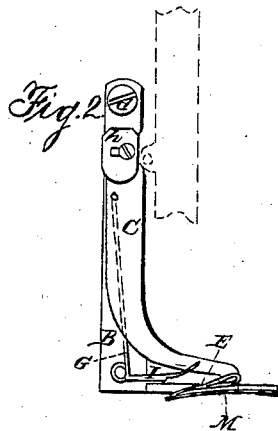
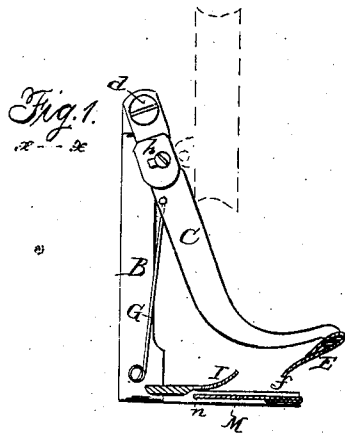


F. B. ZAY.

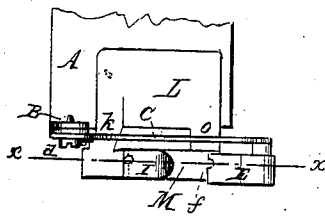
Sewing-Machine Ruffler.

No 112,882.

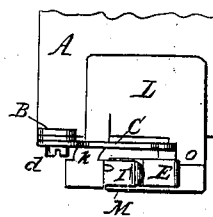
Patented Mar. 21, 1871.



*Fig. 3.*



*Fig. 4.*



Witnesses:  
*H. J. Smith*  
*James S. Sibley*

*Fred. B. Zay, Inventor,*  
*by Theodore Mungen*  
*his Attorney*

# UNITED STATES PATENT OFFICE.

FREDERIC B. ZAY, OF FINDLAY, OHIO.

## IMPROVEMENT IN RUFFLING ATTACHMENTS FOR SEWING-MACHINES.

Specification forming part of Letters Patent No. 112,882, dated March 21, 1871.

*To all whom it may concern:*

Be it known that I, FREDERIC B. ZAY, of Findlay, in the county of Hancock and State of Ohio, have invented certain new and useful Improvements in Ruffling Attachments for Sewing-Machines; and I hereby declare the following to be a full, clear, and exact description of the same, reference being had to the accompanying drawing, in which—

Figure 1 is a side view of the upper portion of the attachment, and a sectional view of the lower portion through the line *x x* in Fig. 3. Fig. 2 is a side view of the attachment in position for forming the fold in the ruffle. Fig. 3 is a plan view of Fig. 1, and Fig. 4 is a plan view of Fig. 2.

My invention relates to an improvement in ruffling attachments for sewing-machines; and consists of a separator or slotted plate of steel, secured to an elastic projection upon a metallic plate attached to the bed-plate of the ruffler, in combination with a gatherer or slotted plate of steel, secured to a wedge-shaped wrist upon the end of a curved arm, and a presser-foot, secured to a second elastic projection upon the metallic plate which is attached to the bed-plate of the ruffler, the curved arm being secured to a straight arm upon the bed-plate by a screw-bolt passing through the shoulders of said arms, and also by a spring that holds the curved arm in a certain position when there is no pressure upon it, the whole being arranged in such a manner that when the bed-plate of the attachment is secured to the bed-plate of the sewing-machine the presser-foot of the attachment comes under the presser-foot of the sewing-machine; and the curved arm is operated by the needle-bar descending, and needle-screw or other projection on the needle-bar striking upon it, and, forcing the gatherer forward between the separator and the presser-foot, so as to form the fold in the ruffle, produces the effect of "stroking the gathers," and holds the fold until the needle passes through it and secures it by the stitch, all of which is done while the feed of the machine is at rest, or out of action, rather, so that it will not move forward and disarrange the fold in the ruffle.

The main object of the invention is that of forming a uniform ruffle and sewing it between two straight pieces of cloth in one operation. It will also form the ruffle and sew it to one

straight piece of cloth, or it will form simply an even and uniform ruffle.

In the drawing, A is the bed-plate of the attachment, which is secured to the bed-plate of the sewing-machine by a thumb-screw. B is the straight arm on the bed-plate A, to which the curved arm C is secured by the screw-bolt *d*, passing through the shoulders of the arms B and C.

The gatherer E, provided with a slot, *f*, is secured to a wedge-shaped wrist at the end of the curved arm C.

The spring G is secured to the arm B near the bed-plate A, and to the arm C just below the slide *h*, which may be adjusted to regulate the stroke of the arm C.

The presser-foot I, provided with a hole, through which the needle passes, is secured to an elastic projection, *k*, on the metallic plate L, so as to be slightly raised from the bed-plate of the sewing-machine.

The separator M has a slot, *n*, corresponding to the slot *f* in the gatherer E, and is secured to an elastic projection, *o*, on the plate L, so as to be also slightly raised above the bed-plate of the sewing-machine.

The gatherer E and separator M are made of elastic steel, so that they may adapt themselves to different thicknesses of cloth, and also to prevent wear, especially upon the separator M, by the feed scratching it from below and making it rough.

The point of the gatherer E curves slightly downward, that it may more surely catch the cloth so as to form the fold in the ruffle.

The presser-foot I is secured to the elastic projection *k*, that it may rise up when the presser-foot of the machine is removed, for conveniently putting the cloth under it in the start.

The slots *f* and *n* in the gatherer E and separator M are slightly to the right of the center, to accommodate the presser-feet and the feed of the machine, and also to give the effect of stroking the gathers as with a needle when done by hand.

The attachment should be firmly secured to the machine by the thumb-screw in the bed-plate A, and the presser-foot I placed under the presser-foot of the machine, so that the needle will descend in the center of the hole in the presser-foot I.

When the needle-bar descends the needle-

screw, or other projection on the needle-bar, strikes the curved arm C and presses the gatherer E forward far enough for the needle to catch the fold, but not quite to the end of the separator M.

When the needle-bar ascends and the needle-screw, or other projection on the needle-bar, rests against the slide *h* in the notch at the upper end of the curved arm C, the spring G presses the arm C back to its original position.

To form simply a ruffle, pass the cloth between the separator M and the gatherer E.

To form the ruffle and sew it in one piece, pass the piece that is to be left straight beneath the separator M, and the piece to be ruffled between the separator M and the gatherer E.

To form the ruffle and sew it between two pieces, pass one piece to be left straight beneath the separator M, the piece to be ruffled between the separator M and the gatherer E, and the other to be left straight over the gatherer E.

The attachment may be applied to any machine by varying the length of the arms B and C and the size of hole for the thumb-screw.

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

1. In combination, the spring-plate separator M, secured to the elastic projection *o*, and provided with the slot *n*, the spring presser-foot I, secured to the projection *k*, and the gatherer E, provided with the slot *f*, and secured to the curved arm C, all constructed and operated substantially as and for the purpose hereinbefore specified.

2. The bed-plate A, straight arm B, curved arm C, slide *h*, gatherer E, spring G, plate L, provided with elastic projections *k* and *o*, spring presser-foot I, and spring-plate separator M, all arranged relatively one to the other, as and for the purposes hereinbefore specified.

In testimony that I claim the foregoing improvements in ruffling attachments for sewing-machines, as above described, I have hereunto set my hand and seal this 27th day of December, 1870.

FREDERIC B. ZAY. [L. S.]

Witnesses:

JACOB F. BURKET,  
REUBEN SHEETS.