A. T. HAMMER.

Sewing-Machine Motor.

No. 220,608. Patented Oct. 14, 1879.

Fig. 1

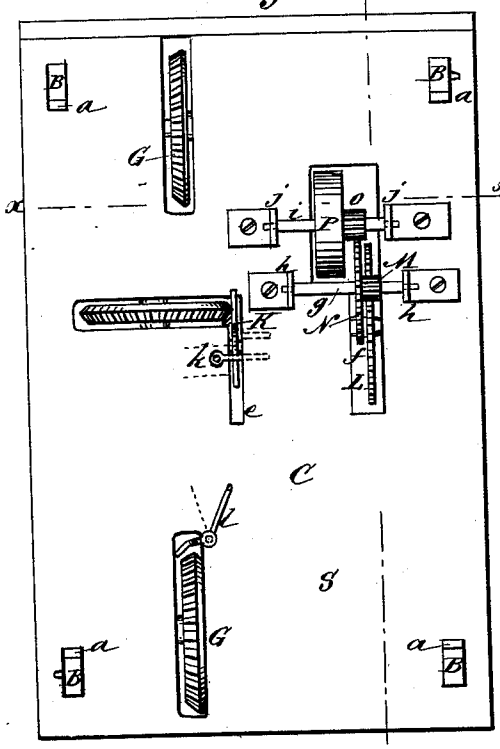


Fig. 2

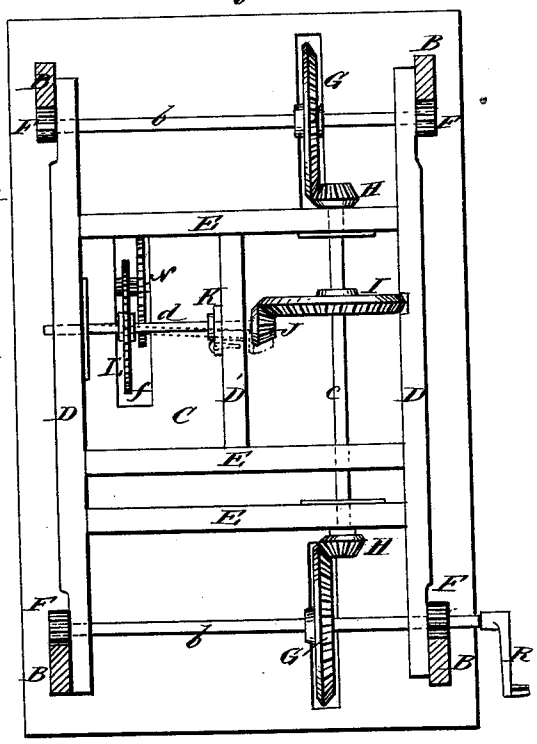


Fig. 3

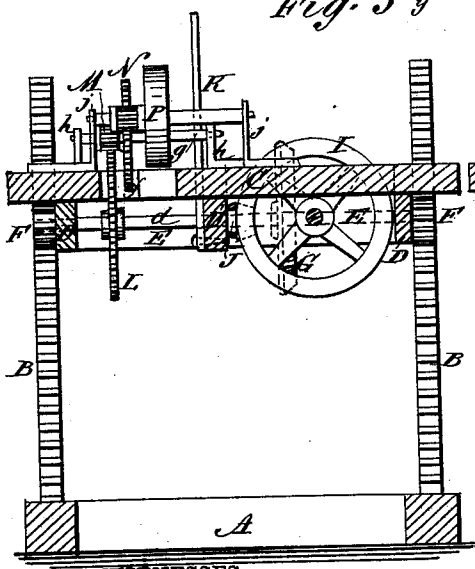
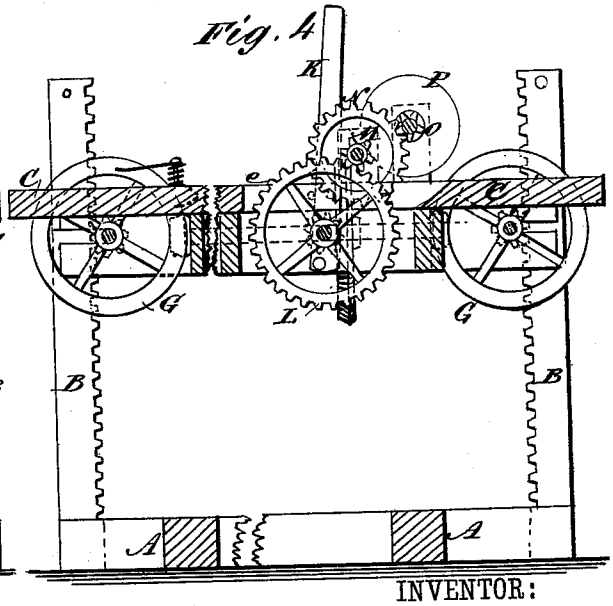


Fig. 4



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UNITED STATES PATENT OFFICE.

AARON T. HAMMER, OF SEDAN, KANSAS.

IMPROVEMENT IN SEWING-MACHINE MOTORS.

Specification forming part of Letters Patent No. **220,608**, dated October 14, 1879; application filed March 15, 1879.

To all whom it may concern:

Be it known that I, AARON T. HAMMER, of Sedan, in the county of Chautauqua and State of Kansas, have invented a new and Improved Sewing-Machine Motor, of which the following is a specification.

The invention consists in the combination of instrumentalities whereby the vertical motion is converted into rotary motion and transmitted to the band-wheel when the platform moves down; in means for guiding and steadying said platform; and in combining the latter with other mechanism, as hereinafter described.

In the accompanying drawings, Figure 1 is a plan of the top of the platform of the motor. Fig. 2 is a plan of the under side of the same. Fig. 3 is a cross-section on line *x x*, Fig. 1; and Fig. 4 is a longitudinal section on line *y y*, same figure.

Similar letters of reference indicate corresponding parts.

Referring to the drawings, A represents the base of the apparatus, from the corners whereof rise posts or bars B B B B, with racks or ratchets on the edges that face each other. C is a rectangular platform, with mortises *a* in the corners. This platform is placed over the base A, with the upright ratchet-bars B passed through the mortises. On the under side of platform C are fixed, near each side and parallel therewith, plates D D, connected by cross-plates E. Plates D are rabbeted at the ends, and at these points they bear against the insides of the posts B, steadying the movement of the platform up and down, and preventing lateral displacement.

Journaled in the plates D, near the ends, within the bars B, and parallel to the ends of the platform, are shafts *b*, the ends whereof project out of the plates, and carry pinions F, which mesh with the adjacent ratchets of the bars B, as clearly shown in Fig. 2.

On shafts *b* are fixed beveled gear-wheels G, which mesh with beveled pinions H on the projecting ends of shaft *c*. Journaled in cross-plates E on this shaft is fixed a beveled gear-wheel, I, which meshes with pinion J on shaft *d*, journaled at the end opposite the pinion in the plate D, and near the pinion journaled in the lever K, passing thence through an opening in plate D′.

Lever K is fulcrumed at its end in the plate D′ below the shaft *d*, and passes up through a slot, *e*, in the platform. By moving this lever the shaft *d* and pinion J are moved to and from beveled gear I, as indicated by the dotted lines in Fig. 2, and thus the mechanism back of pinion J is thrown in and out of gear at will with the mechanism of the ratchets and pinions.

On shaft *d* is a spur-wheel, L, which projects up through a slot, *f*, in the platform, and meshes with a pinion, M, on shaft *g*. Journaled in standards *h* on the platform, on shaft *g*, is a large spur-wheel, N, meshing with a pinion, O, on shaft *i*. Journaled in standards *j* on the platform, and on shaft *i*, is the band-wheel P.

The operation of the motor is as follows: The greater part of the gearing being placed near one end of the platform, the sewing-machine and operator should sit at the opposite end—say, at S, Fig. 1. A belt is then run from the band-wheel P to the fly-wheel of the sewing-machine. The lever K is thrown back to put pinion J in gear with gear-wheel I, and secured by a pin, *k*, and the stop *l* being thrown out from the wheel G, thus releasing the mechanism, the operator takes his seat by the machine at S, to guide the sewing. His weight, combined with that of the machine, causes the platform to descend, and this vertical motion is converted, by the ratchet-bars meshing with pinions F, into rotary motion in the said pinions, and this is transmitted through the gearing to the band-wheel P, and thence to the machine, and the power and speed of the machine can be adjusted to suit the operator by using suitable gearing.

When the platform descends to the base A the power, of course, stops. If further power is required, the lever K is thrown forward, and the pin *k* thrust behind it, as indicated by the dotted lines in Fig. 1, thus disengaging the pinion J from bevel-gear I, and throwing all the mechanism between pinion J and the band-wheel P out of gear, so that the machine will be cut off from the mechanism without removing the belt, and thus avoid any back motion.

By means of the crank R on one of the shafts *b* this shaft is rotated, and, through the gearing, rotating the shaft at the opposite end; the pinions F, engaging the ratchet-bars, raise the platform to the top of the bars, and the stop *l* is thrown into connection with wheel G, to prevent the platform from descending. Lever K is next thrown back, putting pinion J in gear with wheel I, the operator takes his seat, throws stop *l* out from wheel G, and the operation proceeds as before.

This motor is simple in construction and operation, is sufficiently powerful for the purpose, and possesses especially valuable features as a sewing-machine power, as it is not possible to run the machine backward.

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

1. The ratchet-posts B B B B, in combination with pinions F, shafts *b*, platform C, and the train of gearing leading to the band-wheel P, whereby, when the platform moves downward under the weight upon it, the vertical motion is converted into rotary, and transmitted to the band-wheel, substantially as described.

2. The combination and arrangement of the platform C with ratchet-bars B, pinions F, shafts *b*, beveled gears G, pinions H, shaft *c*, beveled gear I, pinion J, shaft *d*, spur-wheel L, pinion M, spur-wheel N, shaft *g*, pinion O, shaft *j*, and band-wheel P, as and for the purpose substantially as described.

3. The plates D, fixed to the under side of platform, with ends bearing against the sides of ratchet-bars B, in combination with said bars and platform, as and for the purpose specified.

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Witnesses:
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