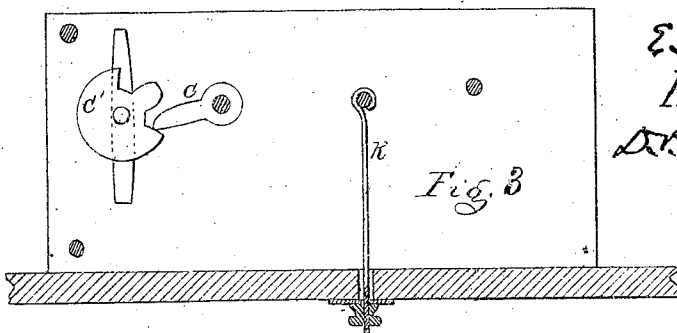
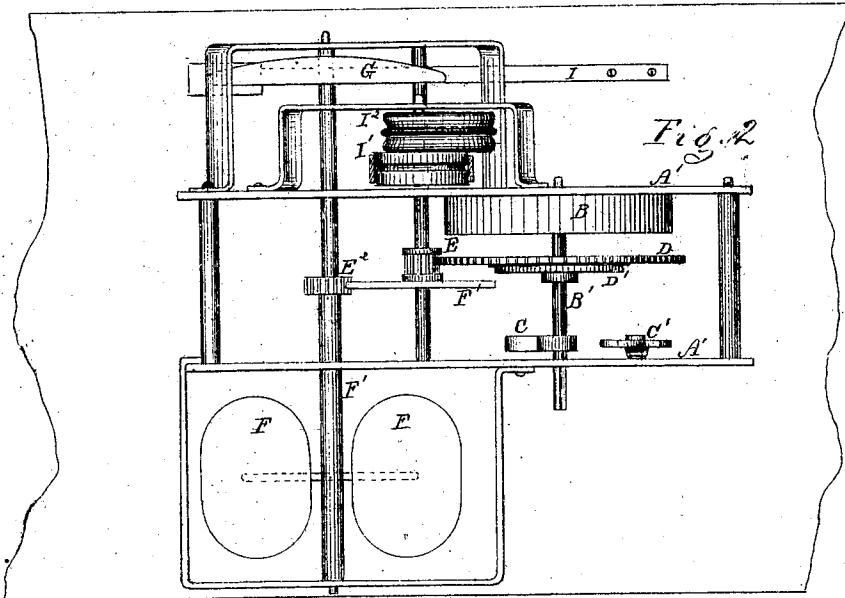
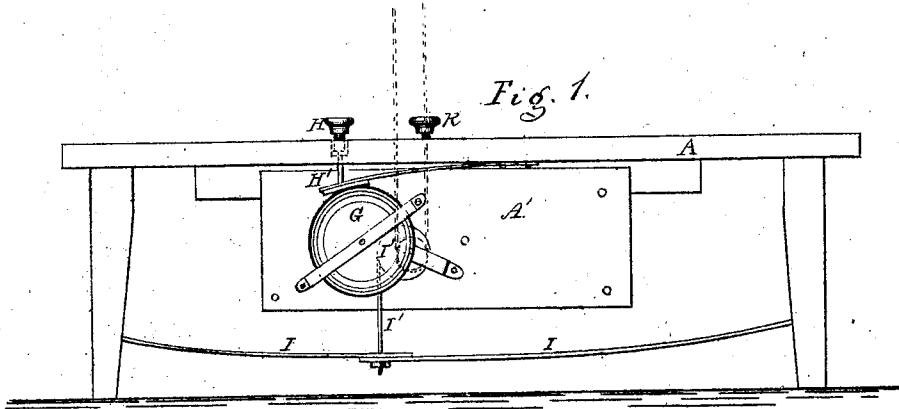


*Elisha Shiver*  
*Motor for Sewing Machines*

PATENTED MAR 15 1870

100934



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 A. Ruppert.

# UNITED STATES PATENT OFFICE.

ELISHA SHIVER, OF WASHINGTON, DISTRICT OF COLUMBIA, ASSIGNOR TO HIMSELF AND J. H. McBLAIR, OF SAME PLACE.

## IMPROVEMENT IN MECHANISM FOR OPERATING SEWING-MACHINES.

Specification forming part of Letters Patent No. 100,931, dated March 15, 1870.

### *To all whom it may concern:*

Be it known that I, ELISHA SHIVER, of Washington, in the District of Columbia, have invented a new and useful Improvement in Motors for Sewing-Machines; and I do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the annexed drawings, making part of this specification, in which—

Figure 1 is a side elevation, showing the table to which the motor is attached, the frame of such motor, the balance-wheel, and the brake which acts upon the same. Fig. 2 is a plan view of the motor, showing the arrangement of the principal parts thereof; and Fig. 3 is an inverted sectional elevation, showing the devices for preventing the breaking of the spring in winding up the same.

Corresponding letters refer to corresponding parts in the several figures.

This invention relates to motors for driving sewing-machines; and it consists in the construction, combination, and arrangement of the parts thereof, as will be more fully described hereinafter.

I am aware that motors for the purpose to which this is to be applied have heretofore been used, consisting of a spring for giving motion to the parts, and a train of wheels for communicating such motion to the sewing-machine; but such devices have never, to my knowledge, been supplied with the means for preventing the spring from being broken by being wound up too far; neither have they been supplied with an adjustable fly or fan for regulating the motion of the machine, arranged as in the present one; nor yet with brakes arranged as these are for controlling the movements of the device while in operation.

The object of the present invention is to provide the means for accomplishing the above-indicated results.

A in the drawings refers to a table, to the under side of which the motor is to be attached. A' A' refer to the sides of the frame, which consists of two plates of metal which are held in position by rods which pass from one to the other, as shown in Fig. 2. These plates form the bearings for the ends of the shafts to which the gear-wheels are secured.

B refers to a case which incloses a spring for giving motion to the parts of the motor. This spring is attached to the case and to the shaft B' in the usual manner. B' refers to the shaft which carries the spring-case B, gear-wheel D, ratchet-wheel D', and cam C.

C refers to a cam which is arranged upon the shaft B in such a manner as to engage with the wheel C', which revolves upon a stud which is secured to the side of frame A', as shown in Fig. 2. This wheel or disk has slots cut in its periphery, as shown in Fig. 3, there being any required number of such slots to determine the number of revolutions which may be given to the shaft which is attached to the inner end of the coiled spring, so that when such spring is wound up to the proper point the cam shall come in contact with the solid surface of the disk C', and thus prevent the further winding of the spring, and thus all danger of breakage is avoided.

D refers to the gear-wheel, which is made fast to the shaft B', and communicates its motion to the other wheels of the train. D' refers to an ordinary ratchet-wheel, which is supplied with a dog or ratchet, which last is held in position by means of a spring in the usual manner.

E, E<sup>1</sup>, and E<sup>2</sup> refer to a train of gear-wheels which communicate motion to the shaft F', upon which the balance-wheel and the fly or fan are placed.

F F refer to a fan or fly which is composed of two sheets of metal, which are secured to the outer ends of a shaft or rod which passes through the shaft F', it being so fitted therein as to be capable of turning, so that the fans may be set in such a manner as to present any portion of their surface to the resistance of the atmosphere as they are being revolved with the shaft F', or they may be so turned as to present only their edges for such resistance, the object being to afford one means of regulating the movement of the motor.

F' is the shaft, above alluded to, which passes through the sides of the frame, as shown in Fig. 2, and carries the fly or fan, the pinion E<sup>2</sup>, and balance-wheel G, which is upon the outer end thereof, but within the yoke which forms the bearing for this end of the shaft.

G refers to a balance-wheel, which is intended to regulate the movements of all the rest of the wheels in the train, it being placed upon the shaft which runs at the greatest velocity, by which means its effect is greatly increased over what it would be if placed upon any slower-revolving shaft.

H refers to a handle of a brake, which rests upon the upper surface of the table A when the brake is not in operation, but which enters a recess formed in such a table when the brake is to be applied, as shown in Fig. 1, the rod which extends from it to the spring H' controlling the movements of such brake, which may be used to stop the movement of the machine, at any time when it may be desirable to do so, by permitting the parts to assume the position shown in Fig. 1.

I I are to represent the treadle of a sewing-machine, which receives its motion from the motor through the eccentric I<sup>3</sup> and eccentric-rod I<sup>1</sup>. I<sup>2</sup> refers to a pulley which drives the sewing-machine by means of a belt when the treadle is dispensed with, it being in this instance placed upon the shaft which receives its motion from the wheel which is upon the shaft to which the spring is connected.

K refers to a rod which is made to embrace at one of its ends one of the shafts of

the motor, and has upon its other end a nut which rests upon the table, so that as it is screwed down upon such table it may be made to afford any required amount of resistance to the movements of such motor.

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

1. The construction of the wheel or disk C', substantially as and for the purpose specified.

2. The combination of the wheel or disk C', cam C, shaft B', and spring with which the motor is driven, substantially as and for the purpose specified.

3. The arrangement of the fly or fan F F and the rod or shaft on which it is placed with reference to the shaft F', substantially as and for the purpose set forth.

4. The arrangement of the rod K and its nut with reference to the shaft around which it passes, substantially as and for the purpose set forth.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

E. SHIVER.

Witnesses:

A. RUPERT,

B. EDW. J. EILS.