(Model.)

J. HEBERLING.

SEWING MACHINE RUFFLER.

No. 292,813. Patented Feb. 5, 1884.

Fig. 1.

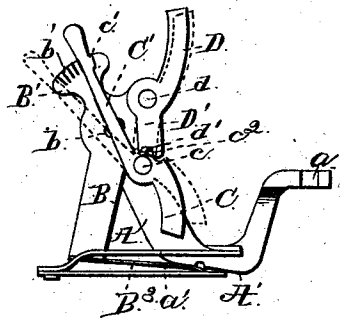


Fig. 2.

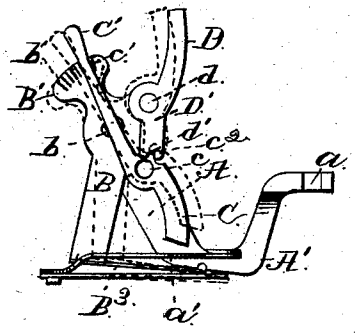


Fig. 3.

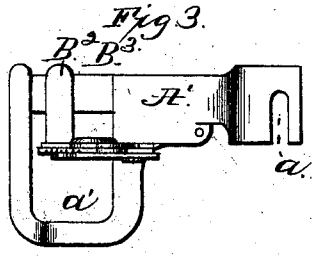


Fig. 4.

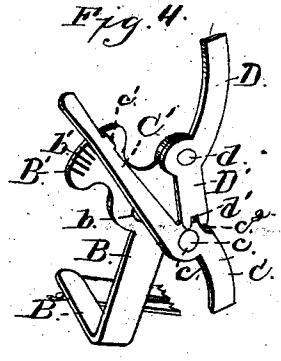


Fig. 5.

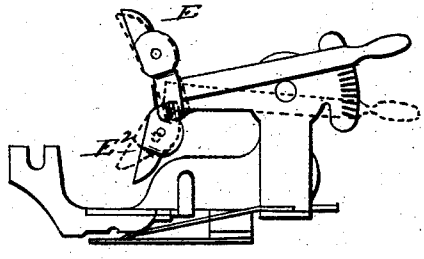
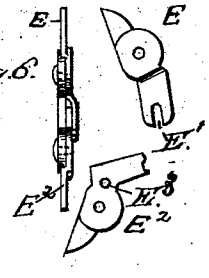


Fig. 6.



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UNITED STATES PATENT OFFICE.

JOHN HEBERLING, OF MOUNT PLEASANT, OHIO.

SEWING-MACHINE RUFFLER.

SPECIFICATION forming part of Letters Patent No. 292,813, dated February 5, 1884.

Application filed October 13, 1883. (Model.)

To all whom it may concern:

Be it known that I, JOHN HEBERLING, a citizen of the United States, residing at Mount Pleasant, in the county of Jefferson and State of Ohio, have invented certain new and useful Improvements in Rufflers; and I do 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 the letters and figures of reference marked thereon, which form a part of this specification.

This invention relates to improvements in rufflers, and has reference more particularly to that class of ruffling attachments in which positive motion is communicated to the ruffling-blade in both directions through the action of the needle-bar upon cams or levers. It comprises a frame usually adapted to be attached to the presser-bar of a sewing-machine, two adjustable cam-levers for receiving motion from the needle-bar, a blade-carrier supporting the two cam-levers, the adjusting device, and the ruffling-blade.

In carrying out my invention I aim to so construct the attachment that the stroke of the ruffling-blade, when adjusted, will be increased or decreased in the distance it moves both forward and back of the needle in operation of the device.

In most ruffling devices now in use the movement of the ruffling-blade is regulated or adjusted in one direction only—that is, the ruffling-blade in the forward movement always advances to the same place with respect to the needle, and its stroke is made longer or shorter by devices which vary the limit of the backward movement only. Experience has demonstrated that a better effect is obtained by increasing the stroke of the ruffling-blade in both directions from the needle in working longer gathers, or decreasing it in both directions with respect to the needle in making shorter gathers; but the increase or decrease in the distance the ruffling-blade passes beyond the needle in making full or scant gathers should be less in proportion than the increase or decrease in the distance it moves back from the needle to secure a new hold upon the goods. In this invention, therefore, means are provided for lengthening and shortening the distance the ruffling-blade moves both forward and backward from the needle simultaneously by one movement of the adjusting-lever, and also for maintaining the desired proportions between the distance moved forward and back of the needle. Thus, if it be desired to increase the stroke of the ruffling-blade one-sixteenth of an inch, one-fourth to one-eighth part of the increase may be made in the distance moved beyond the needle, and the balance should be made in the backward movement from the needle. I attain these objects and advantages by a more simple, compact, durable, and effective device than any heretofore known or used, which will be better understood by reference to the accompanying drawings, making a part of this specification, in which—

Figures 1 and 2 are side views, and Fig. 3 is a plan view of the ruffler. Fig. 4 is a detail view, in perspective, of the ruffling-lever. Fig. 5 shows a modification, and Fig. 6 shows in detail the construction and manner of connecting the cams shown in Fig. 5.

The standard A and base-plate A′ constitute the supporting-frame of my ruffler. The base is adapted at *a′* to be secured to the presser-foot bar of a sewing-machine, as is common in rufflers. It is also provided, preferably, with the shield *a′*, such as is used in ordinary rufflers. This latter, however, it will be understood, may be attached to the bed-plate of the machine when so desired.

The lever B is pivoted on pin *b* to the standard A, near the upper end of same, and is provided with an extension, B′, above and in rear of said pivot, which is formed with notches *b′*, which serve as a rack to hold the cam-operating arm at any desired point. On the lower end of the lever B, I bend or otherwise provide the lateral arm B^2, which extends horizontally, as shown, and has the ruffling-blade B^3 secured at one end to its end, as shown. This blade is preferably made of flat spring metal, and its forward or free end is bent down slightly, and serrated or otherwise suitably formed to grip the fabric when it is moved for-

ward thereon. This blade also has a slot, b^2, formed in its forward end, to enable it to pass the needle, as is desirable.

The cams D C are pivoted on pins *d c* to the lever B both in advance of and respectively above and below the pivot *b* of said lever. The cam C extends down from the pivot *c*, and is provided with an upward extension, C′, which serves as a lever to adjust the cams, as will be presently described. This lever C′ is provided with a portion, *c′*, which engages the notches *b′*, and the lever is made with sufficient spring to enable its adjustment into engagement with any of said notches at will. On the upper edge of the cam C, in the region of its pivot *c*, I form the lip c^2, which enters the notch *d′*, formed in the depending extension D′ of cam D, thus connecting the two cams, as will be readily seen. These cams, it will be understood, are arranged in the path of the needle-clamp of the machine needle-bar, and are engaged by the same in its upward and downward motions, which force the cams, first one and then the other, back, giving the lever the desired rocking or swinging motion on its pivot. It will be seen, then, that moving the adjusting-lever C′ down throws the cam C forward, so its contact with the needle-bar will be greater, and the pendent lever B, with the ruffling-blade B^3 attached thereto, will be carried back farther with the downward stroke of the needle-bar, and as the cam-levers C and D are geared together at c^2 *d′*, it is evident that the downward movement of the adjusting-lever C′ will also throw the upper cam D forward, thus bringing it in greater contact with the needle-bar in its upward movement, carrying the lever B and the ruffling-blade B^3 farther forward, all of which adjustments of the cams are indicated in dotted lines, Fig. 1. It follows, then, that by moving the adjusting-lever C′ up both the cam-levers C and D will be moved back simultaneously, and are thus brought in slighter contact with the needle-bar, and the stroke of the ruffling-blade B^3 shortened in the distance it moves both forward of and back from the needle. Thus the stroke of the ruffling-blade B^3 is simultaneously lengthened and shortened by a single movement of the adjusting-lever C′, and full or scant gathers accordingly made, as desired.

Either or both of the cam-levers C or D may have an extension adjusting-lever, and various modifications of the form of the pendent arm or lever B may be used; also, the cam-levers or prongs C and D attached thereto, as shown in Fig. 5, all of which come within the scope of my invention.

In Fig. 5 the ruffling-blade lever is provided with an extension in front as well as in rear of its pivot. The cams are pivoted on the outer end of the forward extension. The upper one, E, is provided with a small slot, E′, in its lower end, and laps on the upper end of the lower cam, E^2. From the latter I project a small pin or stud, E^3, which enters the slot E′. The lower cam has an adjusting-lever which engages the rack and enables the adjustment of the two cams, as will be readily understood.

It will be appreciated that the arrangement shown in Fig. 5 is different from that shown in the other figures in form and immaterial arrangement only.

It is obvious that the gearing of the cams might be modified in various ways. I prefer, however, the gearing mechanism shown in Figs. 1, 2, 3, and 4, as thereby an easily-operated device is provided.

It will be appreciated that instead of connecting the cams and adjusting them by the same devices the said cams might be secured directly to the lever, as shown, and detached or separated at their inner ends. In this case the cams would need to be adjusted separately, to vary the throw of the ruffling-blade, as will be understood.

Having thus described my invention, what I claim, and desire to secure by Letters Patent, is—

1. The combination, with the pivoted ruffling-blade lever, of two cams pivoted independently to the said lever, and means, substantially as described, whereby they may be simultaneously and correspondingly adjusted on their pivots to any suitable angle relative to the blade-lever, substantially as and for the purposes specified.

2. In a ruffler or gatherer, the combination of the pivoted ruffling-blade lever, the cams C D, pivoted to said lever, both said cams being adjustable independently of the lever, and means for adjusting the cams, substantially as specified.

3. The combination, in a ruffler or gatherer, of a pivoted lever and cams pivoted to the said lever, and connected substantially as described, whereby the adjustment of one accomplishes a corresponding adjustment of the other cam, as set forth.

4. In a ruffler or gatherer, the combination, as set forth, of the pivoted ruffling-blade lever provided with a suitable rack, the cams pivotally held thereto and connected as described, and the adjusting arm or lever extended from one of the cams, and adapted to engage the rack, all as and for the purposes set forth.

5. In a ruffler or gatherer, the pivoted ruffling-blade supporter provided with a suitable rack, *b′*, in combination with the cams C D, pivoted to the supporter, and having lip c^2 and notch *d′*, and the extension C′, forming an adjusting-lever, and suitably arranged to engage rack *b′*, for the purpose specified.

6. The ruffler or gatherer, substantially as described and shown, composed of the standard A, base A′, the shield *a′*, the pivoted ruffler-blade supporter, having extension B′, the pivoted cam C, having extension or arm C′ and lip c^2, and the cam D, having extension D′, provided with notch *d′*, engaging with lip c^2, all as and for the purposes specified.

7. In a ruffler or gatherer, the combination, with the pivoted ruffling-blade lever, of two cams, each secured directly to and adjustable independently of said lever, and arranged the bearing-surface of the one above and the bearing-surface of the other below the pivotal center thereof, substantially as and for the purposes set forth.

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

JOHN HEBERLING.

Witnesses:
JOS. W. CLEMENTS,
HUGH S. THOMPSON.