

M. DRUCKERMAN.
SEWING MACHINE.
APPLICATION FILED APR. 8, 1912.

1,051,315.

Patented Jan. 21, 1913.

Fig. 1.

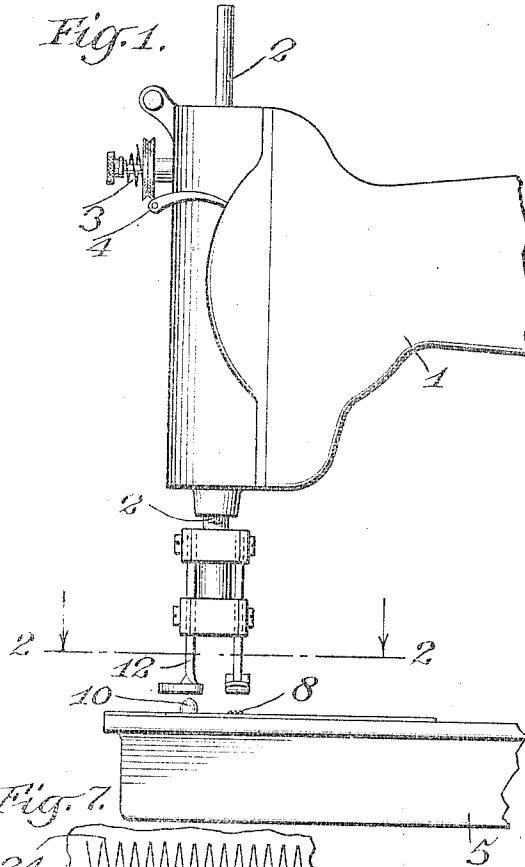


Fig. 2.

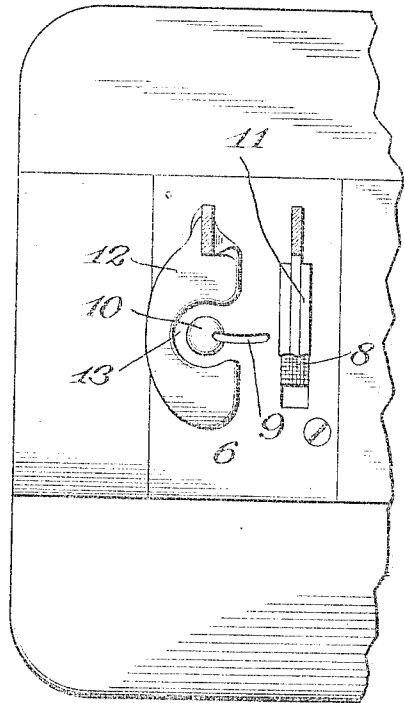


Fig. 7.

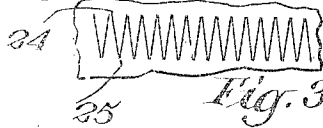


Fig. 3.

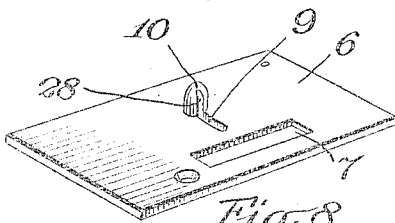


Fig. 8.

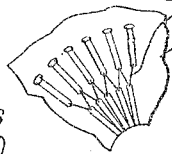


Fig. 4.

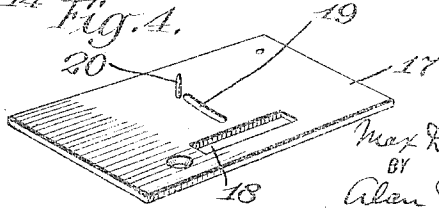


Fig. 5.

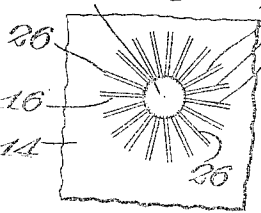
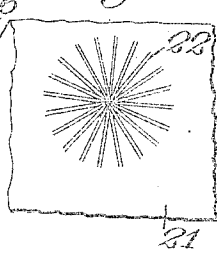


Fig. 6.



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SEWING-MACHINE.

1,051,315.

Specification of Letters Patent.

Patented Jan. 21, 1913.

Application filed April 8, 1912. Serial No. 689,229.

To all whom it may concern:

Be it known that I, MAX DRUCKERMAN, a citizen of the United States, and a resident of Brooklyn, in the county of Kings and State of New York, have invented certain new and useful Improvements in Sewing-Machines, of which the following is a specification, taken in connection with the accompanying drawing, which forms a part of the same.

My invention relates to sewing machines and more particularly to a sewing machine adapted to make a circular seam.

My invention further relates to an attachment for a sewing machine having a vertically and laterally reciprocating needle adapted to make a zigzag stitch so as to adapt that form of sewing machine, which is old, to make a circular seam. These circular seams may be used for various purposes but are principally used in embroidery, the seam either having an open or a closed center as may suit the particular article being embroidered, the circular seams being either the sole or principal feature of the embroidery, or they may form portions of a more or less elaborate embroidery design.

In the accompanying drawing showing an illustrative embodiment of my invention and in which the same reference numerals refer to similar parts in the several figures, Figure 1 is a side elevation of a portion of a sewing machine showing my invention; Fig. 2 is a horizontal section on the line 2—2 of Fig. 1 looking in the direction of the arrows, a portion of the mechanism being broken away for the purpose of clearer illustration; Fig. 3 is a perspective view of my improved throat plate; Fig. 4 is a perspective view of a modified form of throat plate; Fig. 5 is a plan view of a piece of embroidery provided with my circular seam; Fig. 6 is a plan view of another piece of embroidery provided with a slightly different form of circular seam; Fig. 7 is a plan view of a fabric provided with a zigzag stitch made by the ordinary machine provided with a vertically and laterally reciprocating needle; and Fig. 8 is a plan

view of the reverse of the fabric illustrated in Fig. 5, showing more or less diagrammatically the form of stitch or loop made by the needle thread and the locking or shuttle thread.

In the illustrative embodiments of my invention shown in the drawing, 1 is the head of the sewing machine provided with the ordinary needle bar 2, tension device 3 and take up lever 4 of any approved construction in which the needle reciprocates both vertically and laterally. The bed 5 of the sewing machine is provided with my improved throat plate 6, Figs. 2 and 3. This throat plate is provided with the ordinary feed dog slot 7 to receive the ordinary feed dog 8 and with the ordinary needle slot 9 for a vertically and laterally reciprocating needle. This throat plate is further provided with some form of pivoting means, for example the pin 10, for a purpose which will be hereinafter described. The pin 10 is preferably though not necessarily provided with a groove 28 to cooperate with the vertically and laterally reciprocating needle. The sewing machine is further provided with the ordinary presser foot 11 to cooperate with the feed dog 8. In addition to the presser foot 11 I preferably use a second presser foot 12 which is preferably provided with a cut out portion 13 to receive the pin 10.

A piece of fabric or other material 14 is provided with an opening or hole 15, Fig. 5, which would preferably be of a diameter to snugly fit the pin 10. The fabric or other material is then placed between the presser feet 11, 12 and the throat plate 6, the opening 15 being brought into engagement with the pin 10. Upon releasing the presser feet and permitting them to bear upon the goods in the ordinary way and upon starting the machine, the feed dog 8 will cause the fabric or material 14 to be fed in a circular path beneath the needle and around the pin 10 which is the center of the circle described by the fabric as it is fed automatically by the feed dog 8.

The threads of the machine, as the needle reciprocates laterally and vertically, will form a circular seam 16, Fig. 5, the threads

radiating from the center 15 as radii of a circle. I have shown such a seam diagrammatically in Fig. 5 and have omitted many of the threads of the preferred construction so as to more clearly show the seam formed by the sewing machine. The thread 26 is the needle thread, while the locking or shuttle thread, appearing on the back or reverse of the fabric, is shown at 27, Fig. 8.

10 In some cases, of course, it may be desirable to form the seam of comparatively few radial stitches 26 such for example as shown in Fig. 5. Preferably, however, additional radial stitches 26 are used from that shown in Fig. 5 so as to substantially cover up the intervals or gaps between the radial stitches shown in that figure, these additional stitches not being shown in the figure as they would simply tend to confuse the illustration, as they would have to be illustrated by a substantially black ring. These radial stitches also preferably protect the raw edge of the opening 15 in the fabric making a finished and artistic circular figure or seam.

25 In some cases where it is not desirable to cut or form a permanent opening in the fabric, I use an interchangeable throat plate 17, Fig. 4, having a feed dog slot 18; the usual needle slot 19 for a vertically and laterally movable needle and in this form provide the throat plate with a sharp pointed needle or pin 20 which is adapted to separate the threads, strands or other portion of the material operated upon so as to form a pivoting point around which the material or fabric can move while being embroidered with such a circular seam.

40 In Fig. 6 I have shown a fabric 21 provided with a circular seam 22 formed with the aid of such a throat plate as illustrated in Fig. 4, there being no permanent opening or hole formed in the fabric 21 as in Fig. 5. The operation of the sewing machine with the throat plate 17 is exactly the same as with the throat plate 6.

50 While I have described my sewing machine as embroidering fabric, I use this term "fabric" to include any material such as paper, metal or other substance upon which it may be desirable to place the circular seams or figures which I have here disclosed. These circular seams are described more fully and claimed in my companion application Ser. No. 689,230 filed at the same time as this application. While my invention may include simply a machine adapted to solely make these circular seams or figures, and be sold to the trade for this purpose, my invention further comprises an attachment to convert the ordinary form of sewing machine now on the market adapted to make a zigzag stitch such as shown in Fig. 7 by the aid of a needle thread and a

shuttle or locking thread. Such machines are in all respects similar to that previously described with the exception that they employ a throat plate with two feed dog slots and a double feed dog to operate in both the feed dog slots, two presser feet such as 11 being employed, one for each feed dog. Such a form of sewing machine is old and well known in the art and forms no part of my present invention. My attachment, whereby I convert such a machine adapted primarily to make the zigzag embroidery stitch shown in Fig. 7 to make the circular embroidery seams Figs. 5 and 6, consists essentially of the throat plate 6 or 17 and preferably a modified form of presser foot such as 12.

To change the old form of machine, so that it will make my improved circular seam, it is merely necessary to remove the removable throat plate of the old machine, and replace the double feed dogs with a single feed dog such as 8, or if two separate feed dogs are used, simply to disconnect one of them leaving the other one, such for example as 8, to cooperate with the feed dog slot 7 or 18 as the case may be. I also preferably remove one of the presser feet 11 and substitute for it the presser foot 12 so that it will keep the goods or material from working off of the pivoting means 10 or 20 as the case may be, depending upon the particular form of throat piece employed.

It will be seen, therefore, that by my attachment the ends 25, Fig. 7, for example of the stitches, will be crowded or gathered about a common center which will be the center of the pivoting means 10 or 20 while the ends 24 of the stitches will radiate from the center of the circle, the threads 26 connecting the two ends 24 and 25 extending out as radii of the circular seam in both the constructions.

Having thus described this invention in connection with illustrative embodiments thereof to the details of which I do not desire to be limited, what is claimed as new and what it is desired to secure by Letters Patent is set forth in the appended claims.

I claim:

1. In a sewing machine provided with means for vertically and laterally reciprocating a needle, the combination of a feed dog, and a presser foot cooperating with the feed dog, a pivot member to retard the travel of the goods actuated by the feed dog and cause it to move beneath the needle in a circle and a second presser foot to cooperate with the pivot member.

2. In a sewing machine provided with means for vertically and laterally reciprocating a needle, the combination of a feed dog and a presser foot cooperating with it, a throat plate provided with pivoting means

and a second presser foot cooperating with the pivoting means.

3. In a sewing machine provided with means for vertically and laterally reciprocating a needle, the combination of a feed dog and a presser foot cooperating with it, a throat plate provided with a pivoting pin

having a groove to receive the needle, and a second presser foot cooperating with the pin.

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Witnesses:

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ROSE MENK.