

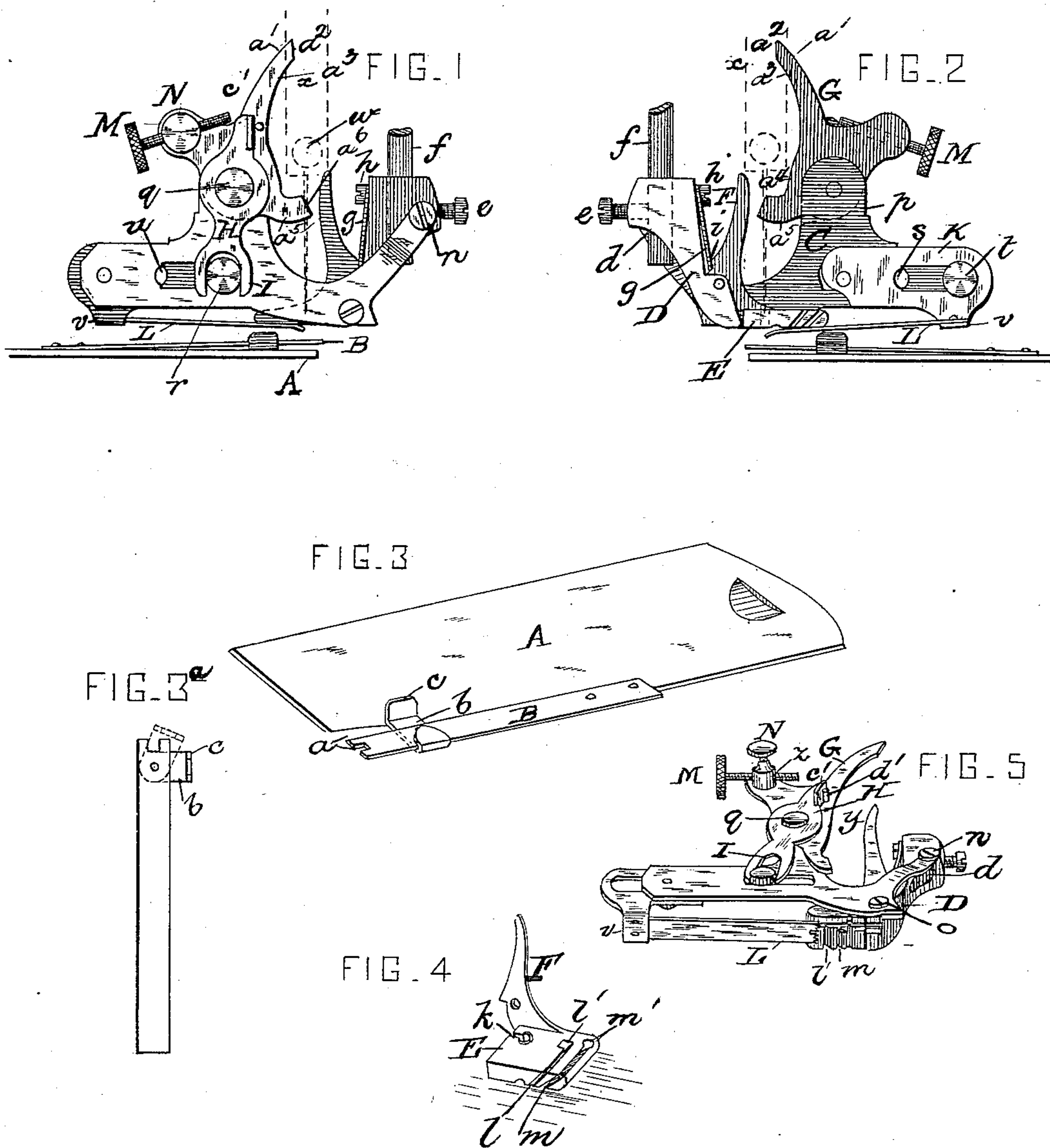
(No Model.)

E. F. EDGECOMB.

## RUFFLER FOR SEWING MACHINES.

No. 259,511.

Patented June 13, 1882.



WITNESSES

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# UNITED STATES PATENT OFFICE.

EDWARD F. EDGECOMB, OF MECHANIC FALLS, MAINE.

## RUFFLER FOR SEWING-MACHINES.

SPECIFICATION forming part of Letters Patent No. 259,511, dated June 13, 1882.

Application filed February 23, 1882. (No model.)

*To all whom it may concern:*

Be it known that I, EDWARD F. EDGECOMB, a citizen of the United States of America, residing at Mechanic Falls, in the county of Androscoggin and State of Maine, have invented certain new and useful Improvements in Rufflers for Sewing-Machines; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to letters or figures of reference marked thereon, which form a part of this specification.

My invention consists in certain improvements, as hereinafter described and claimed, in ruffling attachments for under-feed sewing-machines.

In the drawings, Figure 1 represents a side elevation of my improved ruffler. Fig. 2 is a similar view thereof from the opposite side of that shown in Fig. 1. Fig. 3 represents a perspective of the plate having a portion of my improvements applied thereto. Fig. 3<sup>a</sup> represents a cloth-gage or guide pivoted to a feed-covering plate, in order that said gage may be turned from edge to edge thereof, as hereinafter explained. Fig. 4 represents a perspective view of my improved presser-foot. Fig. 5 represents the device in perspective.

The ruffler in the form shown in the drawings is adapted for use on the "Domestic" sewing-machine; but it can be readily adapted for use on any under-feed machine by slightly changing the supporting-arm.

A is the slide-plate on which the work rests. This cloth-plate is cut away at one corner and has a feed-covering plate, B, securely attached at its rear end to the upper face thereof. A slot, *a*, is formed in the front end of the feed-cover to permit the passage of the needle. The superiority and advantage secured by attaching the feed-covering plate to the slide A over its attachment by means of a gage-screw are, that where it is attached by means of such a screw it is liable to be fastened at an angle, and as a result tends to draw the goods to one side or the other and spoil the work, while by my arrangement the feed-cover is certain to be always in the proper position.

To the feed-covering plate B, I attach a gage, *b*, having a lip or projection, *c*, to guide the

edge of the cloth and render uniform its movement forward. This gage or guide *b* is either provided at the end opposite to that on which is the lip *c* with an inturned ear, *c'*, in order that said gage may be slipped over and slid along the feed-covering plate B, upon which it is held by the frictional contact of said ear *c'* with the plate B, as shown at Fig. 3, said gage being capable of being readily slid off said plate B, and the position of the lip *c* reversed whenever desired, or said gage *b* may, if desired, be secured to said plate B by a pivot, *c''*, as shown in Fig. 3<sup>a</sup>, in order that it may be turned from the inner to the outer edge of the plate B whenever desired.

C is the frame.

D represents the presser-foot of the ruffler, which has a vertical aperture or slot, *d*, and set-screw *e*, so that it may be clamped upon the presser-bar *f* of the machine, as shown in Figs. 1 and 2. This presser-foot D is formed in two parts, as shown, the front part, E, being hinged or pivoted to the part D and having an arm, F, through which said front portion, E, is vibrated, as will be presently described. The front or hinged portion, E, of the presser-foot is held down to its work by means of a spring, *g*, secured at one end by a screw, *h*, to the upper part, D, of the presser-foot, its free end operating against the edge *i* of the vibrating arm F.

*k* represents the slot through which the needle passes, and *l m* represent slots formed in said presser-foot in advance of the slot *k*, and passing rearwardly at a suitable angle from the upper through to the under face of the vibratory foot E, the purpose of which will be presently described.

The frame C is rigidly attached by screw *n* to the upper part of the presser-foot, as shown in Fig. 1, and to the lower part thereof by a screw, *o*.

To the extended portion *p* of the frame C is pivoted at *q* the operating-lever G, a secondary lever, H, having forked lower end, I, being mounted upon said pivot *q*. The forked end I of this lever H embraces a stud or projection, *r*, carried by the forward end of the ruffling-blade carrier or slide K. This slide K is slotted at *s*, and has free horizontal movement upon the projection or stud *t*, at the rear of the frame C, and also within the slot *u* in the



frame, the stud *r* working in said slot *u* on being moved back and forth by the rocking motion of the forked lever *H*. The gathering or ruffling blade *L* is attached to the slide *K* at 5 *v*, so that on a rocking motion being imparted to the forked lever *H* by the operating-lever *G* a to-and-fro motion is imparted to the slide *K*, and consequently to the thereto-attached ruffling-blade *L*.

10 The operating-lever *G*, through which motion is imparted to the forked lever *H*, and from thence to the slide *K* and ruffling or gathering blade *L*, is of peculiar form to adapt it to be properly and effectively operated by the 15 screw *w* on the needle-bar *x* during the vertical movement of said needle-bar. This lever *G* is formed with a rearwardly-curved upper end, *a'*, having a straight face or edge, *a*<sup>2</sup>. From thence its inner edge curves inwardly at *a*<sup>3</sup>, 20 thence outward, as at *a*<sup>4</sup>, and finally terminates at its lower end in an inwardly-extending horn or projection, *a*<sup>5</sup>, having a straight face or edge, *a*<sup>6</sup>. Supposing the ruffler to have been attached to the presser-bar *f* and the needle-bar *x* raised, 25 the operation of the device is as follows: On the needle-bar descending the needle passes through the plait, and when nearly down the nut of the screw *w* strikes the curved upper end, *y*, of the arm *F*, throwing said arm *F* 30 back and lifting the hinged or vibrating foot *E* off the goods. Continuing its descent the needle-nut *w* strikes the operating-lever on its lower cam-surface, *a*<sup>4</sup>, and throws it down. The adjusting-screw *M*, working in a projection on 35 the rear of the operating-lever, is thus forced forward against a lug or projection, *c'*, on the lever *H*, and, pushing the upper end of said lever *H* forward, rocks its forked end rearward. The fork *I* in its turn forces the slide *K* and 40 the ruffling-blade *L* back, ready to make another gather. The needle-bar, having thus nearly completed its downstroke, continues its downward movement until the nut *w* strikes the straight surface *a*<sup>6</sup> of the operating-lever, 45 across which it moves a greater or less distance, as the goods under the ruffler are thick or thin. The needle-bar now commences its upstroke, and, leaving the vibrator lever or arm *F*, the spring *g* throws the vibrating foot 50 *E* down on the goods, so as to press said foot on the gathering-blade and at the same time press the blade against the goods. On the continued upward movement of the needle-bar the nut *w* strikes the upper cam-surface of the 55 operating-lever, and, through the medium of the lever *H* and slide *K*, carries the blade *L* forward and forms the plait. When nearly up to its highest position the needle-nut *w* strikes the straight surface *a*<sup>2</sup> of the operating-lever 60 *G*, and moves thereacross a greater or less distance, as the goods under the ruffler are thick or thin.

The extent of rocking movement of the operating-lever, and consequently of the rocking 65 lever *H*, the slide *K*, and the ruffling-blade operated thereby, is regulated by the following means: On the rear upper portion of the

operating-lever *G* is a lug or projection, *z*, 70 which receives and holds an adjusting-screw, *M*. A set-screw, *N*, passes through an orifice in the end of this lug and serves to clamp said screw *M* rigidly in any desired extended or retracted position. When it is desired that the 75 lever *H* and the ruffling-blade connected thereto shall have but a limited movement the screw *M* is turned so that its inner end shall be distant from the projection *c'* extending 80 outwardly from one face of the lever *H*, so that on the operating-lever *G* being rocked by the nut *w* on the needle-bar but a slight movement is imparted to the parts connected to 85 said lever *G*, by reason of said lever *G* having to rock to nearly its utmost extent before the screw comes in contact with the projection *c'*. On turning the adjusting-screw so that its inner 90 end is near the projection *c'* more of the movement of the operating-lever *G* is imparted to the lever *H* and the ruffling-blade carried thereby. The rearward motion of the upper 95 end of the operating-lever *G* is limited by a stop, *d'*, which comes in contact with the projection *c'*. By reason of the peculiar form of the operating-lever *G* it utilizes nearly all the 100 upstroke of the needle-bar in forming the gather and but a small portion of the downstroke in drawing the blade back. As a result, the needle passes through the plait and 105 fastens it before the blade draws back, and is never disarranged by the movement of the blade. Another advantage secured by the straight faces on this lever is that the needle- 110 bar in its downstroke throws the lever until it reaches the flat or straight face. It then moves down or across this face and imparts no motion to the lever. The same action takes 115 place on the completion of the upstroke of the bar. The effect of this is that the blade has the same movement in the same places whether the goods operated upon be thick or thin, and 120 also in going over seams. The front or vibrating part of the foot holds the blade to its work, and as the needle-bar descends, when it gets nearly down, and after the needle has passed through the plait and fastened it in 125 place, the needle-nut strikes the vibrating lever, and, throwing it back, lifts the foot, and thus relieves the blade of all pressure upon the goods and draws it back while thus freed from contact with the goods, and as a result renders it possible with this device to shirr 130 satin and make a finer ruffle than is possible in the usual manner of operating the blade. The back part of the foot being always in contact with the feed insures the feed being perfectly even and regular.

The slots *l m* are guides for the material to make a ruffle and edge-stitch a band upon it at one operation. The ruffle passes under the blade, as usual, while the band is guided by the slot *l*, and if it is desired to stitch a braid 130 upon it at the same time such braid is passed through the enlarged part *l'* of the slot *l*. A piping is guided through the slot *m*, and if a corded piping is to be used the cord is guided



through the enlarged part  $m'$  of said slot  $m$ . These slots  $l m$ , being near the needle, have a superiority over guides placed farther from the needle, as there is less liability of the material getting out of place between the guides and the needle.

Having thus described my invention, what I claim is—

1. A vibratory presser-foot constructed and arranged to rest upon the gathering-blade, and adapted to be raised from the blade by the needle-bar nut while said blade is drawn back.

2. A vibrating presser-foot having hinged front portion held against the goods by spring-pressure, and having a lever or arm whereby said hinged front portion is adapted to be raised from the goods by the action of the needle-bar, substantially as set forth.

3. A presser-foot having the band-guiding slot  $l$ , with braid-guide  $l'$ , the piping-guiding slot  $m$ , with corded-piping guide  $m'$  formed in advance of the needle-slot  $k$ , substantially as and for the purpose set forth.

4. In a ruffling attachment, a ruffler-operating lever hinged in front of the needle-bar, and having its face toward the bar, and against which the needle-nut operates, formed with straight faces at its upper and lower ends, and a central cam portion to permit of the motions of said lever being made in different lengths of time relatively to the motions of the needle-bar.

5. The combination, with the feed-cover B, secured to the cloth-slide A, of the cloth-guide  $b c$ , adapted to be secured to said feed-cover

with capability of reversal, substantially as and for the purpose set forth.

6. The combination of ruffling-blade L, slotted slide K, having stud  $r$ , frame C, having stud  $t$ , forked lever H, having projection  $e$ , the operating-lever G, having lug or projection  $z$ , and stop  $d'$ , the adjusting-screw M, working within the projection  $z$ , and the set-screw N, passing through the end of said projection  $z$  and engaging with the screw M, substantially as and for the purpose set forth.

7. The combination, with the frame C, having slot  $u$ , and stud  $t$ , of the slotted slide K  $s$ , ruffler-blade L, secured thereto, stud  $r$ , and devices, substantially as shown and described, for operating said slide.

8. A ruffling attachment consisting of a presser-foot having hinged and slotted front portion, a spring arm for actuating the same, operating cam-lever, a slotted slide carrying the ruffling-blade, slotted frame in which said slide works, a lever adapted to operate said slotted slide, an adjusting-screw for limiting the oscillatory movement of said slide-operating lever, and a feed-cover secured to the cloth-plate, and a cloth-guide secured to said feed-cover, substantially as and for the purpose shown and described.

In testimony whereof I affix my signature in presence of two witnesses.

EDWARD F. EDGECOMB.

Witnesses:

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J. D. CURTIS.