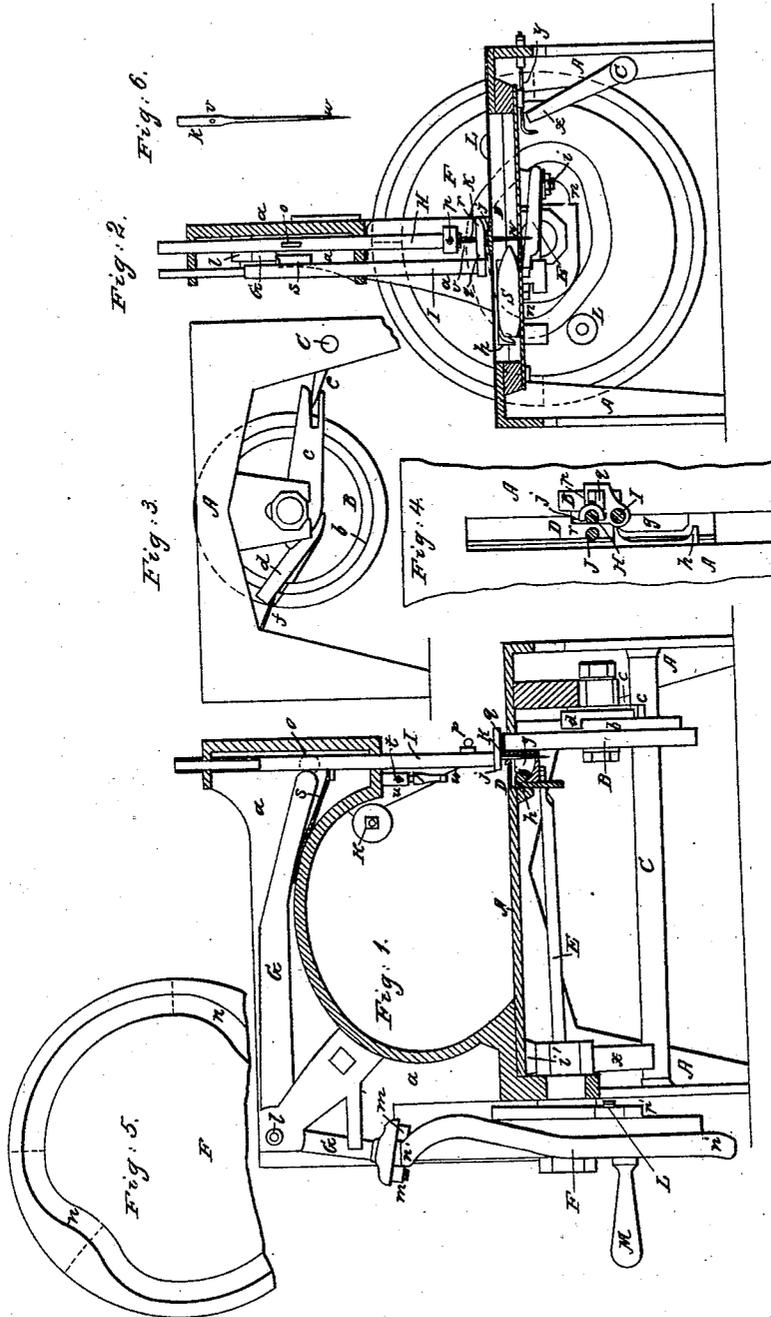


F. PALMER.

Sewing Machine.

No. 9,556.

Patented Jan'y 25, 1853.



UNITED STATES PATENT OFFICE.

FREEMAN PALMER, OF CONNEAUT, OHIO.

IMPROVED FEED-MOTION IN SEWING-MACHINES.

Specification forming part of Letters Patent No. 9,556, dated January 25, 1853.

To all whom it may concern:

Be it known that I, FREEMAN PALMER, of Conneaut, in the county of Ashtabula and State of Ohio, have invented a new and useful Sewing-Machine; and I do hereby declare that the following is a full, clear, and exact description of the construction and operation of the same, reference being had to the annexed drawings, making a part of this specification, in which—

Figure 1 is a longitudinal and vertical section of the frame of the machine, cutting directly through the center and showing the operative parts. Fig. 2 is a transverse and vertical section cutting through the frame and leaving the working part exposed. Fig. 3 is a front elevation, showing the feed-wheel and apparatus governing its motion, and which are removed in Fig. 2. Fig. 4 is a top view of that portion of the frame where the needle, &c., work. Fig. 5 is a modification of the large driving-wheel, the radial dots, Figs. 5 and 2, marking the turn. Fig. 6 shows the needle in detail.

In Fig. 1, A A is the frame of the machine, and *a a* the standard on upper part of the frame.

B is the feeding-wheel, having the flange *b* upon its disk.

C is a shaft having arms *e* and *x*.

D is the chamber in which the shuttle *g* plays, driven by the carrier *h*. (This figure shows an end view of D, *g*, and *h*, Fig. 2 a side view, and Fig. 4 a top view, looking down.)

E is a bar or lever, the end of which, working in the eccentric channel *n n*, Fig. 2, and having its fulcrum at *i'*, same figure, moves the carrier *h* and the shuttle *g*.

j is a plate through which the needle *k* passes.

F is the large driving wheel, having an undulating periphery, *n' n'*, which, working between the friction-rollers *m m* upon the bent lever G G, which has its fulcrum at *l*, and being connected by a circular tenon at *o* with the needle-holder H, (shown in Fig. 2,) gives the required perpendicular motion to the holder and needle. The motion to lever G, effected by the undulating form of the periphery of the wheel F, may be as well accomplished by an undulating or cam flange near the outer edge of the wheel's disk, in which case lever G would be nearly or quite straight.

p is a thumb-screw, by which the needle *k* is attached to the holder H.

I is a movable bar pressed slightly downward by spring *s*, having at the bottom a foot, *r*, on one side of the needle, and a roller, *q*, on the other, which, with the roller B, (having the cloth or substance to be sewed between them,) act together as feed-rollers.

J is a thread-guide adjusted by thumb-screw *t*.

K is the spool, with the thread *u* passing through the guide J, then through the upper eye of the needle *v*, thence to the lower eye, *w*, Fig. 2.

L L (see Fig. 2) are friction-rollers placed upon the disk of the driving-wheel F, which, striking the arm *x* of the shaft C, raises the arm *e* on the other end of that shaft, which, working in a slot of lever *e*, (see Fig. 3,) raises the same, carrying the feed-wheel B forward. In the same Fig. 3 is seen the feed-wheel B, with a flange, *b*, upon its disk, and the cramp *d*, which grasps the flange *b*, but sliding freely along the same until acted on by the lever *e*, when it instantly binds firmly upon the flange, so that the feed-wheel shall be carried forward, as before described, by the arm *e*. *f* is a spring to keep the cramp *d* in its place. The forward motion of the feed-wheel, which gives the length of the stitch, is regulated at pleasure by the screw-regulator Y, (see Fig. 2,) which allows the arm *x* a longer or shorter range.

The needle *k*, Fig. 6, used in this (or any other) machine, has two eyes, *v* and *w*, which is an important device, the upper eye effectually taking up the slack of the thread and preventing it from catching under the point of the needle.

The operation of this machine is simple, having neither cog-wheel nor band about it. It is also rapid and certain. The power being applied by pulley and band, or by hand applied to the handle M, turns the large driving-wheel F. (Shown in Figs. 1, 2, and 5.) Its varying periphery *n' n'* is such that acting upon the lever G G communicates a perpendicular motion to the holder and the needle. When the needle carrying a thread has pierced the cloth to a proper depth, it is raised; but the cloth holding the thread and preventing it from rising with the needle, it forms a loop in the shuttle-chamber D. At this instant the end of the

bar E is acted upon by the eccentric channel *n n*, Fig. 2, which quickly throws the shuttle *g*, with the thread which it carries, through the loop, when the needle, rising still higher, draws tight the thread which had previously formed the loop. In the meantime the shuttle returns and one of the friction-rollers L L, Fig. 2, strikes the arm *x* of the shaft C, and, acting upon the feed-wheel B, as before shown, carries it, with the material being sewed, far enough forward for another stitch, which completes the operation.

What I claim as my invention is—

The arrangement and combination of parts by which the material to be sewed is carried under the needle in a way to secure any required length of stitch, consisting of the shaft C and the screw-regulator Y, together with the lever and cramp *c* and *d* upon the feed-wheel B, substantially as herein described.

FREEMAN PALMER.

Witnesses:

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