

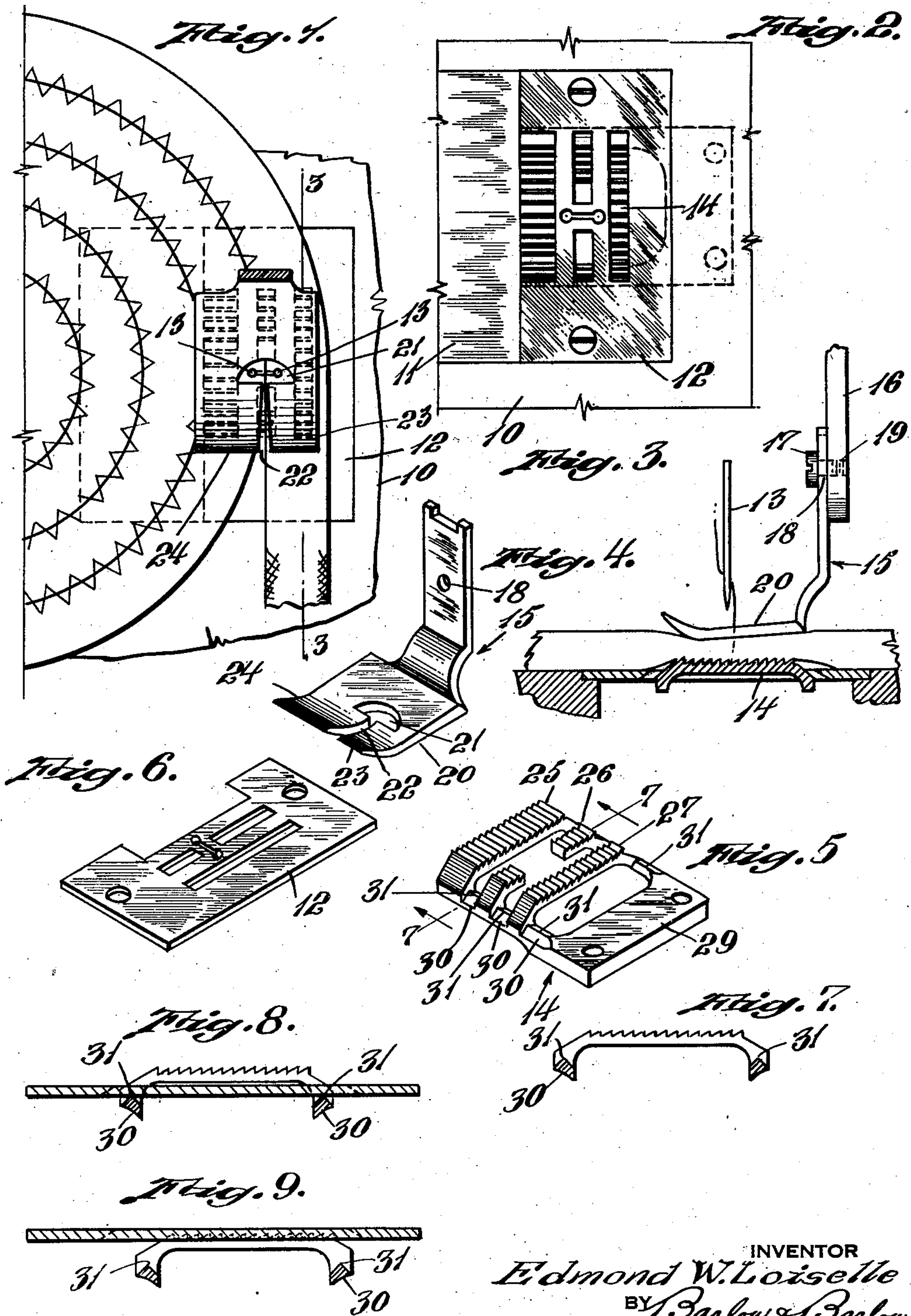
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SEWING MACHINE FEED DEVICE

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SEWING MACHINE FEED DEVICE

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3 Claims. (Cl. 112—216)

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This invention relates to improvements in sewing machines, particularly the feeding mechanism thereof.

It has been experienced in sewing binding onto large size rugs or sewing thick braid material in a spiral formation to make a rug, that the usual sewing machine feeding mechanism is not adequate for the task and requires considerable service in order to maintain it functioning properly.

It has also been found that lint will gather and pack between the throat plate and the bridging portions between the fabric-feeding surfaces to such an extent as to prevent the proper functioning of the feeding mechanism.

An object of this invention is the provision of a feed mechanism for uniformly advancing relatively heavy material to the stitch-forming mechanism and which is particularly adapted for use in connection with attaching binding tape to rugs or the sewing together of braid in making rugs.

Another object of the invention is the provision of a feed mechanism in which the surface of the cloth-presser and the surfaces of the feed dog will have greater binding action on the body of the work than on the material being attached to the work.

Another object of the invention is the provision of a feed mechanism in which the cloth-engaging surfaces will have greater clamping action on one side of the line of stitch than on the other.

With these and other objects in view, the invention consists of certain novel features of construction, as will be more fully described, and particularly pointed out in the appended claims.

In the accompanying drawings:

Fig. 1 is a plan view of a fragmental portion of a sewing machine bed plate and cloth-feeding mechanism embodying my invention, with the work positioned beneath the cloth-presser;

Fig. 2 is a view similar to that shown in Fig. 1 with the cloth-presser and work omitted;

Fig. 3 is a sectional view taken substantially along line 3—3 of Fig. 1;

Fig. 4 is a perspective view of the cloth-presser;

Fig. 5 is a perspective view of the feed dog;

Fig. 6 is a perspective view of the throat plate;

Fig. 7 is a sectional view taken substantially along line 7—7 of Fig. 5;

Fig. 8 is a view similar to that shown in Fig. 7 and showing the relative position of the feed dog and throat plate when in cloth-advancing position; and

Fig. 9 is a view similar to that shown in Fig. 8 but showing the relative position between feed

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dog and throat plate when in non-cloth-advancing position.

In carrying out my invention, I widen the cloth-presser on the side thereof beneath which the body of the work is engaged upon by the feed dog surfaces. I also widen the feed surface beneath this portion of the cloth presser, causing them to be of greater width than the feed surfaces of the feed dog on the opposite side thereof. By so arranging the presser and feed surfaces, I have found that the body of the work, which may be relatively heavy as compared to the material to be attached thereto, is advanced to the action of the stitch-forming mechanism in a more uniform manner and the feed mechanism will remain in order for longer periods. I also provide knife-edge surfaces on the bridging portions of the feed dog between the feed surfaces thereon. Such lint or foreign matter as may lodge in these knife edges is either cut or automatically removed when the knife-edges come in contact with the throat plate in the operation of the feed dog.

Referring to the drawings for a more detailed description of the invention, 10 designates generally a portion of a sewing machine bed plate to which is secured in a usual manner a slide plate 11 and a throat plate 12 which is provided with suitable openings for accommodating the needles 13 and feed surfaces of the feed dog 14 in their actuations. A fabric-presser 15 is mounted on a presser bar 16 by means of a screw bolt 17, the shank of which extends through an opening 18 in the cloth-presser and is threadedly received in the presser bar as at 19.

The cloth-presser is best shown in Fig. 4 and has a foot portion 20 which is provided with an opening 21 through which the needles 13 pass in their reciprocation. The foot portion is slotted as at 22 with the slot extending centrally into the opening 21 providing portions 23 and 24 of unequal widths. The portion 24 is of substantially greater width and is located in a position to engage the edge of the body of the work to be acted upon. The cloth-presser is lowered into engagement with the work or is raised from the work by manipulation of the presser bar 16.

The feed dog 14 in the present embodiment of the invention is formed with spaced bars 25, 26, and 27 extending in the direction of feeding the work. These bars are raised from adjacent surfaces and are joined to each other and to the attaching plate portion 29 by bridging portions 30 which have the upper surfaces thereof fashioned into a knife-edge formation 31. The upper

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surface of each bar is serrated in a usual manner so as to engage and advance the work to the stitch-forming mechanism. The bars 26, and 27 are substantially of equal widths, while bar 25 is substantially twice the width of the other bars and is positioned at a location to engage the edge of the body of the work to be acted upon. In the present application of the invention, the bar 25 is located at the outer edge portion of the feed dog to be positioned beneath the portion 24 of the foot of the cloth-presser 15. At such a location of these two surfaces, the sewing machine is adapted to be employed in sewing binding to large work bodies such as rugs which because of their size are relatively heavy and must be necessarily positioned to extend outwardly of the sewing machine head with the edge thereof to be acted upon positioned between these portions of greater width to be firmly grasped thereby in being advanced to the stitch forming mechanism.

The feed dog is actuated by mechanisms which form no part of this invention and are not shown, but which are well-known in the art. On the cloth-advancing stroke of the feed dog, the feed surfaces extend above the upper surface of the throat plate 12 and engage the work which is pressed thereon by the fabric-presser 15. During the work-advancing movement of the feed dog, the knife-edge formations 31 will slide along the under surface of the throat plate 12 and either cut or remove such lint or foreign matter as may have lodged upon the knife-edge surfaces,

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thus preventing the accumulation of lint and other foreign matter between the feed dog and throat plate.

I claim:

1. A feed for sewing-machines comprising a feed dog having spaced bars having cloth-engaging surfaces thereon and joined to each other by bridging portions, the upper surfaces of which are of knife-edge formation.
2. A feed for sewing machines comprising a feed dog having a plurality of spaced substantially parallel extending bars, each having cloth-engaging surfaces thereon and joined to each other by bridging portions, said bridging portions each having a knife edge upper surface.
3. A feed for sewing machines comprising a feed dog and a throat plate, said feed dog and throat plate having adjacent surfaces adapted to engage each other in the actuation of the feed dog, certain of said surfaces having knife-edge formations.

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