

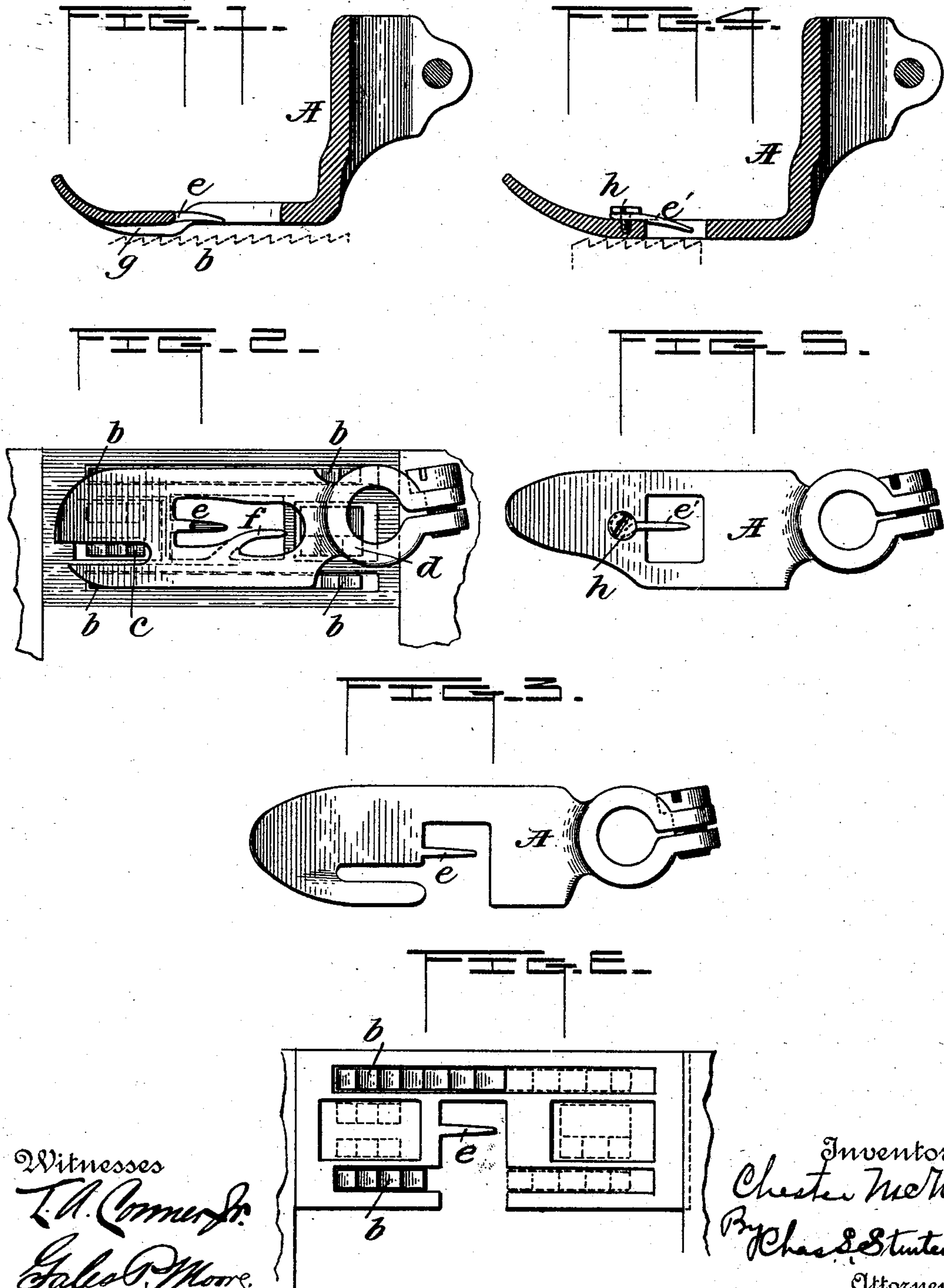
(No Model)

C. McNEIL.

FEEDING MECHANISM FOR SEWING MACHINES.

No. 506,532.

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Witnesses
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UNITED STATES PATENT OFFICE.

CHESTER McNEIL, OF CHICAGO, ILLINOIS, ASSIGNOR TO THE UNION
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FEEDING MECHANISM FOR SEWING-MACHINES.

SPECIFICATION forming part of Letters Patent No. 506,532, dated October 10, 1893.

Application filed June 29, 1892. Serial No. 438,469. (No model.)

To all whom it may concern:

Be it known that I, CHESTER McNEIL, a citizen of the United States, residing at Chicago, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in Feeding Mechanism for Sewing-Machines, of which the following is a description, reference being had to the accompanying drawings, and to the letters of reference marked thereon.

My invention relates to sewing machines and particularly to an improved feeding mechanism for use on machines for sewing knit goods and similar elastic fabric.

In the joining or overseaming of knit goods the fabric is likely to become stretched by the feed, and after the stitches are passed down through the fabric, when the elasticity of the fabric tends to return it to its former relaxed condition, that portion through which the stitches have passed is prevented from assuming its former condition by reason of the said stitches and consequently the fabric is curled or puckered, which is, of course, very objectionable. It has been heretofore proposed to remedy the defects above referred to by providing a form of feeding mechanism which acts in such a way that the portion of the fabric outside the rows of stitches is fed forward at a certain speed while that portion of the fabric through which the stitches pass is fed at a more rapid rate of speed, whereby the portion of the fabric through which the stitches pass is stretched before the rest of the fabric and thereby puckering is prevented. This feeding apparatus comprises mechanism for giving various motions to different feed dogs, that is, one portion of the feed moved forward faster than the other, thereby feeding forward one portion of the fabric in advance of the other and letting go of it sooner, so that at the time the stitches passed through, that portion of the fabric was partially or wholly relaxed while the portion of the fabric outside the stitches was just returning to its relaxed condition. This feeding apparatus is, however, objectionable because of its complicated character and hence it has been proposed to provide a simpler arrangement for accomplishing the same object, said arrangement comprising a presser foot having an opening for the passage of the needle combined with feed dogs bearing

against the fabric beneath the side or sides of the presser foot only, leaving the fabric free in that portion through which the stitches pass. Said invention comprised also a presser foot of peculiar construction acting with the usual feed dogs.

The present invention is an improvement upon the state of the art above referred to and consists in the matters noted in the appended claims.

My invention is illustrated in the accompanying drawings in which—

Figure 1 is a vertical section partly in elevation of my invention, of the form used when applied to sewing machines having the ordinary feed dogs. Fig. 2 is a plan view of my invention when used upon a sewing machine having two laterally vibrating needles, the feed being of ordinary construction. Figs. 3 and 5 are different forms of presser feet embodying my invention. Fig. 4 is a sectional side elevation of my invention, the presser foot being of ordinary construction and having a tongue over which the stitches are formed; and Fig. 6 is a top plan view of a throat plate used with my invention upon a certain class of overseaming machines.

In the drawings A represents the presser foot as a whole the shank portion of which is provided with a divided sleeve fitted over the presser bar, in the usual way. A suitable opening is provided for the passage of the needle or needles and the toe of the foot is upturned in the usual manner.

The preferred means for carrying out my invention is illustrated in Fig. 1, in sectional side elevation, while a modified form of the presser foot is shown in Fig. 2, the feed in both cases being the ordinary feed. The feed in these two cases is composed of the forward and rear dogs *c*, *d*, and side dogs *b*. For use in connection with machines on which the ordinary feed is placed, the presser foot is provided with a groove or channel *g* in the under side of the presser foot about equal in width to the needle hole and of sufficient depth, that when the forward dog *c* advances there will be no clamping of the fabric against the upper wall of the groove. In rear of the needles the presser foot is flattened but is elevated above the surface of the forward portion so that there will be just about sufficient space to admit the fabric between the

presser foot and feed dogs. In front of the needles the sides of the grooves *g* are made to bear upon the fabric and the side feed dogs force the same against the presser foot in the usual way, and feed the fabric forward. It will be seen that by this construction the portion of the fabric through which the stitches pass has no pressure brought to bear upon it in front of the needles so that it is not stretched at all, while the fabric on either side is stretched, but the stitches pass down through the fabric in normal condition so that when the portion stretched assumes its normal condition there will be no curling.

As shown in Fig. 1, I have provided the presser foot with a tongue *e* extending into the needle opening and over this tongue the stitches are formed in a manner well known in the use of overseaming machines. In Figs. 4 and 5 this tongue is shown as removable and is marked *e'*.

In Figs. 3 and 6 a presser foot and throat plate respectively are shown which may be used with my invention, these parts being constructed in this connection to be used in that type of overseaming machine in which a spreader acts to bring thread from below up through the cloth plate of the machine to a point where it is secured by the upper thread.

In Fig. 2 the presser foot is shown as having two tongues *e, f*, arranged to co-operate with two laterally vibrating needles making two rows of zig-zag stitches.

In Fig. 4 I show another manner of carrying out my invention the presser foot being provided with a tongue as shown, over which the stitches are formed, but instead of being provided with the longitudinal slot or groove and working in connection with the ordinary feed, only the side feed dogs are used the others being dispensed with.

It will be understood that I do not desire to be limited to the number of tongues on the presser foot as a plurality may be used, instead of only one, as herein shown in Fig. 2. Furthermore the tongue or tongues may be removable or not and their form may be changed to correspond with the type of machine employed. The throat plate may also be provided with a tongue as in Fig. 6, and, of course, more than one may be used on the throat plate.

Any means for making a stitch across the tongue or tongues is included within the scope of my invention while if desired a trimmer may be applied in connection therewith, arranged in any desired relation to the needles.

I am aware that prior to my invention it has been proposed to provide presser feet and throat plates with tongues over which the stitches are formed and I therefore do not claim to be the first to apply a tongue to a presser foot. I do claim however to be the first to apply the tongue in the connection herein referred to and by so doing accomplish a result not heretofore produced. I have found

in practice in the use of the mechanism herein described for feeding forward the material, that on certain classes of goods, the tongue is an essential element, for in sewing thin or sleazy goods when the needle rises, the goods adhering thereto on account of the friction will tend to rise too, unless a tongue be used. By the use of this tongue however, the goods are held down whereby an increased and useful function is given to the tongue when used in this particular connection.

I claim—

1. In a sewing machine, in combination with complementary stitch forming mechanism, the feeding device comprising a perforated tongued presser foot and an opposing member, one of the latter elements being provided with bearing surfaces extending longitudinally of the other and terminating at a point in advance of the vertical plane in which the needle of the stitch forming mechanism reciprocates, said bearing surfaces being located on each side of said vertical plane, whereby in sewing the fabric is relieved of strain between the bearing surfaces; substantially as described.

2. In a sewing machine, the combination with stitch forming mechanism, the feeding device comprising a perforated presser foot having a tongue extending into the perforation, and an opposing member, the latter being provided with bearing surfaces extending longitudinally of the presser foot and terminating at a point in advance of the vertical plane in which the needle of the stitch forming mechanism reciprocates, said bearing surfaces being located on each side of said vertical plane, whereby in sewing the fabric is relieved of strain between the bearing surfaces; substantially as described.

3. In a sewing machine, the combination with stitch forming mechanism, of the feeding mechanism comprising a perforated presser foot having a tongue extending into said perforation, and an opposing member, one of the latter elements being provided with bearing surfaces extending longitudinally of the presser foot and terminating at a point in advance of the vertical plane in which the needle of the stitch forming mechanism reciprocates, and said bearing surfaces being located on each side of said vertical plane, and the presser foot being provided with an elevated portion in rear of said needle plane; substantially as described.

4. The perforated tongued presser foot provided with longitudinal bearing surfaces located on each side of said perforation and located in advance thereof, and also provided with an elevated portion in rear of said perforation; substantially as described.

In testimony whereof I affix my signature in presence of two witnesses.

CHESTER MCNEIL.

Witnesses:

W. L. NORTH,
JOE SELWAY.