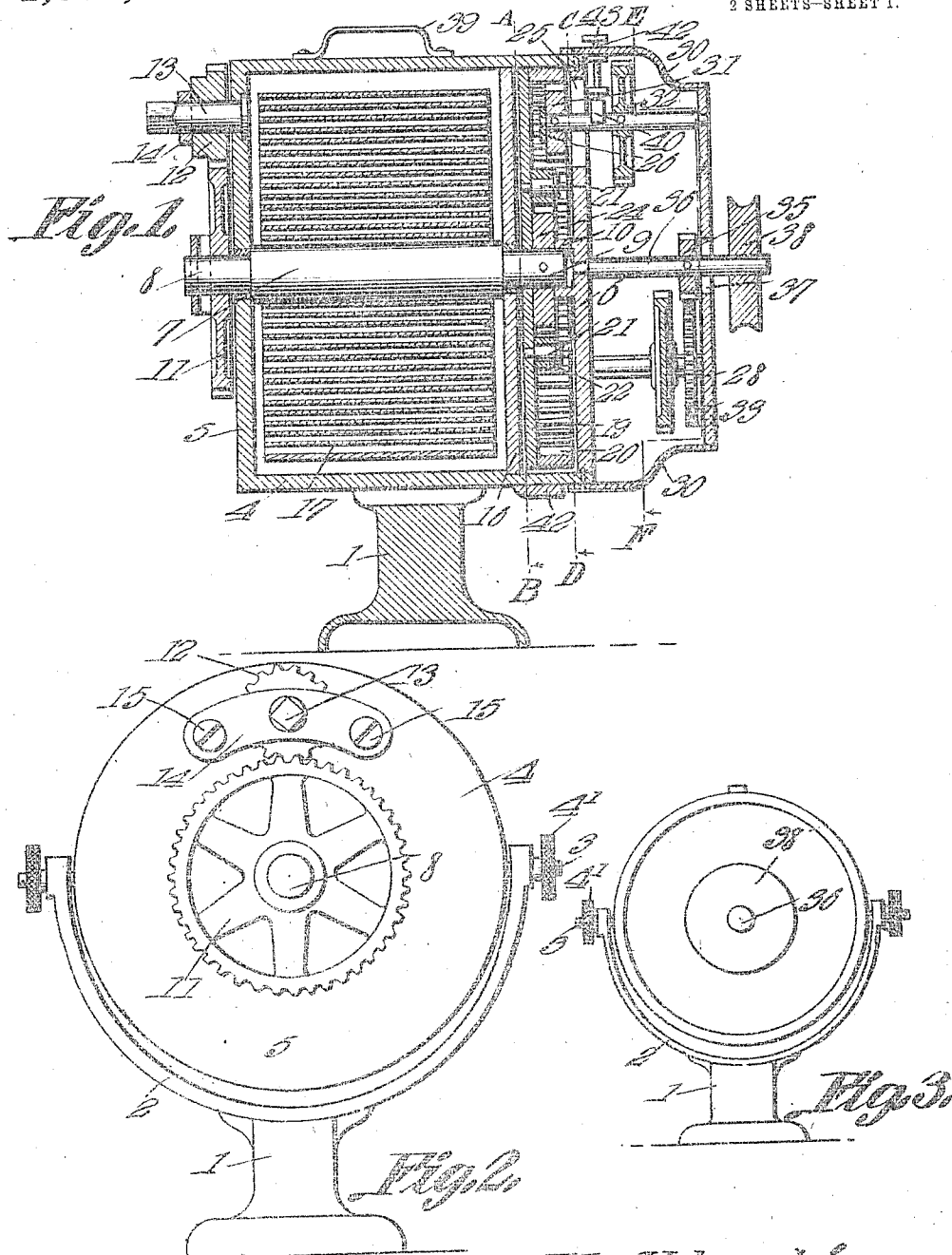


C. H. VON HOHENSTEIN.
FAN SPRING MOTOR.
APPLICATION FILED JUNE 19, 1912.

Patented Jan. 28, 1913.

1,051,529.

2 SHEETS—SHEET 1.



Witnesses

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J. H. Walcott

Charles H. Von Hohenstein, Inventor

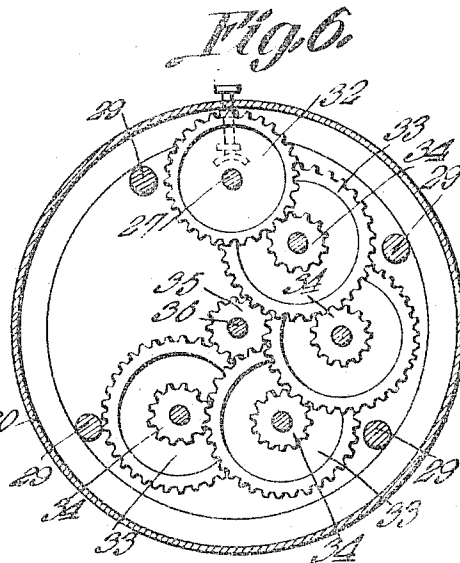
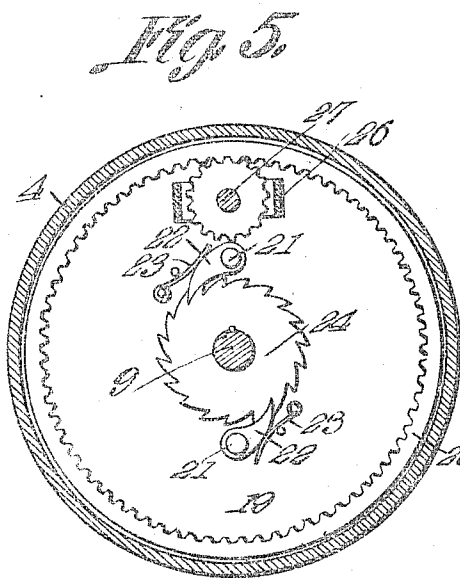
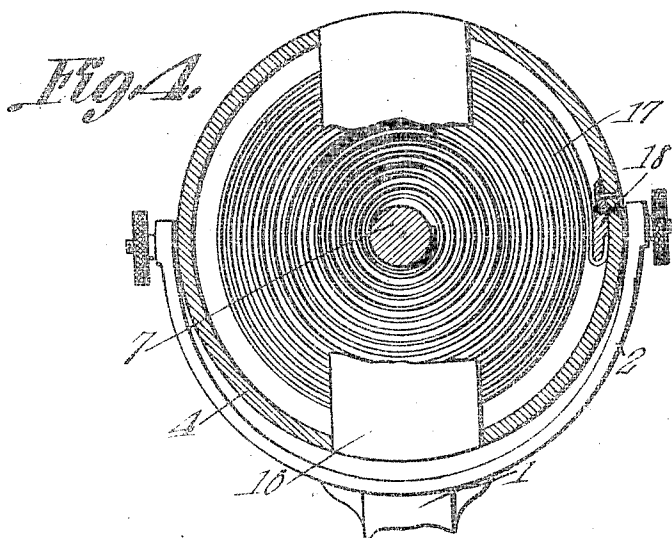
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Witnesses

[Signature]
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UNITED STATES PATENT OFFICE.

CHARLES H. VON HOHENSTEIN, OF SAN ANTONIO, TEXAS. ASSIGNOR TO HANNA
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FAN SPRING-MOTOR.

1,051,529.

Specification of Letters Patent.

Patented Jan. 28, 1913.

Application filed June 19, 1912. Serial No. 704,661.

To all whom it may concern:

Be it known that I, CHARLES H. VON HOHENSTEIN, a citizen of the United States, residing at San Antonio, in the county of Bexar and State of Texas, have invented a new and useful Fan Spring-Motor, of which the following is a specification.

This invention relates to spring motors, one of the objects of the invention being to provide a motor which is compact in construction, can be easily carried, and is formed of comparatively few parts which cannot, therefore, readily get out of order.

With the foregoing and other objects in view which will appear as the description proceeds, the invention resides in the combination and arrangement of parts and in the details of construction hereinafter described and claimed, it being understood that changes in the precise embodiment of invention herein disclosed can be made within the scope of what is claimed, without departing from the spirit of the invention.

In the accompanying drawings the preferred form of the invention has been shown.

In said drawings:—Figure 1 is a central vertical section through a motor embodying the present improvements. Fig. 2 is a rear elevation of the motor casing and its support. Fig. 3 is a front elevation, on a reduced scale, of the motor. Fig. 4 is a section on line A-B Fig. 1, the middle portion of the cross plate being removed and the arbor being shown in section. Fig. 5 is a section on line C-D Fig. 1. Fig. 6 is a section on line E-F Fig. 1.

Referring to the figures by characters of reference 1 designates a base having a yoke 2 for the reception of trunnions 3 extending laterally from a cylindrical casing 4. These trunnions have threaded ends engaged by binding nuts 4' whereby the casing can be held in any position to which it may be swung within the yoke 3. The casing is closed at the back, as indicated at 5 while its front end is closed by a detachable circular plate 6. An arbor 7 is arranged within the center of the casing and has its reduced ends 8 and 9 journaled within the end 5 and within a boss 10 located upon the inner face of the plate 6 at the center thereof. A gear 11 is keyed or otherwise attached to the reduced end 8 of the arbor and meshes with a smaller gear 12 keyed or otherwise

fastened to the short shaft 13 which is journaled at one end within the end 5 of the casing and at its other end within a bracket 14. This bracket is secured to the casing by means of screws 15 or the like and is shaped as to bridge over the gear 12. The shaft 13 projects through and beyond the bracket and has an angular terminal for engagement with a winding key (not shown).

A cross plate 16 is secured diametrically within the casing 4 and has a central opening within which the arbor 7 is mounted. This plate constitutes an abutment for the annular shoulder formed at the inner end of the reduced portion 9 of the arbor and also serves to prevent displacement of a heavy volute spring 17 which is coiled about the arbor and secured at one end to said arbor and at its other end to the casing. Spring 17 may be secured to the casing in any manner desired, as by hooking the free outer end thereof into engagement with a block 18 riveted or otherwise fastened to the inner surface of the casing.

A disk 19 is loosely mounted upon the reduced portion 9 of the arbor and has an internal gear 20 secured to the peripheral portion thereof. Stud 21 extends from the disk 19 adjacent the center thereof and carry dogs 22 which are held, by means of springs 23, in normal engagement with a ratchet wheel 24. This ratchet wheel is secured to the reduced portion of the arbor and serves, also, as a means for holding the disk 19 against displacement relative to the arbor.

An opening 25 is formed within the plate 6 adjacent the periphery thereof and is bridged by a bracket 26 in which is journaled one end of a spindle 27, the other end of this spindle being journaled within a face plate 28. Said face plate is preferably circular, as shown, and is connected to the plate 6 by means of posts 29, there being a casing extension 30 secured to the peripheral portion of the face plate 28 and to the end portion of casing 4. A gear 31 is secured to one end portion of spindle 27 and meshes with the internal gear 20. Another gear 32 is secured to the spindle 27 at a point between the plate 6 and plate 28 and constitutes the first of a train of gears arranged within the casing extension 30. This chain is made up of large gears 33 and small gears 34 so arranged as to multiply speed, the last

gear of the train being in mesh with a gear 35 secured to a spindle 36. This spindle is journaled at its inner end within the middle portion of the plate 6 and at its outer end portion extends through an opening 37 formed at the center of the face plate 28. A pulley 38 or the like is secured to the outer end of the spindle 36.

It will be apparent that, by rotating shaft 13 in one direction by means of a suitable key, motion may be transmitted therefrom through gears 12 and 11 to the arbor 7 and, as the spring 17 is secured at its ends to the arbor and the casing 4 respectively, it will be apparent that this rotation of the arbor will result in the spring being wound tightly about the arbor, ratchet wheel 24, during this winding operation, slipping past the dogs 22. As soon as the spring has been wound, and the key removed from shaft 13, said spring will cause the arbor to rotate and as the ratchet wheel 24 is secured to the arbor, it will engage the dogs and cause disk 19 to also rotate with the arbor. As the internal gear 20 is secured to and moves with the disk, this rotation of the disk will result in the rotation of gear 31 at a high speed. This speed will be multiplied by the train of gears and power transmitted by said gears to the spindle 36 carrying the wheel 38.

It will be apparent, by referring to the arrangement of gears disclosed, that wheel 38 will be rotated at a high speed and, by reason of the size and strength of the spring employed, this rotation may be maintained for a long time without necessitating re-winding of the spring.

For convenience in transporting the motor, a handle, such as shown at 39, may be secured to the top portion of the casing 4.

The speed of rotation of the wheel 38 can be regulated by means of a brake shoe 40 swiveled to one end of a screw 41 which extends through ears 42 and has a head 43 at its outer end whereby the screw can be turned for the purpose of forcing the shoe 40 against the spindle 27 with any degree of pressure desired.

The motor herein described can be used for various purposes such as driving machinery of different kinds and it is to be understood that, if desired, the wheel 38 can be removed and fan blades substituted. This structure is so obvious that illustration thereof is not deemed necessary.

What is claimed is:—

1. A motor including a base, a casing supported thereby and movable relative thereto, an arbor journaled within the casing, a volute spring secured at its ends to the arbor and casing, means for winding the spring upon the arbor, an internal gear loosely mounted within the casing, a pawl and ratchet connection between said gear and the arbor, a spindle, and a train of gears

for transmitting motion from the internal gear to the spindle, said gears constituting speed multiplying means.

2. A motor including a pivotally supported casing, a cross strip secured within the casing, an end plate secured to one end of the casing and having a central recessed bearing portion, an arbor journaled within one end of the casing and within the bearing portion, said arbor being loosely mounted within the cross strip, a volute spring interposed between the cross strip and one end of the casing and secured at its ends to the arbor and to the casing respectively, means for rotating the arbor to wind the spring, an internal gear loosely mounted on the arbor and disposed between the end plate and the cross strip, a pawl and ratchet connection between the arbor and the internal gear, a gear meshing with the internal gear, a face plate, a train of gears interposed between the face plate and the end plate and actuated by said meshing gears, and a spindle journaled within the end plate and extending beyond the face plate, said spindle being actuated by the train of gears.

3. A motor including a casing, an arbor, a volute spring connected to and adapted to wind upon the arbor, an end plate constituting a bearing for the arbor, a face plate, a casing extension connecting said face plate and the casing, a spindle journaled within the end plate and extending through the face plate, a train of gears within the casing extension for actuating the spindle, a gear loosely mounted on the arbor for actuating said train of gears, and a pawl and ratchet connection between said gear and the arbor.

4. A motor including a pivotally supported casing, a casing extension movable with said casing, a spindle journaled within the end of the casing, a cross strip within the casing, a spring actuated arbor journaled within the ends of the casing and extending loosely through the cross strip, a disk loosely mounted on the arbor between the cross strip and one end of the casing, an internal gear revoluble with the disk, a ratchet wheel secured to the arbor, a dog secured to the disk and normally engaging the ratchet wheel, and a train of gears actuated by the internal gear for transmitting motion from said internal gear to the spindle.

5. A motor including a casing, a spring actuated arbor, a spindle alining therewith, a plate interposed between and constituting bearings for the arbor and spindle, gears for transmitting motion from the arbor to the spindle and a pawl and ratchet connection between the arbor and one of the gears.

6. A motor including a casing, a spring actuated arbor, a spindle alining therewith, a plate interposed between and constituting bearings for the arbor and spindle, gears for

transmitting motion from the arbor to the
spindle, a pawl and ratchet connection be-
tween the arbor and one of the gears, a brake
shoe, a spindle revoluble with one of the
5 gears and engaged by the shoe, and means
for adjusting the shoe relative to said spindle.
In testimony that I claim the foregoing as

my own, I have hereto affixed my signature
in the presence of two witnesses.

CHARLES H. VON HOHENSTEIN.

Witnesses:

R. CLOSE,

W. L. C. SAUL.