Sheet 1— 3 Sheets.

C. Parham.

Sewing Machine.

No. 44217 Patented Sep. 13, 1864.

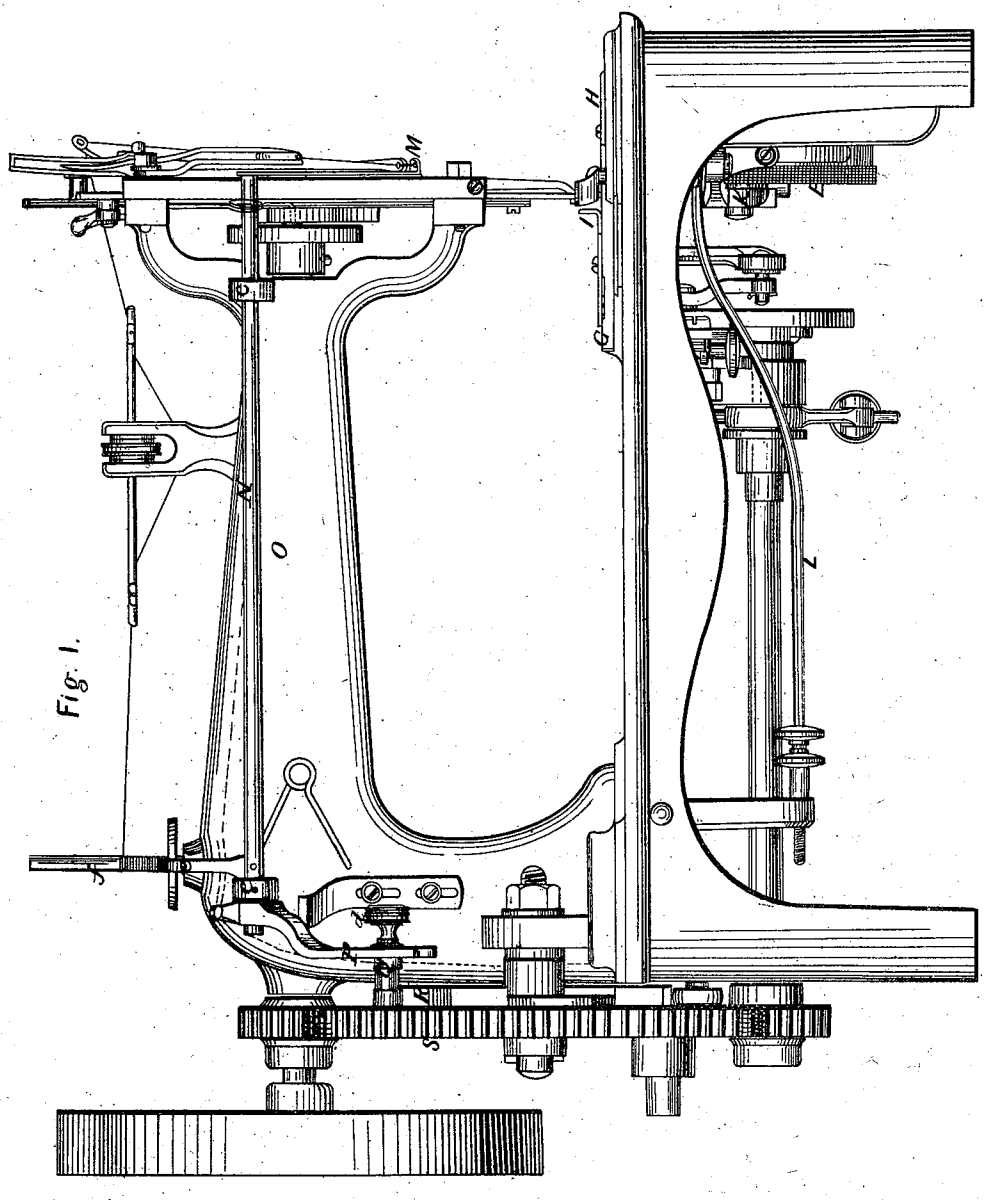


Fig. 1.

Witnesses.

J. W. Watson

Jno. D. Patterson

Inventor.

Charles Parham.

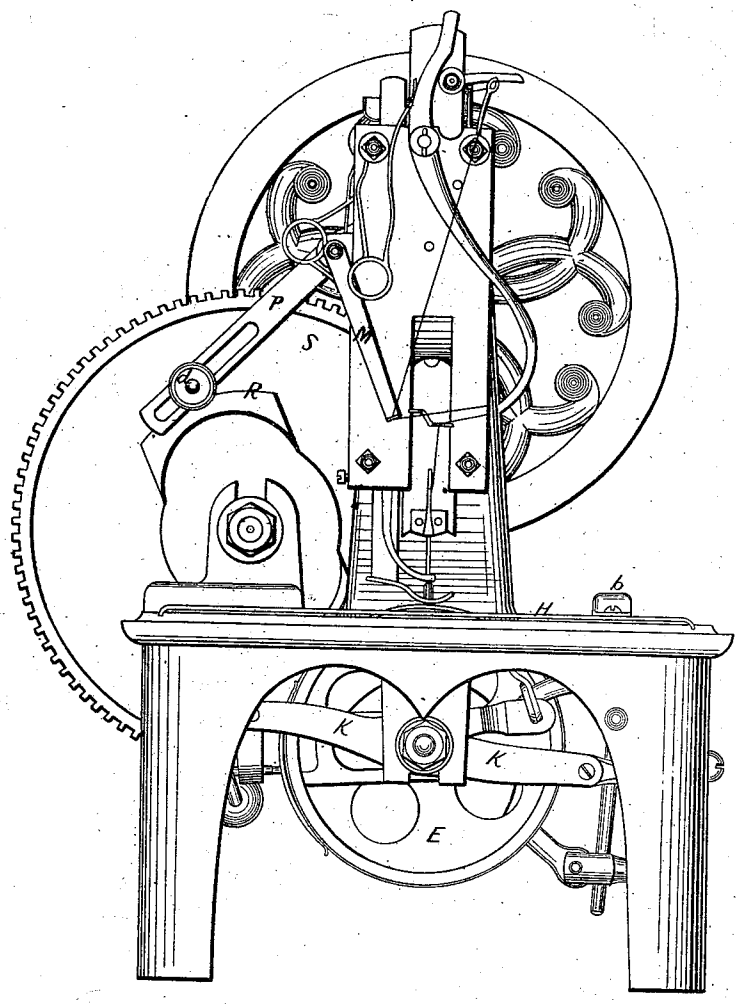
By atty. A. B. Stoughton.

C. Parham.

Sewing Machine.

No 44217 Patented Sep. 13, 1864.

Fig. 2.



Witnesses.

J. W. Nelson

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Sheet 3. 3 Sheets.

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Sewing Machine.

No. 44,217 Patented Sep. 13, 1864.

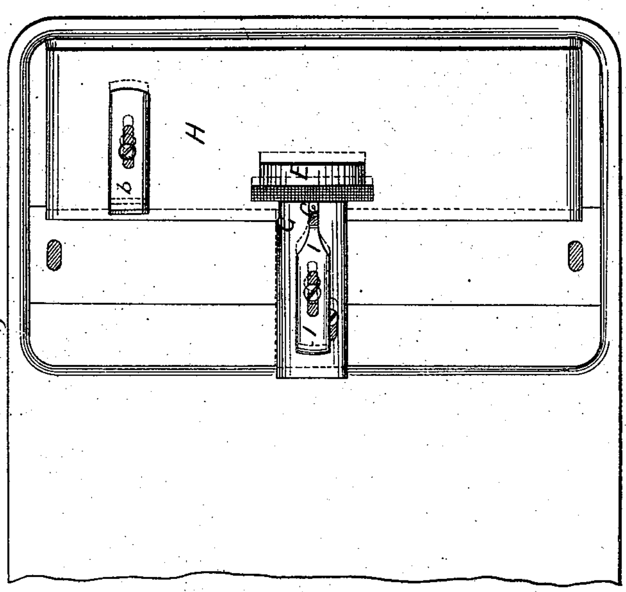


Fig. 4.

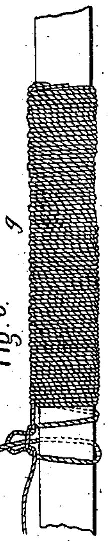
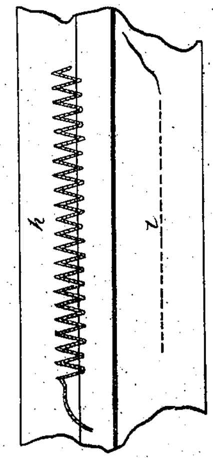


Fig. 6.



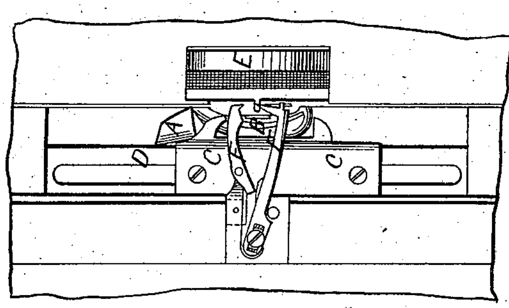


Fig. 3.

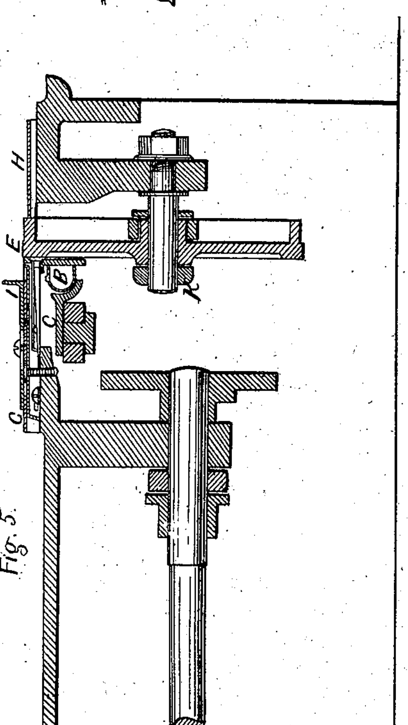


Fig. 5.

Witnesses.

A. W. Hallen

Jno. D. Patten

Inventor.

Charles Parham,

By atty. A. B. Stoughton.

UNITED STATES PATENT OFFICE.

CHARLES PARHAM, OF PHILADELPHIA, PENNSYLVANIA.

IMPROVEMENT IN SEWING-MACHINES.

Specification forming part of Letters Patent No. **44,217**, dated September 13, 1864.

To all whom it may concern:

Be it known that I, CHARLES PARHAM, of the city and county of Philadelphia, and State of Pennsylvania, have invented certain new and useful improvements in sewing-machines for making the button-hole, blind button-hole, overlap or felling, and the ordinary stitch; and I do hereby declare the following to be a full, clear, and exact description of the same, reference being had to the accompanying drawings, making a part of this specification, in which—

Figure 1 represents an elevation of the machine, taken from one of its sides. Fig. 2 represents an elevation of the same, taken from the needle or sewing end of the machine. Fig. 3 represents, by a detached or broken view, the shuttle, shuttle-driver, looper, and their connections. Fig. 4 represents detached from the machine the reciprocating rest upon which the cloth lies, the needle-throat bridge, and the feed-wheel. Fig. 5 represents a vertical central and longitudinal section taken through the front end of the machine; and Fig. 6 represents the form of the stitches made by the machine.

Similar letters of reference, where they occur in the several separate figures, denote like parts of the machine in all the drawings.

Letters Patent of the United States for improvements in sewing-machines, No. 42,502, and dated on the 26th day of April, 1864, were granted to me, in which many of the parts and operations of my present invention may be found, and I do not propose to again describe or fully represent all of those parts and operations, but simply the improvements which I have made on said patented invention and so much of the machine as will illustrate the locality and action of the improved parts.

The nature of my present invention consists, first, in a needle-guard attached to the shuttle-carrier for the purpose of keeping or throwing the needle back in its recess and clear of the shuttle. The needle often, when its point strikes upon the edge of or upon the seam of any material being sewed, will glance off or out of its recess, and the shuttle will then strike or catch under it and break or bend it. This guard is designed to prevent this casualty, and effectually does so.

Another part of my invention consists in a movable or laterally-reciprocating needle-throat bridge or slide for the purpose of bridging or covering the space between the feed-wheel and stationary throat-piece, and thus preventing the material that is being sewed from getting into said space and jamming. It also facilitates the true movement of the cloth in the lateral direction, as it moves with the plate on which the cloth rests, and with the feed-wheel also, and leaves nothing for the cloth to hang upon—that is to say, no stationary surface.

Another part of my invention consists in the laterally-reciprocating plate to rest the material that is being sewed upon. This plate reciprocates with the feed-wheel, and thus aids said feed-wheel in guiding and moving the cloth.

Another part of my invention consists in the guides or gages on the reciprocating plates, for the purpose of defining the distance of the sewing from the edge of the cloth, whether for the whip or button-hole stitch.

Another part of my invention consists in the application to a sewing-machine of an auxiliary alternating needle-thread "take-up," so that when the machine is converted into a button-hole from the ordinary stitch machine a take-up may be used that will compensate for the additional thread drawn off from the spool by the looper which is then used.

Another part of my invention consists in certain mechanism for properly working an alternating take-up and adjusting it to the work to be done.

Another part of my invention consists in a spring check or clamp working in connection with the alternating take-up and checking the "draw-off" from the spool at every alternate stitch, to make certain the take-up of all or any superfluous thread.

To enable others skilled in the art to make, apply, and use these improvements, I will proceed to describe the same in connection with the drawings, which illustrate the whole machine, but confine the description more particularly to the parts now claimed as new.

The needle-guard A is shown in place in Fig. 3, where B represents the shuttle; C, the shuttle-carrier; D, the race; E, the feed-wheel, and F the looper worked by a ratchet-wheel and lever below. The needle-guard A is at-

tached to the shuttle-carrier C by means of a set-screw, so that it may be adjusted when necessary. It is rounded off next the face of the race, and moves in close proximity to it, and should be just in advance of the point of the shuttle, so as to pass the needle in advance of the shuttle. Should the needle from any cause project from its recess, the rounded or inclined portion of this guard forces it back into the recess and prevents the point of the shuttle from striking and injuring it.

The needle-throat bridge is represented at G, Fig. 4. It is a plate attached to or moving with the laterally-reciprocating plate H, on which the cloth or other material that is to be sewed or worked rests. This needle-throat bridge is designed to bridge or cover the space between the feed-wheel and the stationary throat-piece *a*, and thus prevent the material that is being worked upon from getting jammed into said space. It moreover makes a laterally-reciprocating bearing for that part of the material that extends beyond the sewing-line, and thus aids in moving and guiding said material. This needle-throat bridge may be moved in one direction by the feed-wheel or reciprocating plate H, and in the opposite direction by the recoil of a spring underneath it, where it is out of the way.

I is a cloth-gage, made adjustable on the bridge, but moving with it as the bridge moves, as in working button-holes or making the overlap-stitch.

H is the movable or laterally-reciprocating plate to rest the material upon, it also serving as a guide to the material lying or resting upon it. The feed-wheel E projects slightly above this plate, and, as the feed-wheel is vibrated in its frame K horizontally by means of the rod L and other mechanism, as described in my above-mentioned patent, the plate H is carried with it in a corresponding lateral direction. On the plate H there is a guide or gage, *b*, (or two or more, if necessary,) for the purpose of guiding or gaging the distance of the sewing from the edge in making either the whip or the button-hole stitch, and this guide or gage, as well as the gage I on the bridge G, reciprocates laterally with its respective parts when they have that motion imparted to them, and this lateral motion can be regulated by changing the throw of the rod L.

When this machine is sewing the ordinary stitch an ordinary take-up can be used; but when working button-holes and the looper F is brought into action, then compensation must be made for taking up the additional thread that the looper draws off from the spool. For this purpose I have devised what I term an "auxiliary alternating needle-thread take-up," M. It is auxiliary, because it works in addition to the ordinary take-up. It does for the looper, when the looper is in action, what the ordinary take-up does for the needle-thread. It is alternating in its action, because the needle makes two passes while the looper acts but once. This auxiliary take-up is quite important in making the button-hole stitch, as I find that on every other movement of the needle and the regular ordinary take-up there is an extra quantity of thread drawn off from the needle-spool by the action of the looper equal to the amount which passes around the looper, and, as a consequence, without it a loose loop would occur at every alternate stitch.

The auxiliary alternating take-up M is operated as follows: It is attached to a rock-shaft, N, supported in bearings *c c* on the arm O, and which shaft at its rear end has a slotted arm, P, connected with it, through which slot a stud or pin, Q, passes, and is secured by means of a set-screw, *d*. The cam R on the drive-wheel S, striking the stud Q, rocks the shaft N at stated and proper intervals, and thus operates the take-up M. On the shaft N there is a spring check or clamp, *e*, which as said shaft rocks presses against the spool on the pin *f* at every alternate stitch for the purpose of clamping or checking the draw-off from the spool, except when actually necessary to form the stitch and to insure the taking up of all superfluous thread.

The laterally-reciprocating motion of the feeding mechanism, the auxiliary take-up, and the looper may be thrown into or out of action as the machine is changed from one kind of work to another—namely, the take-up, by slipping the stud Q and its cam up through the slot of the arm P and fastening it out of the influence of the cam R, the reciprocation of the feeding mechanism by running the screws on the rod L forward to throw said rod out of action with the cam that otherwise would operate it, and the looper by moving a mechanism that throws it out of action, as in my patent heretofore mentioned.

In Fig. 6, I have shown at *g* a specimen on an enlarged scale of the button-hole stitch made by my machine. This button-hole work may be in the body or on the edge of the cloth, or, as they are technically termed, the "blind" or "open" button-hole stitch or work. At *h*, I have shown the overlap, fell, or whip stitch, and at *i* the ordinary straight sewing, all of which this machine is capable of sewing with very slight adjustments of its parts.

Having thus fully described the nature, object, and purpose of my invention, what I claim therein as new is—

1. In combination with the shuttle-carrier, a needle-guard for forcing the needle back into its recess should it from any cause be forced out therefrom, substantially as described, and for the purpose set forth.

2. The movable needle-throat bridge for covering the space between the feed-wheel and stationary needle-throat piece to prevent the cloth from getting jammed in said space, and to facilitate the moving and guiding of the cloth, substantially as described.

3. In combination with a laterally-recipro-

cating feed-wheel, the laterally-reciprocating plate on which the material rests, so that the cloth may be more readily moved and guided, substantially as described.

4. In combination with the laterally-reciprocating bridge-piece and resting-plate, the reciprocating gages for defining the distance of the sewing from the edge of the cloth in making the whip or button-hole stitch, substantially as described.

5. The auxiliary alternating needle-thread take-up, which is used when the machine is converted from an ordinary-stitch to a button-hole machine, for the purpose of taking up the additional thread drawn off from the spool by the operation of the looper, substantially as described.

6. The combination of the cam, stud, arm, and rock-shaft for operating the auxiliary take-up and timing it so as to conform to the motions of the needle, shuttle, and looper, substantially as represented.

7. In combination with the auxiliary alternating take-up, the spring check or clamp for checking the draw-off from the spool at every alternate stitch, substantially as and for the purpose described.

CHARLES PARHAM.

Witnesses:
DAVID BEITLER,
L. GRIMM.