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GRIP PRESSER FOOT FOR SEWING MACHINES

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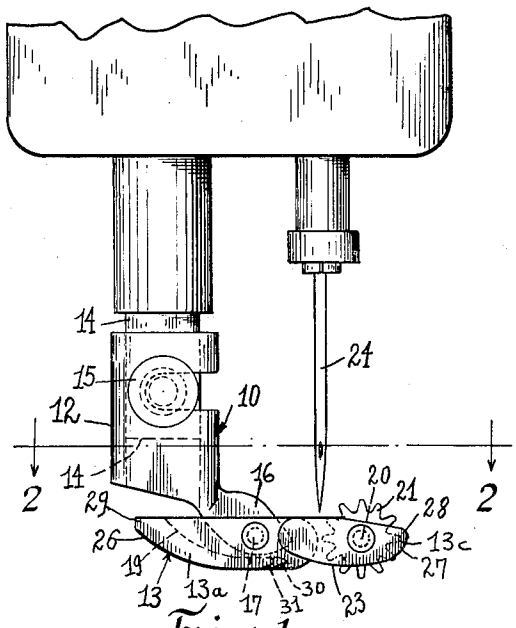


Fig. 1

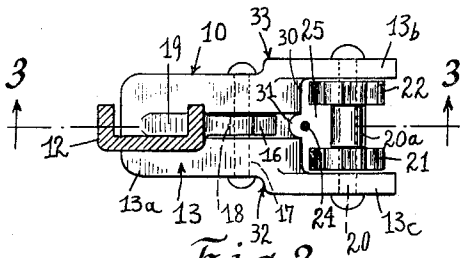


Fig. 2

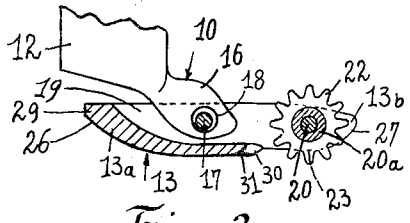


Fig. 3

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GRIP PRESSER FOOT FOR SEWING MACHINES

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3 Claims. (Cl. 112—235)

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This invention relates to presser feet for sewing machines and has as its main object to provide a presser foot of a novel construction and operation which will be more efficient than the presser feet now in use and which will hold the material worked on more firmly and reliably, preventing a wrinkling thereof or an unevenness or flaws in the finished product.

Still another object of my invention is to provide a presser foot as characterized hereinbefore, which adjusts itself to the changes in the thickness of the material worked on, whether such change is in the front or the rear of the presser foot, or on one side or the other side of the same.

Other objects of this invention will be apparent as the specification of the same proceeds, and, among others, I may mention: to provide a presser foot for sewing machines of the type indicated which will be simple in construction, inexpensive to manufacture, and which will be adapted to be easily applied to present day sewing machines without any change in their construction.

In the drawings, forming a part of the specification and accompanying the same:

Fig. 1 is a fragmentary side view of the lower part of the operating head of a sewing machine, showing my novel presser foot applied thereto;

Fig. 2 is a plan view of my presser foot, partly in section, the section being taken on the line 2—2 of Fig. 1;

Fig. 3 is a sectional view of my presser foot, the section being taken on the line 3—3 of Fig. 2.

Referring now to the drawings more in detail by characters of reference, the numeral 10 indicates my novel presser foot, in general, being composed of two main parts, an upper securing member 12, and a lower operating member or presser foot proper 13. The upper or securing member 12 is of the form indicated in Figs. 1 and 2, and is of channel shape, so that it may fit on the presser foot bar 14 of the sewing machine, whereon it may be removably secured, as usual and well known in this art, and as indicated by the screw 15.

The lower forward end of the securing member 12 of my presser foot consists of a forwardly projecting element or ear 16, through which passes a pin 17 carrying my presser foot proper 13, as will be more fully explained presently. A hole 18 in the ear 16 for the pin 17 is of a larger diameter than said pin, through which a transverse inclined movement of the presser foot 13 on the pin 17 will be allowed, that is, either the right hand side, or the left hand side of the

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presser foot may be lifted, like when a one-sided added thickness, or other such obstacle, will come into the path of the presser foot.

The presser foot proper preferably is in a casting, having a rear part 13a from which project the two forward branches or legs 13b and 13c, forming a forked construction for the front thereof. The rear portion may have a central axial recess or slot 19 into which projects the ear 16 of the securing member 12. A pin 20 is secured across and in the front branches 13b and 13c of the fork, and a left hand toothed wheel 21 and a right hand similar wheel 22 are rotatably arranged on the pin 20, said wheels preferably projecting below the lower surfaces 23 of the branches 13b and 13c. The needle 24 of the sewing machine will operate in the free space 25 at the rear end between the two branches 13b and 13c of the fork. A spacer sleeve 20a may be applied on pin 20 between the wheels 21 and 22.

Both, the rear end 26 and the front ends 27, of my presser foot 13 will be rounded, whereby the presser foot may pass over enlargements or unusual thicknesses in the material operated on, either the front part, generally indicated by the numeral 28, or the rear part, indicated by the numeral 29, being raised, while the other part may be appropriately lowered, the presser foot 13 being pivoted on the pin 17.

Obviously, and as has been mentioned hereinbefore, my presser foot proper 13 may also take up an inclined position either to the right or to the left, when necessary, on account of the play between said pin 17 and its hole 18.

It will be seen from the herein description and explanation, that my novel, self-aligning and self-adjusting presser foot attains all the aims claimed for it in the introduction to this specification. My very extensive experience with the same has been that when applying my presser foot on any ordinary sewing machine, the same may perform operations, and turn out products, which it could not do before. So, for instance, with my presser foot unusually heavy and slippery materials may be worked on, like plush, velvet, or even several layers of them. Unusually fancy sewing may be done on them, approaching embroidery, and folds, heavy seams, etc., may be arranged thereon and still be sewn thereover, in a quick, efficient, and smooth manner.

It will be seen that the two wheels 21 and 22 will grip the material worked on, will co-operate with the usual well known grooved feeder of the sewing machine whereby an even moving of two or more layers of material will be insured.

With the present presser feet on sewing machines, if two layers of material are to be worked on, the presser foot will retard the upper layer, while the feeding mechanism of the machine will move the lower layer somewhat faster, so that at the end of the operation the two layers are entirely different and the upper one is considerably back of the lower one, while they started with even edges. With my presser foot, both layers will move in an even manner, even if the material is a heavy, slippery plush, velvet, or the like.

All the respective front and rear edges of my device are rounded, as has been mentioned with reference to the front **27** and the rear **26**, and, similarly, the intermediate central edges **30** and **31**. My presser foot proper is pivoted in both directions, for the front and for the rear, so that when an obstacle is to be passed and the front part **28** is raised, the rear part **29** will press on the material and hold it, and, vice versa, after the obstacle or thickness has been passed by the front, the rear **29** will be raised and the front **28** will hold the material; so that the material is never without sufficient gripping, as against the presser feet used on sewing machines at present, which, even if they may pass a thickness or other obstacle, in such a case will for a time leave the material without grip with well known troubles and drawbacks caused by it.

Similarly, if a seam or other obstacle is in the way of my presser foot on the one side only thereof, either the left side, generally indicated by the numeral **32**, or the right side **33**, may be raised and the opposite side of the presser foot will remain lowered through the action of the enlarged hole **18**, in the ear **16**, whereby the material, again, will be held in any such event, in contrast with the deficient operation of the present presser feet.

In a word, my presser foot adjusts itself to any unexpected obstacle, and will firmly hold the material all the time, preventing a slipping thereof, and assuring an even grip, even when the material is of slippery character, or with a heavy nap, like the mentioned velvets and plushes.

While I have shown and described a preferred embodiment of my invention, it is obvious that changes and variations may be resorted to in the details of its elements and combinations, and I want it to be understood that I reserve my rights to all such changes and variations which are within the spirit of this specification and the scope of the claims hereunto appended.

What I claim as new, and want to protect by Letters Patent of the United States, is:

1. A presser foot for sewing machines, comprising a presser foot proper member, having a smooth undersurface adapted to engage the material worked on, a securing member adapted for connection with the sewing machine presser bar and having a substantially narrow lower end with a transverse hole therein, a pin in said hole and carrying said presser foot proper member, the diameter of said hole being substantially larger than said pin, whereby said pin may assume a transversely inclined position with respect to the securing member; two forwardly projecting elements at the two sides of said presser foot proper member, and two rotatable toothed wheels between said elements, each being arranged adjacent to a respective forwardly projecting element.

2. In a presser foot for sewing machines, a shank member adapted for connection to the sewing machine presser bar, a forwardly inclined narrow depending projection on said shank member having a hole therein, a presser member proper of elongated shape in the direction of the seam formation, a longitudinal groove being provided in the rear part of said presser member, the lower end of said projection of the shank being arranged in said groove, a pin passed through the hole in said projection and being secured into the side of the groove, the diameter of the hole being larger than that of the pin whereby the presser member is allowed a rocking movement on the pin and a transverse inclined movement with the pin, the front of said presser member being fork-like, having two arms at the sides, a transverse pin between said arms, and two rotatable spaced toothed wheels on said pin.

3. In a presser foot structure for a sewing machine, an elongated presser foot proper, a pin secured to the presser foot proper intermediate its ends and extending transversely thereof, a shank adapted for connection to the sewing machine presser bar, a hole in said shank of greater diameter than said pin and through which the pin extends for rocking movement of the foot in planes parallel with the axis of said pin and in planes at right angles thereto, and a pair of toothed wheels rotatably supported by said foot adjacent its front end on an axis parallel with said pin.

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