupted motion to the fan, means for regulating the winding of the motor, and also to provide a motor which is simple and inexpensive in construction and easily operated.

My invention consists in the construction, combination, and arrangement of features more fully hereinafter described and claimed.

My invention is shown in the accompanying drawings, in which—

Figure 1 is a central vertical section; Fig. 2, a side elevation of the compensating device; Fig. 3, an end view of the same; Fig. 4, a detail sectional view on line *xx* of Fig. 1 of the device for regulating the winding of the motor; and Fig. 5 is a detail view of the brake for the fan-shaft.

Referring to the drawings, in which like characters of reference denote like parts throughout the several views, A designates the casing of the motor, provided with a removable top B.

C is the frame of the motor, secured in the casing and comprising plates C^1 C^2 C^3 , mounted on a base-plate C^4 .

D is a drive-shaft having a series of springs E mounted thereon.

F is a rod to which one end of each of the springs is secured.

G is a cog-wheel on one end of the drive-shaft.

H is a screw-threaded winding-shaft, one end mounted in a bracket I, secured to the base-plate C^4 , and the other end in the plate C^1 .

J is a screw-threaded sleeve mounted on the shaft H and provided with a depending lug K, engaging and sliding in an elongated slot L in the rod F.

M is a pin projecting laterally from the front face of the sleeve J.

N is a pin depending from the shaft H,

which engages with the pin M of the sleeve J when said sleeve is in its forward position.

O is a pinion fixed to the shaft H and meshing with the cog-wheel G. The outer end of the shaft H is screw-threaded and provided with a screw-threaded cap P, squared on its outer surface.

Q is a key for winding the motor, adapted to fit over the cap P.

R is a cog-wheel mounted on the shaft D, meshing with the pinion S on a shaft T.

U is a cog-wheel on shaft T, meshing with a pinion V on a shaft W.

X is a cog-wheel on the shaft W, meshing with a lantern-wheel Y of the compensating device on the shaft Z. The lantern-wheel Y is loose on the shaft Z and is provided with spring-controlled pawls 1 and 2.

3 and 4 are ratchet-wheels fixed to the shaft Z, which are engaged by the pawls 1 and 2, respectively, the ratchet-wheels being so located with reference to each other that the teeth of one are intermediate with the teeth of the other, so that constantly one pawl or the other will be in engagement with its ratchet.

5 is a cog-wheel on the shaft Z, meshing with a pinion 6 on a shaft 7.

8 is a cog-wheel on the shaft 7, meshing with a pinion 9 on the driven shaft 10.

11 is a fan on the outer end of the shaft 10.

12 is the escape mechanism for controlling the shaft W, said escape mechanism having an escape-wheel 13, a balance-wheel 14, an anchor-lever 15, and an anchor 16.

Other forms of escape mechanism than the one above described may be employed for accomplishing the purpose desired.

17 is a brake for the fan-shaft.

I do not limit myself to the precise construction and arrangement herein shown and described, as the same may be varied somewhat without departing from the spirit of my invention.

Although I contemplate using the spring-motor to run a fan, it may with equal facility be used for other purposes.

The operation is as follows: To start the motor, the winding-shaft is turned by means of the key until pin M of the sleeve J engages the pin N on the shaft H and prevents the springs from being wound up too tight. Mo-

tion is communicated from the drive-shaft to the lantern-wheel by the cog-wheels R, U, and X and pinions S and V, the lantern-wheel in turn communicating motion to the shaft Z 5 through the medium of the pawls 1 and 2 and ratchets 3 and 4. Motion is communicated from the shaft Z to the driven shaft 10 by means of the cog-wheels 5 and 8 and pinions 6 and 9, which revolves the fan. During the intervals between the strokes of the escape- 10 ment the shaft Z will rotate independently of the lantern-wheel by means of the momentum of the fan, and the pawls will run over the ratchet-wheels, and at each stroke of the es- 15 capement the cog-wheel X will operate the lantern-wheel Y, and one of the pawls being in engagement with its ratchet will continue the rotation of the shaft Z in the same direc- 20 tion without interruption. The fan may be stopped at any time by applying the brake to the driven shaft.

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

25 1. A spring-motor provided with an escapement and a device for compensating for lost motion during the strokes of the escapement, substantially as described.

30 2. A spring-motor provided with an escapement, and a rotatable shaft having a rotatable body thereon for compensating for lost motion resulting from the stoppage during the strokes of the escapement, and means for causing the rotatable body to rotate with the 35 shaft in one direction and to allow the shaft to rotate independently in the same direction when the rotating body stops for imparting a continuous motion to the driven shaft, substantially as described.

40 3. A spring-motor provided with an escapement, a drive-shaft, a driven shaft, a train of gearing connecting the same, and a device interposed in said gearing for compensating for lost motion resulting from the stoppage 45 during the strokes of the escapement, said compensating device comprising a rotatable shaft having a rotatable body mounted thereon and means for causing it to rotate the shaft in one direction and to allow the shaft to ro- 50 tate independently of said rotatable body in the same direction for the purpose of impart-

ing a continuous motion to the driven shaft, substantially as described.

4. A spring-motor provided with an escapement, a rotatable shaft having ratchet-wheels, 55 the teeth of one of said wheels being intermediate with the teeth of the other, and a rotatable body mounted on said shaft provided with pawls adapted to engage said ratchets for the purpose of causing said rotatable body 60 to rotate the shaft in one direction and to allow the shaft to rotate independently in the same direction, substantially as described.

5. A spring-motor provided with an escapement, a rotatable shaft having ratchet-wheels, 65 the teeth of one of said wheels being intermediate with the teeth of the other, and a rotatable gear-wheel mounted on said shaft provided with pawls adapted to engage said ratchet-wheels for the purpose of causing said 70 rotatable gear-wheel to rotate the shaft in one direction and to allow the shaft to rotate independently in the same direction, substantially as described.

6. A spring-motor provided with an escapement, a drive-shaft, a driven shaft, a train of gearing connecting the same, and a rotatable 75 shaft having ratchet-wheels, the teeth of one of said wheels being intermediate with the teeth of the other, and a rotatable gear-wheel 80 mounted on said shaft provided with pawls which engage said ratchet-wheels for the purpose of causing said rotatable gear-wheel to rotate the shaft in one direction, and to allow the shaft to rotate independently in the same 85 direction, substantially as described.

7. A spring-motor provided with a drive-shaft having a series of springs and a gear-wheel mounted thereon, and a screw-threaded winding-shaft provided with a pin, and a pin- 90 ion which meshes with said gear-wheel, a slotted rod, a screw-threaded sleeve on said shaft provided with a pin on its face adapted to engage the pin on said shaft, and a depending lug adapted to engage and slide in the slot in 95 said rod, substantially as described.

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

PICKENS NEAGLE.

Witnesses:

P. F. GRAY,

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