

(Model.)

T. L. MELONE, Dec'd.

2 Sheets—Sheet 1.

J. S. MELONE, Administratrix.

RUFFLING ATTACHMENT FOR SEWING MACHINES.

No. 419,339.

Patented Jan. 14, 1890.

FIG. I.

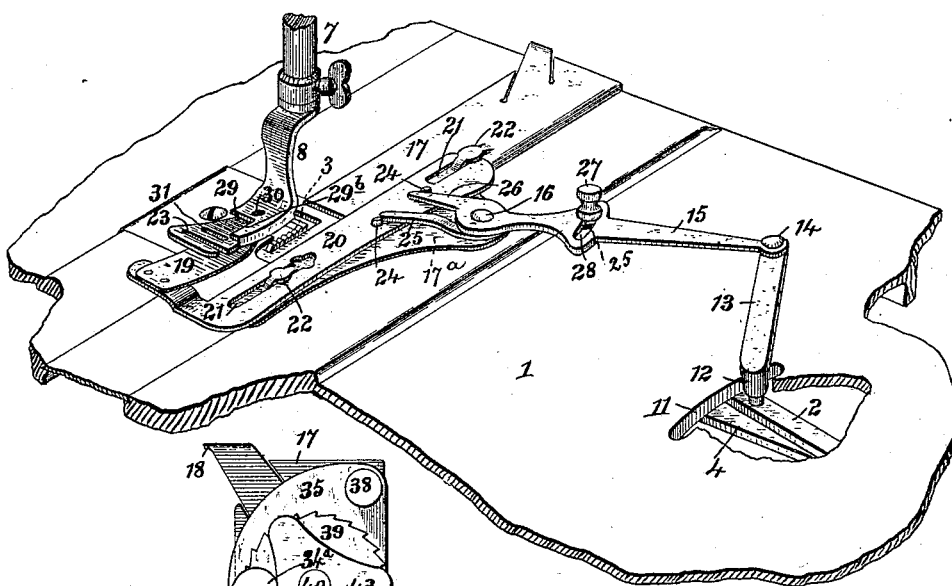


FIG. II.

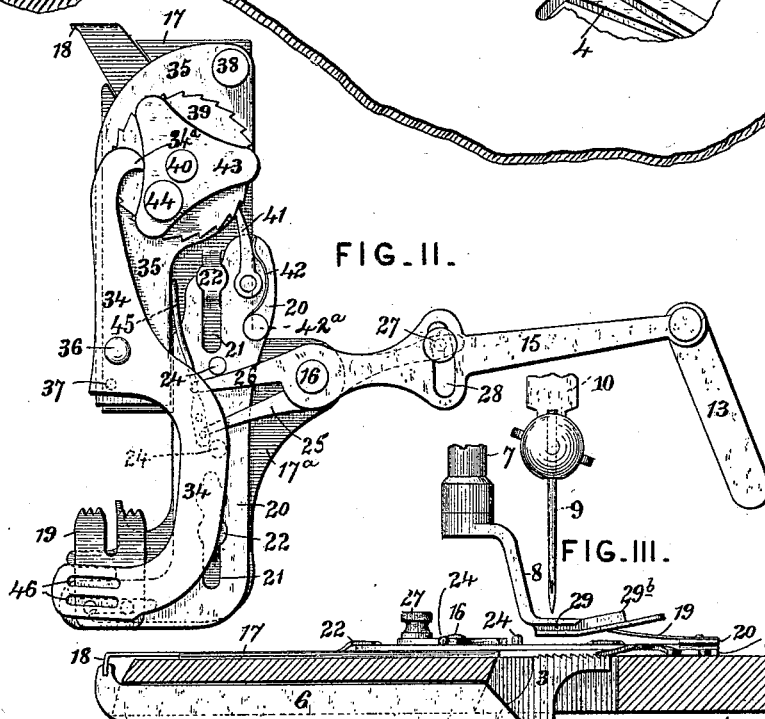
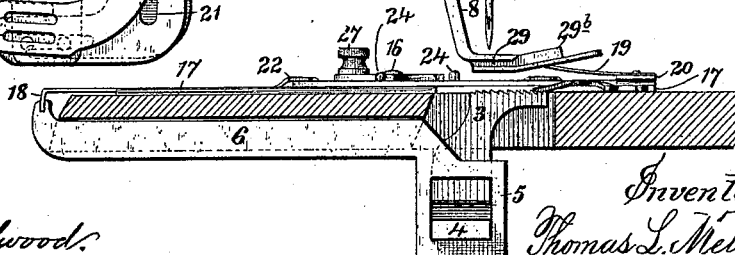


FIG. III.



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(Model.)

2 Sheets—Sheet 2.

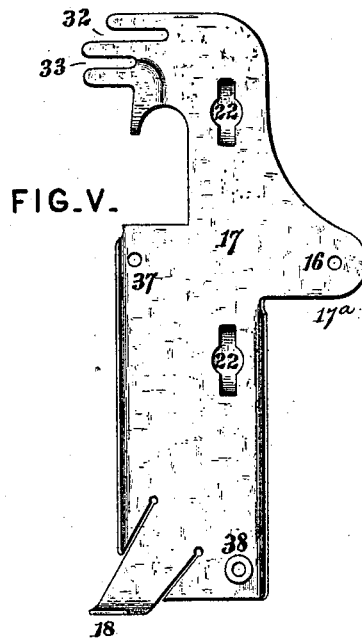
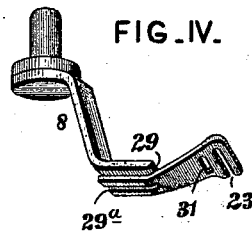
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RUFFLING ATTACHMENT FOR SEWING MACHINES.

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UNITED STATES PATENT OFFICE.

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RUFFLING ATTACHMENT FOR SEWING-MACHINES.

SPECIFICATION forming part of Letters Patent No. 419,339, dated January 14, 1890.

Application filed December 24, 1887. Serial No. 258,860. (Model.)

To all whom it may concern:

Be it known that I, THOMAS L. MELONE, a citizen of the United States, residing at Chillicothe, in the county of Ross and State of Ohio, have invented certain new and useful Improvements in Ruffling and Piping Attachments for Sewing-Machines, of which the following is a specification.

My improvements primarily relate to ruffling attachments adapted to be operated from the swinging shuttle-arm of a sewing-machine, but are in part not limited to such a method of operation.

In applying mechanism for operating the ruffler from the swinging shuttle-arm to a machine in which the feed takes place partly after the stitch is drawn up the forward movement of the feed, after the shuttle-arm has reached the limit of its movement and before the needle has entered the cloth, is apt to draw out a part of the ruffle, rendering the ruffler irregular and unreliable in its operation. To avoid this difficulty I have devised a ruffling attachment adapted to receive motion from both the swinging shuttle-arm and the swinging feed-movement, so that when the shuttle-arm has reached its extreme position the feed-movement will seize not only the goods, but take the whole ruffling attachment with it and carry all forward to the end of its stroke. This forward movement of the ruffling attachment is made without interfering with the movement of the shuttle-arm, as it is simultaneous with the commencement of the return movement of said arm.

In carrying out my improvements for effecting the operation of the ruffler from the combined action of the swinging shuttle-arm and swinging feed-movement I have also devised improvements in the devices, whether on the presser-foot or on the base-plate of the ruffler; for guiding the ruffling and other strips to the needle.

In order that the invention may be better understood, I will proceed to describe it with reference to the accompanying drawings, in which—

Figure I is a perspective view of my improved ruffler, showing its mode of application to a sewing-machine. Fig. II is a plan of the same in connection with the automatic

guide mechanism. Fig. III is a side view, looking from the left of Fig. I. Fig. IV is a perspective view of the presser-foot, and Fig. V is a bottom view of the base-plate of the ruffler.

I have shown the improvements applied to a Melone sewing-machine; but they are equally applicable to any sewing-machine in which the feed takes place partly after the completion of the stroke of the swinging shuttle-arm.

1 represents the bed-plate or cloth-plate of such a machine; 2, the swinging shuttle-arm; 3, the dog or equivalent part of the feed-movement; 4, the swinging feed-rod, and 5 its yoke, the last-named part having an arm 6 extending across to the rear side of the bed-plate of the machine. 7 is the presser-bar; 8, the presser-foot secured thereto, and 9 the needle carried by the bar 10. With the exception of the presser-foot, these parts are shown merely to illustrate the method of application of the improvements to a single form of sewing-machine, they being of the represented or any preferred construction.

In the bed-plate of the machine I form a curved slot 11 to receive the wrist 12 of a connecting-rod 13, jointed at 14 to a lever 15. Said lever 15 is pivoted at 16 to the arm 17 of the base-plate 17 of the ruffling attachment, said base-plate being arranged to move in the way of the shuttle-race slide when the latter is removed, and having a flange or lip 18 for actuation by the feed-movement. I have here shown the end of the arm 6 provided with a groove or recess, into which the flange 18 is snapped when the attachment is applied to the sewing-machine, so that the said attachment will accompany the feed in its movement transversely of the machine.

19 is the ruffling-blade carried by a slide 20, connected to the base-plate 17 by slots 21 and T-headed studs or projections 22. The ruffling-blade is serrated at the portion bearing against the under side of the presser-foot 8, so as to seize the cloth passing between the blade and presser-foot and carry it forward to the needle in advance of the feed dog or movement 3. The cloth to be ruffled is passed directly between the blade and foot, or is passed first through a guide 23 at the forward

end of said foot. In this manner one edge of a broad strip may be gathered or a narrow strip or band may be ruffled or plaited. The shorter arm of the lever 15 is adapted to transmit motion to the slide 20 by means of studs 24 on said slide. The said shorter arm of the lever 15 rests loosely between said studs, and by impact against them alternately reciprocates the slide. In order that the stroke of the slide may be varied at pleasure, I have divided the end of the lever 15, bearing between said studs, as shown at 25 26, the member 26 pivoting on screw or rivet 16, and being fixed at any desired position by a set-screw 27, passing through slot 28.

The presser-foot is cut away horizontally at 29 to receive a band or strip of cloth, which can thus be sewed over the ruffling-strip. This band, coming nowhere in contact with the ruffling-blade, is fed evenly through the machine. At rear of the needle-opening a vertical way 29^a is also provided to allow the cloth to pass from the needle without any of the downward pressure of the foot. It is observed that this form of foot is adapted also to automatically turn over the edge of the band or strip as it is passing to the needle in any case where it may be desired to do so. For this purpose a forward curved projection 29^b is made on the foot at one side.

30 is the needle-opening, and 31 is a slot formed in the front part of the presser-foot in the rear of the guide 23. Through this slot piping may be passed when it is desired to sew the same on simultaneously with the making of the ruffle.

In the base-plate 17 of the ruffling attachment are also formed guides 32 33 to receive cloth of different widths and turn over the edge thereof when it is desired to sew the ruffling-strip at the same operation to the main body of the cloth.

The operation of the attachment will be seen to be as follows: The ruffling-strip being passed through the guide 23 and the various pieces being placed in the special guides, as designated, and the machine started, the ruffling-plate, receiving motion from the lever 15, will, before each descent of the needle, carry forward thereto a portion of the ruffling-strip in advance of the piece carried by the feed-dog 3, thus making the gather or ruffle. When the ruffling-blade has reached the limit of its motion toward the needle by means of the lever 15, the shuttle-arm having then reached the limit of its stroke, the feed dog or movement 3 has but just commenced its movement. To avoid the movement of the feed-dog, therefore, from crumpling and disarranging the goods before the needle can descend, the whole ruffling attachment is, by reason of its connection with the feed-movement, carried forward with the feed, and the cloth being clamped therein, its several pieces are preserved from relative movement one upon the other until the needle has entered them.

In addition to the ruffling attachment above described, I have provided an automatic guide mechanism, which may be applied thereto at will, when instead of the ordinary ruffle a folded strip may be ruffled and sewed in an irregular or curved line. Such a guide is shown at 34, pivoted to a supplemental base-plate 35 by screw or pivot 36. The plate 35 is fixed, when desired, to the base-plate 17 of the attachment by means of a stud 37 and set-screw 38, entering holes in the plate 17.

39 is a ratchet-wheel pivoted on the stud or screw 40, fixed to the plate 35, and 41 is a pawl pivoted to the slide 20 and forced between the teeth of the ratchet-wheel 39 by a spring 42, also secured to the slide 20 by a stud 42^a. At each reciprocation of the slide 20 the ratchet-wheel 39 will be carried forward one tooth by the lever 15.

43 is a cam or detachable former of any preferred shape turning around the stud or screw 40 and fixed at will to the ratchet-wheel 39 by means of set-screw 44. Against the face of the cam 43 the nose 34^a of guide 34 is forced by means of spring 45, so that during the movement of the slide 20 and consequent rotation of the cam 43 the forward end of the guide 34 will be forced to slowly travel back and forth over the line of the seam. Bands or strips of cloth, therefore, placed in the slots 46 in said guide will be fed to the needle in such a manner as to be sewed to the ruffling-strip in any waved or scalloped form, depending on the shape of the cam 43. By passing such bands or strips directly over the ruffling-blade in contact with the serrated edge thereof they may be ruffled, or by interposing a separate ruffling-strip between them and the ruffling-blade they may be sewed evenly over the ruffle.

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

1. The combination, with the bed-plate of a sewing-machine, the swinging shuttle-arm, and the swinging feed-rod, of a ruffling attachment sliding on the bed-plate and connecting devices between the shuttle-arm and the attachment, and also between the feed-rod and the attachment, substantially as described.

2. The combination, with the bed-plate of a sewing-machine, the swinging shuttle-arm, and the swinging feed-rod, of a ruffling attachment sliding on the bed-plate, having a base-plate connected with the shuttle-arm and with the feed-rod and a ruffling-slide connected with the shuttle-arm and sliding on and with the base-plate, substantially as described.

3. The combination, with the bed-plate of a sewing-machine, the swinging shuttle-arm, and the swinging feed-rod, of a ruffling attachment sliding on the bed-plate, having a base-plate, a ruffling-slide sliding on and with the base-plate, and an operating-lever pivoted to the base-plate and connected with

the shuttle-arm and with the ruffling-slide, the base-plate being connected with the feed-rod, substantially as described.

4. The combination, with the bed-plate of a sewing-machine, the swinging shuttle-arm, and the swinging feed-rod, of a ruffling attachment sliding on the bed-plate, having a base-plate, a ruffling-slide provided with stops and sliding on and with the base-plate, and an operating-lever pivoted to the base-plate and connected with the shuttle-arm, having finger 26, the finger 25, pivoted to the base-plate, having set-screw 27 and slot 28, connection with the lever, and the connecting-rod 13, the base-plate being connected with the feed-rod, substantially as described.

5. The combination, with the bed-plate of a sewing-machine, the swinging shuttle-arm, and the swinging feed-rod, of a ruffling attachment sliding on the bed-plate, having a base-plate formed with an end flange 18, the yoke 5, with which the feed-rod engages, having an arm 6, with which the end flange engages, and a connecting device between the shuttle-arm and the attachment, substantially as described.

6. The combination of the bed-plate 1, having a curved slot 11, the swinging shuttle-arm 2, the swinging feed-rod 4, the feed-dog 3, the yoke 5, having arm 6, the base-plate 17, having flange 18, the slide 20, having blade and provided with stops 24, the lever 15, and connecting-rod 13, substantially as described.

7. The combination of the feed-rod having an arm and a ruffling attachment consisting of a base-plate 17, having an end flange 18 and provided with projections 22, the slide 20, having slots 21, studs 24, and blade 19, the le-

ver 15, pivoted to the base-plate, and the connecting-rod 13, substantially as described. 40

8. A ruffling attachment consisting of a base-plate 17, formed with arm 17^a and end flange 18 and provided with projections 22, the slide 20, having slots 21 and provided with blade 19 and studs 24, the lever 15, pivoted to the base-plate, having slot 28 and finger 26, the finger 25, having set-screw 27, and the connecting-rod 13, substantially as described. 45

9. The combination of the base-plate, the slide having a ruffling-blade, the guide, guide-spring, the ratchet-wheel, the cam, the pawl, and the operating-lever, substantially as described. 50

10. The combination of the base-plate, the slide having a ruffling-blade, the guide, guide-spring, the ratchet-wheel, a cam detachably secured to the ratchet-wheel, the pawl, and the operating-lever, substantially as described. 55

11. The combination of the base-plate, the slide having a ruffling-blade, supplemental base-plate, the ratchet-wheel, the cam, the guide, guide-spring, the pawl, and the operating-lever, substantially as described. 60

12. The combination of the base-plate, the supplemental base-plate, the guide pivoted to the supplemental base-plate, having a bearing-nose, the guide-spring, the ratchet-wheel, the cam, the slide having a ruffling-blade, the spring-pawl, and the operating-lever, substantially as described. 65

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Witnesses:

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M. J. TIMMONS.