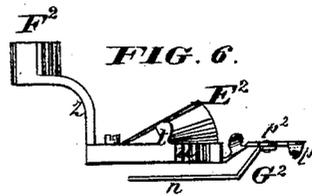
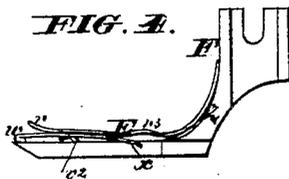
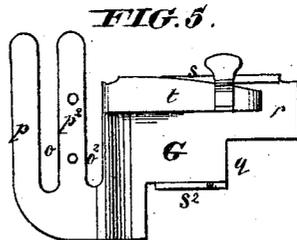
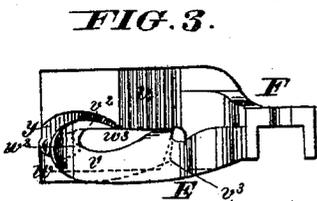
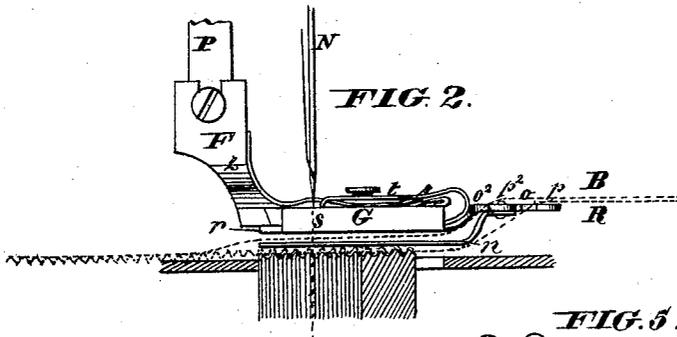
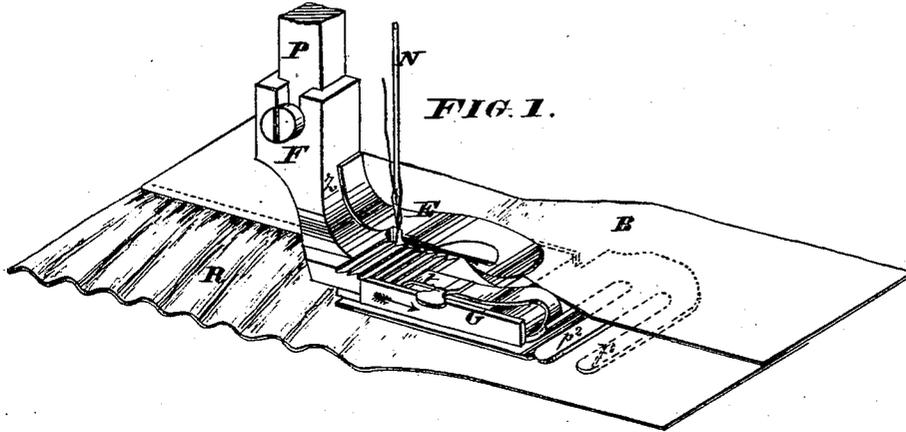


A. M. LESLIE.

RUFFLERS FOR SEWING MACHINES.

No. 179,036.

Patented June 20, 1876.



WITNESSES
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ARTHUR M. LESLIE, OF NEW YORK, N. Y.

IMPROVEMENT IN RUFFLERS FOR SEWING-MACHINES.

Specification forming part of Letters Patent No. **179,036**, dated June 20, 1876; application filed December 1, 1875.

To all whom it may concern:

Be it known that I, ARTHUR M. LESLIE, of the city, county, and State of New York, have invented a new and useful Improvement in Rufflers, of which the following is a specification:

This invention relates to those ruffling attachments for sewing-machines termed "tension-rufflers," and to those which are attached to or supported by the presser-foot, and to those in which an edge-turning device is employed.

Tension-rufflers, as heretofore made, have been impracticable to a certain extent, or unsatisfactory by reason of their construction with reference to the needle, presser-foot, and feed of the sewing-machine, the aim having been to make a good ruffler for application to the ordinary presser-foot. This has involved reliance on a careful lengthening or shortening of the feed and a nice regulation of the pressure of the presser-foot as means for varying the fullness of the gathers.

The present device comprises a special presser-foot, differing only in the shape of its attaching end as adapted to several different machines. This gives the ruffling parts proper, and their accessories, the same relation to the needle and feed on all sewing-machines, and provides for regulating the fullness of the gathers in the ruffler itself, without producing any increased tension on the goods. It also forms or accommodates an edge-turning device without complication of parts.

A serious difficulty with plaiting-rufflers is that they cannot gather with uniformity so little as once and a half to twice—that is to say, one and a half to two inches of ruffling strip to each inch of band. This is the fullness which is most required, and plaiting is not wanted for this, but ruffling proper.

The present invention accomplishes the construction of a ruffler of the most simple principle—a tension or friction ruffler—and one adapted to be used with the least possible change or adjustment to do all those kinds of work that are most needed in families.

This invention consists, first, in a special presser-foot provided with an edge-turner, and having a gatherer or ruffler proper attached, so as to be adjustable on the foot, for regulat-

ing fullness; secondly, in a peculiar construction of the edge-turner; thirdly, in peculiar means for holding the gatherer in different positions on the presser-foot, for regulating the fullness of the gathers; fourthly, in a feed-block or abutment-plate and a thin sole-plate, adjustable with the other parts of the gatherer, and terminating at the same point beneath the presser-foot; fifthly, in the employment of a combined edge-turner, tension, and guide for the band on the presser-foot, and a finger on the gatherer, for guiding the ruffling-strip beneath the presser-foot; sixthly, in the combination of an edge-turner, tension, and band-guide on the foot, and a guide-finger and elastic sole-plate on the gatherer; seventhly, in the combination of an edge-turner, tension, and band-guide on the foot, and an adjustable gatherer having a guide-finger, an elastic sole-plate, and an abutment-plate or feed-block above the latter; eighthly, in a pair of guide-fingers on the gatherer, separated from each other and from the body by gage-spaces through which the ruffling-strip and band, respectively, pass, in combination with a thin sole-plate extending from the inner finger beneath the band; ninthly, in the combination of the pair of fingers, the thin sole-plate, and an abutment-plate or feed-block above the latter, these parts being adjustable together relatively to the needle and feed, all as hereinafter more fully set forth.

Figure 1 is a perspective view of this improved ruffler as applied to the presser-bar of a sewing-machine, and in use for making band-ruffling, and stitching it close to the edge at the same time. Fig. 2 is an elevation of the same, illustrating the operation of making a ruffle and sewing it onto a band without turning the edge of the band. Fig. 3 is a plan view of the special presser-foot. Fig. 4 is an elevation thereof. Fig. 5 is a plan view of the gathering part detached. Fig. 6 is an elevation of an attachment which illustrates modifications.

Like letters of reference indicate corresponding parts in the several figures.

The general parts of this improved ruffler, in its preferred complete form, are a special presser-foot, F, an edge-turner, E, formed thereon, and a gathering part, G, formed sep-

arately, and applied to the special presser-foot.

The foot F is applied to the presser-bar P of a sewing-machine in the same manner as the ordinary presser-foot, occupying the position of the latter, and performing its functions. Its shank z is so shaped and proportioned as to bring the needle-orifice accurately beneath the needle N, and the foot proper in line with the feed. The attachment will vary in this particular as adapted for different machines, and not otherwise. It will simply be necessary, generally, to manufacture the required varieties of skeleton feet. The other parts will be uniform. The foot in length and width is adapted to cover the largest feed. Its bottom and top are flat and horizontal, and its longitudinal sides are parallel. Its toe is beveled to facilitate the entrance of goods beneath it. Its heel is of ordinary shape. Its sole is smooth.

The top of the presser foot to the right of the needle, for the accommodation of the edge-turner E, Figs. 3 and 4, has a depression, y , extending from the toe to the needle-orifice, and at the latter a lateral opening, x , is cut through the foot for the passage of the band B. A thin elastic plate, w , attached at the toe of the presser-foot, and rebent, so as to lie within the depression y , forms the guide of the edge-turner. At its receiving-point it has a notch, w^2 , or is made narrow, so as to accommodate the turned band-edge. From this point a prominent straight edge, w^3 , extends to the extremity of the guide, which extends downward within the opening x at the needle. The turned edge is thus preserved in perfect shape and position until it is sewed upon the ruffle. The band edge is turned under by a curved finger, v^2 , at the extremity of a second thin plate or spring, v , which is attached at the shank of the foot.

The turning-finger extends above and beneath the guide w , leaving sufficient space to accommodate thin bands, and yields readily to thicker ones.

Immediately in front of the needle-orifice the spring v has a laterally-extended and depressed friction-point, v^3 , which bears on the band with sufficient force at all times to afford the requisite tension. On the opposite side of the needle-orifice from that occupied by the edge-turner E, the upper surface of the presser-foot presents a longitudinal series of ratchet-teeth, u , Fig. 3, having their square faces in front. These are engaged by a spring-pawl, t , Figs. 1, 2, and 5, attached to the gatherer G, which is thus supported in different positions with reference to the needle and feed. Flanges s s^2 , Fig. 5, afford support against lateral displacement, and form guides to control the movement of the gatherer back and forth. The gatherer is readily drawn forward—that is to say, in the direction of the arrow seen in Fig. 1. To set it farther back it is only necessary to lift the pawl t by a finger-piece, provided for this purpose, and

slide the gatherer in toward the shank of the presser. The main plate r of the gathering part coacts with the feed as an abutment, and is termed the “feed-block” or “abutment-plate.” It has a recess, q , Fig. 5, corresponding with the opening x in the foot, to accommodate the band when introduced there-through, and its longer portion has a square end, the position of which determines the extent of the ruffling effect of the feed.

A horizontal transverse guide-finger, p , in front of the presser-foot, supports and guides the ruffling-strip R, which passes beneath the foot, in contact with the feed, in making either kind of ruffling, as illustrated in Figs. 1 and 2.

A second guide-finger, p^2 , behind and parallel to the first, supports and guides the band or plain piece B in the operation of making plain ruffling, as illustrated in dotted lines in Fig. 2. In this operation the edge-turner is not employed, and the band and ruffling-strip pass through flat, one above the other, the former in inverted position. The openings o o^2 between the fingers p p^2 , and between the inner finger and the body of the gatherer, form the gages by which the sewing-line is kept at uniform distance from the seam-edge of this kind of ruffling. When the edge-turner is employed it forms the band-gage. To form an elastic bearing-surface above the ruffling-strip, and to form a separate channel for the band in the plain ruffling operation, a thin plate or separator, n , is attached to the inner guide-finger p^2 , and extends backward beneath the abutment-plate r , terminating at the same point as the latter. By moving the gathering part G back and forth on the presser-foot F the position of the terminal rear edges of the abutment-plate r and sole-plate or separator n is varied, and this regulates the fullness of the gathers in the following manner: There is always more or less slip between the feed-dog and the goods, and the extent of this is determined by the extent of the surfaces in contact, unless the tension on the goods is varied, which is not the case in the operation of this ruffler. The abutment-plate and sole-plate form the effective surface of the presser-foot as an abutment for holding the goods in contact with the feed-dog, as hereinbefore set forth. The action of the feed is, therefore, limited to that portion or place where this abutment is located for the time being. When the gathering part G is set back, as shown in Fig. 2, the sole-plate covers the feed-surface, and the feed has effective contact with the largest extent of sewed surface, and with the smallest proportional extent of ruffling-strip in front of the needle. The sewed ruffling is consequently fed away rapidly, and the gathers are the least full that can be made. When the gathering-part is drawn forward a less extent of sewed ruffling is held in contact with the feed, and the relative extent of ruffling-strip in effective contact before the needle is correspondingly

increased, the result being a fuller ruffle. The fullness of gathers is thus regulated in the most easy manner, without disturbing the adjustment of either the feed-movement or the presser-spring. The improved ruffler can be manufactured without the edge-turner, if preferred, under those features of the invention of which this is not an element. The parts may be made of any approved metal or metals.

Two modifications are illustrated in Fig. 6. The first consists in attaching the pawl-spring *t* to the special presser-foot, and the application of the ratchet-teeth *u* to the flange *s* of the gathering part. The second consists in the employment of a different form of edge-turner, *E*².

The following is claimed as new, and of this invention, namely:

1. The special presser-foot *F*, provided with an edge-turner, *E*, and having a flat sole and parallel sides, in combination with an adjustable gathering part, *G*, applied thereto, substantially as herein described, for the purpose set forth.

2. In combination with the special presser-foot *F* and an adjustable gathering part *G*, the edge-turner *E*, composed of the guide plate or tongue *w*, constructed with extended straight edge *w*³, and the spring *v*, constructed with turning-finger *v*² attached to the special presser-foot, and arranged partially within accommodating recesses *y x* therein, as herein shown and described, for the purpose specified.

3. In combination with a special presser-foot, *F*, and a gathering part, *G*, adjustable thereon, the longitudinal series of ratchet-teeth *u*, and the spring-pawl *t*, arranged and operating as specified, for holding the gather-

ing part in different positions relatively to the needle and feed, as set forth.

4. The gathering part *G*, constructed with the feed-block or abutment-plate *r*, and the thin sole-plate *q*, terminating at the same point beneath the presser-foot, as herein shown and described, for the purpose specified.

5. The edge-turner *E* on the presser-foot, having a tension, *v v*³, and guide *w w*³, for the band, in combination with the finger *p* on the gatherer *G* for guiding the ruffling-strip beneath the presser-foot, as set forth.

6. The combination of the edge-turner, tension, and band-guide *E* on the presser-foot, and the guide-finger *p* and elastic sole-plate *n* on the gatherer, as specified.

7. The combination of the edge-turner, tension, and band-guide *E* on the presser-foot, and the adjustable gatherer *G*, having the guide-finger *p* and elastic sole-plate *n*, and the abutment-plate or feed-block *r* above the latter, as set forth.

8. The combination of the pair of guide-fingers *p p*² separated from each other and from the body of the gatherer by gage-spaces *o o*², and the thin sole-plate *n* extending from the inner finger above the feed-dog, as set forth, for the purpose specified.

9. The adjustable gathering part *G*, constructed with the pair of guide-fingers *p p*², the gage-spaces *o o*², the thin sole-plate *n*, and the abutment-plate *r*, in combination with the feed and presser-foot, as herein illustrated and described, for the purpose set forth.

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Witnesses:

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WM. H. RIBLET.