G. R. EVERSON.

Motor for Sewing-Machines.

No. 164,439. Patented June 15, 1875.

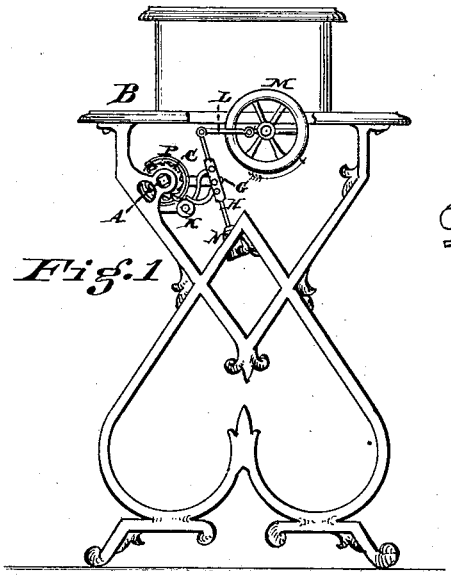



Fig. 1

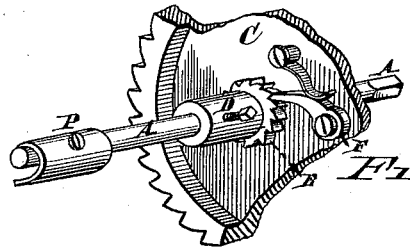



Fig. 2

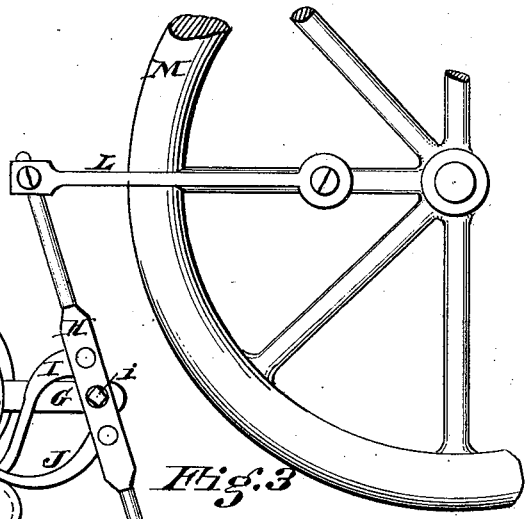



Fig. 3

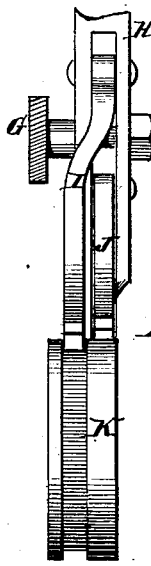
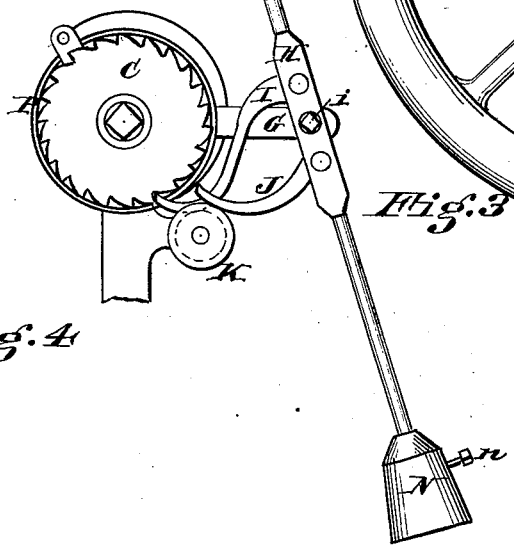



Fig. 4




Attest

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# UNITED STATES PATENT OFFICE.

GEORGE R. EVERSON, OF CINCINNATI, OHIO.

## IMPROVEMENT IN MOTORS FOR SEWING-MACHINES.

Specification forming part of Letters Patent No. **164,439**, dated June 15, 1875; application filed January 25, 1875.

*To all whom it may concern:*

Be it known that I, GEORGE ROTUS EVERSON, a resident of the city of Cincinnati, in the State of Ohio, have invented certain new and useful Improvements in Motors for Operating Sewing-Machines Independent of Treadle, Hand, or Foot Power, of which the following is a specification:

My invention relates to a device for the impartation of mechanical power for running or operating sewing-machines, and its intention, application, and purpose are particularly to avoid and supersede the reciprocating treadle-movement now in use to impart motion to said machines. My invention also dispenses with the necessity of the continual foot and hand movement now used.

My device, in general, consists of the combination of a lever and two pawls and a ratchet-wheel operated by a spring or cord and weight, or by both, the pawls engaging the teeth in the same side of the latter. The pawls cross each other in their line of operation, and in this way produce a more uniform movement than when they operate parallel with each other, as is the case with all motors of this description heretofore patented. The ratchet-wheel causes the pawls to communicate a reciprocating motion to the lever, the latter then being capable of operating a crank or pitman, and thus imparting rotary or linear reciprocating motion to each machine, as they come within the scope of this invention.

In the accompanying drawing making part of this specification, Figure 1 represents my improved device and one end of a sewing-machine, and showing one mode of combining said device with the upper operating-shaft of a sewing-machine. Fig. 2 represents portions of the shaft, the motor, ratchet-wheel, and the subordinate ratchet, which at all times prevents the motor ratchet-wheel from retrograding. Fig. 3 represents that edge of my device which is on the right-hand side in Fig. 4, the lever which is immediately actuated by the pawls having been removed; and Fig. 4 represents that side of my device which is the reverse of that partly shown in Fig. 2.

A represents a shaft, which is supported, preferably at *a*, in journal-bearings, so that it is held securely in position and is capable of rotation. When my improved device is attached to sewing-machines one of the journal boxes or bearings whereby the shaft A is supported is preferably placed in the frame of the legs B, as shown in Fig. 1. C designates the motor ratchet-wheel, turning upon shaft A between the collars D D. The latter are tightly fixed upon the shaft, preferably by means of set-screws *d*, as thereby the collars can be adjusted on the shaft. Collar D is provided with a ratchet-wheel, E, the collar and wheel being concentric. A pawl, F, pivoted to the motor-shaft wheel C, engages the teeth of the ratchet-wheel A, and prevents any retrograde movement of the latter. A flat spring, *e*, fastened to the inside of the ratchet-wheel A, presses upon the back of the pawl F, and holds the latter in position upon the ratchet E. A coiled spring is attached at one end of the shaft A, and at the other to the ratchet-wheel C, in such a manner that, by turning the shaft A in a different direction to that in which the teeth of the ratchet-wheel point, the spring shall be wound up, the ratchet E and pawl F preventing the spring from unwinding any faster than the ratchet-wheel C can move, and arm G extending from the same frame-work which supports shaft A to the right of the ratchet-wheel C, a distance sufficient to properly support the reciprocating lever H and afford room for the necessary action of the reciprocating pawls I and J. Pawl I is pivoted to the lever H above the point *i*, where the lever H is pivoted to the arm G, and pawl J is pivoted to the lever H below the point *i*. The pawls are prevented from dropping down and away from the ratchet-wheel by means of a bearing, K, connected to the frame-work which supports the shaft A. The lever H is preferably connected to one end of a pitman or connecting-rod, L, whose other end is attached to a crank or fly wheel, M, which latter turns the shaft which operates the machine. To secure a more steady and uniform motion of the lever H, its lever end is provided with a weight, N, which can be adjusted upon the lever H by means of a set-screw, *n*.

It is well to remark that my invention is not confined to the reciprocating pawls of the precise shape of those shown in the drawing, but includes pawls of any shape acting upon one and the same side of the ratchet-wheel and

pivoted to the reciprocating lever, the one above and the other below the point *i*, whereat the lever is pivoted.

In relation to the motor-power, I do not confine myself to the employment of a spring, but propose to use, where more convenient, a weight and cord, the latter being wound upon the shaft A, where the spring is now placed.

The mode in which my device is operated is as follows: The operator winds up the spring P by means of a hand-crank attached to the shaft A at the point *e*, the pawl F preventing the spring P from unwinding. The effort of the spring to unwind moves the ratchet-wheel C alternately against the pawls I and J, and thus imparts a reciprocating oscillatory movement to levers H. The movement of the latter is communicated, in turn, to the connecting-rod L, which latter turns the crank or fly wheel M, which in turn rotates the shaft operating the machine to which my device is applied. The rapidity of the oscillation of lever H can be regulated in some degree by the weight N. The nearer the weight is set to the point *i* the more rapidly will the lever H oscillate, and vice versa. The weight, however, is not absolutely essential to the effective operation of my device.

The crank or fly wheel N may be directly connected to the end of the lever H, without the intervention of the connecting-rod L; but I believe my device operates best where this connecting-rod is retained.

What I claim as new, and desire to secure by Letters Patent, is—

In a motor for a sewing-machine, the arrangement of the pawls I and J, shaped as shown, and working in their line of operation across each other, both being on the same side of the motor ratchet-wheel C, in combination with a support, K, upholding both pawls, substantially as and for the purposes set forth.

GEORGE R. EVERSON.

Attest:

D. P. KENNEDY,

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