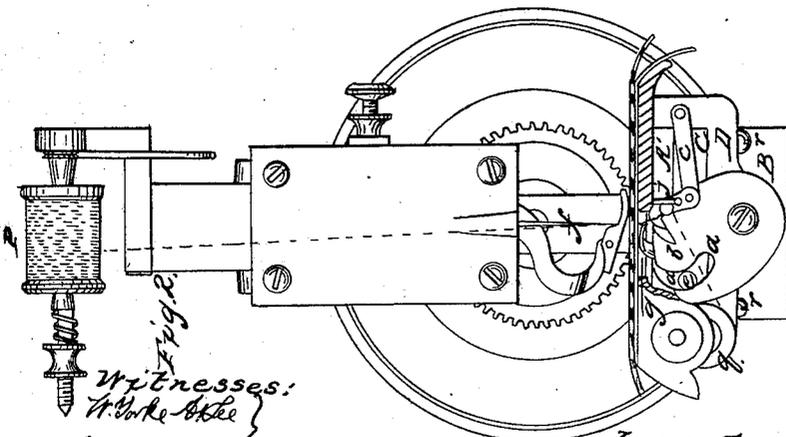
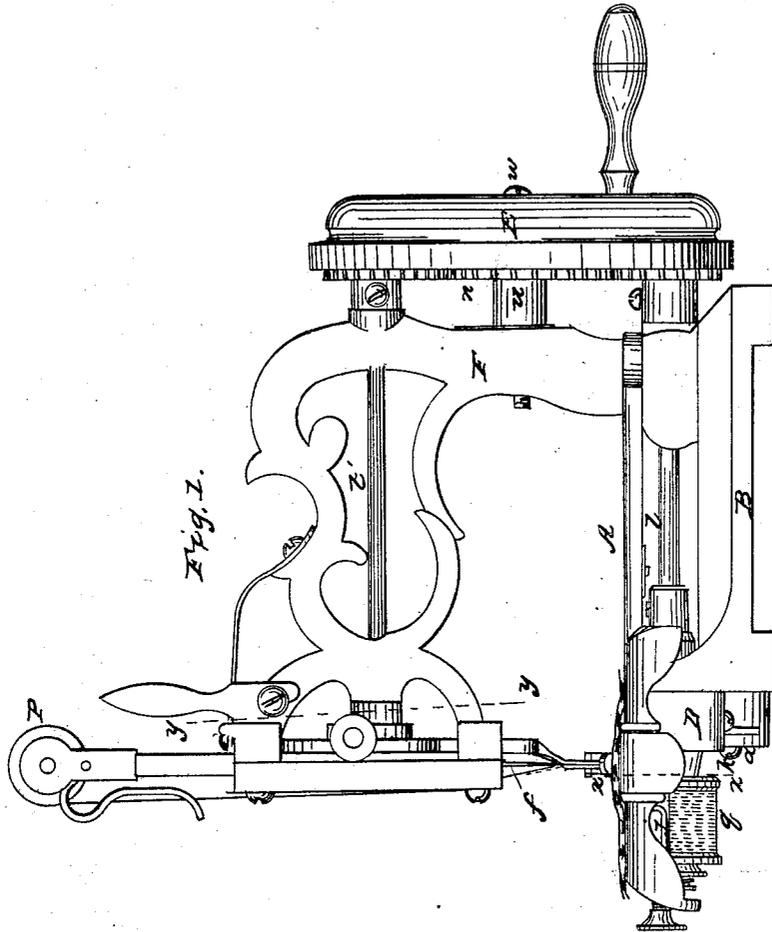


C. RAYMOND.
Sewing Machine.

No. 32,785.

Patented July 9, 1861.



Witnesses:
W. C. Hoke
A. H. Lee
C. W. Howard

Inventor:
Charles Raymond
by his atty J. C. Robbins

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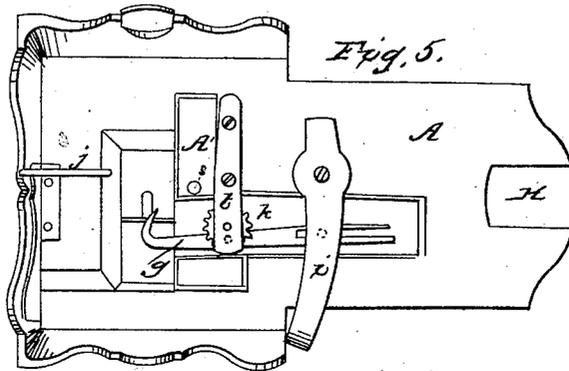


Fig. 5.

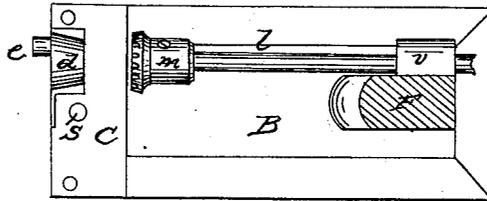


Fig. 6.

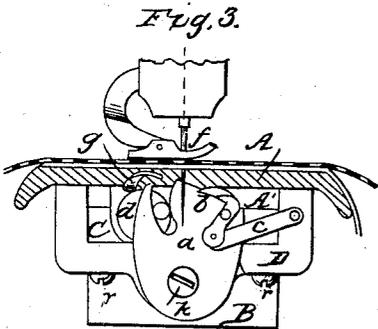


Fig. 3.

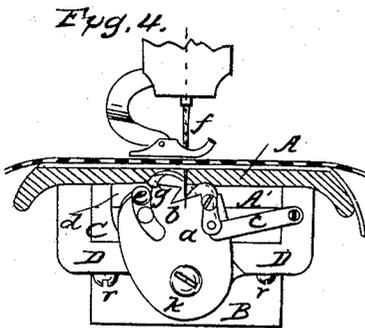


Fig. 4.

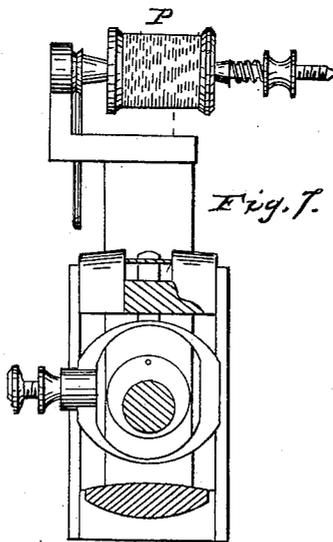


Fig. 7.

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UNITED STATES PATENT OFFICE.

CHARLES RAYMOND, OF BRATTLEBOROUGH, VERMONT.

IMPROVEMENT IN SEWING-MACHINES.

Specification forming part of Letters Patent No. 32,785, dated July 9, 1861.

To all whom it may concern:

Be it known that I, CHARLES RAYMOND, of Brattleborough, in the county of Windham and State of Vermont, have invented a new and Improved Sewing-Machine; and I do hereby declare that the following is a full and exact description thereof, reference being had to the accompanying drawings, which form a part of this specification, in which—

Figure 1 is a side elevation of said machine; Fig. 2, an view; Figs. 3 and 4, sections in the line *x x* of Fig. 1; Fig. 5, a view of the under side of the face-plate A of the machine, with the parts which are combined with said plate; Fig. 6, a view of the upper side of the base B C of the machine after the face-plate A has been detached therefrom; and Fig. 7 is a section in the line *y y* of Fig. 1.

Similar letters refer to the same parts in each of the drawings.

The needle of my improved sewing-machine may be operated by means of the respective parts represented in the accompanying drawings, or by any other that may be preferred.

The looper *b* is pivoted to the two short oscillating levers *a* and *c*, in such a manner that while the axis of the looper moves in the arc of a circle around the axis of the lever *a* its point is thrown inwardly toward the said lever-axis as it advances, and then outwardly from it as it recedes, and at an accelerated rate of motion when compared with that of the axis of the looper, which movements are illustrated by Figs. 2, 3, and 4 of the drawings. The peculiar shape of the looper *b* enables the desirable compound movements to be imparted to it by means of its combination with two oscillating levers of only about one inch in length, and without producing any sliding friction or noise. Consequently the said arrangement enables a steadier and more accurate series of movements to be imparted to the point of the looper than it would be possible to accomplish were it pivoted to the end of a longer lever and arranged in such a manner that its peculiar movements must be produced by the action of a curved or angular surface upon some portion of the looper or upon some projection therefrom. The shortness of the said levers *a* and *c*, and their peculiar combination with the looper *b*, enables them to be placed in an accessible position at the end of a small-sized sewing-machine, and

it also enables a crank-pin, *e*, whose axis is only one-fourth of an inch distant from the axis of its shaft *l*, to impart the desired movements to the looper by means of a curved slit in the lever *a*, as shown in the drawings, and consequently the said movements are produced with a less expenditure of power than it would be possible to accomplish by any other known form or arrangement of the respective parts of a sewing-machine.

When the needle and the looper of my improved sewing-machine are used by themselves, in connection with only the feeding apparatus, they produce the ordinary single-thread or tambour stitch; but by passing a second thread through eyes formed in the looper *d*, and then bringing the oscillating bearing-off hook *g* to bear against the loop of the needle-thread formed by a previous movement of the needle, at the proper instant the needle will pass down without passing through the said loop, while it will pass between the looper and the thread which it carries, that is pressed outward by the hook *g* into the path of the needle at the same instant that it pushes the aforesaid loop of the needle-bearing thread away from the path of the needle, and by so doing it causes the thread carried by the looper to be embraced within the loop of the needle-thread in such a manner as to produce a perfect lock-stitch.

In the accompanying drawings, for the sake of more perfectly illustrating the above-described method of forming a lock-stitch, the needle is represented as carrying a blue thread and the looper a red thread.

The bearing-off hook *g* is located in a recess on the under side of the face-plate A of the machine, and is retained in its position by the strap *t* and the lever *i*. The said bearing-off hook *g* is operated in the following manner, viz: A toothed wheel, *h*, is centrally pivoted in its position between the strap *t* and the bottom of the recess in the under surface of the face-plate A, and this wheel is also eccentrically pivoted to the shank of the bearing-off hook, as shown in Fig. 5. Motion is conveyed from the shaft *l* to the toothed wheel *h* through the medium of the toothed sleeve *m*. A slit in the shank of the bearing-off hook *g* receives a pin which projects from the lever *i*, and this contrivance enables the operator to vary the movements of the bearing-off hook to such a

degree that he can operate the machine with either one thread or two threads at his pleasure.

The offset A' of the face-plate A of my improved sewing-machine rests upon the upward projection C of the base B of the machine, and is secured in said position by means of a screw which passes from below up through the apertures *s s*. (Shown in Figs. 5 and 6.) The notch H in the face-plate A embraces the standard F, and the sides of said notch rest upon a shoulder at the base of said standard. The looper-levers *a* and *c* are pivoted to the supporter D, and this supporter is secured to the projection C of the base B of the machine by means of the screws *r r*. The needle-actuating and feed-operating shaft *t'* has its bearings in portions of the standard F. The operating end of the looper-actuating shaft *l* passes through an aperture in the projection C of the base of the machine, and the opposite end of said shaft passes through an aperture in the offset *v* on one side of the base of the standard F, as shown in Fig. 6. The driv-

ing-wheel E works upon the pin *w*, which is screwed into the standard F, and by means of the toothed wheel *n*, which is secured to the inwardly-projecting sleeve *u* of said wheel, and which gears into pinions on the shafts *l* and *t'*, as shown in Fig. 1, motion is imparted to the said shafts from the driving-wheel.

Having thus fully described my improved sewing-machine, what I claim therein as new, and desire to secure by Letters Patent, is—

The bearing-off hook *g*, when it is arranged in such a manner with relation to the looper *b* that the said parts are enabled to co-operate with each other in the formation of lock-stitches, substantially in the manner herein set forth.

The above specification of my improved sewing-machine signed and witnessed this 12th day of April, 1860.

CHARLES RAYMOND.

Witnesses:

GEO. HOWE,

BENJ. SPEYER.