Jan. 17, 1950 B. ZAHLER 2,494,790

SEWING MACHINE

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Fig. 1.

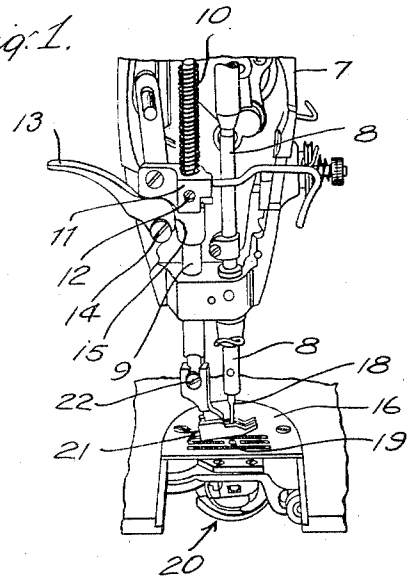
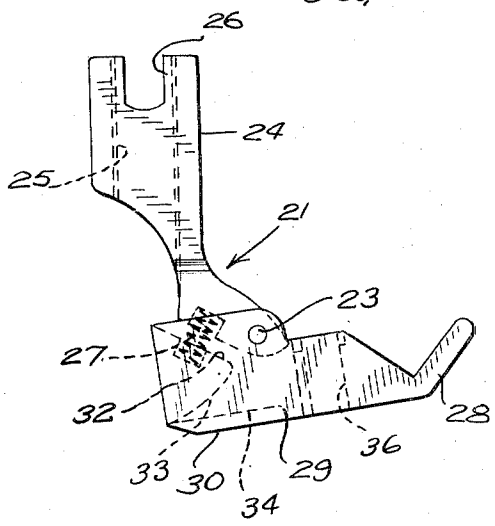


Fig. 2.



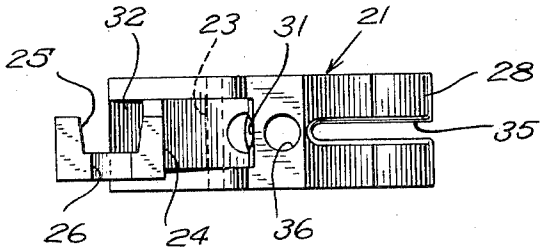


Fig. 3.

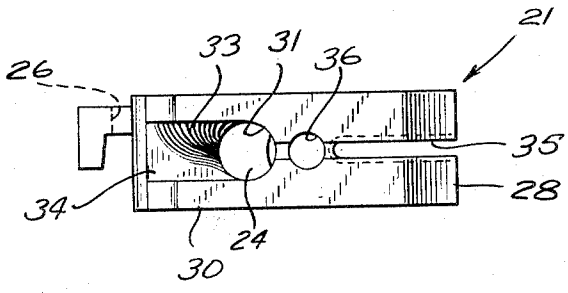


Fig. 4.

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Fig. 5.

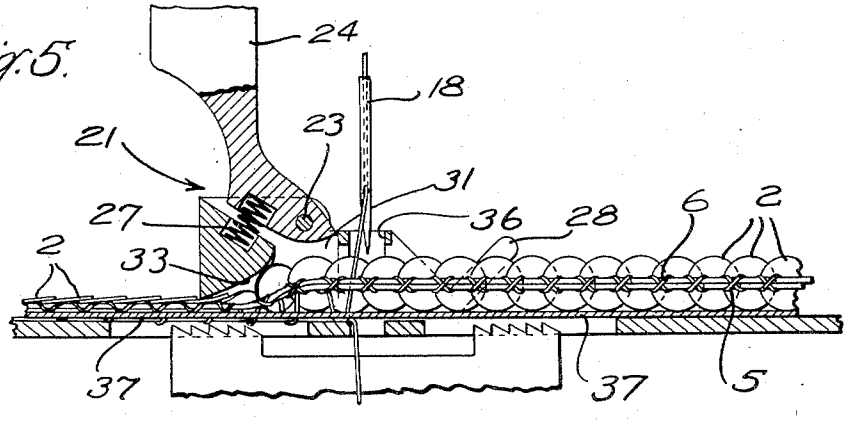
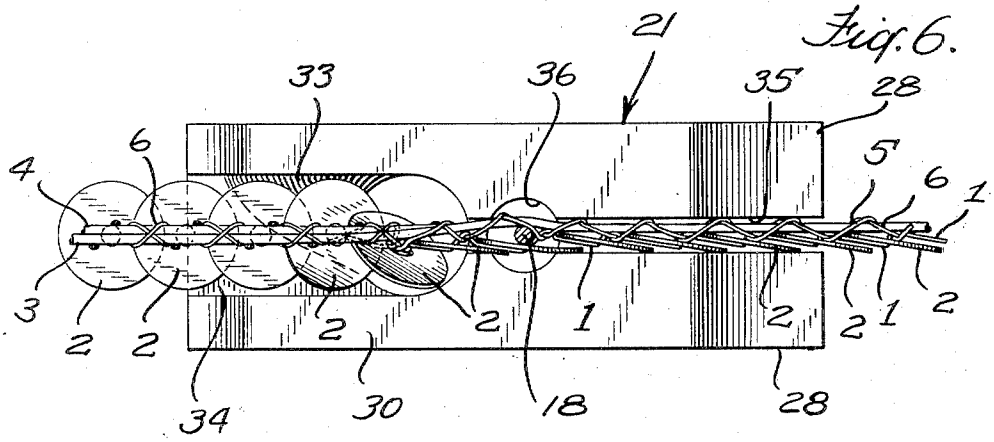


Fig. 6.



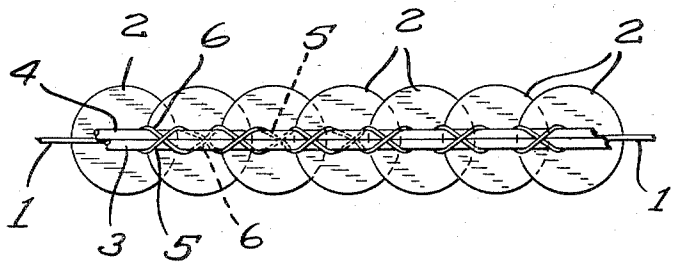


Fig. 7.

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UNITED STATES PATENT OFFICE

2,494,790

SEWING MACHINE

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Application January 14, 1947, Serial No. 722,050

1 Claim. (Cl. 112—235)

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The invention herein disclosed relates to an arrangement for sewing strung spangles to fabrics. More particularly, the invention relates to such an arrangement in a sewing machine in which the needle bar reciprocates in a fixed path.

An object of the invention is to provide an arrangement whereby strung spangles may be sewn to a fabric with the common sewing machine. Another object of the invention is to provide such an arrangement that is readily effected and adjusted on the common sewing machine.

The foregoing objects and certain advantages that will hereinafter appear are realized in the embodiment of the invention illustrated in the accompanying drawing and described in detail below, from which description a clearer understanding of the invention may be had.

The drawings include:

Fig. 1 which is an end elevation of the needle head of a common sewing machine with the cover plate removed;

Fig. 2 which is a side elevation of a presser foot forming a part of the arrangement of this invention;

Fig. 3 which is a plan view of the presser foot;

Fig. 4 which is a bottom plan view of the presser foot;

Fig. 5 which is a sectional elevation of the presser foot taken on the line 5—5 of Fig. 3;

Fig. 6 which is an enlarged bottom plan of the presser foot and illustrating the passage of the spangles therethrough and;

Fig. 7 which is a rear elevation of strung spangles in overlapping flatwise relation secured on two filling cords.

For the purpose of utilizing spangles on women's wear such as hats, dresses, etc., the spangles are arranged in overlapping flatwise relation and secured to filling cords. Strung spangles of this kind are illustrated in Fig. 7. In this arrangement, a spangle thread 1 passes through the center hole in the overlappingly arranged spangles 2. Filling cords 3 and 4 extend along the surface of the spangles. Wrapping threads 5 and 6 are wound in opposite directions between successive spangles. These wrapping threads are wound about the spangle thread 1 and filling cords 3 and 4 and secure the spangles in spaced relation on the filling cords. In some instances a single filling cord may be used.

Strung spangles such as described above are secured to fabrics by stitching the filling cords to the fabric. To this end a threaded needle is passed between the spangles and the filling cords at spaced intervals to effect the stitching of the

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filling cords to the face of the fabric. In sewing strung spangles to a fabric on a common lock stitch machine, the threaded needle must pass between the spangles and the filling cords and through the fabric. In the finished fabric the spangles lie flat on the fabric covering the filling cord. The arrangement of this invention is for the purpose of adapting the common sewing machine having a needle bar operating in a fixed path for sewing spangles to a fabric.

The needle head of the common through-and-through lock stitch sewing machine is illustrated in Fig. 1 of the drawing. This includes a needle head frame 7 in which a needle bar 8 is mounted for vertical reciprocation in a fixed path. To the rear of the needle bar, relative to the direction of the feed there is slidably mounted in the needle head a presser-foot bar 9. The presser-foot bar 9 has limited vertical movement and is resiliently urged in a downward direction by a spring 10 that surrounds the presser-foot bar. The spring 10 presses upon a movable bracket 11 through which the presser-foot bar extends and to which it is secured by a set screw 12. A finger lever 13 is provided for raising the presser foot bar against the action of the spring 10. This finger lever is mounted on a pivot 14 and it is provided with a cam surface 15 which engages the bracket 11.

The needle bar 8 extends above a needle plate 16 that is secured on the bed of the machine. A needle 18 extends from the end of the needle bar and in a downward position of the needle bar extends through a needle opening 19 in the needle plate. The hook and bobbin, denoted generally by the numeral 20 are mounted below the needle plate and positioned to cooperate with the needle. The presser-foot bar 9 extends through the needle head and carries a presser-foot 21 which is removably secured to the presser-foot bar by a thumb screw 22.

The particular presser-foot utilized in the arrangement of this invention is illustrated in Figs. 2 to 6 of the drawing. This presser-foot has pivotally secured thereto, by a pivot 23, a shank 24. The shank 24 has a rectangular slot 25 therein which receives a complementary end section on the presser-foot bar 9. A transverse slot 26 receives the securing screw 22 by which the presser-foot is fastened to the presser-foot bar. A spring 27 acting between the shank 24 and the presser foot tends to move the presser foot about the pivot 23 as shown in Fig. 2.

The presser foot includes an inclined toe portion 28, a central portion 29, and a heel portion

30. The central portion has an opening 31 therethrough. At the rear of this opening there are converging walls 32 and 33 extending from the upper and lower rear edges of the foot, respectively. The spring 27 acts between the inclined wall 32 and the base of the shank 24. The wall 32 is inclined to the base of the presser foot and curved in such manner as to be inclined transversely as well as longitudinally of the presser foot. The heel portion 30 has a recess 34 therein into which the wall 32 merges. From the end of the toe portion 28 to the opening 31, the presser foot is slotted into the base, forming a slot 35 through which the strung spangles pass in edgewise relation. A needle opening 36 extends through the presser foot.

In this particular presser foot the needle opening 36 is substantially enlarged, that is it is of a greater diameter than the needle opening commonly found in a presser foot. With this enlarged needle opening, the presser foot may, to a limited extent, be adjusted transversely of the path of the needle so that spangles passing through the presser foot may be properly positioned for the needle to pass between the spangles 2 and the filling cords 3 and 4. The adjustment of the presser foot, for this purpose, is effected by moving the presser-foot bar 9, to which the presser foot is secured, about its axis. This may be done by loosening the securing screw 12 by means of which the presser-foot bar is secured to the bracket 11.

In sewing strung spangles to a fabric, such as the fabric 37, the fabric is placed beneath the presser foot. The presser-foot bar is lowered so that the presser foot clamps the fabric against the needle plate of the feed. The strung spangles are entered in edgewise relation in the slot 35. The presser foot is then adjusted, as above described, so that the needle passes between the filling cords and the spangles. The spangles are thus stitched to the fabric. As a stitching continues, the spangles move out of the slot 35 and into the opening or hollow portion 31 of the presser foot. On engaging the inclined curved wall 32 the spangles are turned to a flatwise relation with the filling cords against the surface of the fabric. In this flatwise relation they pass, stitched to the fabric, through the recess 34 which is of sufficient depth to pass the spangles without elevating the presser foot. In passing through the recess

34, the spangles are flattened against the fabric to which they have been sewn. In the finished article, the filling cords are not observable since they are beneath the spangles.

From the foregoing description of the embodiment of the invention illustrated in the drawing, it will be apparent to those skilled in the art that by this invention there is provided an arrangement by which the common sewing machine having a needle operating in a fixed path may be utilized for sewing strung spangles to a fabric; and that the arrangement is simple, effective, and economical.

It will be obvious that various changes may be made by those skilled in the art in the details of the embodiment of the invention illustrated in the drawing and described above within the principle and scope of the invention as expressed in the appended claim.

I claim:

For a sewing machine of the kind described, a presser foot for use in sewing strung spangles to a fabric, which presser foot comprises an inclined bifurcated toe portion, a heel portion having a recess in the face thereof adapted to receive strung spangles in flatwise relation, and a central portion having a needle opening therethrough, a recess in the face thereof to the rear of the needle opening and a slot extending from the toe portion past the needle opening to the recess at the rear of the needle opening, the slot being adapted to receive strung spangles in edgewise relation and the recess behind the needle opening terminating in a rear wall extending to the recess in the heel portion and inclined transversely and longitudinally of the presser foot, whereby strung spangles entering the recess behind the needle opening in edgewise relation are turned in contact with the rear wall into flatwise relation.

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