



# UNITED STATES PATENT OFFICE.

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## RUFFLING ATTACHMENT FOR SEWING-MACHINES.

SPECIFICATION forming part of Letters Patent No. 292,867, dated February 5, 1884.

Application filed November 13, 1883. (No model.)

*To all whom it may concern:*

Be it known that I, CHARLES C. SEEBOLD, a citizen of the United States, residing at Middleburg, in the county of Snyder and State of Pennsylvania, have invented certain new and useful Improvements in Sewing-Machine Rufflers, of which the following is a specification, reference being had therein to the accompanying drawings.

10 Most, if not all, of the sewing-machine rufflers now in use which are operated from above the work-plate of the machine receive their movements from the needle-bar, and as the power consumed by the latter in performing its ordinary functions is generally greater than  
15 that required to drive any other part of the sewing-machine, the additional labor required of needle-bars in operating ruffling and similar attachments results in rapid wear of needle-bars or their bearings and of the heart-cams by which they are usually operated.

The principal object of my invention is to obviate the objection just above indicated by a construction enabling me to operate the ruffler bar or lever directly from a cam on the  
25 needle-operating shaft journaled in the upper portion of the machine. My construction also permits of the utilization of the ruffler bar or lever for supporting other attachments on the machine, and I also provide a separate plate  
30 of such form as will avoid friction and wear on the teeth of the feed-dog.

In the accompanying drawings, Figure 1 is a front view of the head of a sewing-machine  
35 with the face-plate removed, showing my ruffler in operative position. Fig. 2 is a sectional side view of the same. Fig. 3 is a view from the side opposite that seen in Fig. 1, showing the means for attaching the ruffler to the head, the ruffler bar or lever being represented as out of action. Fig. 4 is a detail perspective view of the presser-foot and its attached guides. Fig. 5 is a detail bottom plan view of the separator-plate, and Fig. 6 is a section  
40 of the same on line 6-6, Fig. 5.

A indicates a portion of the bracket-arm of a sewing-machine, and B the head carried thereby.

50 C is the needle-operating shaft, journaled in the horizontal portion of the bracket-arm, and provided at its forward end with a crank-disk, D, having a crank-pin, *d*, for imparting mo-

tion to the needle-bar in the usual manner. In the drawings I have shown the needle-bar as provided with a heart-cam, which is engaged by the crank-pin, this being the more common construction now in use. The disk D, instead of being circular, as is usual, is formed as a cam.

E is the ruffler bar or lever, pivoted to a bracket, F, which is attached to the head B by a thumb-screw, *f*. The lever E has a bent upper end passing through an opening in the side of the head, so that it may engage the disk-cam D, the upper end of said lever being preferably provided with an anti-friction roller, *e*. A spring, *e'*, attached to the lower portion of the lever E, and bearing against the side of the head B, serves to force the upper end of said lever toward its operating-cam, the throw of the lever being regulated by an adjusting-screw, *e''*, tapped in the lever above its pivotal point. A second screw, *e'''*, the purpose of which will presently appear, is tapped in the lever below its pivotal point. The lower arm of the lever E is preferably made in two portions halved together, as shown, the portion *e''* being detachably connected with the upper portion by a set-screw, *e'''*, and dowel-pin *e''''*, or in any other suitable manner. The ruffling-blade *e''''* is attached to a horizontal extension on the lower end of the lever E, and one or more guides, *e'''''*, for the fabric, ruffle-strip, or piping, may also be attached to said extension above and below the ruffling-blade.

From the foregoing it will be apparent that the portion *e''* of the lever E and its attached ruffling-blade and guides may be removed simply by loosening the set-screw *e'''*. The upper arm of said lever may then be thrown out of action, away from its cam, by turning in the set-screw *e''* a suitable distance. Then by turning the set-screw *e'''* against the side of the head B, as shown in Fig. 3, the arm or lever E will be rigidly fixed in a proper position to be utilized as a means for supporting binders, hemmers, corders, or other attachments having properly-shaped arms or stocks in operative position on the machine.

100 G is the separator-plate, serving to cover a portion of the feed, said plate, as is well known, separating the ruffle-strip from the fabric which passes beneath it, so that the ruffling-

blade may act on said strip without affecting said fabric. The separator-plate may be provided with an arm, *g*, by means of which it can be attached to the bed-plate of the machine by a set-screw; or said plate may be carried by an arm fixed to the slide which covers the shuttle-race, both of these constructions being well known. As the feed-dog when in operation rises slightly above the upper surface of the bed-plate of the machine, the separator-plates of the usual construction occasion considerable friction on the feed-dog, and it sometimes occurs in sewing ruffles to bands which are guided above the ruffle-strip that the teeth of the feed-dog will come directly in contact with the separator-plate, which, being usually constructed of hardened steel, dulls the points of said teeth. To avoid this difficulty I have provided my separator-plate with a shallow recess, *g'*, into which the feed-dog can rise without coming in contact with the under surface of said plate. This recess may be formed by milling when a plate of sufficient thickness is used; but it will be preferable to make it simply by stamping a thin steel plate into proper form before hardening.

H indicates a presser-foot of the form which I prefer to use with my ruffler. This presser-foot has a square projecting toe, *h*, to which are attached guides *h'* *h''*. The latter is inclosed, so as to be adapted for guiding piping. These guides may be removably secured to the toe *h* by a small set-screw, so that the presser-foot may be used for ordinary work without having the guides in the way, or they may be permanently fixed to said toe, and the foot be replaced by a foot of the ordinary construction when the guides are not to be used. It will be understood that the guides *h'* *h''* may be used as supplemental to or alternatively with the guide *e''* on the ruffler-lever.

The operation of my ruffler will be readily understood by those skilled in the art to which it relates from the foregoing description.

When the shaft C is rotated, the disk-cam D will impart a vibratory motion to the lever E, and the ruffling-blade *e'* will ruffle the properly-guided strip or piece of fabric in the usual manner.

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

1. The combination, with the needle-operating shaft arranged above the bed-plate of the machine, of a cam on the forward end of said shaft, within the head of the machine, a ruffler bar or lever having a pivotal support on the said head, a ruffling-blade carried by said bar or lever, and a spring for forcing the latter toward said cam, substantially as described.

2. The combination, with the head B, shaft C, and disk-cam D, of the bracket F, screw *f*, ruffler bar or lever E, having a ruffling-blade at its lower end and an anti-friction roller at its upper end, regulating-screw *e''*, and spring *e'*, substantially as described.

3. A ruffler bar or lever having a detachable portion carrying the ruffling-blade, combined with means for rigidly holding said bar or lever in a fixed position away from its operating-cam, whereby said bar or lever is adapted to serve as a support for other attachments, substantially as described.

4. The combination, with the head B, of the bracket F, means for securing said bracket to said head, the lever E, pivoted to said bracket, and the screws *e''* and *e'''*, arranged on opposite sides of the pivotal point of said lever, substantially as described.

5. A separator-plate provided with a recess for the feed-dog, whereby the latter will be prevented from coming in contact with the under surface of the said plate, combined with a ruffling-blade and means for operating the same, substantially as described.

6. The combination, with the ruffler bar or lever and the ruffling-blade, of a separator-plate provided with a recess for the feed-dog, whereby the latter will be prevented from coming in contact with the under surface of the said plate, substantially as described.

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

CHARLES C. SEEBOLD.

Witnesses:

J. B. WUNDERLY,  
F. J. SMITH.