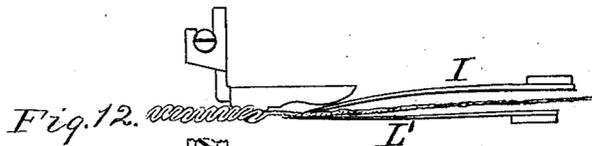
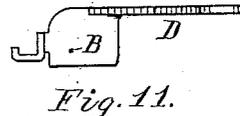
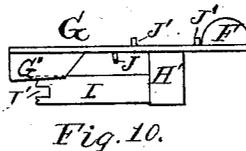
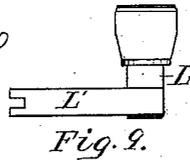
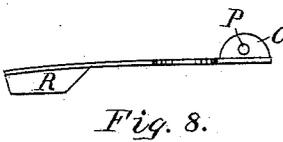
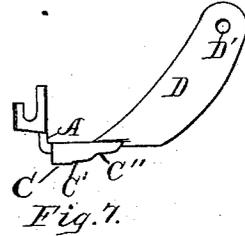
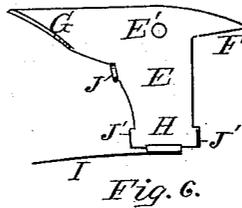
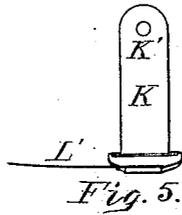
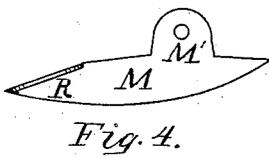
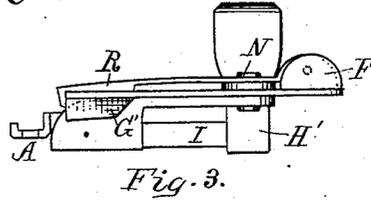
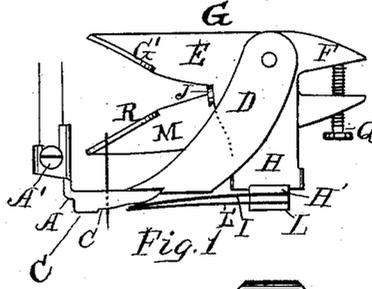
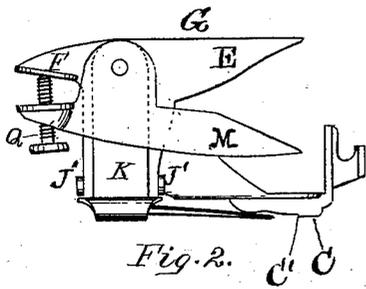


O. A. REYNOLDS.

RUFFLING ATTACHMENT FOR SEWING MACHINES.

No. 310,465.

Patented Jan. 6, 1885.



Witnesses:  
*O. J. Pailey*  
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*O. A. Reynolds.*  
*by J. S. Zerk*  
*att'y*

(Model.)

2 Sheets—Sheet 2.

O. A. REYNOLDS.

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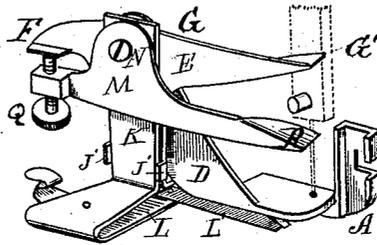


Fig. 14.

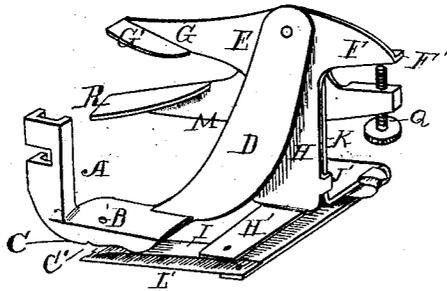


Fig. 15.

WITNESSES:

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*J. W. McDonald*

INVENTOR :

*O. A. Reynolds*  
 By *J. S. Park*  
 Attorney.

# UNITED STATES PATENT OFFICE.

ORRIN A. REYNOLDS, OF COVINGTON, KENTUCKY.

## RUFFLING ATTACHMENT FOR SEWING-MACHINES.

SPECIFICATION forming part of Letters Patent No. 310,465, dated January 6, 1885.

Application filed February 13, 1883. (Model.)

To all whom it may concern:

Be it known that I, ORRIN A. REYNOLDS, of Covington, in the county of Kenton and State of Kentucky, have invented a new and useful Improvement in Ruffling Attachments for Sewing-Machines, which improvement is fully set forth in the following specification and accompanying drawings, in which—

Figure 1 is a front side of the improved ruffler. Fig. 2 is a view of the rear side. Fig. 3 is a top view of same. Figs. 4, 5, 6, 7, 8, 9, 10, and 11 are detail side and top views of the various detached parts. Figs. 12 and 13 are front views showing different actions of the ruffler while in motion. Fig. 14 is a rear perspective view of the ruffler, and Fig. 15 is a front perspective view of the same.

The object of my invention is to provide an improved ruffler attachment for sewing-machines; and it consists in the combination and arrangement of certain parts, as will be described hereinafter.

In the drawings, A represents the stationary portion or foot of the device, capable of being attached to the presser-bar of a sewing-machine by means of the screw A', as shown in Fig. 1. This foot extends forward from the presser-bar, and is provided at the proper location with an aperture, B, for the needle to pass through. On the heel side of the aperture B is a flat surface, C, and a shoulder, C'. The flat surface C is about equal in length to the width of the fold to be made in a ruffle. In rear of the shoulder C' the sole of the foot is concave, as indicated at C'', and the toe of the foot is curved upward, as clearly shown in the drawings. This peculiar shape of the sole of the foot will be hereinafter again referred to. The forward end of the foot has an arm, D, extending forward and upward, as shown in Fig. 7, the upper end of which is provided with an aperture, D', to which the movable parts are attached, either with a stud or rivet.

In Fig. 6 is shown a side view of one of the detached parts, and Fig. 10 also represents the top or plan view of the same. This part E, as well as the other parts, is composed of metal of suitable thickness, and is provided with an aperture, E', near the upper end, through which the pivot-pin of the aperture D' passes. On the rear end of the piece E is

an arm, F, having on its lower edge a side flange, F', which extends inwardly. On the forward side of the pivoted point is an arm, G, having on its lower edge a side flange, G', projecting forward. The lower limb, H, of the piece E has an elbow or arm, H', bent at right angles to the limb H, and to the under side of said arm is permanently attached the rear end of an elastic finger, I. The forward end of the finger has a flat tapering point, serrated and provided with a recess, I', through which the machine-needle passes. On the lower end of the limb H, on both edges, are rearwardly-projecting flanges J' J', between which the limb shown in Figs. 5 and 9 plays.

Fig. 5 shows a side elevation, and Fig. 9 a top or plan view, of the limb K, which is attached to the standard or arm D at the perforation K'. This limb extends down to a point even with the lower end of the limb H, and is then bent backward a short distance at right angles and doubled back on itself, so that the limb L projects horizontally forward beneath the limb H' of the arm H and a short distance therefrom. To the forward end of this limb L is also attached the rear end of a flexible finger, L', of about or equal length with the finger I on the limb above.

Fig. 4 represents a side view, and Fig. 8 a top or plan view, of the lever M, having near the rear end and on the upper edge an aperture, M', by means of which it is also pivoted to the arm D. It will thus be observed that the stud or bolt N secures the three pieces E K M to the arm at the apertures E' K' M', so that each piece is capable of rocking or moving a limited distance independently of each other. The lever M has on the forward end a side flange, O, corresponding with the side flange, F', of the piece E, and through the flange O is a threaded thumb-screw, Q, the end of which plays against the flange F' above, whereby the throw of the fingers I L' is regulated. The rear end of the lever M is also provided with a forwardly-projecting side flange, R, corresponding with the flange G' on the arm E. Between these two flanges the needle screw, clamp, or stop on the needle-bar plays, as will be hereinafter more fully set forth.

The operation is as follows: The standard

or arm D is secured to the presser-bar; or it may be attached to the bed-plate of the machine. The needle screw, clamp, or a lug or stop on the needle-bar operates between the flanges G R, so that as the needle-bar moves upwardly the screw or lug will strike and draw up the rearwardly-projecting arm of the piece G, and when the needle-bar moves downward the forward end of the lever M is drawn downward a short distance independently of the piece E until the end of the thumb-screw Q strikes the flange F, when the arm H moves backwardly. It will be noticed that the limb K is narrower than the space on the limb H between the lugs or stops J' J', thus permitting the limb K to play a limited distance backward and forward independently of the arm H, and making the movement of finger L' less than that of finger I.

As shown in Fig. 13, the fingers I L', between which the goods to be ruffled have been inserted, have drawn the goods forward to that point where the needle is ready to pierce the folded ruffle. As or after the needle strikes the goods, the fingers, at first one and then both, draw back, and assume the position indicated in Fig. 12, with the upper finger, I, retreating. This independent movement of the finger I is due to the fact that when the needle-bar screw or lug first strikes the flange R of the lever M the first impulse is given to the arm H through the thumb-screw Q striking the flange F; and since the space between the studs J', Figs. 6 and 10, is greater than the width of the limb K, Fig. 5, the retreating movement of arm H only is permitted to that extent, after which fingers I

and L' retreat together. When, now, the needle-bar rises and strikes the flange G of the piece E, the finger I is suddenly impelled forward, causing the goods to fold up in the cavity C', after which the limb L also moves forward with finger L', carrying the goods under shoulder C to the position indicated in Fig. 13.

The ruffler as herein shown is fitted to the Singer sewing-machine; but it can be adapted to any sewing-machine.

Having described my invention, what I claim is—

1. In a ruffling attachment for sewing-machines, the combination, with the arm D, supported by a foot shouldered and curved upon its sole, as shown, of the levers E M, the former being provided with the limb H, said limb also being provided with lips J' J', the lever K, and the spring-fingers I and L', substantially as described.

2. In a ruffler, the combination, with the arm D, its foot, and means for securing it to a pressure-bar, of the part E, having arms G F, and a limb, H, bearing the finger I and stop-lips J' J', the limb K, having arm L and finger L', and the lever M, flanged and provided with a set-screw, Q, substantially in the manner and for the purposes specified.

In testimony that I claim the foregoing I have hereunto set my hand, this 2d day of June, 1882, in the presence of witnesses.

ORRIN A. REYNOLDS.

Witnesses:

SAMUEL T. JACK,

C. G. ALEXANDER.