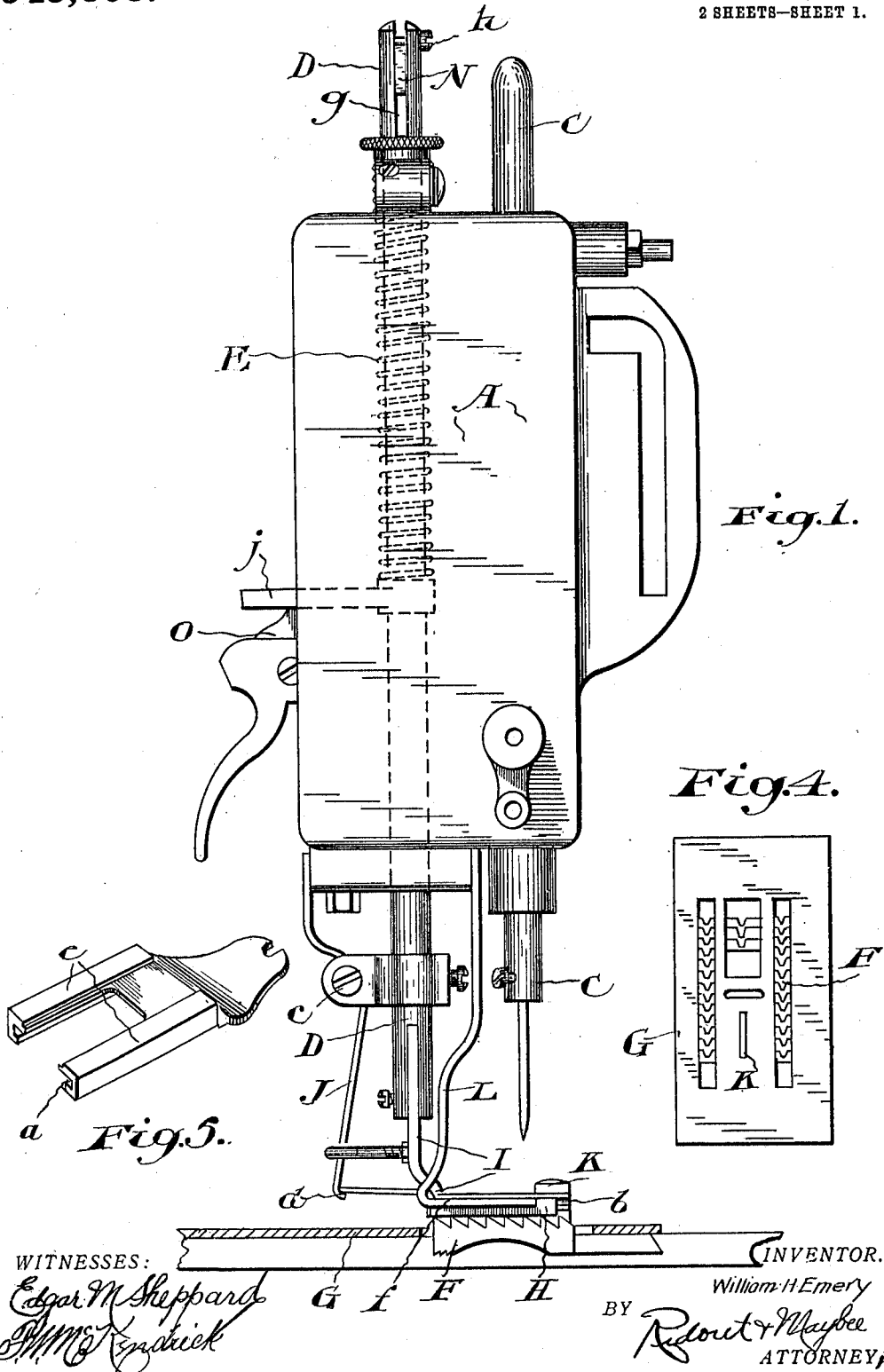


W. H. EMERY.
SEWING MACHINE.

APPLICATION FILED NOV. 12, 1908.

Patented Jan. 4, 1910.
2 SHEETS—SHEET 1.

945,308.

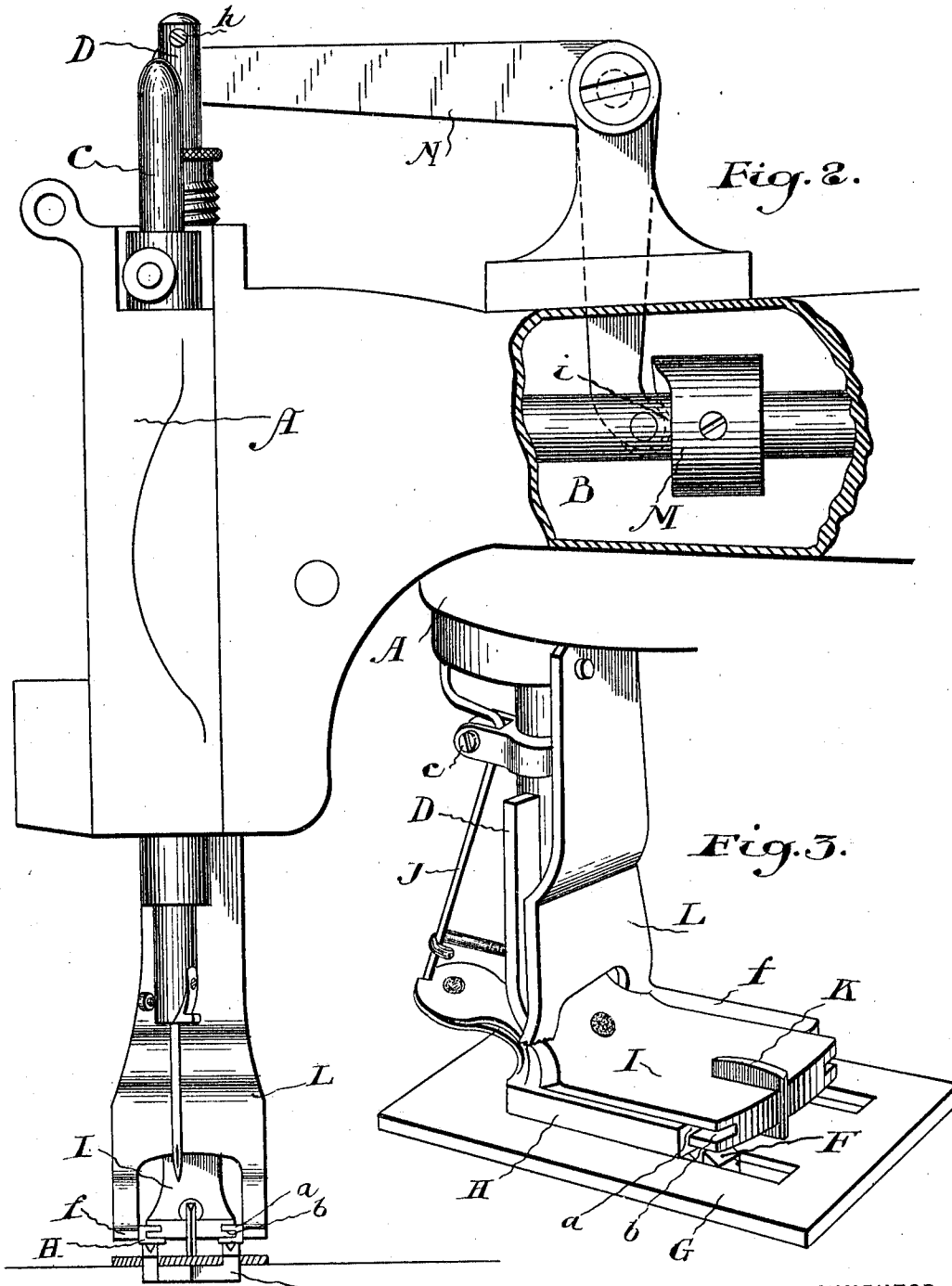


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WITNESSES:

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WILLIAM H. EMERY, OF TORONTO, ONTARIO, CANADA, ASSIGNOR OF ONE-HALF TO
ROBERT F. SEGSWORTH, OF TORONTO, CANADA.

SEWING-MACHINE.

945,308.

Specification of Letters Patent.

Patented Jan. 4, 1910.

Application filed November 12, 1908. Serial No. 462,277.

To all whom it may concern:

Be it known that I, WILLIAM H. EMERY, of the city of Toronto, in the Province of Ontario, Canada, have invented new and useful Improvements in Sewing-Machines, of which the following is a specification.

My object is to devise a machine particularly adapted for sewing rubber coated and other sticky fabrics.

Owing to the great friction developed between a metal surface in contact, under pressure, with the tacky coated surface it has heretofore been found almost impossible to effectively feed raw rubber coated fabrics through an ordinary sewing machine and even when any measure of success has been attained it has only been with a very great expenditure of power.

I have overcome the difficulty by so arranging the machine that the presser means contacting with the upper surface of the fabric to hold it in contact with the feed-dog will move back in contact with the fabric as the latter is moved by the feed-dog, thus avoiding any dragging of the fabric over the surface of the said presser means. At the same time that the feed-dog is returning ready for a new feeding movement the aforesaid presser means is lifted and returned to its normal position. A stripper is also provided which holds down the fabric as the presser means is raised, and when the machine is used for butt seams a guide is provided between the abutting edges of the fabric.

Figure 1 is an end elevation of the arm of a sewing machine provided with my improvements. Fig. 2 is a front elevation of part of the same. Fig. 3 is a perspective view on an enlarged scale, showing particularly the presser foot, the presser foot shoe and stripper. Fig. 4 is a plan view of the throat plate and feed-dog. Fig. 5 is a perspective detail of the under side of the presser foot shoe.

In the drawings like letters of reference indicate corresponding parts in the different figures.

A is the arm of a sewing machine. Through this arm passes the shaft B which operates the needle bar C in the ordinary manner. The operating means being well known in the art and forming no part of the present invention are not illustrated. The arm also carries the presser bar D,

which is vertically movable in the ordinary manner. The presser bar is provided with the usual spring E tending to move it downward. The presser bar carries the presser means which serves to maintain the work in contact with the feed-dog F. This is an ordinary toothed feed dog and may be operated in any of the well-known manners. It operates through the throat plate G, which is suitably slotted for the passage of the teeth of the feed dog. (See particularly Fig. 4.)

As already set out in this specification I arrange the mechanism so that the presser means will travel with the fabric being fed through the machine. The presser means is preferably formed as a shoe H, slidably connected with the presser foot I rigidly secured to the lower end of the presser bar D. I show the shoe as provided with the L-shaped flanges *a* fitting into the groove *b* formed in the sides of the presser foot. The shoe H extends rearwardly of the presser end and is engaged by a bent spring J coiled around a pin *c* carried by the presser bar. One end *d* of the spring engages the shoe H. The other end extends upwardly and lies behind the rear side of the end of the arm A of the machine. The tension of the spring is thus maintained even when the presser bar is raised and lowered as hereinafter described.

This machine being preferably intended to sew butt joints the throat plate G is provided with an upwardly extending fin K which forms a seam guide and lies between the abutting edges of the fabric to be sewn. This fin passes through a slot cut in the presser foot I.

A reference to Figs. 2 and 5 will show that the forward part of the shoe H is cut away to clear the fin K. The shoe is also formed with a rib *e* at each side of its center portion. These ribs contact with the fabric passing through the machine and raise the shoe out of contact with the edges of the fabric which are often clotted with gummy material and which it is important should not be pulled upwardly when the presser foot is lifted, as hereinafter described.

From the construction described it follows that when the fabric to be sewn is moved rearwardly by the action of the feed dog F the shoe H being in contact with and adhering to the upper surface of the fabric

will be moved rearwardly at the same rate that the fabric is moved by the feed dog, the shoe sliding much more readily on the presser foot than it is possible for the fabric to move over the surface of the shoe. A very easy feed is thus obtained. At the end of the feeding movement, however, the shoe must be disengaged and returned to its initial position ready for the next feeding movement. To obtain this movement of the shoe I provide mechanism by which the presser bar may be lifted at the end of each feed movement to disengage the shoe from the fabric. As soon as the shoe is thus disengaged from the fabric a spring J returns the shoe to its initial position.

To prevent the fabric lifting with the shoe I provide the stripper L secured to the arm of the machine and having a foot *f* at each side of the presser foot sufficiently close to the throat plate to hold down the fabric when the presser foot is lifted without being near enough to interfere with the proper feeding of the fabric.

The presser bar is lifted by the following mechanism: on the shaft B is secured a cam M which is adapted to engage the end of one arm of the bell crank lever N which is suitably pivoted on the arm of the machine and has its second arm engaged with the upper end of the presser bar D. As a preferable connection I show the arm of the bell crank lever entering the slot *g* formed in the upper end of the presser bar. The pin *h* passing through the presser bar engages the upper surface of the end of the arm of the bell crank lever. The arm of the bell crank lever engaging the cam M is preferably provided with a friction roller *i* to reduce friction. By this arrangement the presser bar is periodically lifted and as in a complete machine the driving parts are suitably synchronized the movements of the presser foot will be suitably synchronized with the movements of the operator's foot and the needle.

In a machine arranged for butt sewing the needle bar of course has a lateral movement as well as an up and down movement, but these features form no part of my invention and being old in the art are not illustrated.

The presser bar D is preferably provided with an ordinary lifting cam O pivoted on the arm of the machine and engaging the finger *j* projecting from the presser bar.

I have described what with my present knowledge I consider the preferable construction of my invention, but I do not, of course, desire to limit myself to the details shown, as any arrangement by which the presser means co-acting with the feed dog may be arranged to travel rearwardly with the fabric would fall within the scope of my invention. In practice I find the arrangement entirely satisfactory as at no time is

there any dragging of the sticky surfaces of the material over any part with which they contact, and the waste of powder and trouble consequent on such a condition is entirely avoided.

What I claim as my invention is:—

1. In a sewing machine provided with a throat plate and a feed dog the combination therewith of a presser shoe movable to follow the feeding movement of the feed dog; means for raising the presser shoe and returning it to its initial position; and a stationary stripper supported out of contact with the throat plate and adapted to prevent the fabric lifting with the presser shoe.

2. In a sewing machine provided with a throat plate and a feed dog the combination therewith of a presser shoe movable to follow the feeding movement of the feed dog; means for raising the presser shoe and returning it to its initial position; a stationary stripper supported out of contact with the throat plate and adapted to prevent the fabric lifting with the presser shoe; and a fin forming a seam guide projecting up from the throat plate of the machine.

3. In a sewing machine the combination of a throat plate a feed dog operating through said plate; a presser foot; means for raising the presser foot and returning it to its initial position; a fin forming a seam guide projecting from the throat plate; the presser foot embracing said fin and a stripper adapted to prevent the fabric lifting with the presser foot.

4. In a sewing machine the combination of a throat plate; a feed dog operating through said plate; a fin forming a seam guide projecting from said plate; a presser foot slotted for the passage of said fin; a shoe longitudinally movable on the presser foot and cut out to embrace the fin; means for periodically raising the presser foot; and a spring tending to maintain the shoe in its normal position.

5. In a sewing machine the combination of a throat plate; a feed dog operating through said plate; a fin forming a seam guide projecting from said plate; a presser foot slotted for the passage of said fin; a shoe longitudinally movable on the presser foot and cut out to embrace the fin; means for periodically raising the presser foot; a spring tending to maintain the shoe in its normal position; and a stripper adapted to prevent the fabric raising with the presser foot shoe.

6. In a sewing machine a presser foot having a shoe longitudinally movable thereon, the shoe having a longitudinal flat rib on its under side at each side of its center portion in combination with a feed dog and a stationary stripper having a foot at each side of the shoe close to said longitudinal flat ribs.

7. In a sewing machine a presser foot having a shoe longitudinally movable thereon,

the shoe having a longitudinal flat rib on its under side at each side of its center portion, the forward part of its center portion also being cut away, in combination with a throat plate; a fin forming a seam guide projecting from the throat plate through the cut away portion of the shoe; a feed dog; and a stationary stripper having a foot at each side of the shoe close to said longitudinal flat ribs.

10 8. In a sewing machine provided with a throat plate and a feed dog the combination therewith of a presser shoe movable to follow

the feeding movement of the feed dog; and having a longitudinal flat rib at its under side at each side of its center portion, means 15 for raising the presser shoe and returning it to its initial position; and a stationary stripper having a foot at each side of the shoe close to said longitudinal flat ribs.

Toronto, this 7th day of November, 1908.

WILLIAM H. EMERY.

Signed in the presence of—

J. EDW. MAYBEE,

F. W. MCKENDRICK.