C. F. GREER.

Improvement in Sewing Machine Motors.

No. 124,812. Patented March 19, 1872.

Fig. 1.

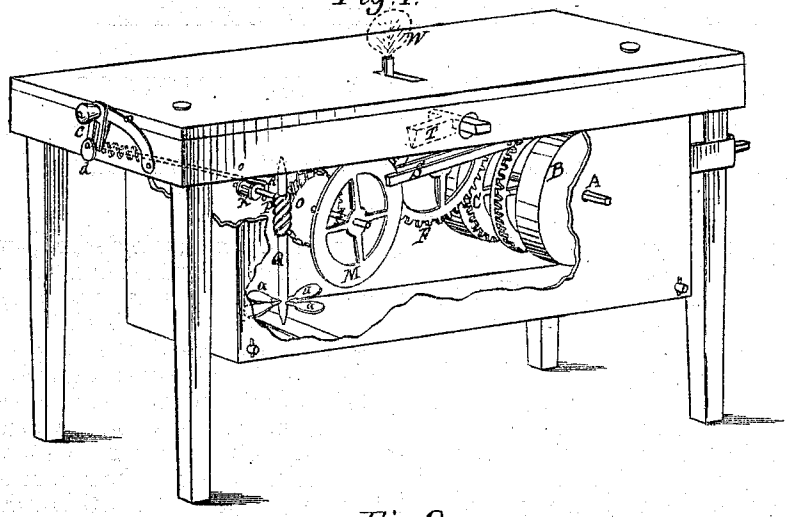


Fig. 2.

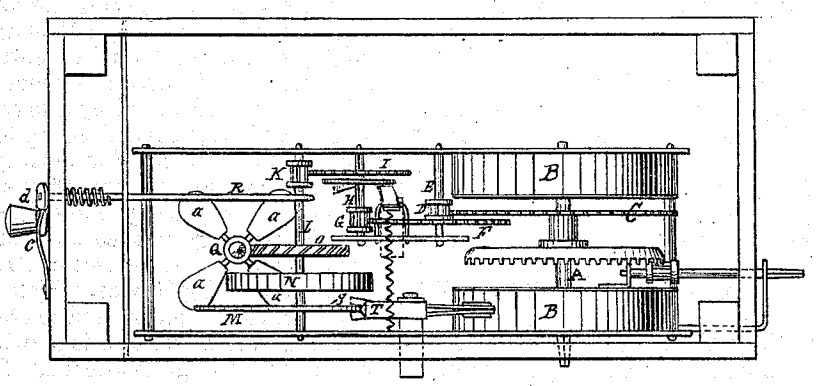
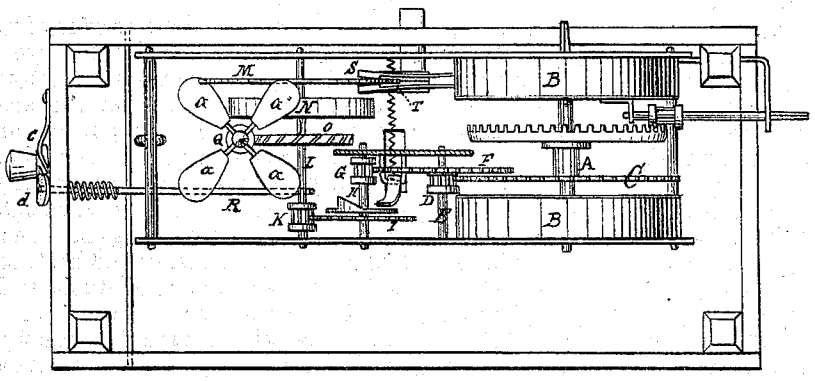


Fig. 3.



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IMPROVEMENT IN SEWING-MACHINE MOTORS.

Specification forming part of Letters Patent No. 124,812, dated March 19, 1872.

To all whom it may concern:

Be it known that I, CHAUNCEY F. GREER, of Georgetown, District of Columbia, have invented a certain new and useful Improved Sewing-Machine Motor.

My invention relates to that class of motors which are operated by springs; and it consists of certain novel features in the combination, construction, and arrangement of the mechanism employed, and also in combining therewith a fanning attachment; and I do hereby declare that the following specification, taken in connection with the drawing furnished and forming a part of the same, is a clear, true, and exact description thereof.

Referring to the drawing, Figure 1 represents one of my spring-motors in perspective as if attached to the under side of a sewing-machine table, and with a portion of the case removed for the purpose of exhibiting the interior. Fig. 2 represents the same viewed from below. Fig. 3 represents the same viewed from above, when detached from the table.

The same letters of reference are used in all the figures.

A represents the main or driving shaft. At each end the springs B are secured, in a manner well known. By having two springs, and locating them at opposite ends of the shaft, their force is exerted evenly and truly without any twisting strain of the shaft in its bearings. The springs are wound up in the usual manner by a crank on the end of the main shaft, or a crank and pinion engaging with a gear mounted on the main shaft. C is the main driving-gear wheel, mounted on the shaft A. It communicates with a small pinion, D, which is mounted on a short counter-shaft, E, and attached to a larger gear-wheel, F, which engages with a second pinion, G, mounted upon a second short counter-shaft, H, to which is attached another gear-wheel, I, which engages with a third pinion, K, mounted on a power-shaft, L, to which is attached a balance-wheel, N, belt-pulley N, and spiral-gear O. From the belt-pulley N the power is taken upward to drive the sewing-machine. The spiral-gear O engages with a worm, P, on the vertical regulator-shaft Q, to the lower end of which are four arms, *a*, provided with fan-shaped ends, which are capable of being turned so as to present their faces at any angle desired, and, by meeting with much or little resistance from the air, will allow the apparatus to operate at a low or high rate of speed. A hook-brake, R, is arranged to engage with the power-shaft L. It is operated by a slotted, hinged, or pivoted wedge, *c*, which, by entering between the end of the casing or table and the button-tip *d* on the end of the brake-rod, causes the hook to engage with the shaft with more or less force as the wedge is entered or withdrawn.

In order to provide a means for promptly reducing the speed and giving the operator perfect control of the motor, a V-shaped spring-brake, S, is arranged to embrace with pressure the two sides of the balance-wheel near its periphery. It is controlled by a pivoted wedge, T, which by being turned so as to enter between the two arms of the spring-brake will force them apart and prevent their contact with the wheel. By adjusting this wedge the degree of friction can be graduated as desired and the motor brought under perfect control.

W is the fanning device, which is mounted on a vertical spring-arm, and made to vibrate by the intermittent contact therewith of a cam on the side of the gear-wheel I. In a heated room, or during the summer season, this device will contribute largely to the comfort of the operative.

The prominent features of my improved motor consist in mounting the two springs on opposite ends of the main shaft, by which they can exert their power on the shaft without twisting it in its bearings; in making the counter-shafting shorter than the main and power shafts, so as to admit of the longitudinal side space in which to operate a large balance-wheel or belt-pulley; in having the mechanism all located within a casing and protected from injury and the entrance of dust; in having the shafting all set on the same plane, so that the device will operate one side up as well as the other, and thus provide for its attachment to any sewing-machine, regardless of the direction in which it is intended to run.

It is not claimed that these several features, separately considered, are of my own invention; but no sewing-machine motor has ever before been constructed, to my knowledge, embodying the whole and, therefore, possessing, in

itself, the combined advantages accruing therefrom.

The manner of operating the brake of a sewing-machine motor, as exhibited in my slotted wedge *c*, operating at the end of the hook-brake rod R, presents a simple, effective, and inexpensive means for stopping the device, while the V-shaped spring-brake S, operated by its pivoted wedge T, gives a more perfect control over the speed of the motor than any other device known to me.

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

1. The improved sewing-machine motor herein described, consisting of the inclosing case, within which are the two springs mounted upon and at opposite ends of the main shaft, the driving-gear, the intermediate gearing, mounted upon short counter-shafting extending but part way across the case, the balance-wheel, and regulator, and in which the shafting is set on a horizontal line at or about midway between the top and bottom of the casing, substantially as shown and described.

2. The hook-brake R, the slotted wedge *c*, and button *d*, constructed and operating substantially as described.

3. The V-shaped spring-brake S, arranged to engage with both sides of a driving or balance wheel near its periphery, and controlled by the pivoted wedge T, substantially as described.

4. The fanning device W, mounted upon a vertical arm, and operated by the driving mechanism of a sewing-machine motor, substantially as described.

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