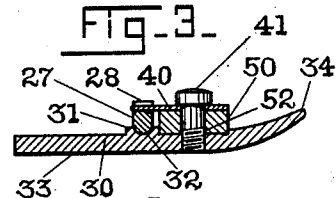
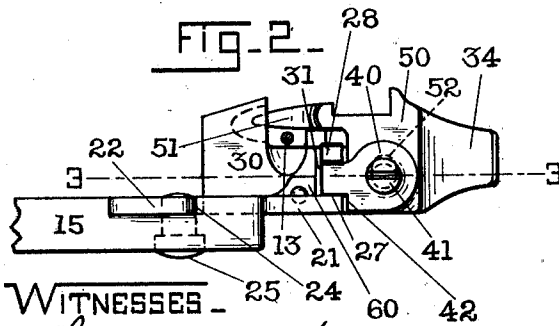
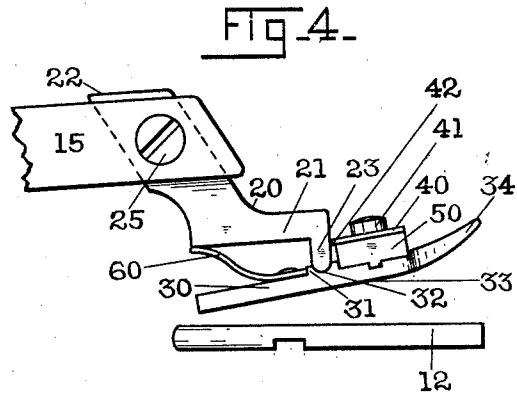
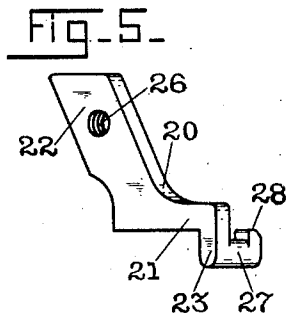
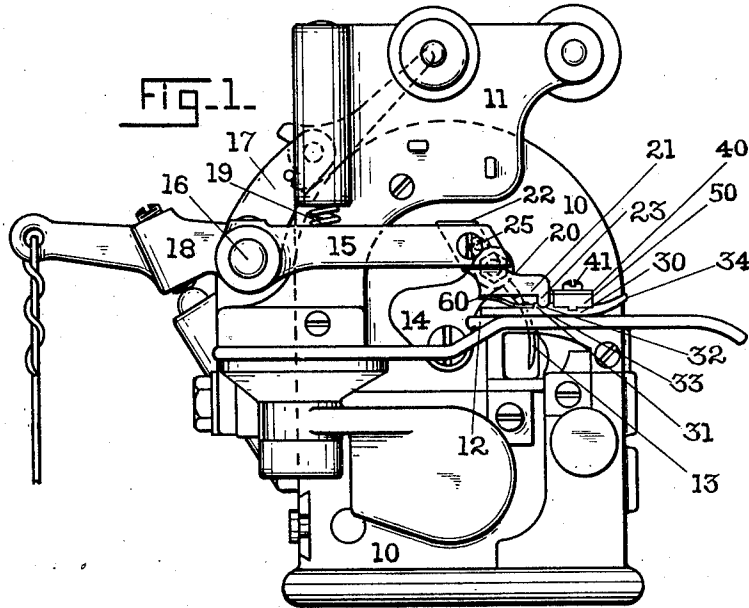


W. H. STEDMAN.
PRESSER FOOT FOR SEWING MACHINES.
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1,002,330.

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WITNESSES -
Thomas Durant
H. P. Brown

INVENTOR -
William H. Stedman
BY *Church & Church*
HIS ATTORNEYS -

UNITED STATES PATENT OFFICE.

WILLIAM H. STEDMAN, OF HARTFORD, CONNECTICUT, ASSIGNOR TO THE MERROW MACHINE COMPANY, OF HARTFORD, CONNECTICUT, A CORPORATION OF CONNECTICUT.

PRESSER-FOOT FOR SEWING-MACHINES.

1,002,330.

Specification of Letters Patent.

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To all whom it may concern:

Be it known that I, WILLIAM H. STEDMAN, a citizen of the United States, residing in the city and county of Hartford, State of Connecticut, have invented certain new and useful Improvements in Presser-Foot for Sewing-Machines; and I do hereby declare the following to be a full, clear, and exact description of the same, reference being had to the accompanying drawings, forming a part of this specification, and to the figures and characters of reference marked thereon.

This invention relates to that class of sewing machine presser feet commonly known as "hinged" feet, for the reason that the foot proper has rocking connection with its supporting shank to permit of the tilting of the foot relatively to the machine's needle plate. A foot of this character is particularly useful in operating upon material or work which does not present at all times a uniform thickness between the needle plate and the presser foot, or work which may contain welts and seams which must be fed beneath the presser foot, or when the foot is mounted upon a pivoted arm, in which instance independent pivotal movement enables the bearing surface of the foot to better engage and follow the irregularities or accommodate itself to the thickness of the work than is possible with a foot rigidly attached to its shank and thus there is less liability of impairing the feeding of the work.

This invention consists in and has for its object the provision of a presser foot of the kind mentioned that embodies certain novel features of construction as hereinafter fully set forth and claimed.

The accompanying drawings illustrate an embodiment of the invention in connection with a sewing machine of the Merrow overseaming type, but it is not intended to be understood as restricting the invention thereto.

In the drawings—Figure 1 is an end elevation showing the presser foot in connection with a partially illustrated overseaming machine. Fig. 2 shows on an enlarged scale a plan view of the foot with a portion of its supporting arm and shows in section the adjacent needle of the sewing machine. Fig. 3 is a sectional view, taken on the line 3—3, of Fig. 2, with the needle omitted. Fig. 4

is an elevation, showing the foot raised from the needle plate. Fig. 5 shows the shank of the foot in perspective.

Like numerals of reference in the several figures indicate the same parts.

The number 10 denotes the sewing machine frame, 11 the head, 12 the needle plate, 13 the needle and 14 the needle carrier adapted to be oscillated by mechanism, not shown, to cause the needle to reciprocate in a path crossing the needle plate, suitable stitch forming implements (also not shown) cooperating with the needle above and below the needle plate, to effect the formation of overseam stitches.

In the machine illustrated, the presser foot is carried at the forward end of an arm 15 pivoted at its rear end at the rear of the machine, but the improvements could be applied to that type of mechanism in which the presser foot is carried on the ordinary vertically movable presser bar. The arm 15 is secured to the shaft 16 located in bearings in the rear of the machine, said shaft being provided with two levers 17 and 18 adapted to be actuated respectively by the hand and foot of the operator, to effect the raising of the presser foot. A spring 19 in the head 11 engages the arm 15 and serves to normally force the presser foot downward toward the needle plate.

The number 20 denotes the presser foot shank as a whole. As shown in the drawings, the shank has a portion 21 from one end of which there extends obliquely thereto a portion 22 and from the other end, and in a general opposite direction to the portion 22, a right angular portion 23. The arm 15 is preferably grooved at 24 to receive the part 22 of the shank, and a screw 25 in the arm enters a tapped hole 26 in the shank to retain it in position upon the arm. From the portion 23 of the shank a stud 27 projects at right angles to the adjacent face of the shank or at right angles to the direction of the feed of the machine when the shank is in operative position. The stud 27 may be termed an axial stud, inasmuch as it provides a support upon which the presser foot is secured and about which it has a rocking or tilting motion. A shank shaped substantially as shown and described is especially desirable when the foot is carried at the end of a pivoted arm, such as the arm 15, but it will be understood that when the foot

is otherwise supported, as for example by a vertically movable presser bar, the shank 20 may be constructed to meet such conditions and properly position the stud 27 for the support of the presser foot 30.

Approximately midway its length the presser foot 30 is preferably increased somewhat in thickness by a rib 31 upon its upper face and extending at right angles to its length. The rib 31 is channeled or formed with a bearing 32 at right angles to the length of the foot, to receive the lower edge of the shank stud 27, which is semi-circular in cross section. The channel or bearing 32 is similarly shaped in cross section but is of somewhat less depth than the radius of the lower edge of the stud 27 in order that the foot may rock upon the said stud. The edge of the stud 27 opposite the semi-circular edge, is engaged by the free end of a cap 40 secured to the presser foot 30 in advance of the channel 32, by a screw 41, a block 50 being preferably interposed between the cap and foot and held by the same screw. The cap 40 which may be a spring, bears upon the stud 27 to retain the presser foot 30 in close contact with the stud 27, the latter being held snugly in its seat in the channel 32, but not so tightly clamped as to prevent the rocking or tilting of the foot upon the stud. The stud 27 is formed at its outer end with a head 28 the space between which and the shank portion 23 being so well filled by the free end of the cap 40 as to prevent side play of the foot relatively to the shank.

The cap 40 may be secured directly to the upper face of the foot but the block 50 is preferably interposed and preferably carries or is made integral with the presser foot "chaining" finger 51 around which the over-seam stitches are formed and from off the end of which they slip, as the work is fed through the machine. The screw hole 52 through the block 50 is preferably elongated or made sufficiently large (dotted lines, Fig. 2) to permit of slight adjustment of the block at right angles to the length of the foot to vary the position of the finger 51 relatively to the needle 13. Direction is given to the just mentioned adjustment of the block by the tongue and groove connection between the block and the foot, shown in Fig. 4 of the drawings.

The presser foot 30 being hinged about midway its length, downward pressure thereon will be about equally distributed on each side of the hinge, and when the foot is in its normal downward position, its under or bearing surface 33 will seek to engage the needle plate 12 throughout the entire length of the bearing surface of the foot, as shown in the Fig. 1, or to similarly engage either thick or thin work that may be on the needle plate. Should the work contain irregulari-

ties in thickness, the foot 30 will rock upon the shank stud 27 as the work feeds beneath it, the bearing surface 33 thus accommodating itself to the irregularities.

In some instances it is desired to operate upon work of unusual thickness so that difficulty is experienced in inserting it under the presser foot, even when the latter is raised to the highest elevation for which provision is made in the machine. To render the insertion of the work and particularly of thick work more readily accomplished, the presser foot forming the subject of this invention is provided with means whereby when the presser-foot is raised, the toe 34 or forward end of the foot automatically rocks upward, thus providing a wide entrance opening between the presser foot toe and the needle plate. This feature is shown, exaggerated, in Fig. 4. The number 60 denotes a spring secured at one end to the foot 30 just in the rear of the rib 31 and having its free end extending rearwardly and engaging the shank 20 with a tendency to force the rear end of the foot downward away from the shank and the toe upward away from the needle plate. To limit the upward movement of the toe a stop is provided, preferably formed by a shoulder on the cap 40 at 42, adapted to engage the shank 20.

Having thus described my invention, what I claim as new and desire to secure by Letters Patent, is:

1. In a sewing machine presser foot mechanism, the combination of a shank member, a foot member having hinged relation to the shank member, a chaining finger carried by the foot member, a cap forming an element of the hinge connection between the foot member and shank member, and a screw connecting the cap and chaining finger to the foot member.

2. In a sewing machine presser foot mechanism, the combination of a shank member, an axial stud on the shank member, a foot member channeled to receive the axial stud, a chaining finger, a cap having a shoulder forming a stop and a screw for securing the cap and the chaining finger to the foot member whereby the cap is held in contact with the axial stud to retain the foot member in rocking engagement with the shank member and with the stop on the cap in position to engage the shank member and limit the rocking of the foot member in one direction.

3. In a sewing machine presser foot mechanism, the combination of a shank member and a foot member having rocking engagement relatively to each other, a cap secured to the foot member and engaging the shank member to retain the members in rocking engagement, the cap having a stop to limit the rocking in one direction and a spring secured to the foot member and engaging

the shank member whereby the foot member may be rocked and the stop caused to engage the shank member to limit the rocking of the foot.

- 5 4. In a sewing machine presser foot mechanism, the combination of a shank member, an axial stud on the shank member, a foot member channeled to receive the axial stud, a cap removably secured to the foot member
10 at one side of the channel and projecting

over and engaging the axial stud to retain the same in the channel and a spring secured to the foot at the other side of the channel and engaging the shank to rock the foot member on the axial stud.

WILLIAM H. STEDMAN.

Witnesses:

CHAS. E. BOND,
REGINALD BIRNEY.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."