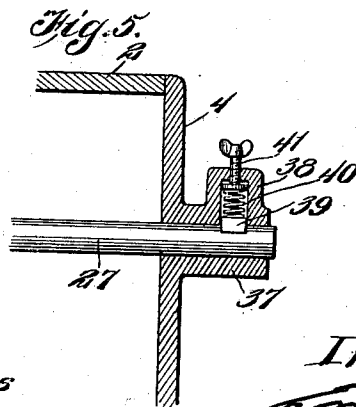
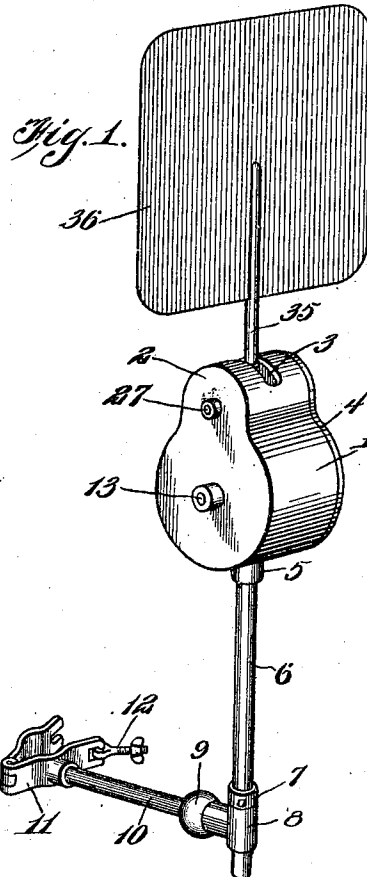


I. A. SHANTON.
 SPRING MOTOR.
 APPLICATION FILED SEPT. 23, 1910.

996,147.

Patented June 27, 1911.

2 SHEETS-SHEET 1.



WITNESSES

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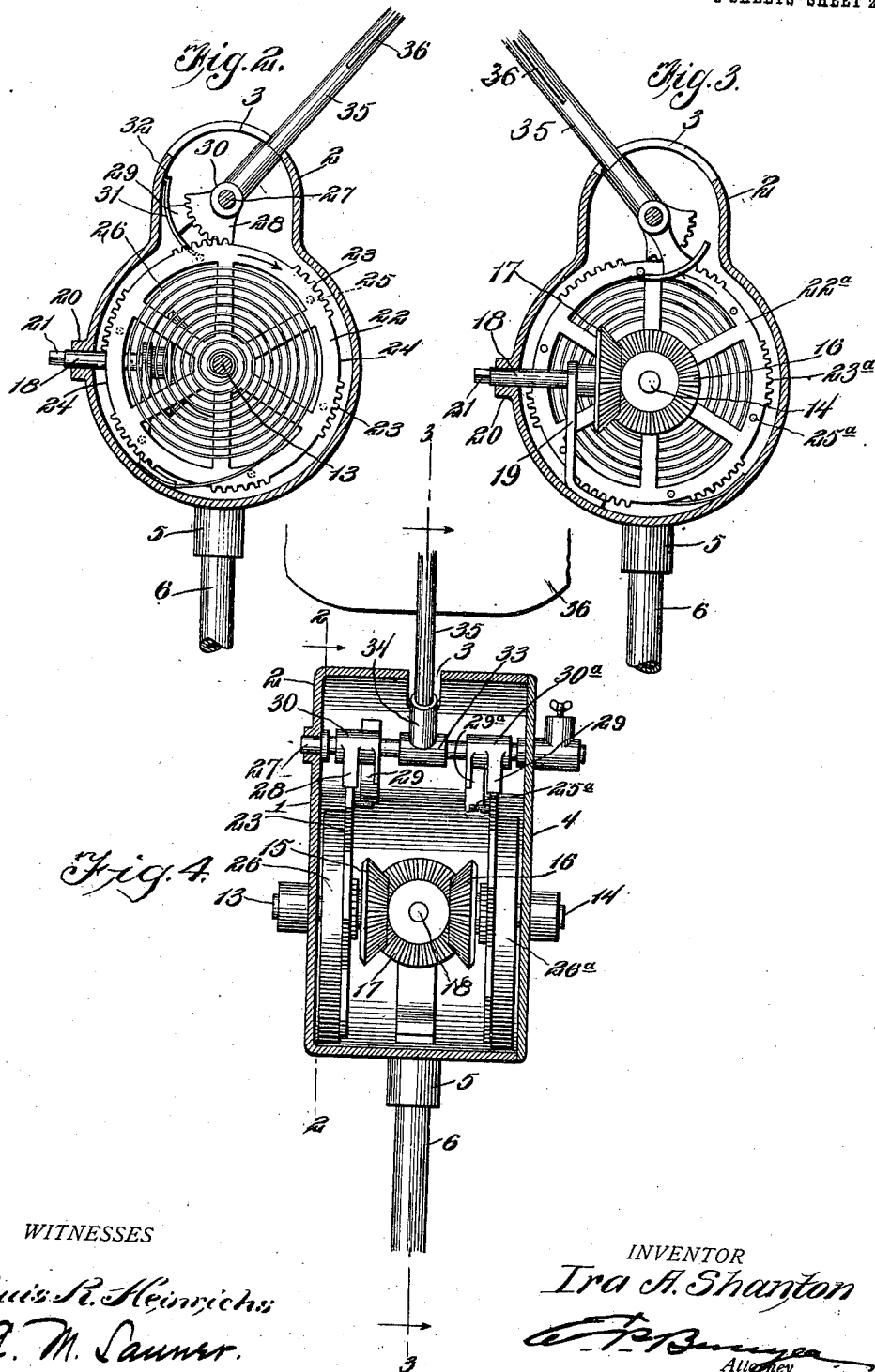
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UNITED STATES PATENT OFFICE.

IRA A. SHANTON, OF ST. PETERSBURG, FLORIDA.

SPRING-MOTOR.

996,147.

Specification of Letters Patent. Patented June 27, 1911.

Application filed September 23, 1910. Serial No. 583,405.

To all whom it may concern:

Be it known that I, IRA A. SHANTON, a citizen of the United States, residing at St. Petersburg, in the county of Hillsboro and State of Florida, have invented certain new and useful Improvements in Spring-Motors, of which the following is a specification.

This invention relates to spring motors designed more particularly for operating fans, and one of the principal objects of the invention is to provide an efficient, reliable and compact portable device for oscillating a fan.

Another object of the invention is to provide a spring motor of simple construction which can be manufactured at a low cost for oscillating a fan, means being provided for regulating the speed of the fan, and means being also provided for attaching the motor to a chair, desk, bed or other object, and to permit the fan to be adjusted in various positions for use.

Still another object of the invention is to provide a spring motor for operating fans comprising a casing having inclosed therein a pair of mutilated gears actuated by coil springs, said gears adapted to be wound up by bevel gears and to alternately rotate in opposite directions to oscillate a fan, said fan being connected to a shaft provided with two sectors, one for each mutilated gear, and an escapement device for holding one of the gears against rotation, while the other is rotated and vice versa.

These and other objects may be attained by means of the construction illustrated in the accompanying drawings, in which,

Figure 1 is a perspective view of my invention complete. Fig. 2 is a vertical section taken on the line 2—2 of Fig. 4 looking in the direction indicated by the arrow. Fig. 3 is a sectional view taken on the line 3—3 of Fig. 4 looking in the direction indicated by the arrows. Fig. 4 is a vertical sectional view taken at right angles to the view shown in Fig. 3. Fig. 5 is a detail sectional view showing the brake for regulating the speed of the motor.

Referring to the drawings the numeral 1 designates a casing of the required size and shape and containing the motor, said casing having, preferably, an enlargement 2 upon its upper side, said enlargement being pro-

vided with a slot 3. The casing 1 is provided with a suitable detachable cover plate 4. Connected to a socket 5 at the bottom of the casing is a rod 6, said rod being provided with a collar 7 adapted to rest upon a sleeve 8, through which the rod 6 extends. A ball-and-socket hinge 9 is provided for the adjustment of the fan in any desired position. A supporting rod 10 is connected to the ball-and-socket hinge at one end and the other end is secured to a suitable hinge clamp 11 provided with a swinging eye bolt 12 for attaching the fan motor to a chair, desk, table, bed or other piece of furniture or support. Journaled in the opposite sides of the casing are stub shafts 13—14 and on the inner ends of said shafts are beveled gears 15—16, said beveled gears being oppositely disposed and constantly in mesh with a similar beveled gear 17 mounted upon the inner end of the winding spindle 18 journaled in a bracket 19 in the casing, and extending through a bearing 20 formed in one side of the casing, said spindle being provided with a squared portion 21 to receive the winding key. Secured to the stub shaft 13 is a mutilated gear 22, said gear having a series of cogs 23 on the periphery thereof, said series of cogs being spaced apart by means of plain uncogged portions 24.

A series of stop pins 25 are secured to the inner side of the mutilated gear 22 adjacent to the cogs 23. A clock spring 26 is secured at one end to the shaft 13, while the opposite end is secured to the inner wall of the casing 1. Upon the stub shaft 14 a mutilated gear 22^a is secured, said gear being provided with cog teeth 23^a, substantially identical with those already described. Stop pins 25^a are secured to this mutilated gear, said pins projecting inwardly. A clock spring 26^a is secured to the shaft 14 at one end, while the opposite end is secured to the casing 1. The mutilated gears 22 and 22^a are disposed in parallel relation and the plain portion 24 of the gear 22 is disposed in alinement with the cog teeth 23^a on the gear 22^a.

A shaft 27 is journaled in the enlargement 2 of the casing. Secured to this shaft are two toothed sectors 28—29, said sectors adapted to engage the cog teeth 23—23^a on the mutilated gears. A verge or escapement device 29 is connected to the sleeve 30 on

which the sector 29' is formed, said escapement device having a curved rim 31, provided with projecting ends 32, which engage the pins 25 at the end of each stroke of the shaft 27. A similar escapement 29^a is formed on the sleeve 30^a to engage the pins 25^a on the mutilated gear 22^a.

Secured centrally to the shaft 27 is a sleeve 33 provided with a socket 34 in which is fitted a handle 35 on a fan 36. One end of the shaft 27 projects through a bearing 37 formed on the cover plate 4, and a boss 38 is formed on the bearing 37 to provide for a spring speed regulating brake 39, which bears upon the shaft to create friction to prevent the rapid oscillation of said shaft. A spring 40 bears upon the brake and a thumb screw 41 is utilized for adjusting the brake.

The operation of my invention may be briefly described as follows: After the springs have been wound by means of a key placed upon the squared end 21 of the spindle 18, said springs being wound in opposite directions by means of the beveled gears 15, 16, 17, the mutilated gear 22 will rotate in the direction indicated by the arrow thereon, while the mutilated gear 22^a will rotate in the opposite direction as indicated by the arrow on this gear. At the end of each stroke of the fan, one of the mutilated gears is stopped by the projecting end 32 of the escapement device engaging one of the pins 25.

From the foregoing it will be obvious that a spring fan motor made in accordance with my invention, can be manufactured at low cost, is simple in construction, is efficient and reliable in operation, cannot readily get out of order, can be quickly wound, can be adjusted to suit various conditions or positions and that the speed of the motor may be regulated at will.

I claim:

1. A fan motor comprising a casing, stub shafts mounted in the casing, oppositely disposed beveled gears connected to said shafts on the inside of the casing, clock springs connected to said stub shafts and to said casing, a centrally disposed beveled gear adapted to mesh with the first named beveled gears for winding the springs, mutilated gears connected to said stub shafts and provided with cog teeth at intervals, sectors mounted upon a separate shaft, escapement devices on said sectors and a fan connected to said shaft for oscillation, substantially as described.

2. A spring motor comprising a casing, stub shafts mounted in the casing, beveled gears oppositely disposed in said casing, a winding beveled gear in mesh with said first mentioned beveled gears, springs on said stub shafts, mutilated gears on said stub shafts, a fan shaft, toothed sectors connected to said shaft, a fan connected to said shaft, and means for stopping one of the mutilated gears, while the other is rotated.

3. A spring motor comprising a casing, stub shafts in the casing, springs secured to said stub shafts and to said casing, means for oppositely rotating said stub shafts for winding up said springs, mutilated gears connected to said stub shafts, a fan shaft, toothed sectors connected to said fan shaft for meshing with the teeth on the mutilated gears, escapement devices for holding one of the mutilated gears, while the other is rotated, and vice versa.

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

IRA A. SHANTON.

Witnesses:

ROBERT J. W. TAYLOR,
E. L. CUSHMAN.