

A. THAYER.
SEWING-MACHINE.

No. 172,205.

Patented Jan. 11, 1876.

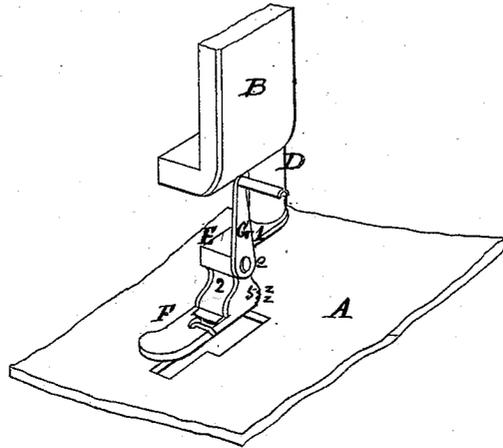


Fig. 1.

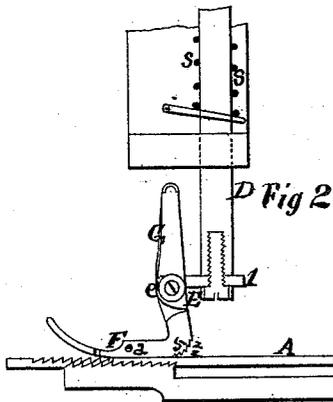


Fig 2

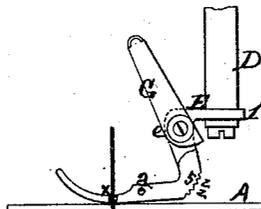


Fig. 3.

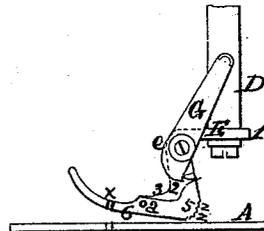


Fig. 4.

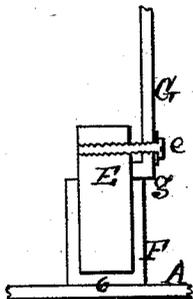


Fig. 6.

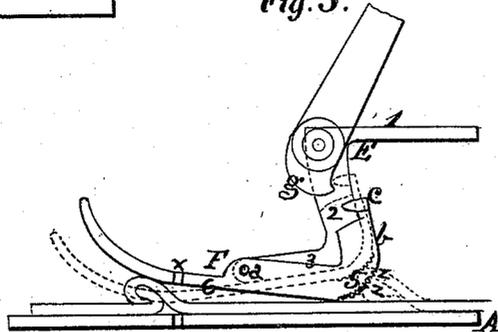


Fig. 5.

Witnesses.

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UNITED STATES PATENT OFFICE.

AUGUSTUS THAYER, OF ALBANY, NEW YORK.

IMPROVEMENT IN SEWING-MACHINES.

Specification forming part of Letters Patent No. **172,205**, dated January 11, 1876; application filed June 19, 1874.

To all whom it may concern:

Be it known that I, AUGUSTUS THAYER, of the city and county of Albany, State of New York, have invented certain Improvements in Sewing-Machines; and I do hereby declare that the following is a description thereof, reference being had to the accompanying drawings, forming a part of this specification, in which—

Figure 1 represents a perspective view of the improved parts of the machine. Fig. 2 is a side view of the presser-foot, with its pad locked in a horizontal position. Fig. 3 is a side view of the same, locked, with its toe inclined downward. Fig. 4 is a side view of the same, with the pad unlocked and the toe elevated. Fig. 5 represents the pad on an enlarged scale, and unlocked to permit its assuming any position, and illustrates the operations of the improvements. Fig. 6 is an enlarged sectional view of the bracket, foot, and flanged cam-lever for holding the pad locked.

My invention relates to that class of sewing-machines employing an automatic feed mechanism, to feed the material over the cloth-plate, and beneath an elastic presser-foot, provided with a smooth pressing-surface; and consists in a flange cam-lever, pivoted to the bracket of an oscillating foot, and a catch made with said oscillating foot, whereby the said foot or pad may be locked, either in a horizontal position, or with its toe inclining downward, or with the pad free to assume any position or relative degree of inclination allowable by the distance of the foot or pad from the cloth-plate when a piece of material with seams or folds is being fed over the said cloth-plate.

To enable others skilled in the art to make and use my invention I will proceed to describe it in reference to the drawings and the letters of reference marked thereon, the same letters indicating like parts.

In the drawings, A represents the bed of the machine or cloth plate, and a feed mechanism for moving the material. B is the head of the machine, supporting the presser-bar. D is the presser-bar, rendered elastic by a spring, *s*, all of which are old and well known.

Secured to the lower end of the presser-bar D is the bracket E, comprised of the parts 1, 2, and 3—the part 1 for the purpose of the attachment of the bracket to the presser-bar, and the parts 2 and 3 for the attachment of the presser-pad and its steadyment.

The particular form of the bracket is not essential, so long as the bracket is capable of attachment to the presser-bar, and will permit a holding of the presser-pad pivoted to the same, steady from all lateral movement.

Pivoted to the said bracket at *a* is the presser foot or pad F, furnished with an upward rear projection, *b*, provided with a catch, *c*, as shown.

I would here say that pivoted pads of presser-feet made to oscillate are not new, as the same have been employed by others; but such pads could not be set or locked in a horizontal position, so as to be rigid, and the same as an ordinary presser-foot; neither could they be set and locked with the toe inclining downward for operation in turning short curves of stitching, as in this invention.

Pivoted to the bracket at *e* is the lever G, provided with a cam-shaped flange, *g*, which flange-cam is capable of engaging with the catch *c* made on the rear projection *b* of the presser-pad. When the said lever G is moved to position shown in Fig. 2, the pad will be set and locked with its lower pressing surface horizontal and parallel with the cloth-plate, so as to be capable of operating, in all respects, the same as if said pad was made rigid. When said lever is moved to the position shown by Fig. 3, the form of the flange-cam *g* operating with the catch *c*, will set and hold the pad in position shown in said figure, so that its toe will be depressed and the pressing-surface of the lower side of the pad will be thrown in contact with the material around or at the needle-hole *x*, when the foot or pad will operate on the material to be stitched in the best manner for turning the same for curved lines of stitching, while, when the said lever is moved to position shown in Figs. 4 and 5, the flange-cam will be thrown out from contact with the catch *c*, and the pivoted pad will be rendered free to oscillate in any direction and assume a horizontal position when a

plain surface of material free from seams or fold is being passed over the cloth-plate; or the foot or pad may be inclined at the rear, as shown by full lines in Fig. 5, when a seam or fold is passing from under the toe to the plain horizontal surface; or the said pad may have a position shown by dotted lines in Fig. 5, when a seam is passing beneath the pad back of the needle-hole x and toward the heel of said pad.

Made on the rear inclined portion or heel 5 of the pad F, and at a point above the plane of the smooth pressing-surface 6 of the same, are the checking-teeth $z z$, which teeth run across from side to side of the said heel, and in their serrations stop a little short of the plane of the smooth surface 6 of the pad, so that when a uniform surface of material is being passed beneath the presser-foot by the feed mechanism the said teeth will not engage with such plane and uniform surface, and only engage with the seam or fold about emerging from beneath the said smooth pressing-surface of the pad, as shown by dotted lines in Fig. 5, when the said checking-teeth will, by one or more of their number according to the prominence of such seam or fold, catch with the same and retain it, together with the material in which such seam or fold occurs, to the place moved to by the feed mechanism, while it fails or ceases to hold the material in place.

It will be observed that the said checking-teeth are above the plane of the smooth pressing-surface 6 of the pad. This permits the pad to operate with the material in the same manner as if no checking-teeth were employed with it, while by the employment of the said teeth the seam or fold pressed upon by the incline of the heel will be prevented from suddenly slipping out from beneath the same and carrying the material, such seam or fold, to a distance farther than desirable for a uniform length of stitch, when the heel of the presser-foot bears on the seam or fold about emerging from beneath the plain smooth surface 6 of the pad.

I am aware that presser feet or pads have been used provided with teeth running from side to side throughout the entire length of the foot. Such presser-feet were made in the form of a rocker, or segment of a circle, and without any flat smooth pressing-surface on the lower side, and were intended to operate as a feed device for moving the material over the cloth-plate, while in my invention the catching-teeth are set at the rear termination of the smooth pressing horizontal surface 6, and on a plane above the same to engage only with a seam or fold to prevent it from slipping back when the feed mechanism ceases to engage with the material.

The improvements in this invention are capable of being employed with most of the popular sewing-machines now in use with great advantage both to the operator and to

the work to be done, and the several advantages to be secured from their use are as follows: First, the pad may be locked in a true horizontal position for operation with any plain surface of material, the same as in presser-pads made rigid. Second, when it is desired to stitch in curved lines, the presser-pad may be set and locked with its toe inclined downward, so that the pressure will be distributed about uniform around the needle-hole, while the portions of the presser-surface remote from the needle-hole will be free from all pressing contact with the material, and thereby cause the material to be held in such a manner that the operator may readily turn the material without its dragging beneath the presser foot or pad in the least. Third, when seams or folds occur, the pad may be permitted to oscillate in either direction, and assume any relative inclination according to the thickness of the seams or folds passing beneath the said pad, so that when a seam or fold is about entering beneath the toe the said toe is free to be raised to more readily permit the entrance of the seam for its passage beneath the plain surface of the pad to the rear or heel, while at the same time the resistance to the seam offered by the toe will be reduced to nearly one-half from that attending a rigid pad, by reason of the rear portion of the pad sustaining about an equal pressure on the material back to that exerted on the entering-seam by the toe, and the operator is relieved of all necessity of aiding the feed mechanism to feed forward the material when a seam or fold is about entering beneath the foot. Fourth, the checking-teeth made on the incline of the heel or rear of the smooth pressing-pad prevents the making of a longer stitch in the material when a seam pressed on by the said rear incline or heel of the pad is about ready to emerge, as the said checking-teeth engage with such seams as they emerge from beneath the smooth portion of the presser-foot, and hold them to the point moved to, when the feed fails or ceases to hold the material, while all liability of causing a deflection or breakage of the needle at the instant of its entering the material arising from a sudden slipping back of the same is obviated, as the said teeth will, under any pressure exerted by the presser-foot, hold the material securely from moving until by the positive operation of the feed mechanism.

I do not claim an oscillating pad, as it is old and well known. Neither do I claim a presser-pad provided with serrations on its lower pressing-surface, as the same has been employed with pads operating to move the material to be stitched, and are not used by me in this invention.

Having described my invention, what I claim, and desire to secure by Letters Patent, is—

1. The combination, with the elastic press-

er-bar D, provided with bracket E, and the cloth-plate and feed mechanism of a sewing-machine, the adjustable pad F, and mechanism for locking the same in different positions, when desired, for different operations, substantially as set forth.

2. The flange cam-lever G, bracket E, and elastic presser-bar D, in combination with the

pivoted or vertical oscillating pad, provided with a holding-catch, e, for operation substantially as set forth.

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Witnesses:

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