

928,792.

Fig. 1. Fig. 2. Fig. 3. Fig. 4. Fig. 5. Fig. 6. Fig. 7. Fig. 8. Fig. 9. Fig. 10. Fig. 11. Fig. 12.

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## SEWING-MACHINE RUFFLER.

No. 928,792.

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*To all whom it may concern:*

Be it known that I, WINSLOW R. PARSONS, a citizen of the United States, and resident of the city of Chicago, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in Sewing-Machine Rufflers, of which the following is a specification.

This invention has for its object to improve the efficiency and render more positive and accurate that class of sewing machine rufflers in which the ruffling blades are operated from the needle bars of the machines, as also to provide rufflers which are adapted for a wider range of work than similar rufflers at present in use.

To this end the invention comprises certain novel constructions and combinations as will hereinafter more fully appear.

In the accompanying drawings, Figure 1 is a side view of the improved ruffler. Fig. 2 is a detail plan view of the rear end of the ruffling blade carrier, with an adjustable guide attached thereto. Fig. 3 is a detail edge view of the adjustable guide shown in Fig. 2. Fig. 4 is a central transverse section of the improved ruffler. Fig. 5 is a detail bottom view of the adjustable foot piece of the ruffler, and Fig. 6 is an edge view of the same. Fig. 7 is a detail plan view of an adjustable edge stitching guide, and Fig. 8 is an edge view of the same. Fig. 9 is a central longitudinal section of the improved ruffler with the upper portion thereof broken away. Figs. 10 and 11 are detail views showing two different forms of trimming which can be made on the improved ruffler. Fig. 12 is a detail section, lengthwise of the ruffler, through the foot portion thereof and in a plane denoted by line 12—12, Fig. 5.

Referring to the drawings, 10 denotes the frame or base plate of the ruffler and which is of somewhat heavy sheet metal, the said frame having a foot portion 9, and a raised shank portion 11 by which the ruffler may be attached to the presser-bar of a sewing machine in a well known manner.

Rising from the frame 10, and preferably integral therewith, is a standard 12 provided with a pivot 13 on which are mounted the pendulous lever 14 and operating lever 15, said operating lever being forked in the usual manner for engagement with a pin or stud on the needle-bar of the machine. The

lever 14 is provided with stops or lugs 16 and 17 which will be engaged by the operating lever, or by a regulating lever carried by the latter, so that said lever 14 will be operated from said lever 15 with a certain amount of lost motion depending upon the position of adjustment of said regulating lever, which is not herein shown as it forms no part of the present invention, but which will preferably be of the construction shown in my Patent No. 356,849 granted Feb. 1, 1887. The pendulous or secondary lever 14 is connected by a pivot 18 with an upwardly extending lug 19 on the ruffling blade carrier 20 to which latter is attached, by rivets or otherwise, the ruffling blade 21. Removably attached to the frame or base plate 10 is an arm 22 to which is secured a separator plate 23.

The parts thus far described are, or may be, of well known construction, and the present improvements will now be more particularly described.

In sewing machine rufflers of the class to which this invention relates the power required for reciprocating the ruffling blades is usually applied at one side of the ruffling blade carriers, and in forcing the ruffling blades forward in the ruffling operations there is more or less side strain on the ruffling blade carriers which tends to divert them from right line movements; and, under considerable strain, as when the heavier classes of goods are being ruffled, more or less imperfect work is likely to result. To obviate this objection the present improved ruffler comprises a guide which overhangs the ruffling blade and its carrier, and which is engaged by an upward projection on the carrier, so that as the said carrier is reciprocated back and forth it will be positively guided in its movements, and cannot therefore depart from a straight line. To this end, in the present improved construction, the ruffling blade carrier 20 is provided with an upward extension 24 which is continued laterally in the form of an arm 25 overhanging the body portion of the said carrier, thus providing a space between said arm and carrier for the free passage of a strip of cloth and a piping, when using the adjustable edge-stitching guide 35, hereinafter described, for the various kinds of work for which it is adapted. The said arm 25 is provided at its forward end with an upwardly



projecting lug 26 preferably terminating at its upper end in an enlarged portion, as more clearly shown in Fig. 4, having upper and lower convex shoulders 27 and 28 which tend to center the said lug in a longitudinal slot 29 formed in a guiding arm or plate 30 extending from and preferably integral with the frame or base plate 10. The upper corners of the walls of said slot are preferably somewhat rounded, so as to cooperate with the opposing rounded shoulders 27 and 28 on the lug 26 in centering the said lug, as the reciprocating carrier is moved back and forth in the ruffling operations. The slot 29 is preferably centrally located laterally with reference to the ruffling blade carrier, and in a direct line in front in the position which will be occupied by the needle, so that the ruffling blade will be centrally and positively guided in its reciprocating movements by the upwardly extending lug 26 on the ruffling blade carrier working in the slot 29 of the guide 30 which overhangs the ruffling blade carrier and ruffling blade.

Owing to the fact that the guiding device above referred to overhangs the ruffling blade and is located about centrally thereof laterally, or approximately so, the side strain on the ruffling blade carrier is much better resisted and the movements of the said carrier and its ruffling blade are much more reliably controlled than is possible with the constructions heretofore in use in which the guiding devices on the frames of the ruffling attachments were located at the sides of the ruffling blade carriers. Thus the overhanging arm 25 not only provides means by which the ruffling blade carrier may be positively centered, and the ruffling blade positively guided in its reciprocating movements, but the said arm provides between itself and the body of the ruffling blade carrier a passage through which the cloth or piping may be conducted through the ruffler above the strip to be ruffled, in using the edge-stitching guide 35, in substantially a horizontal plane, and the various strips or pieces of fabric may thus be guided with more uniformity than is possible when, as in prior constructions, the ruffling strip and its band were not directed in a straight line to the needle.

It is desirable that the presser foot portion of a ruffler of the class to which this invention relates should be of such a character as to enable it to adjust itself to different thicknesses of goods or inequalities in the work, and to this end the presser foot portion of the ruffler bearing directly on the goods should be capable of a limited universal movement. With this result in view the foot piece 31 beneath the presser-foot portion 9 of the frame or base plate 10, and which is loosely attached to said foot piece 9, is provided on its upper side with a central convex boss 33 entering a concave recess in

the bottom of the presser-foot portion 9, so that the said foot piece or sole 31 will be capable of a limited rocking movement in all directions. The said foot piece 31 is loosely attached to the foot portion 9 of the frame or base plate 10 by a pivot pin or rivet 32 beneath the upper head of which is a spring plate or washer 34 which will yield sufficiently to permit the said foot piece 31 to adjust itself in all directions to inequalities in the work. The hole in the said foot-piece 31 is of somewhat greater diameter than the pivot-pin or rivet 32 so that said foot-piece is loosely mounted on the foot-portion 9 of the frame 10. As the central convex boss 33, fitting in a concave socket in the bottom of the foot portion 9, permits of a certain limited movement of the foot-piece 31 in all directions, the usual transverse shoulder 55 (see Fig. 9) on the bottom of said foot piece will be free to adapt itself to the forward end of the ruffling blade 21, so that said shoulder and the extreme end of said blade may maintain their proper parallel relations to each other notwithstanding inequalities in the work. Any suitable means may be provided to prevent the foot piece 31 from turning too far horizontally on its central boss 33, as by a pin or projection 8 on the foot portion 9 loosely entering a hole 38 in said foot piece. The foot piece 31 is provided with a needle hole or opening 37 registering with a needle-hole 40 in the foot portion 9 of the frame or base plate 10.

To adapt the attachment for certain classes of work, for which other similar rufflers are not adapted, a laterally adjustable edge stitching guide 35 is provided; said guide being formed with a transverse slot 36, through which passes the rivet 32, and also with a needle slot 39 which will register with the needle holes or openings 40 and 37 above referred to. The said edge stitching guide is frictionally held in place by the spring plate or washer 34, and may be adjusted laterally within the limits afforded by the slot 36. The body portion 41 of the said edge stitching guide lies flat on the top of the foot portion 9 of the frame or base plate 10 beneath the spring washer 34, and, forward of said body portion 41, said guide is provided with a downwardly bent portion 42, conforming to the vertical edge of the presser-foot portion 9, and terminating at its bottom in a shoulder, at the rear end of the horizontal part or extension 43, which bears on the front edge of the upper surface of the foot piece 31; and, as the said edge stitching guide is of spring metal, said shoulder has a tendency to tilt the forward end of said foot piece downward, as denoted in Fig. 9, and permits the said foot piece to yield when sufficient force is opposed to the spring stress of the said guide. At the front end of said horizontal part or extension 43



the metal of said plate is bent downwardly and rearwardly forming a fold which is partly cut away in front to provide a slot 44 between the said horizontal part or extension 43 and the bottom portion 45 of the said fold, the said slot 44 being closed at its ends, as indicated in Fig. 7. The said guide is also provided between its outer end and the vertical portion 42 with an open ended slot 44<sup>a</sup>. The slots 44 and 44<sup>a</sup> provide means, above the ruffling blade, whereby certain strips of goods can be passed through the ruffler above the ruffling strip and stitched to the work simultaneously with the ruffling operation; and as the said edge stitching guide may be adjusted laterally beneath the spring washer 34 the strips passing through the said slots 44 and 44<sup>a</sup> may be guided in such positions relative to the needle that the lines of stitching through said strips may be at any desired distances from the edges thereof.

The ruffling blade carrier is provided with a short guide slot 46, and near its end with a longer guide slot 47 preferably provided with enlarged end portions 48. A guide 49 is preferably attached to the ruffling blade carrier, said guide being of thin metal and being provided with hooked lips 50 frictionally engaging a bar forming the extreme end of said carrier, and such frictionally held guide 49 may be adjustable laterally on said bar when desired. The said guide 49 is provided with an open ended slot or passage 51 between two arms 52 which are joined together at one end of the said guide by the portion 53, and the thin metal composing the rear arm 52 is bent down on itself and turned under or folded inward to form an arm 54 between which and the arm 52 above it is an open ended guide slot or passage which, however, opens laterally in a direction opposite the guide slot 51. The guide 49 is intended to be used as a ruffle strip and band guide; and as the slot or passage between the arms 52 and 54 opens laterally in a direction opposite the slot or passage 51 the strips which are to be guided in said slots or passages may be inserted laterally in opposite directions, and thus the said slots, the end walls of which afford guiding surfaces, are adapted to serve as right and left hand guides. The said guide 49 may be adjusted laterally on the ruffling blade carrier to locate it in such positions as to bring the strips passing through said guide slots or passages into any desired position or alinement relative to the ruffling blade and the needle of the machine.

The improved ruffler herein shown and described, in addition to its adaptation for doing ordinary ruffling, with or without simultaneously stitching the same to a band, may be used for the production of a large variety of fancy ruffling or plaiting, and is fitted for

doing some kinds of work which cannot be done on any of the ruffling attachments now in use.

If it be desired to produce the plaited trimming shown in Fig. 10, with a narrow ribbon or folded strip of cloth, such ribbon or strip is inserted in the guide slot 46 in the ruffling blade carrier 20 and is passed thence forward beneath the ruffling blade to the needle, while the strip or garment to which the plaited trimming is to be sewed is passed beneath the separator plate 23 for the stitching operation. To produce the ruffling trimming shown in Fig. 11 a ruffling strip, of suitable width to be guided through the slot 47, is first hemmed on both edges with a narrow hemmer, and is then passed through the said slot and beneath the ruffling blade 21, the cloth or garment to which the ruffling trimming is to be sewed being passed beneath the separator plate 23 for the stitching operation. The enlarged end portions 48 of the slot 47 are for the purpose of accommodating the thicker hemmed edges of the strip, but instead of a hemmed strip a ribbon or other strip having selvage edges may be used for a ruffling strip. A very fine fancy trimming of two colors can be produced by passing a strip to be plaited through the guide slot 46, and a strip of a different color through the guide slot 47, both strips passing below the ruffling blade 21 to the needle, and the garment or cloth to which the trimming is to be attached being passed beneath the separator plate 23. As the guide slots 46 and 47 have closed ends the ruffling or plaiting strips, when of a width substantially the same as the lengths of said slots, will be guided automatically and without any special attention on the part of the attendant.

To utilize the improved ruffler for edge stitching a band to a ruffle at one operation a folded band may be passed through the opening between the overhanging arm 25 and the ruffling blade carrier 20 and through the guide slot 44<sup>a</sup> in the edge stitcher; and, owing to the fact that said edge stitcher is laterally adjustable, it may be so located as to bring the line of stitching nearer to or farther from the edge of the folded band. The ruffling strip to which the band is to be attached may be passed downward through the guide slot 51 of the guide 49, and thence beneath the ruffling blade carrier and ruffling blade. A band to which the ruffling is to be stitched may, if desired, be passed downward between the rear arm 52 of the guide 49 and the arm 54 of said guide, and thence beneath the separator plate 23, so that a band and a ruffling strip or ribbon to be ruffled or plaited may both be readily guided to the needle with little or no care on the part of the attendant. If, in addition to the band



and ruffling strip, it be desired to insert a piping, this can be passed above the ruffling blade carrier and beneath the arm 25 and thence through the guiding slot 44 at the forward end of the edge stitching guide 35. It will therefore be understood that, owing to the various guides afforded by the guide slots 44 and 44<sup>a</sup> in the laterally adjustable edge-stitchers 35, the guiding passage afforded between the overhanging arm 25 and the body of the ruffling blade carrier 20, the guide slots 46 and 47 of the ruffling blade carrier, and the guide slots in the laterally adjustable guide 49, one of which is the slot 51 and the other of which is the space between the arm 54 and the overhanging arm 52, as shown in Fig. 3, a large variety of work may be performed on the improved ruffler by virtue of the various strips, piping, etc. which may be passed through the ruffler in addition to the ruffling strip; so that the attachment is adapted for a larger range of work than other ruffling attachments at present in use.

Having thus described my invention I claim and desire to secure by Letters Patent:

1. In a sewing machine ruffler, the combination with the frame thereof, of a ruffling blade, a ruffling blade carrier having an upward extension and an overhanging arm, said arm being provided with an upward projection and the said frame being provided with a longitudinally slotted extension located above the said overhanging arm, the slot in the extension of said frame receiving said projection on said overhanging arm, so that the ruffling blade carrier will be positively guided back and forth in its reciprocating movements.

2. In a sewing machine ruffler, the combination with a separator blade and a ruffling blade, of a ruffling blade carrier provided at the rear end of its body portion with a closed slot 47 having enlarged end portions 48 thereby adapted to guide a hemmed ruffling strip.

3. In a sewing machine ruffler, the combination with a separator plate and a ruffling blade, of a ruffling blade carrier provided in its body portion near its rear end with a short or narrow slot 46 having closed ends, said carrier also having in its body portion and rearward of said short or narrow slot, a larger or wider slot 47 also having closed ends, and means for operating said carrier.

4. In a sewing machine ruffler, the combination with a separator plate and a ruffling blade, of a ruffling blade carrier provided in its body portion near its rear end with a short narrow slot 46 having closed ends, said carrier having also in its body portion and rearward of said short or narrow slot a larger or wider slot 47 also having closed ends, said slot 47 having enlarged end por-

tions 48, and means for operating said carrier.

5. In a sewing machine ruffler, the combination with the frame thereof, of a ruffling blade, means for operating said blade, a frame having a presser-foot portion, a laterally adjustable edge-stitching guide mounted on said presser-foot portion above the said ruffling blade and provided with one or more guiding slots, and a spring-plate or washer by which said guide is frictionally retained in place.

6. In a sewing machine ruffler, the combination with the frame thereof, of a separate presser-foot piece yieldingly attached to said frame and provided with a central convex boss, the foot portion of said frame having a concave recess receiving said boss, a ruffling blade, and means for operating the said blade.

7. In a sewing machine ruffler, the combination with the frame thereof, of a separate presser foot piece yieldingly attached to said frame and provided with a central convex boss, the said foot portion of said frame having a concave recess receiving said boss, a ruffling blade, means for operating the said blade, and a laterally adjustable, spring-metal edge-stitching guide mounted on said frame, and having a shoulder or part bearing upon the front edge of the said presser foot portion.

8. In a sewing machine ruffler, the combination with a ruffling blade, of a carrier for said blade provided near its rear end with one or more guiding slots having closed ends, of the laterally adjustable guide 49 attached to the rear end of said carrier and comprising the connected arms 52, separated by the guide slot 51, and the in-folded arm 54 beneath one of said arms 52.

9. In a sewing machine ruffler, the combination with a ruffling blade, of a carrier for said blade having an upward extension serving as a guiding edge above said carrier and an arm projecting horizontally from said extension above said carrier, of a strip guide mounted at the rear end of said carrier and laterally adjustable thereon.

10. In a sewing machine ruffler, the combination with a ruffling blade, of a carrier for said blade having an upward extension serving as a guiding edge above said carrier and an arm projecting horizontally from said extension above said carrier, of a strip guide mounted at the rear end of said carrier and laterally adjustable thereon, said strip guide comprising the separated arms 52 and the in-folded arm 54 beneath one of said arms 52.

11. In a sewing machine ruffler, the combination with the ruffling blade and its carrier, of an arm overhanging said carrier and providing an intervening passage for a band or strip of cloth above said carrier, said arm



5 having an upward projection, and a frame part overhanging said arm and having a guiding slot in which said projection works; whereby said carrier is positively guided back and forth in its reciprocating movements.

10 12. In a sewing machine ruffler, the combination with the frame thereof of a separate presser-foot piece having a pivotal and yielding spring connection with said frame, means for limiting the turning movements of said presser-foot piece on its pivotal mounting, a ruffling blade, and means for operating said blade.

15 13. In a sewing machine ruffler, the combi-

nation with the frame thereof having a foot portion provided in its under side with a concave recess, of a presser-foot piece having on its upper side a convex boss, a pivot-pin yieldingly securing said presser foot piece to said foot portion of said frame, means for limiting the turning movements of said presser foot piece, a ruffling blade, and means for operating said blade.

In witness whereof, I have hereunto set my hand, this 28th day of February 1906.

WINSLOW R. PARSONS.

In the presence of witnesses:

ANNA L. KAUFMANN,

B. HAYDEN.