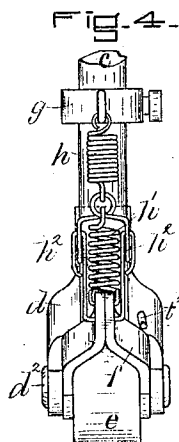
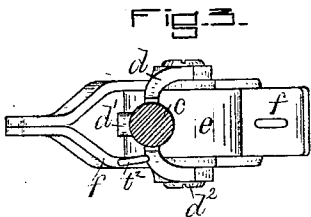
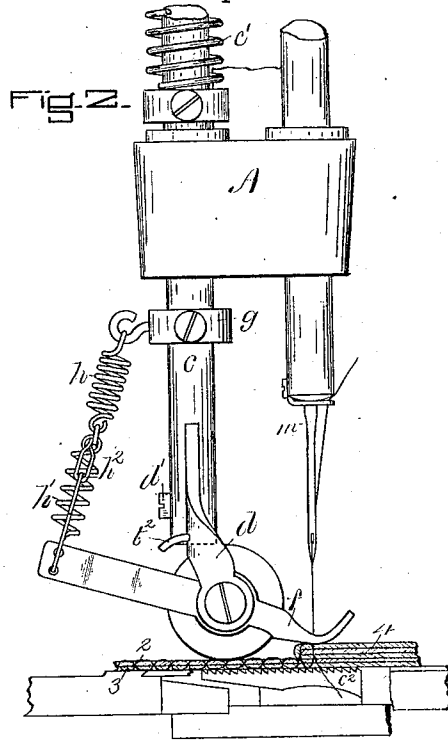
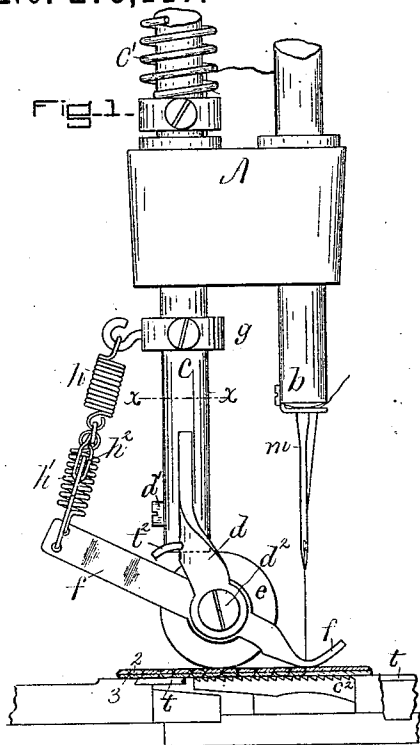


(No Model.)

C. H. BAYLEY.
SEWING MACHINE.

No. 275,117.

Patented Apr. 3, 1883.



WITNESSES

A. O. Orme

Fred A. Powell

INVENTOR

Charles H. Bayley

by Crosby & Gregory

Attlys.

UNITED STATES PATENT OFFICE.

CHARLES H. BAYLEY, OF BOSTON, MASSACHUSETTS.

SEWING-MACHINE.

SPECIFICATION forming part of Letters Patent No. 275,117, dated April 3, 1883.

Application filed January 15, 1883. (No model.)

To all whom it may concern:

Be it known that I, CHARLES H. BAYLEY, of Boston, county of Suffolk, and State of Massachusetts, have invented an Improvement in Sewing-Machines, of which the following description, in connection with the accompanying drawings, is a specification, like letters on the drawings representing like parts.

This invention in sewing-machines has for its object improvements in a presser-foot, whereby unequal feeding of two superimposed layers of fabric or material is obviated.

In certain classes of goods or fabric, especially rubber-faced fabric, when being stitched by a sewing-machine having a stationary presser-foot above and a four-motioned feeding device below the said material, the upper layer of material is apt to be held back by the friction against it of the stationary foot, and the said upper layer, as it is held back, results in the formation of gathers in the lower layer, thus making it very difficult to make a smooth ungathered seam; and this difficulty is enhanced when the contacting surfaces of the material are glazed or hard and smooth and the outer surfaces rough or soft or sticky, like india-rubber. Some operators, to overcome the gathering of the under layer, attempt to hold the same back so that it cannot be fed faster than the upper layer on which the presser-foot rests; but such holding of the under layer, particularly in india-rubber-faced goods, results in the feeding-surface moving over and scratching the under layer whenever the adhesion of the presser-foot to the upper layer and the force with which the under layer is held back is in excess of the adhesion of the feeding device to the under layer. To obviate these difficulties and enable two layers of india-rubber-faced or other goods to be sewed without puckers or gathers, I have made a compound presser-foot, composed, as herein shown, of a roller and a spring-held pad adapted to bear upon the material at both sides of the needle and in front of the said roller. The roller bears on the sewed seam in the material above the feeding device and directly back of the needle-bar, and the pressure of the roller thereon is determined by the force of the usual spring on the presser-bar. The pad bears on the upper layer of the unstitched material in advance of the said roller. The feeding de-

vice and roller, by their action on the sewed seam close to but back of the stitching-point, insures a positive and uniform movement of the two layers of material together, the slight pressure of the pad on the upper layer immediately about the stitching-point offering but slight, if any, resistance to the movement of the upper layer of fabric, for this pad, instead of producing the pressure necessary to hold the material upon the serrated surface of the feed, has only to be held down upon the upper layer with sufficient force to enable the pad to act as a stripper and prevent the material rising with the needle.

My invention consists essentially in a roller presser-foot adapted to bear upon the sewed material, when combined with an under feed and a pad to bear upon the material in front of the said roller and at the stitching-point, as will be described; also, in other features and combinations, hereinafter described, and set forth in the claims at the end of this specification.

Figure 1 represents in end view a sufficient portion of a sewing-machine to illustrate my invention; Fig. 2, a like view with the parts in different position; Fig. 3, a section on the dotted line *x x*, and Fig. 4 a rear elevation of the presser-bar and attached roller and pad.

The head *A*, needle-bar *b*, presser-bar *c*, spring *c'*, feeding device *c''*, and throat-plate *t* are all as common in the Wheeler & Wilson sewing-machine, style No. 10. The presser-bar, slotted at its lower end, has a forked hanger, *d*, connected with it by a screw, *d'*, the said hanger receiving through its ears a screw or stud, *d''*, which serves as the axis of the roller *e*, and also as the fulcrum for the lever-like pad *f*, turned upward at its forward end and connected at its rear end with an adjustable collar, *g*, on the presser-bar by a compound spring, (herein shown as composed of two spiral springs, *h h'*, and a link, *h''*.) The upper and under layers of material being sewed are marked 2, 3; and 4, Fig. 2 is supposed to represent several extra thicknesses of material as just passing under the pad to be stitched.

In Fig. 1, I have shown the layers of material in section on the line of seam; and it will be noticed that the seam is finished where the roller rests upon it above the throat-plate and feeding device *c''*, and that the stitching-point

is immediately under that part of the pad *f* bearing upon the layer of material. The feeding device *e*², as it rises above the throat-plate, engages the under layer of material, which is held down on the said raised feeding device by the roller *e*, resting on the upper layer of material, by a force depending upon the stress of the usual spring, *e*¹, and the said feeding device, acting against the under layer, 3, causes it and the upper layer stitched to it at that point to be moved back, the roller at such time turning by reason of its contact with the upper layer, 2, the said roller offering no resistance to such movement; and hence the two layers of united material so acted upon are pulled back uniformly away from the needle, thus avoiding the fulling up or gathering of the under layer.

In ordinary sewing-machines, when thin goods are being sewed, the needle-thread, as the stitch, is being set is apt to so draw upon the material as to full or gather the fabric for a short distance back of the stitch last made. This objectionable gathering I have completely obviated by causing the roller *e* to bear on the sewed material across the seam and above the feeding device at the rear of the needle, so that both layers of fabric or material are positively held as the feeding device operates to feed the material and the stitch is being set. The pad *f* bears so lightly upon the upper layer of material at the stitching-point as to in no way hold the said upper layer back, and with but two layers of material, as at Fig. 1, the pressure of the pad on the said material is due entirely to the light spring *h*¹.

On the occurrence of a seam or the arrival of several thicknesses of material under the pad *f* the latter rises, as shown in Fig. 2, and distends the light spring *h*¹ until the link *h*² is drawn into straight line, when the latter, owing to its connection with the stronger spring, *h*, distends it, as shown in Fig. 1, thus increasing the pressure of the pad on the increased thickness of material under it, such increased pressure being necessary to effectually strip the extra thickness of material from the rising needle.

In sewing-machines having a flat-surfaced presser-foot to bear upon and hold down the material when a seam passes the needle and is being moved along under the presser-foot the latter is held up by the extra thickness of material entering into the said seam and leaves the material loose or unclamped at the stitching-point, so that the said material will rise at such time from the throat-plate as the needle rises, preventing the proper throwing out of the loop of needle-thread, which results in skipping stitches.

With this, my apparatus, the pad easily rides over the seam and readily follows down upon the thinner material at the rear of the seam, and on the arrival of the said seam under the roller *e* the latter is lifted from the said mate-

rial, but, being pivoted upon the stud *d*² and acted upon by the springs referred to, remains in contact with the material at the stitching-point. The hanger *d* is provided with a stop, *t*², to arrest the downward movement of the pad *f* as the roller *e* is lifted from the material to remove the work.

I do not broadly claim two springs each of which exerts pressure upon the material at all times, except when the material is being fed, when the material is relieved from pressure of one of the said springs.

I claim—

1. The presser-bar and the roller carried thereby and adapted to bear upon the sewed material at the rear of the stitching-point, combined with an independently-movable pad, to operate substantially as described.

2. The presser-bar and its roller *e*, and the independently-movable pad having its fulcrum on the stud which supports the said roller, substantially as described.

3. The presser-bar, its roller *e*, adapted to bear upon the sewed material at the rear of the stitching-point, as described, and the independently-movable pad, combined with a spring to hold the pad against the material at the stitching-point, substantially as described.

4. The presser-bar and its roller *e*, adapted to bear upon the sewed material at the rear of the stitching-point, as described, and the independently-movable pad and spring to turn it, combined with a stop to arrest the downward movement of the said pad, as set forth.

5. The presser-bar, its roller *e*, adapted to bear upon the sewed material at the rear of the stitching-point, as described, and the independently-movable pad, adapted to hold the material down about the path of movement of the needle, combined with the feeding device, substantially as and for the purpose set forth.

6. In a sewing-machine, a presser foot or pad to bear upon the material, combined with a compound spring adapted to hold the said foot or pad upon the material, and made variable as to its pressure by variation in thickness of the material passing under it, substantially as described.

7. The presser-bar and its roller *e*, and a spring to force the said bar down and the roller against the material, combined with a pad to bear upon the material, and with a compound spring attached to the said pad and presser-bar to vary the pressure of the said pad upon the material as the latter varies in thickness, the rising and falling of the presser-bar not affecting the action of the said compound spring, substantially as described.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

CHARLES H. BAYLEY.

Witnesses:

G. W. GREGORY,
BERNICE J. NOYES.