

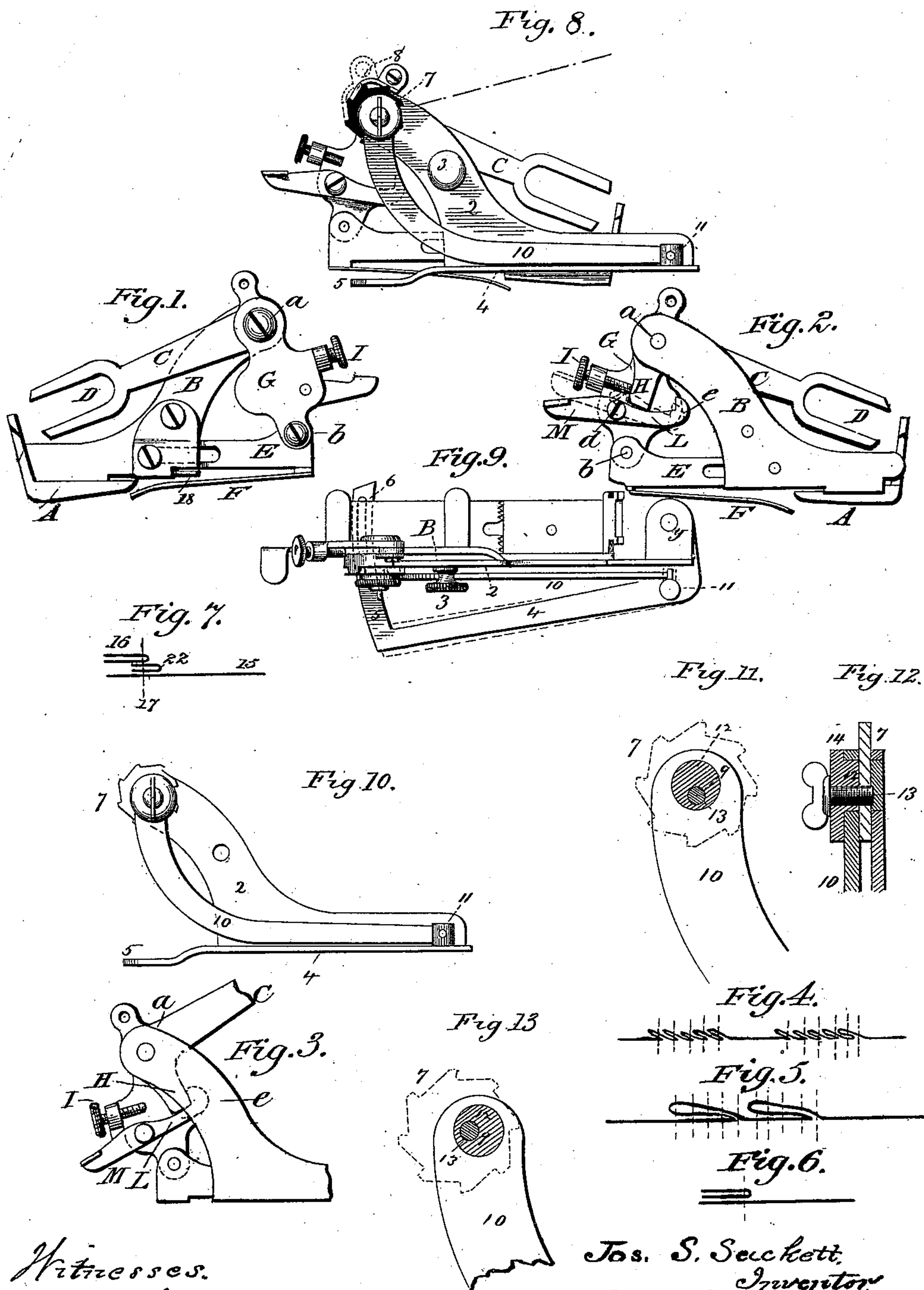
(Model.)

J. S. SACKETT.

RUFFLING ATTACHMENT FOR SEWING MACHINES.

No. 364,138.

Patented May 31, 1887.



Witnesses.  
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# UNITED STATES PATENT OFFICE.

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## RUFFLING ATTACHMENT FOR SEWING-MACHINES.

SPECIFICATION forming part of Letters Patent No. 364,138, dated May 31, 1887.

Application filed February 18, 1884. Serial No. 121,044. (Model.)

*To all whom it may concern:*

Be it known that I, JOSEPH S. SACKETT, of New Haven, in the county of New Haven and State of Connecticut, have invented a new Improvement in Ruffling Attachments for Sewing-Machines; and I do hereby declare the following, when taken in connection with accompanying drawings and the letters of reference marked thereon, to be a full, clear, and exact description of the same, and which said drawings constitute part of this specification, and represent, in—

Figures 1 and 2, opposite side views of the attachment, showing the parts in the position of the extreme retreat of the crimping-blade; Fig. 3, a partial side view showing the parts in the extreme advanced position; Figs. 4 and 5, diagrams to illustrate the operation of the invention; Fig. 6, a transverse section of a doubled ruffle-band; Fig. 7, a transverse section of a doubled band or "piping" ruffle; Fig. 8, a side view showing the scalloping mechanism attached; Fig. 9, a top view of the same; Fig. 10, a side view of the scalloping mechanism detached; Figs. 11, 12, and 13, detached enlarged views to illustrate the operation.

This invention relates to an improvement in that class of ruffling attachments for sewing machines in which the crimping-blade is operated by a vibrating lever in connection with the needle-arm.

In the usual construction of this class of ruffling attachments the ruffling-blade necessarily makes one full reciprocating movement to each vibration of the actuating-arm, and hence one stitch is made to each shirr or crimp produced by the blade.

A represents the presser-foot, to which a frame, B, is attached in the usual manner of making connection between the ruffler and the presser-foot; C, a vibrating lever hung to the frame by a pivot, *a*, so as to vibrate in a vertical plane, fitted at its free end D for connection with the needle-bar in the usual manner of connecting the actuating-lever of ruffling attachments; E, the slide, which carries the crimping-blade, F also in the usual manner. This slide is hung to one end of a lever, G, as

at *b*, the other end of the lever hung upon the pivot *a*.

From the hub of the lever C a short arm, H, extends downward upon the lever G and parallel therewith, as seen in Fig. 2. On the lever G, and forward of the arm H, an adjusting-screw, I, is introduced and so as to stand in the path of the arm H. This screw I forms a bearing, against which the arm H will operate in the descent of the lever C, and so as to turn the lever G and with it impart to the crimping-blade its retreating movement, as seen in Fig. 2.

On the side of the lever G upon which the arm H plays a hook-shaped lever, L, is hung upon a pivot, *d*, the nose *e* of the hook being at the rear of the arm H—that is, on the opposite side to the adjusting-screw I. When this lever L stands in the position seen in Fig. 2, as the lever C rises the arm H will strike the nose *e* of the lever L and give to the crimping-blade its advance movement, as seen in Fig. 3, the play between the adjusting-screw and the nose *e* being that usually required for the movement of the needle before the crimping takes place. Thus adjusted, the ruffler will operate in the usual manner—that is, the blade will advance as the actuating-lever rises and retreat as that lever falls, each full vibration of the actuating-lever communicating the corresponding advance and retreating movement to the blade.

If, when the blade stands at its position of full retreat, as seen in Fig. 2, the lever L be turned into the position seen in broken lines to bring the nose *e* below the path of the arm H, then the lever C will continue its vibration, leaving the blade stationary. Now, suppose it be desired to make ruffling, say, with five crimps of one stitch each, then a plain space of equal extent, and again five crimps, as seen in Fig. 4, and so continue alternate crimps and plain spaces. The operator turns the lever L up, as seen in Fig. 2, so that its nose will engage with the arm H, and makes the five crimps; then turns the lever down, as seen in broken lines, Fig. 2, and makes five stitches without crimping, then returns the lever L, and the



next series of crimps will be made. Thus the operator may, at will, make any number of crimps, then plain spaces, followed by other crimps, and so on.

5 Again, supposing the crimps or folds to be so broad that several stitches would be required for each, say, as seen in Fig. 5, where the folds are equal, say, to five stitches, the operator turns the lever L into position to en-  
10 gage the arm H, and adjusts the attachment to lay a fold to the extent of five stitches, and then makes that fold by one ascent of the needle. As the needle descends the blade retreats to the full extent, and then the operator turns  
15 the lever L downward and runs the machine five stitches, at which time the next fold is to be made. Then the lever L is turned up for engagement, as before, the one fold laid, and then disengaged until the fold is stitched.

20 For convenience in operating the lever L, I extend it the other side of its pivot, to form an arm, M, which projects beyond the lever G, as seen in Fig. 1, and upon which the operator can easily place the finger to turn the  
25 lever. If it be desired to work the machine for continuous and even single-stitch crimping, then the lever L will be turned upward to bring the nose e into the path of the arm H, and there continue. The arm H will operate  
30 between the end of the screw I and the nose e and impart one full movement to the crimping-blade to each full movement of the actuating-lever, and as in the usual construction of ruffling attachments.

35 The presser-foot A may be attached to its spindle by any of the usual or known constructions.

Instead of making the stop I a screw, so as to be adjusted, it will be readily seen that it  
40 may be fixed or stationary, it only being essential that there shall be a stop forward of the shorter arm, H, whereby the descent of the lever C will impart a retreating movement to the crimping-blade.

45 In some classes of ruffling the band is run double onto the shirred strip, as indicated in Fig. 7, 15 representing the shirred strip, and 16 the doubled band. The line of stitches in this is run near the edge, as indicated by the  
50 line 17, and this gives a better finish to the ruffle than when the band is run in single thickness, stitched, and then turned over, so as to hide the stitches. In making such ruffling care should be exercised so as to present  
55 an equal width between the edge and the line of stitches.

In addition to the ruffling attachment I provide a detachable scalloping device.

60 The scalloping device of a ruffling attachment consists, essentially, in a guide which stands forward of the crimping-blade and through which the strip to be ruffled is passed, and to this guide a movement is imparted to the right and left to turn the strip first to the  
65 right and then to the left of the needle-line, whereby successive crimps will increase or shorten in length, according to the side toward

which the strip is turned. The object of this part of my invention is to make the scalloping device detachable from the ruffling mechanism. 70

I construct the plate or frame 2 corresponding in shape substantially to the frame B of the ruffling attachment, and so as to stand close to its side. Through the frame 2 a  
75 screw, 3, passes into a corresponding threaded hole in the frame, which locks the scalloping device to the ruffling attachment. To the rear end of the frame 2, and at a point in line with the needle, I hang a lever, 4, upon  
80 a pivot, y. This lever extends forward to about the heel of the crimping-blade, and there its end turns toward the crimping-blade to form an arm, 5. The lever 4 swings upon its pivot y in a plane parallel with the work-  
85 plate and of the crimping-blade. In the arm 5 is a slot, 6, closed at both ends, and through which the strip to be ruffled is introduced. At the upper end of the frame 2, and in axial line with the pivot a of the actuating-lever C,  
90 a toothed ratchet, 7, is arranged upon a suitable bearing, and on the hub of the lever C a pawl, 8, is hung, which, as the lever C vibrates, will engage the teeth of the ratchet 7—that is, in the ascent of the lever C the pawl will en-  
95 gage one tooth of the ratchet—and then, as the lever C rises, as seen in broken lines, Fig. 8, it will turn the ratchet, say, one tooth, and so that at each ascent of the needle or actuating-lever C the ratchet will be turned one point. 100

In the side of the ratchet, and eccentric to its axis, a hole, 9, is made, and into this a crank-pin is set; with which one end of a connecting-rod, 10, is engaged, the other end of the connecting-rod hung to the lever 4, as at  
105 11, at one side of the pivot y of the said lever. As the ratchet revolves its crank-pin imparts an intermittent or step-by-step reciprocating movement to the connecting-rod 10, and this intermittent movement is communicated to  
110 the lever 4; hence, during one half the rotation of the ratchet the lever 4 will be turned to the right and the other half will be turned to the left, carrying the lever and its arm 5 first to the right and then to the left, as indi-  
115 cated in Fig. 9.

If the crank-like connection between the ratchet and the lever 4 were unchangeable, the extent of movement of the lever 4 would be always the same; but it is desirable to make  
120 the extent of vibration of the lever 4 greater or less, in order to produce different-shaped scallops.

To adjust the extent of vibration of the lever 4, I make the crank-pin through which it is  
125 operated adjustable. The construction whereby this is accomplished is seen in Figs. 11 and 12. The crank-pin 12 fits a corresponding hole in the connection 10. The crank-pin is made separate from the carriage, and eccentrically  
130 through the crank-pin is a set-screw, 13, entering a correspondingly-threaded hole in the ratchet 7, so that the set-screw may bind the crank-pin firmly to the eccentric at any posi-



tion to which it may be set with relation to the axis of the ratchet, and so that by loosening the screw the crank-pin may be turned to give the desired amount of movement and then set.

Upon the outer end of the crank-pin 12 a collar, 14, is formed, between which and the ratchet the connection 10 works. The eccentricity of the crank-pin 12 is such, as seen in Fig. 11, that it may be brought into a concentric position with relation to the ratchet, and, if it be set at that point, then the rotation of the ratchet would impart no movement to the connection 10 or the lever 4; but if it be turned to the opposite direction, as seen in Fig. 13, and there set, then the extreme throw will be produced, and that throw will be reduced as the eccentric is turned from the position in Fig. 13 until it arrives in the position seen in Fig. 11, and may be set by the screw 13 at any intermediate position. The collar 14 serves as a convenient means for turning the eccentric.

When adjustment of the eccentric or crank pin is required, the screw is loosened, then the eccentric or crank pin turned to the required position by means of the collar 14, and then the screw set to fix it in that position.

The scalloping attachment by this construction is detachable entirely from the ruffler, except as to the pawl 8, and may be replaced upon the ruffler without removing it from the machine with which the ruffler is engaged, or removed therefrom while the ruffler is so attached to the machine.

Instead of making the scalloping device detachable, it may be a permanent part of the ruffler or permanently secured thereto.

I am aware that ruffling devices have been constructed so that while the actuating-lever continues its vibration the crimping-blade may be so disconnected as to rest for a time and then be reconnected to engage the lever, so that alternate spaces and crimps may be made, and therefore do not broadly claim such device.

I claim—

1. In a ruffling attachment for sewing-machines, the combination of a bell-crank lever, C H, one arm, C, of which is constructed for engagement with the needle-bar hung to the frame B, the lever G, hung by one end to said frame and by the other to the crimping-blade slide, the stop I on the lever G forward of the shorter arm, H, and the lever L, hung to said

lever G with its nose *e* in the path of said arm H, and upon the side opposite the stop I the said lever L constructed with a projection, M, substantially as described.

2. In a ruffling attachment for sewing-machines, the combination of the actuating-lever C, constructed for engagement with the needle-bar and with the crimping-blade, the lever 4, hung upon a pivot in rear of the crimping-blade and extending forward, constructed with the arm 5, in which is the guiding-slot 6, the toothed ratchet 7, concentric with the pivot on which the said actuating-lever turns, the pawl 8 on said actuating-lever, and the connection 10, hung by one end to said lever 4 and by the other end to an eccentric or crank pin on said ratchet, substantially as described.

3. The combination of a ruffler consisting of an actuating-lever constructed for engagement with the needle-arm, and also in connection with the crimping-blade, whereby reciprocating movement is imparted to said crimping-blade, the frame 2, constructed for attachment to the frame of the ruffler and removable therefrom, the ratchet 7 on said frame 2 and concentric with the pivot upon which said actuating-lever turns, an eccentric or crank pin on said ratchet, a horizontally-vibrating lever, 4, hung by one end to said frame 2 in rear of the crimping-blade, its other end extending forward and constructed with an arm, 5, having a slot, 6, therein, the connection 10, one end of which is hung to the said lever 4, the other to the crank-pin on said ratchet, and a pawl, 8, on the hub of said actuating-lever, substantially as and for the purpose described.

4. In a ruffling attachment for sewing-machines, the combination of the actuating-lever C, constructed for engagement with the needle-bar and with the crimping-blade, the vibrating lever 4, hung in rear of the crimping-blade and extending forward, constructed with the arm 5, in which is the guiding-slot 6, the toothed ratchet 7, concentric with the pivot of said actuating-lever, an adjustable eccentric, 12, on said ratchet, the connection 10, one end of which is hung to said lever 4 and the other to said adjustable eccentric 12, and the pawl 8 on said actuating-lever, substantially as described.

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