(No Model.)

C. M. HAMILTON.

RUFFLING AND GATHERING ATTACHMENT FOR SEWING MACHINES.

No. 264,456. Patented Sept. 19, 1882.

Fig. 1.

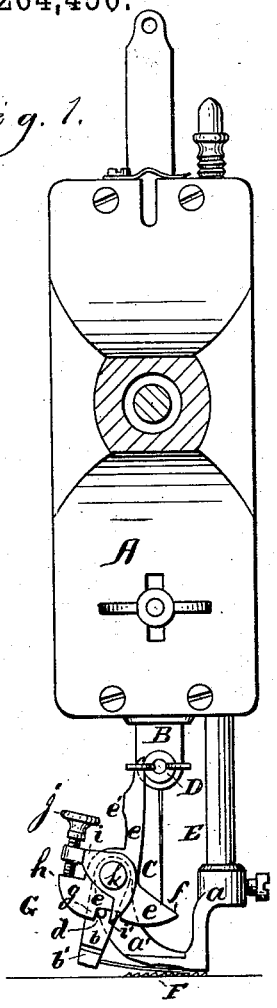


Fig. 2.

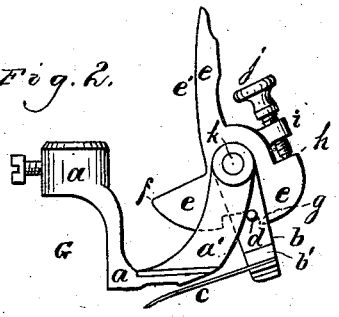
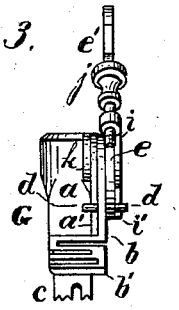


Fig. 3.



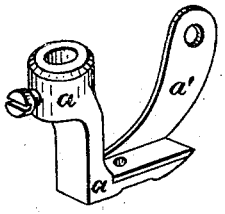


Fig. 4.

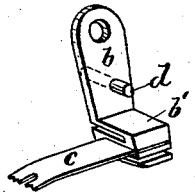


Fig. 5.

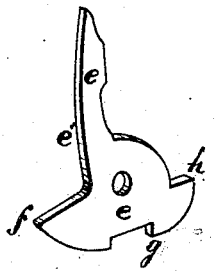


Fig. 6.

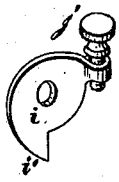


Fig. 7.

Witnesses.
Henry Faulkner,
J. B. Morse

Inventor.
Cassius M. Hamilton,
per. Gridley & Co.
his Attorney.

UNITED STATES PATENT OFFICE.

CASSIUS M. HAMILTON, OF CHICAGO, ILLINOIS, ASSIGNOR OF ONE-HALF TO JOHN W. THOMPSON, OF SAME PLACE.

RUFFLING AND GATHERING ATTACHMENT FOR SEWING-MACHINES.

SPECIFICATION forming part of Letters Patent No. 264,456, dated September 19, 1882.

Application filed January 18, 1882. (No model.)

To all whom it may concern:

Be it known that I, CASSIUS M. HAMILTON, of Chicago, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in Ruffling or Gathering Attachments for Sewing-Machines, of which the following, in connection with the accompanying drawings, is a specification.

In the drawings, Figure 1 is a side view or elevation of a ruffling or gathering attachment embodying my invention and applied to the presser-foot of a sewing-machine. Fig. 2 is a like representation of the same detached, and showing the side opposite that shown in Fig. 1. Fig. 3 is an edge view of the attachment, and Figs. 4, 5, 6 and 7 are perspectives of the parts of the ruffler detached from each other.

Like letters of reference indicate like parts.

A represents a sewing-machine head.

B is the needle-bar; C, the needle, and D is the needle set-screw.

E is the presser-foot bar, and F is the serrated feed-plate.

G is my improved ruffling or gathering attachment. The part *a* is constructed substantially the same as an ordinary presser-foot, excepting that it is provided with an arm, *a'*, which supports the other parts of the attachment.

b is a pendent arm or lever, having a lateral projection, *b'*, at its lower end, and *c* is the ruffling-blade, which is secured at one end to the part *b'*. This blade is made of spring metal, and its forward end is bent downward slightly and toothed to engage the goods and notched to pass the needle, as is clearly shown in Figs. 3 and 5. The arm *b* carries a pin, *d*, extending laterally from both sides thereof. *e* is a cam-lever, the characteristic features of which are the nearly-vertical arm *e'* and the shoulders *f*, *g*, and *h*. *i* is a plate or lever having a shoulder, *i'*, and carrying a set-screw, *j*. *k* is a rivet passing freely through the parts *a'*, *b*, *e*, and *i*, and on which all these parts are capable of turning to a greater or less extent.

In riveting or connecting the parts together pivotally the part *b* should be arranged so that the blade may project underneath the foot *a* and the pin *d* strike the outer edge of the arm *a'*. The lever *e* should be next to the arm or lever *b*, and the part *i* should be arranged next to the outer side of the lever *e*. This arrangement will bring one end or part of the pin *d* between the shoulders *g* and *i* and the other end at or near outer edge of the arm *a'*, while the lower end of the screw *j* will be upon or above the shoulder *h*. The relative position of the parts is clearly shown in Figs. 1 and 2. When the screw *j* is in contact with the shoulder *h* and the pin *d* in contact with both the shoulders *g* and *i'*, all at the same time, the parts *b*, *e*, and *i* may all be turned together as one piece on the rivet *k* as an axis, so as to throw the blade *c* back and forth underneath the presser-foot *a*. Such a rigid connection of the parts *b*, *e*, and *i* will be produced by screwing the screw *j* down as far as it will go. If the attachment be then applied to the machine, as indicated in Fig. 1, the blade *c* will be moved back and forth underneath the presser-foot, for when the machine is in operation the head of the screw D during the up movement of the needle will move vertically along the inclined or curved arm *e'*, thus moving the upper part of the lever *e* from the presser-bar and the lower part toward it, thus throwing the blade *c* forward under the presser-foot, and so making a gather or ruffle in the goods, which gather will be stitched when the needle next descends. This movement of the blade *c* occurs for the reason that the shoulder *g*, being in contact with the pin *d*, will move forward the arm *b* as the lower part of the lever *e* moves forward. On the down-stroke of the needle the head of the screw D will strike the shoulder *f*, and, as the shoulder *i'* is held in contact with the pin *d* by the screw *j*, the arm *b* and its blade will be swung back as the shoulder *f* is moved by the descending needle-screw. The operation of gathering or ruffling will thus be performed by a positive movement without the intervention of a spring and without lost motion between the parts of the attachment, as will be perceived by those familiar with attachments of this class.

So far as yet stated, this attachment will only produce gathers of uniform width; or, in other words, I have not yet described the method of altering the stroke or throw of the

ruffling-blade, although it will probably be obvious that I have made provision for so doing. It will be perceived that if the screw *j* be raised or turned up in the part *i* the shoulder *i'* will stand away from the pin *d*, and hence that the arm *b* and its blade will not be moved during the entire vibration of the lever *e*—in other words, there will be lost motion between the ruffling-blade and that part of the attachment first or directly moved by the machine. It will be understood that the breadth of the ruffles will be less when this lost motion occurs, and, as the lost motion may be varied by adjusting the screw *j*, the width of the ruffles may be thereby regulated at will.

All of the details of construction and arrangement herein particularly shown and described need not be carefully or exactly duplicated in order to reduce my invention to practice; but the leading features of construction are the means employed for the producing a positive movement without the intervention of a spring for varying the stroke or thrust of the ruffling-blade, and the suspension of all the parts freely on one pin or axis.

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

1. A ruffling or gathering attachment for sewing-machines, consisting of the presser-foot *a*, provided with the arm *a'*, the vibrating arm *b*, carrying the blade *c*, the vibrating cam-lever *e*, adapted for vibration by the needle-bar, and the vibrating plate *i*, in combination with each other and means admitting of more or less of lost motion between the said lever, arm, and plate, substantially as shown and described.

2. The combination, in a gathering or ruffling attachment for sewing-machines, of the presser-foot *a*, provided with an arm, *a'*, the vibrating arm *b*, carrying the blade *c*, the vibrating cam-lever *e*, adapted for vibration by the needle-bar, and means for producing more or less lost motion between the arm *b* and lever *e*, the said arm and lever adapted to vibrate on one and the same axis supported by the arm *a'*, substantially as and for the purposes specified.

3. The combination of the presser-foot *a*, provided with the arm *a'*, the arm *b*, carrying the blade *c* and the pin *d*, the lever *e*, in which are the arm *e'* and the shoulders *f*, *g*, and *h*, the plate or lever *i*, having thereon the shoulder *i'* and carrying the set-screw *j*, and the rivet or axis *k*, passing through the arms *a'* and *b* and the levers *e* and *i*, substantially as and for the purposes specified.

CASSIUS M. HAMILTON.

Witnesses:
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N. COWLES.