

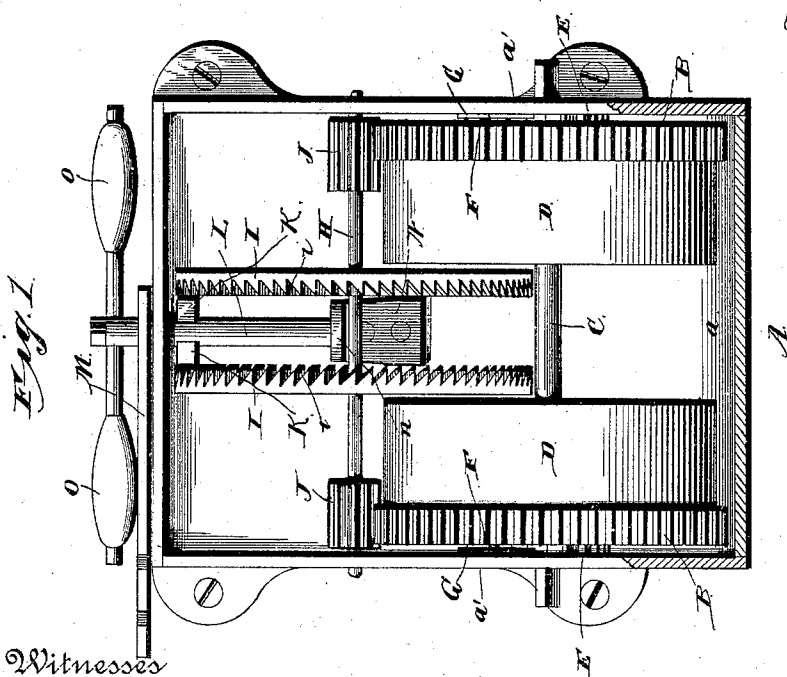
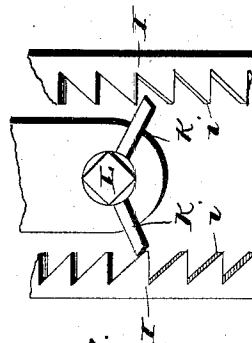
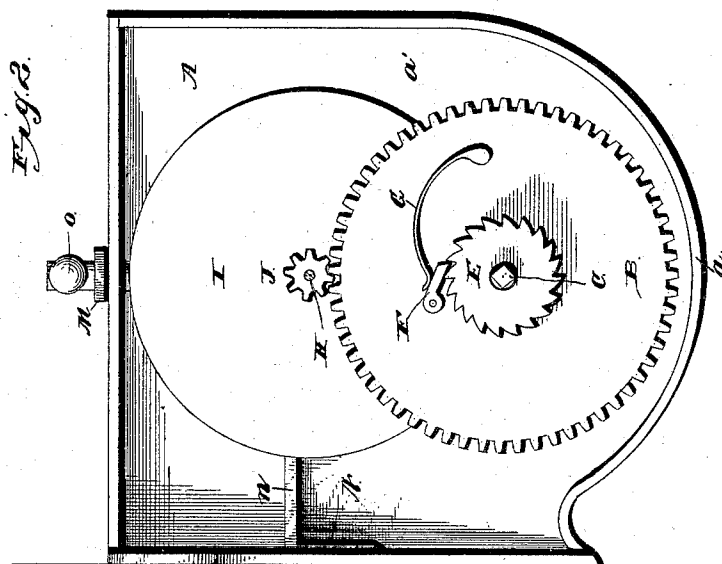
(No Model.)

H. L. SUYDAM.

SPRING MOTOR.

No. 398,355.

Patented Feb. 19, 1889.



Witnesses

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UNITED STATES PATENT OFFICE.

HIRAM L. SUYDAM, OF GENEVA, NEW YORK.

SPRING-MOTOR.

SPECIFICATION forming part of Letters Patent No. 398,355, dated February 19, 1889.

Application filed November 2, 1888. Serial No. 289,838. (No model.)

To all whom it may concern:

Be it known that I, HIRAM L. SUYDAM, a citizen of the United States, residing at Geneva, in the county of Ontario and State of New York, have invented new and useful Improvements in Spring-Motors, of which the following is a specification.

The invention relates to improvements in spring-motors.

10 The object of the present invention is to produce a spring-motor of simple and comparatively inexpensive construction for fans, cradles, and the like where an oscillating or vibratory motion is desirable.

15 The invention consists in the construction and novel combination and arrangement of parts hereinafter fully described, illustrated in the accompanying drawings, and pointed out in the claims hereto appended.

20 In the accompanying drawings, Figure 1 is a front elevation of a motor constructed in accordance with this invention. Fig. 2 is a side elevation illustrating the manner of securing the device in position for operation. Fig. 3 is a detail view showing the arrangement of the pallets and the scape-wheels.

Referring to the drawings, A designates the frame of the motor, constructed of suitable metal and of approximately rectangular form, but having its bottom *a* slightly curved to provide a casing partially around two drive-wheels, B.

35 The frame may be screwed to a bedstead, desk, wall, or in any other place where it is desirable to use it, as it is clearly illustrated in Fig. 1 of the drawings.

The two drive-wheels B are mounted on a shaft, C, upon which they rotate, and to which are secured two barrel-springs, D, that are also attached to the drive-wheels B and propel the same. The shaft C is squared at the ends, whereby the springs D may be wound at either side of the frame, and it is provided near each end with a ratchet-wheel, E, that is engaged by a pawl, F, which prevents the backward rotation of the drive-wheel B, and which is secured to the side *a'* of the frame A, and is held into such engagement by a spring, G, which is also fastened to the side *a'* of the frame A and has its free ends bearing upon the pawl F.

Mounted upon a main shaft, H, are two

scape-wheels, I, which receive motion from two drive-wheels, B, by means of two pinions, J, mounted at the ends of the shaft H and meshing with the two drive-wheels, which are provided with teeth on their peripheries.

The scape-wheels I are provided upon their inner faces with teeth *i*, which are opposite each other, with the teeth on one wheel arranged between those on the other, whereby they are adapted to alternately engage one of two pallets, K, that are fixed to a vertical rock-shaft, L, to which is secured a lever, M, that is designed to be attached to a fan or other device (not shown) desired to receive an oscillating or vibratory movement.

The pallets K are arranged approximately at an angle of one hundred and sixty degrees, and when the motor is in operation one of them is engaged by a tooth, *i*, of one of the scape-wheels I and carried forward, and the vertical rock-shaft L is partially rotated. As soon as the said pallet K is carried sufficiently forward to become disengaged from the propelling-tooth *i*, the other pallet K is engaged by one of the teeth *i* of the other scape-wheel I, which carries the pallet K forward and reverses the motion of the rock-shaft. When this pallet is moved sufficiently forward to become disengaged from the tooth *i*, the other pallet K is engaged by one of the teeth *i* of the other scape-wheel I, which causes the motion of the rock-shaft to be reversed.

The rock-shaft L is arranged above the shaft H and stepped in the horizontal arm *n* of a bracket, N, that is suitably secured to the side of the frame A, and it is also journaled in the top of the frame A, and the said rock-shaft communicates its motion to the lever M, which is vibrated back and forth, the motion being rendered steady by the weighted arms O, which perform the function of a governor, and are arranged within the casing below the lever M, or outside the casing above the said lever.

From the foregoing description and the accompanying drawings the construction, operation, and advantages of the invention will readily be seen, and I desire it to be understood that I do not limit myself to the precise details of construction herein shown and described, as I may, without departing from the spirit of the invention, make any minor changes therein.

What I claim is—

1. The combination, in a spring-motor, of the frame, the main shaft journaled in the frame, the drive-wheels and springs arranged at the ends of the main shaft, the shaft H, carrying pinions meshing with the drive-wheels, and the scape-wheels mounted upon the said shaft H and provided upon their inner faces with teeth, substantially as described.
2. The combination, in a spring-motor, of the frame, the main shaft journaled in the frame, the drive-wheels and springs arranged at the ends of the said shaft, the shaft H, carrying pinions meshing with the drive-wheels, the scape-wheels mounted upon the shaft H, and the rock-shaft arranged between the scape-wheels and provided with the pallets adapted to be alternately engaged by the scape-wheels, substantially as described.

3. The combination, in a spring-motor, of the frame, the main shaft journaled in the frame, the drive-wheels and the spring arranged on said shaft, the shaft H, carrying the pinions meshing with the drive-wheels, the scape-wheels mounted upon the shaft H, the rock-shaft arranged between the scape-wheels and provided with pallets adapted to be alternately engaged by the scape-wheels, the lever, and the weighted arms, substantially as described.

In testimony that I claim the foregoing as my own I have hereto affixed my signature in presence of two witnesses.

HIRAM L. SUYDAM.

Witnesses:

JNO. W. MELLEN,
S. SOUTHWORTH.