B. C. CHAMBERS.

Sewing-Machine Motor.

No. 160,876. Patented March 16, 1875.

Fig. 1.

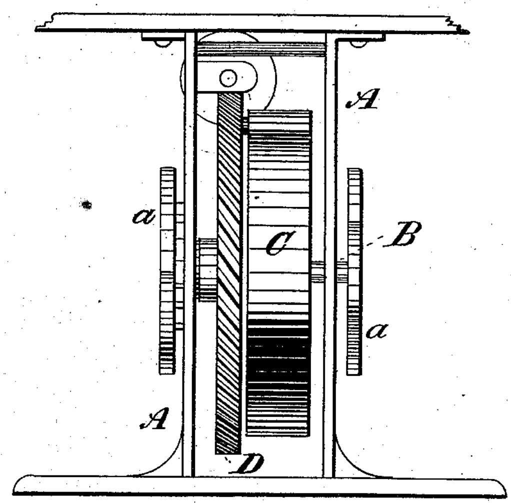
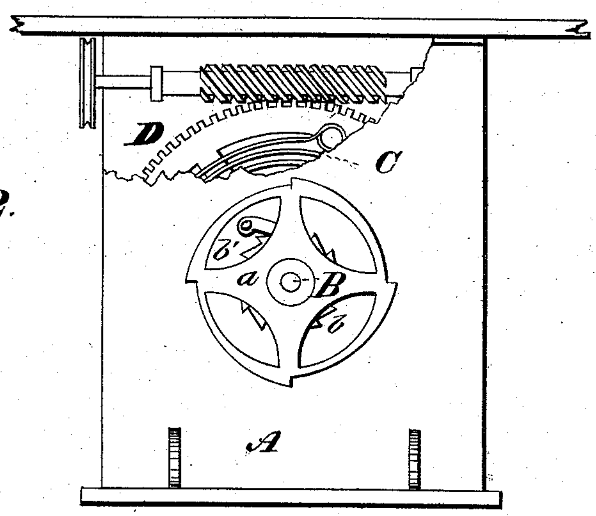


Fig. 2.



Witnesses
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UNITED STATES PATENT OFFICE.

BENJAMIN C. CHAMBERS, OF SHADY PLAIN, PENNSYLVANIA.

IMPROVEMENT IN SEWING-MACHINE MOTORS.

Specification forming part of Letters Patent No. **160,876**, dated March 16, 1875; application filed December 19, 1874.

To all whom it may concern:

Be it known that I, BENJAMIN C. CHAMBERS, of Shady Plain, in the county of Armstrong and State of Pennsylvania, have invented certain new and useful Improvements in Sewing-Machine Motors; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it pertains to make and use it, reference being had to the accompanying drawings, which form part of this specification, in which—

Figure 1 is an end elevation. Fig. 2 is a side elevation, partly broken to show interior.

This invention relates to an improvement in motor and winding mechanism for sewing-machines; and consists in the peculiar construction and combination of devices for winding the spring, which allows of winding while the machine is running. To effect this I take a strong coiled spring, fasten its inner end to the main shaft and its outer to the spur on the side of the drum-wheel, meshing with an endless screw, which is also the shaft of the pulley or band-wheel driving the sewing-machine. While running or at rest the spring may be wound by the feet by alternately pressing the feet down on the step-wheels placed at each side of the frame-work. These wheels are made with a series of steps or projections on their radial lines, and so set relatively that the steps of one register between the steps of the other, and vice versa. Their motion is confined to the proper direction by means of a ratchet on one and a spring-pawl. The frame-work of the motor serves as a substitute for and does away with all the supports and devices now in use under sewing-machine tables. For this purpose I attach flanges above and below, the upper for fastening the table to, and the lower made broad either as a flange or equivalent bearings, adapted to give a broad bearing-surface to the machine-support.

The advantages of this construction are that the friction of complex gearing is diminished somewhat, the number of costly wheels lessened, the liability to derangement obviated, while the spring may be kept wound by a convenient method, and the motor-frame becomes the support for the table, and saves the expense of the usual legs or end supports.

Referring to the accompanying drawings, A designates the frame; B, the driving-shaft, to which is firmly attached the coiled spring C, whose outer end is run around a spur on the driving-wheel D. The driving-wheel has oblique cogs, and meshes with an endless screw, by which combination the velocity is increased to a degree proper for the purpose. To the shaft of this endless screw is fixed the pulley or band-wheel for communicating the power. The driving-wheel is loose on the main shaft, while the step-wheels *a a* are fixed to the main shaft B. These, as said, are formed with suitable steps or projecting foot-rests, and register alternately. *b* designates a ratchet on the shaft *a*, and *b'* a pawl engaging with said ratchet to prevent the recoil of the spring while it is being wound.

Having fully described my present invention, I herein disclaim the features common thereto and to the device shown in my patent of August 19th, 1873, upon which, particularly this invention, is regarded as an improvement.

What I claim is—

In a mechanical motor, provided with the spring C, shaft B, ratchet *b*, and pawl *b'*, the winding-wheels *a a* attached to said shaft and constructed with steps projecting from and formed on their peripheries for the feet of the operator, as shown and described.

In testimony that I claim the foregoing I have hereunto set my hand this 11th day of December, 1874.

BENJAMIN COULTER CHAMBERS.

Witnesses:

T. J. MCTIGHE,

S. A. BARR.