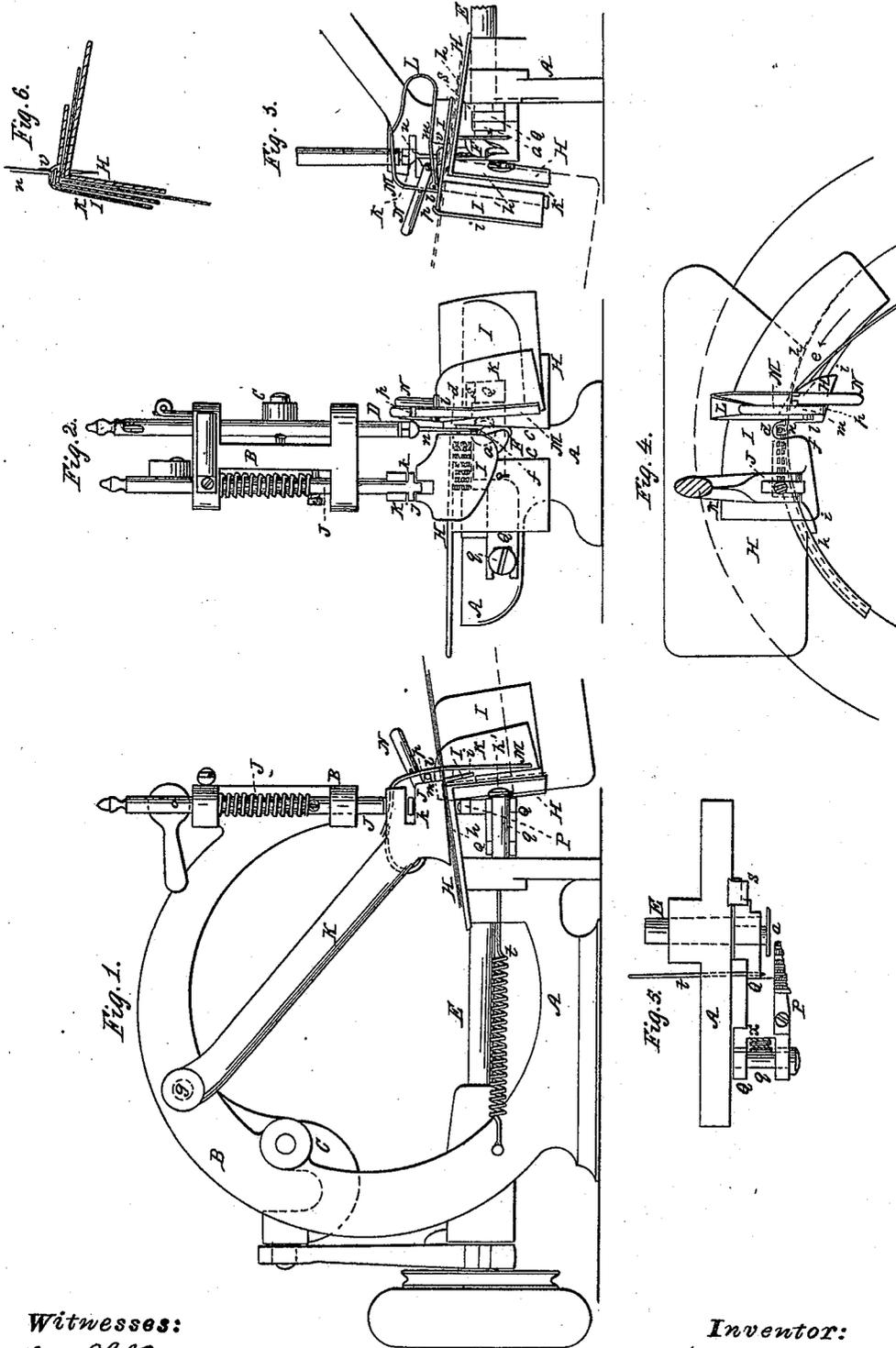


R. EICKEMEYER.
Sewing Machine.

No. 52,698.

Patented Feb. 20, 1866.



Witnesses:
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UNITED STATES PATENT OFFICE.

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IMPROVEMENT IN SEWING-MACHINES FOR SEWING IN THE SWEAT-LININGS OF HATS, &c.

Specification forming part of Letters Patent No. 52,698, dated February 20, 1866.

To all whom it may concern:

Be it known that I, RUDOLPH EICKEMEYER, of Yonkers, in the county of Westchester and State of New York, have invented certain new and useful Improvements in Sewing-Machines for Sewing in the Sweat-Linings of Hats, and for other Purposes; and I hereby declare that the following is a full, clear, and exact description of the same, reference being had to the accompanying drawings, forming part of this specification, in which—

Figure 1 is a back view of a sewing-machine with my improvements. Fig. 2 is a left-hand-side view of the same. Fig. 3 is a front view of the mechanism for holding and feeding the hat. Fig. 4 is a plan of the holding mechanism. Fig. 5 is a plan of the feeding devices. Fig. 6 is a transverse vertical section of the plates for supporting and guiding the hat and sweat-lining.

Similar letters of reference indicate corresponding parts in the several figures.

This invention relates to the employment, in a sewing-machine, of angular supporting and guiding plates of similar general character to those which are part of the subject-matter of my Letters Patent No. 25,078; and it consists in a novel construction and arrangement of such guiding-plates and means of operating the same, whereby the stitching may be performed in a better manner by a system of stitching like what is used for sewing seams in garments by machines.

It also consists in a novel arrangement and mode of operating the feeding device relatively to said supporting and guiding plates, whereby it is rendered very efficient in its operation.

To enable others skilled in the art to make and use my invention, I will proceed to describe it with reference to the drawings, which represent the improvements applied to a machine of the kind known as "Willcox & Gibbs."

A is the base, and B is the stationary arm, of the machine.

C is the needle-operating lever, D the needle-bar, and *n* the needle.

E is the rotating shaft which carries the rotating hook or looper F, the eccentric G, which works the needle-operating lever, and the eccentric wrist *a*, which operates the feeding device. These parts are substantially the same in the Willcox & Gibbs machine.

Instead of the ordinary flat cloth-plate I substitute the stationary bottom supporting-plate H, which is of nearly rectangular form, as shown in Fig. 1, in its transverse profile, taken at right angles to the feed motion. The top part, *h*, of this plate, upon which the brim of the hat rests during the sewing operation, is flat and nearly horizontal, being only slightly inclined downward from the angle of the plate, as shown in Figs. 1 and 3. The side portion, *h'*, of the said plate, against which the exterior of the side of the crown of the hat rests, is nearly upright, as shown in Figs. 1 and 3, but it is curved in a longitudinal direction, as shown in Fig. 4, to conform nearly to the form of that portion of the hat. The hat is shown in red color in Figs. 1, 3, and 4. The plate H, thus constructed and arranged, has the needle nearly perpendicular with the part *h*, and nearly parallel with the part *h'*, as shown in Fig. 3. The part *h'* of the said plate has a wide opening, *c*, Fig. 2, opposite the needle and rotating hook or looper F, to allow the free movement of the loop in the formation of the stitch. This opening *c* communicates with the needle-hole *d*, Fig. 4, in the top part, *h*, of the said plate near the angle thereof.

I is the top supporting or guiding plate, by which the hat is held upon the top and against the side of the plate H. This plate is of angular transverse profile form corresponding with H, and its side part, *i'*, has a similar curvature, but in an arc of somewhat shorter radius, that the opening between *h'* and *i'* at the front or entering end may be somewhat wider, as shown at *e* in Fig. 4, than it is opposite the needle, to facilitate the entrance of the hat between them. The said plate I has an opening, *f*, in its side and upper parts, as shown in Figs. 2 and 4, to afford free movement to the loops in forming the stitches. The plate I is attached rigidly to the lower end of an obliquely-arranged arm, K, the upper end of which is pivoted at *g*, Fig. 1, to the stationary arm of the machine in such manner that as it rises and falls it moves in an arc nearly at an angle of forty-five degrees with the top part, *h*, and side, *h'*, of the bottom plate, or parallel with a line bisecting the transverse angle of the said plate, so that it may press the hat-band or angle between the brim and sides of the crown close against the angle of the said plate. The necessary pressure upon the plate I is produced by

the ordinary spring presser-bar J of the sewing-machine, which is attached to it by a sliding mortise-and-tenon connection, *jk*, as shown in Figs. 1 and 2, to permit the oblique rising and falling movement on the pivot *g*, and to enable the pressure to come directly against the angle of the band of the hat.

K' is a thin plate of metal, conforming to the exterior of the side part, *i'*, of the plate I, and so attached at the top, as shown at *v* in Fig. 6, to the latter plate, near the angle thereof and in front of the opening *f*, as to enable it to spring slightly toward and from the part *i'*. In the normal condition of the said plate K' it stands off sufficiently from the part *i'* of the plate I to permit the free entrance, between the two, of the sweat-lining of the hat, which is shown in blue color in Figs. 1 and 4; but the elastic attachment of its upper part to the plate I permits the lower part of the said plate K' to be pressed against the sweat-lining and press the latter against the plate I by the action of a spring, L, upon the upper end of a bent lever, M, which is pivoted at *l* to an arm, *m*, attached to the plate I, the said spring causing the lower end of the said lever to press the plate K' toward the plate I. When it is desired to relieve the plate K' of the pressure of the lever M another lever, N, pivoted to the arm *l* at *n*, is raised up by hand to bring a stud, *p*, in one side of it over the bend of the lever M. The said stud then pressing on the upper part of the lever M holds away the lower part from the plate K'.

The feeding device, arranged in the angle of the plate H and working in a hole in the top part, *h*, of the said plate, consists of a serrated dog, P, and is rigidly attached to a lever, Q, which is arranged to both oscillate and slide longitudinally upon the fixed fulcrum-pin *g*, secured in the base A. The eccentric wrist-pin *a*, working in a hole or bearing in the said lever, and aided by the action of a spring, *r*, Fig. 5, produces on the said lever an upward and downward vibrating movement and a longitudinal movement by which the attached dog P receives the upward and downward and longitudinal movements common to what is known as the "four-motion feed;" but a lateral movement is also given to the dog by arranging a stationary inverted inclined plane, *s*, Figs. 2, 3, and 5, between the lever Q and the base A, and attaching to the said lever a spring, *t*, which holds the said lever in contact with the said inclined plane. As the lever is raised by the eccentric wrist-pin *a*, it is moved laterally toward the portion *h'* of the plate H by sliding up the inclined plane, and as it is depressed it is drawn away from the said portion of the plate by means of the spring *t*. This lateral movement of the lever and its upward and downward movement together produce an oblique movement of the dog toward and from the needle and the angle of the plates H I, and of the band of the hat.

The operation of the machine is as follows: The plate I is raised from the plate H by raising the presser-bar in the usual manner, and the hat is introduced between the plates H and I with the brim between the flat parts of the said plates, and the sides of the crown between the curved portions *h' i'*, and the plate I is then brought down to clamp the hat against the plate H. This condition of things is represented in Figs. 1, 3, and 4, the hat being represented in red color, in section, in Figs. 1 and 3, and a portion of it being shown in red outline in Fig. 4. The plate K', being relieved of the pressure of the springs L and lever M, the strip of leather or other material to form the sweat-lining (represented in blue color, in section, in Fig. 1, and in blue outline in Fig. 4) is then introduced between the plates K' and I, with the upper edge against the bend *v* of the plate K', as shown in Fig. 6, the end of the said strip being passed far enough beyond the said plate to extend across the openings *f* and *c* of the two plates I and H, and between the plate I and the hat, and to a position opposite to the feeding-dog. The spring L and lever M are then allowed to come into operation on the latter plate to make it hold the lining between it and the plate I. The machine is then set in operation, and the upper edge of the lining, being bent over the angle of the band of the hat, as shown in Figs. 1 and 6, is sewed to the brim close to the said angle, where the needle *u* passes through the brim of the hat nearly perpendicularly thereto, as shown in Figs. 3 and 6. In this operation the bend *v* of the plate K', against which the upper edge of the sweat-lining runs, serves as a gage to prevent the said edge from running too far over the angle of the band of the hat and onto the brim.

I have described my invention as applied to the Willcox & Gibbs sewing-machine merely because that machine serves as well as any other for its illustration, but it may be understood by persons skilled in sewing-machines that the invention may be just as well adapted to shuttle machines or to machines with any other contrivance for producing the interlacing of the threads by which the stitches are formed.

The machine may be arranged in such manner that the curved portions of the plates H and I may be presented upward, and the flat portions thereof in upright positions. This arrangement of the machine is, all things considered, the best, as it provides a better support for the hat.

What I claim as my invention, and desire to secure by Letters Patent, is—

1. The angular guiding or pressing plate I, so applied in relation to and operating in combination with the angular supporting-plate H as to enable it to move toward and from the latter plate in a direction parallel, or nearly so, with a line bisecting the angle thereof, substantially as herein specified.

2. The plate K', for guiding and holding the

sweat-lining, and the pressing-lever M, and spring L, in combination with each other and with the angular plates H and I, substantially as and for the purpose herein described.

3. Giving the feeding device, besides its forward and backward movement, a movement oblique to the needle and to the angle of the

plates H I, and of the band of the hat, substantially as and for the purpose herein specified.

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