Aug. 17, 1943. O. BALZANO 2,326,818

PRESSER FOOT

Filed March 4, 1941

Fig. 1.

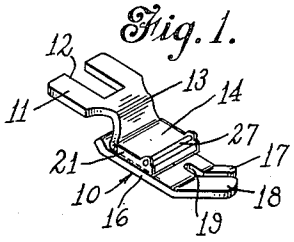


Fig. 2.

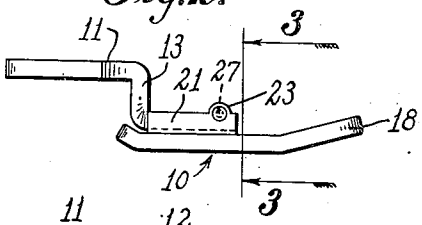


Fig. 3.

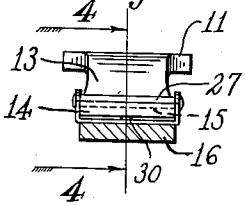


Fig. 4.

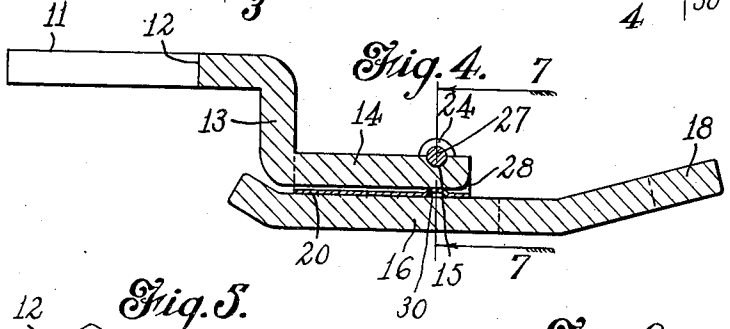


Fig. 5.

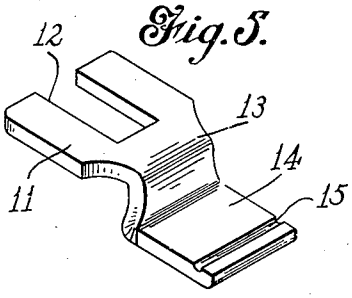


Fig. 6.

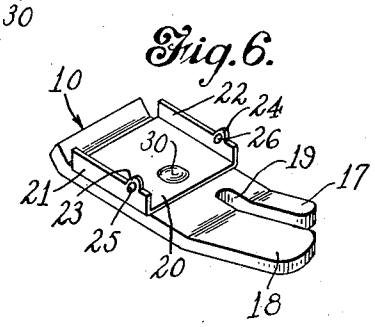
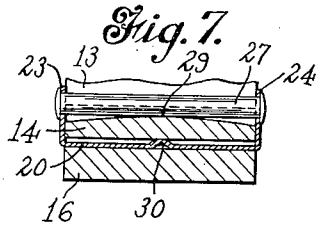


Fig. 7.



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UNITED STATES PATENT OFFICE

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PRESSER FOOT

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Application March 4, 1941, Serial No. 381,666

8 Claims. (Cl. 112—235)

This invention relates to sewing machine attachments, and more particularly to a presser foot designed to be mounted at the lower end of the presser bar of a sewing machine, and so constructed that the foot member may tilt or rock relatively to the attaching shank by which the foot member is secured to the presser bar.

In the past when a rockable or titable connection has been provided for the presser foot, this has usually been effected by drilling or boring a small opening through a portion of the attaching member, and also through flanges or lugs on the presser foot, and securing a pivot pin in these openings so that the two parts will be pivotally connected. Such a construction requires drilling operations, and as the parts are relatively small it is necessary to drill relatively small openings for the pivot pin. Such operations are expensive and greatly increase the cost of the attachment, which otherwise is of simple and economical construction.

I contemplate by the present invention eliminating the expensive drilling operations referred to above, by so constructing the presser foot that it may be tiltably or rockably secured to the attaching shank by a novel and unique connection which avoids the drilling of any openings.

One object of the invention is the provision of a tiltable or rockable presser foot of novel and economical construction.

A still further object of the invention is the provision of a presser foot construction wherein the foot member will be tiltably or rockably secured to the attaching shank, and which at the same time requires no drilling operations for connecting the parts together.

To these and other ends the invention consists in the novel features and combinations of parts to be hereinafter described and claimed.

In the accompanying drawing:

Fig. 1 is a perspective view of a presser foot construction embodying my invention;

Fig. 2 is a side elevational view thereof somewhat enlarged;

Fig. 3 is a sectional view on line 3—3 of Fig. 2;

Fig. 4 is a longitudinal sectional view on line 4—4 of Fig. 3;

Fig. 5 is a perspective view of the attaching shank;

Fig. 6 is a perspective view of the foot member and sheet metal flanged element secured thereto; and

Fig. 7 is a sectional view on line 7—7 of Fig. 4.

To illustrate a preferred embodiment of my invention I have shown a presser foot construction comprising a foot member designated generally by the numeral 10, and an attaching shank portion or member 11. As shown, the shank member is substantially of Z-shaped construction, having a slot 12 by which it may be secured to the presser bar of the sewing machine in the usual manner, a shank portion 13, and a substantially horizontally extending portion 14 which is adapted to carry the foot member 10. As shown more especially in Fig. 5, the portion 14 of the attaching shank is provided with an elongated recess or slot 15 extending transversely across this portion of the member, the purpose of which will be hereinafter referred to.

Generally speaking the foot member 10 may be of the usual form. As shown, it comprises a substantially horizontally extending flat portion 16 provided with bifurcated end portions 17 and 18 between which lies the needle slot 19. The end portions 17 and 18 may be inclined upwardly slightly, as is usual.

In order to secure the foot portion to the attaching shank for relative tilting or rocking movements, I secure upon the body 16 of the foot member a sheet metal channel-shaped element having a body or web portion 20 and upstanding side portions 21 and 22. The portion 20 may be secured flatly upon the portion 16 of the foot member, and spot welded thereto. The flanges 21 and 22 may be provided with ears 23 and 24 within which openings 25 and 26 may be formed. As this member may be of relatively thin material, the openings 25 and 26 may be formed by piercing operations before the flanges are turned up, so that no drilling operations will be required.

After this channel-shaped member is secured to the foot member 16, the portion 14 of the attaching shank 11 is placed in position between the flanges 21 and 22, so that the groove 15 will be aligned with the openings 25 and 26. A pivot pin 27 is then inserted through the openings 25 and 26, which pivot pin may be headed slightly at its ends to prevent detachment thereof. It is noted that the body of this pin will lie partially within the groove 15 so that the portion 14 of the attaching shank will be attached to the foot member 10.

Fulcrum means is provided between the shank and the foot in the form of a boss 30 which as illustrated is provided on the member 20 and which permits the foot to rock on a longitudinal axis. This boss lies directly below the pin 27 and at substantially the center thereof transversely of the foot. It will also be understood that the pin 27 is spaced slightly above the bottom of the slot 15 so as to allow sufficient play between the parts to permit this rocking movement as well as the tilting or rocking about the axis of the pivot pin. As shown more especially in Fig. 7, the groove 15 may be somewhat deeper

at its ends than at the central portion so as to facilitate the rocking movement about a longitudinal axis. The lower forward corner of the portion **14** of the attaching shank may be slightly rounded, as shown at **28**, to permit greater freedom of the parts in tilting about the pin **27**. Thus the foot member may rock or tilt about a transverse axis to raise and lower the front end thereof, and may also rock about a longitudinal axis transverse to the axis of the pin **27**, or upon the boss **30**, this rocking movement being facilitated by the increased clearance between the ends of the groove **15** and the pin **27**, as compared with the clearance intermediate these points.

It will be seen that with the above construction the parts will be held together in a satisfactory manner, and at the same time the foot member will enjoy a rocking or tilting movement about the axis of the pin **27** and also transversely of this axis. Moreover, with the construction described, all drilling operations are eliminated and the entire construction can be made at a lower cost than has been possible with similar constructions in the past.

While I have shown and described a preferred embodiment of my invention, it will be understood that it is not to be limited to all of the details shown, but is capable of modification and variation within the spirit of the invention and within the scope of the appended claims.

What I claim is:

1. A presser foot construction comprising a foot member, a sheet metal member of channel-shaped cross section having its body portion secured to the upper surface of the foot member, and its flanges projecting upwardly therefrom, an attaching shank having a forwardly extending portion lying between said flanges, and a pin secured in said flanges to overlie said shank portion and connect the foot member thereto for rocking motion, said shank portion having a transversely extending groove in its upper surface within which said pin is disposed, and said groove having an outwardly convex bottom wall to provide greater clearance between said pin and the bottom of said groove adjacent the ends of the pin than at the intermediate portion thereof.

2. A presser foot construction for sewing machines comprising a foot member, a pin carried by said member in spaced relation to the upper surface thereof and extending transversely across said surface, an attaching shank having a portion extending between said member and pin provided with an upwardly facing transverse groove in which said pin is disposed, and fulcrum means between the foot member and said shank portion on which the foot member is tiltably supported.

3. A presser foot construction for sewing machines comprising a foot member and a pin carried by said member in spaced relation to the upper surface thereof and extending transversely across said surface, an attaching shank having a portion extending between said member and pin and provided with an upwardly facing transverse groove in which said pin is disposed, and fulcrum means on the foot member below said shank portion on which the foot member rocks about a longitudinal axis, said fulcrum means comprising a boss provided upon and projecting upwardly from the foot member, and said boss being disposed beneath the intermediate portion of said pin.

4. A presser foot construction comprising a foot member, a sheet metal member of channel-shaped cross section having its body portion secured to the upper surface of the foot member and its flanges projecting upwardly therefrom, an attaching shank having a forwardly extending portion lying between said flanges, a pin secured in said flanges to overlie said shank portion and connect the foot member thereto, and fulcrum means located between said foot member and attaching shank, said fulcrum means comprising an upstanding boss on the foot member upon which the attaching shank bears to provide rocking motion of said foot member relatively to said attaching shank.

5. A presser foot construction for sewing machines comprising an attaching shank, a foot member, means securing said foot member to said shank for rocking movements about horizontal axes one of which is transverse to the other, said means comprising upstanding spaced flanges on the foot member, a part on the shank lying between said flanges and having an upwardly facing transversely extending groove therein, a pin supported by said flanges and lying in said groove, and fulcrum means between said attaching shank and foot member to facilitate said rocking movements.

6. A presser foot construction for sewing machines comprising an attaching shank, a foot member, means securing said foot member to said shank for rocking movements about horizontal axes one of which is transverse to the other, said means comprising upstanding spaced flanges on the foot member, a part on the shank lying between said flanges and having an upwardly facing transversely extending groove therein, a pin supported by said flanges and lying in said groove, and fulcrum means between said attaching shank and foot member to facilitate said rocking movements, said fulcrum means comprising an upstanding boss on the foot member upon which the shank bears.

7. A presser foot construction comprising a foot member, a sheet metal member of channel-shaped cross section having its body portion secured to the upper surface of the foot member and its flanges projecting upwardly therefrom, an attaching shank having a forwardly extending portion lying between said flanges, a pin secured in said flanges to overlie said shank portion and connect the foot member thereto for rocking motion, said shank portion having a transversely extending groove in its upper surface within which said pin is located, and fulcrum means between the sheet metal member and the shank portion to provide rocking movements of the foot member about transverse axes.

8. A presser foot construction for sewing machines comprising an attaching shank, a foot member, means securing said foot member to said shank for rocking movements about horizontal axes one of which is transverse to the other, said means comprising upstanding spaced flanges on the foot member, a part on the shank lying above and parallel to the foot member and disposed between said flanges and having an upwardly facing transversely extending groove therein, and a pin supported by said flanges and lying in said groove.

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