

(Model.)

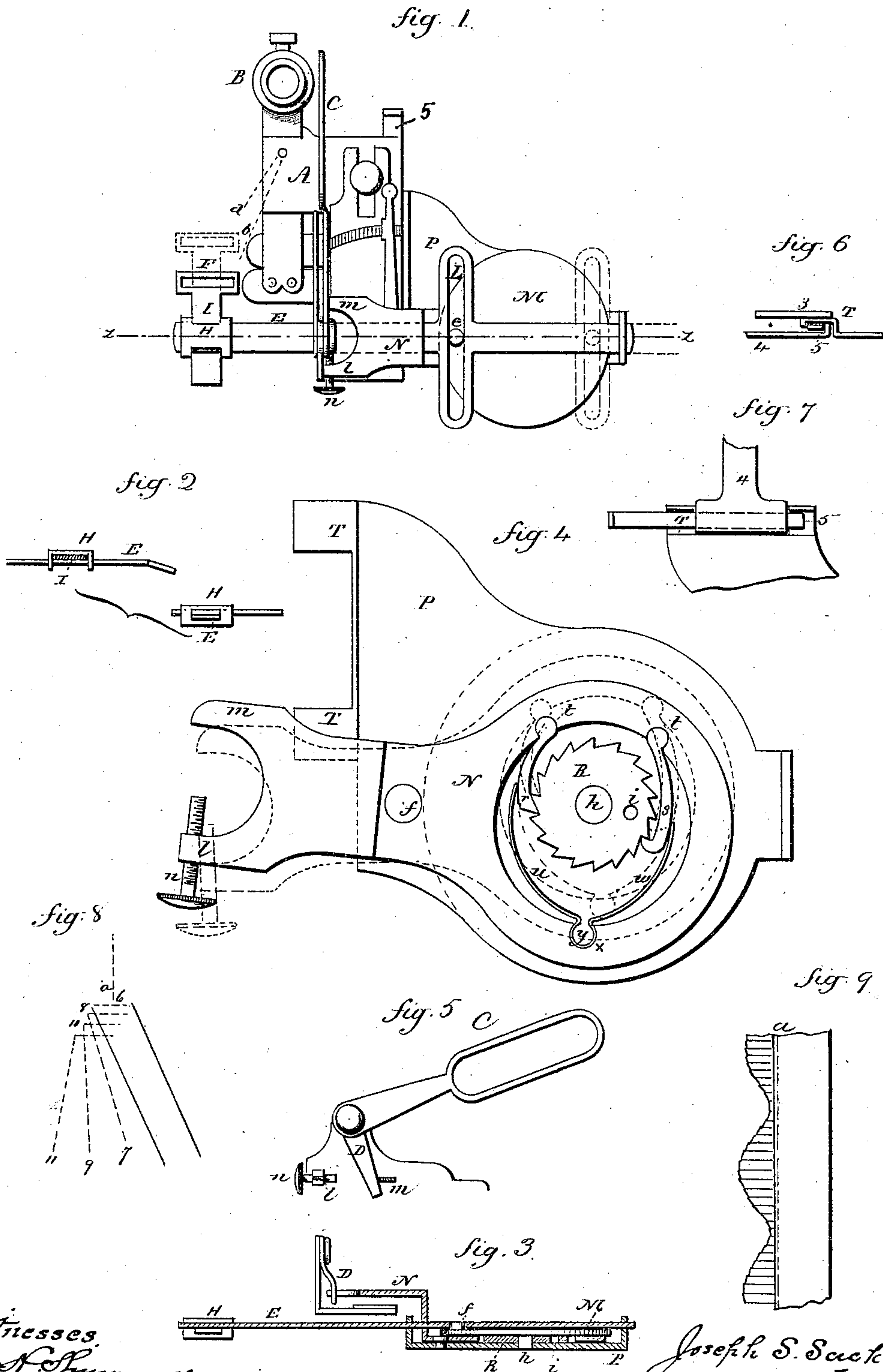
2 Sheets—Sheet 1.

J. S. SACKETT.

RUFFLING ATTACHMENT FOR SEWING MACHINES.

No. 287,174.

Patented Oct. 23, 1883.



Witnesses.
J. S. Sackett
J. S. Sackett

Joseph S. Sackett
By atty.
J. S. Sackett

(Model.)

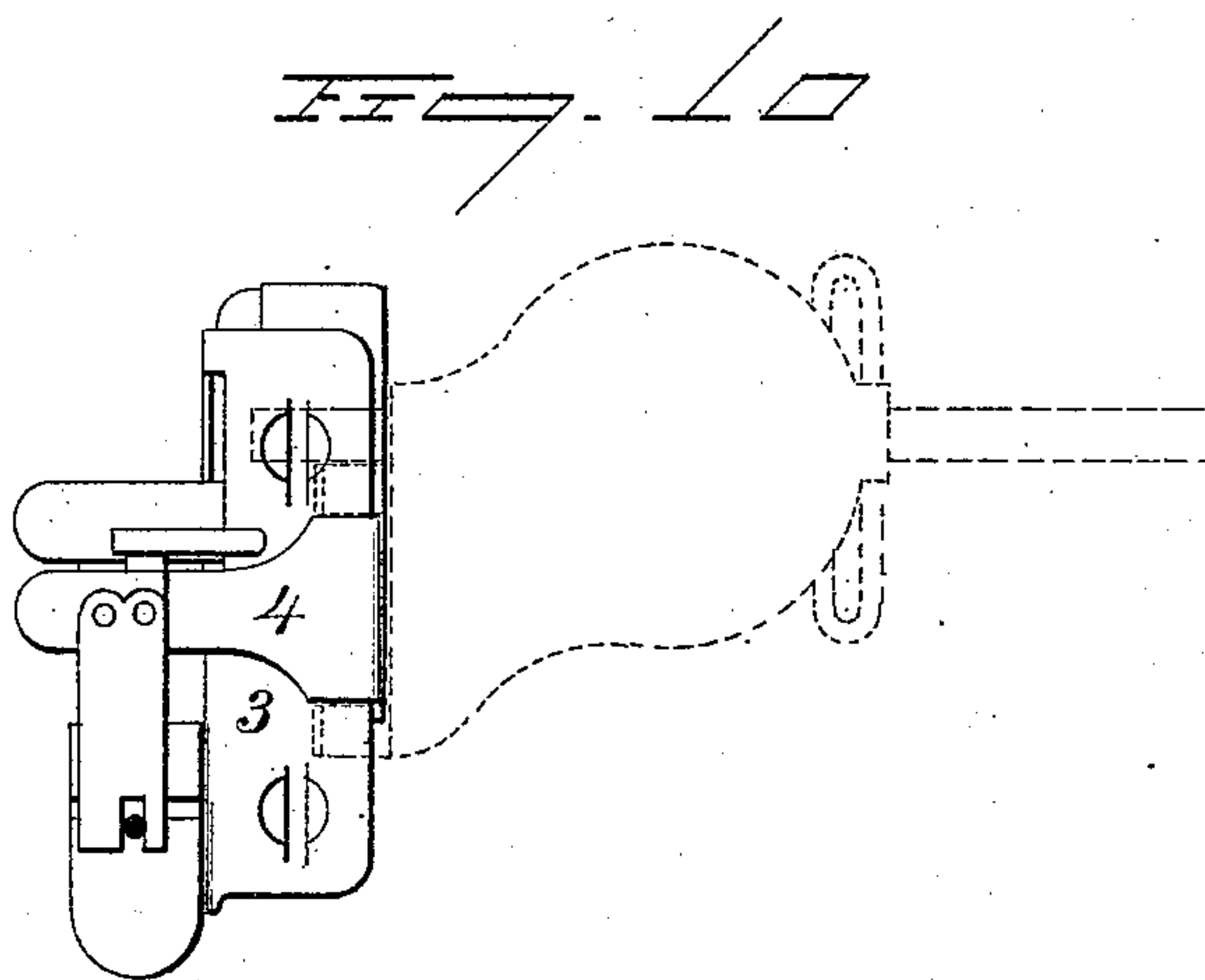
2 Sheets—Sheet 2.

J. S. SACKETT.

RUFFLING ATTACHMENT FOR SEWING MACHINES.

No. 287,174.

Patented Oct. 23, 1883.



Witnesses,
J. H. Murray
J. A. Clark

Joseph S. Sackett.
Inventor.
By Atty.
Wm. C. Clark

UNITED STATES PATENT OFFICE.

JOSEPH S. SACKETT, OF NEW HAVEN, CONNECTICUT, ASSIGNOR OF ONE-HALF TO JANE HALLIWELL, OF SAME PLACE.

RUFFLING ATTACHMENT FOR SEWING-MACHINES.

SPECIFICATION forming part of Letters Patent No. 287,174, dated October 23, 1883.

Application filed May 7, 1883. (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—

Figure 1, a top view; Fig. 2, side and end view of the bar E, showing the yoke by which the guide is adjustably attached to the bar; Fig. 3, vertical central section through the bar E on line *z z*; Fig. 4, the pawl-and-ratchet mechanism and base-plate detached and enlarged, for convenient illustration; Fig. 5, side view of the ruffler-lever, showing its engagement with the pawl and ratchet lever; Fig. 6, end view, and Fig. 7 under side view, looking up, illustrating the method of attaching the plate P to the ruffler; Fig. 8, diagram illustrating the scalloping operation; Fig. 9, the scallop finished; Fig. 10, under side view of the ruffler, with the scalloping attachment in broken lines, to illustrate the device for securing the two parts together.

This invention relates to an improvement in ruffling attachment for sewing-machines, particularly to that class which are constructed to produce a ruffle with a scalloped edge. In the usual attachments a guide is applied to the strip to be ruffled, and which operates to turn the strip to one side out of the direct line or path of the feed—that is, at an angle to the line of stitches—for a certain number of stitches, and then turn the strip in the opposite direction. By such presentation of the strip to one side—that is, away from the line of stitches—each successive stitch will enter the fabric at a greater distance from the edge than the previous stitch. Then, when the strip is returned, the position of the stitches will gradually approach the edge, and as the line of stitches is necessarily straight, it follows that the edge of that ruffled portion between the two points will be substantially a scalloped shape, as shown in Fig. 8, the broken lines *a* representing the line of stitches.

The object of the invention is to operate the guide directly from the ruffler-lever and make the movement of the guide adjustable, whereby a greater or less number of crimps may be laid in each scallop, and also to make the guide readily adjustable, whereby the depth of the scallop may be increased or diminished, and also to make the scalloping attachment easily removable from or attachable to the ruffling device; and the invention consists in the construction whereby these objects are accomplished, as more fully hereinafter described, and particularly recited in the claims.

The ruffling attachment itself may be any of the usual attachments for this purpose, and in describing this attachment it is only necessary to say A is the presser-foot; B, the socket by which it is attached to the presser-foot bar; C, the long arm of the bell-crank ruffler-lever, which is connected to the needle-bar; and D, the other arm of the lever, which operates the crimping-blade. E is the bar which carries the guide F, through which the strip to be ruffled passes. To this bar an intermittent or step-by-step movement is imparted to take the guide, say, from its extreme left position, as seen in Fig. 1, to its extreme right position, as indicated in broken lines in that figure. This guide is in the form of a loop, corresponding substantially to the width of the strip to be crimped, and is made adjustable on the bar E, so as to stand at a greater or less distance from the line of stitches, as may be required. This is best done by means of a yoke, H, through the ends of which the bar E passes, as seen in Fig. 2, and so as to leave a space between the back of the yoke and the bar, through which an arm, I, on the guide passes; and the yoke fits the bar and the arm so closely as to produce sufficient friction to retain the guide at any position to which it may be set. If the angle of presentation of the strip is required to be greater, then the guide F is moved forward through the yoke, as indicated in broken lines, Fig. 1, broken lines *b* and *d* indicating the change of angle; but if the angle is required to be less, then the guide is moved backward through the yoke, the friction retaining it in either direction. To impart the step-by-step movement to the guide from right to left and left to right, the bar E

extends across to the opposite side of the ruffler, and is there constructed with a slot, L, at right angles to the line of the bar, and beneath this bar is a rotating disk, M, in which is a stud, *e*, standing in the slot L of the bar E; hence as the disk M is rotated it will correspondingly move the bar E from left to right and return, as indicated in broken lines, Fig. 1. Rotation is imparted to this disk by means of a lever, N, hung upon a pivot, *f*, on the plate P, to which the scalloping mechanism is attached, the disk M having its pivot or center of rotation at *h* on the same plate. (See Fig. 4.)

On the pivot *h* is a toothed ratchet, R, which is engaged with the disk, preferably by means of a stud on the disk entering a hole, *i*, in the ratchet, as seen in Figs. 3 and 4, so that the disk will be turned with the ratchet. One arm of the lever N extends upward and over to the arm D of the crimper-lever, that end being bifurcated to form two prongs, *l m*, one standing at each side the arm D of the crimper-lever, as seen in Fig. 5, the space between the two prongs being greater than the width of the lever, and in one of these prongs, *l*, an adjusting-screw, *n*, is introduced, so that the space between the two prongs may be contracted or extended, as occasion may require, the said screw standing in the path of the moving arm D of that lever, and so that as the crimper-arm rises it will strike the prong *m* of the lever and turn it forward to the position seen in Fig. 4, or, returning, will strike the set-screw *n* and turn the arm in the opposite direction, as seen in broken lines, Fig. 4. This extent of movement of the lever upon its pivot is therefore adjusted by the set-screw *n*. The other arm of the lever N is made of ring shape, and surrounds the ratchet R beneath the disk M, the opening in the ring being considerably larger than the ratchet. Upon the inner side of this ring two pawls, *r s*, are arranged—one upon each side of the ratchet R—the nose of one engaging the teeth in one direction and the other in the opposite direction, as seen in Fig. 4. These pawls are formed at their pivot end with a circular head, *t*, and upon the inner edge of the ring seats for these heads in corresponding shape are formed. The recesses to form these seats extend a little more than half around the head of the pawls, so that when the pawls are dropped into their seats they are retained by the surrounding part of the ring, and without the introduction of pivots through the heads. Opposite the pawls a single spring is introduced, having two arms, *u w*, bearing, respectively, upon the two pawls. Midway of the length of the spring, in the inside of the ring part of the lever N, a recess, *x*, is cut, somewhat more than half a circle, and at that point a partial ring, *y*, is formed in the spring, and so that the ring part or circular bend in the spring will drop into the recess *x* in the lever, and thus secure the spring in its position, the arms extending, respectively, on to the backs of the pawls *r s*. Standing in the position seen in Fig. 4, with the pawl *s* en-

gaged with a tooth of the ratchet, the movement of the lever to the position indicated in broken lines will cause the pawl *s* to turn the ratchet to the extent of that movement. Then the pawl *r* will engage its tooth, as seen in broken lines, and on the return of the lever will correspondingly turn the ratchet; hence each movement of the lever imparts a partial rotation to the ratchet R, and through that to the disk M, the disk M in its turn imparting a corresponding horizontal movement to the bar E and the guide F, which it carries, and thus an intermittent movement, step by step, will be imparted to the bar E and the guide which it carries until its extreme position in one direction be reached, and then, by like step by step, will be returned to its opposite extreme.

By making the teeth of the ratchet fine, so that one, two, three, or more teeth may be taken at each vibration of the lever N, a greater or less extent of movement may be imparted to the bar E at each step—that is to say, suppose there be eighteen teeth in the ratchet and the adjustment of the set-screw *n* be such that one tooth only will be taken at each movement, then the guide will take nine steps between its two extremes. If it be so that the pawl takes three teeth at each movement, then there will be three steps of the guide between the two extremes.

The disk M covers the pawls, spring, and ratchet, and serves to retain them in place.

Different ratchets may be introduced to vary the feed, if desired—that is, ratchets with varying numbers of teeth.

To removably attach the scalloping device to the ruffler, I construct the plate or base P with two hook-shaped ears, T T, which pass beneath the base-plate 3 of the ruffler, as seen in Fig. 6, each side of the arm 4, which carries the separator of the ruffler, as seen in Figs. 7 and 10. In Fig. 10 an under side view of the ruffler is shown, the scalloping attachment in its place in broken lines. The arm 4 of the ruffler is turned down from the base, so as to leave a space between it and the base. Then between the hooked ends of the ears T and the bend of the arm 4 I introduce a key, 5, as seen in Figs. 6 and 7, which secures the scalloping attachment to the ruffler, and so that it may be removed by simply taking out the key.

To illustrate the operation of the scalloping mechanism I refer to Fig. 8. The strip to be ruffled is passed through the slot in the guide, and then between the plate and the separator, in the usual manner of introducing strips to be ruffled; and supposing the guide to be standing at the extreme right, *a* representing the natural line of stitches, the first stitch is taken, as at 6, and there a crimp made. Then the guide is moved one step to the left, turning the stitch to the line 7, and there the next crimp, 8, will be made. Then, the guide turning to the line 9, the next crimp, 10, will be made; then to the line 11, the next crimp will be made, and so on. As each successive crimp is made and stitch taken the part crimped will

project a greater distance at each crimp from the line of stitches until the extreme left is reached. Then on the return the reverse effect will be produced, and the result is a scalloped edge, as seen in Fig. 9.

I make no claim herein to the peculiar ratchet mechanism which I have described, as that will form the subject of an independent application for Letters Patent; and I wish it understood that these ratchet devices enter into the invention described in this specification only to the extent that they are made elements of combination with the ruffling mechanism.

While I prefer the yoke H of the bar E as the best means for securing and adjusting the guide, the guide may be otherwise adjusted—as, for instance, by a slot in the arm I and set-screw through into the bar.

While I prefer the mechanism described to impart intermittent rotary movement to the disk M, other mechanism may be employed for this purpose, it only being essential to this part of my invention that the disk M shall have an intermittent rotation imparted to it, whereby a corresponding intermittent reciprocating movement will be imparted to the bar E.

I claim—

1. In a ruffler for sewing-machines, the combination therewith of the horizontal bar E, mechanism, substantially such as described, for imparting to said bar an intermittent or step-by-step movement to the right and left, a guide, F, for carrying the strip to be ruffled, and mechanism, substantially such as described, to adjust said guide on said bar to a greater or less distance from the needle, and whereby the angle of presentation of the strip may be varied, substantially as specified.

2. In a ruffler for sewing-machines, the combination therewith of the horizontal bar E, mechanism, substantially such as described, for imparting to said bar an intermittent or step-by-step movement to the right and left, the loop-shaped guide F, constructed with an arm, I, the yoke H, arranged to slide longitudinally on said bar, with an opening through said yoke at right angles to said bar, and through which opening the arm I of the guide extends, and whereby said guide is made adjustable both on the bar and at right angles thereto, substantially as described.

3. In a ruffling attachment for sewing-machines, the combination of the horizontal sliding bar E, constructed with a right-angular slot, L, the guide F, the disk M, carrying the stud *e* in said slot L, the ratchet R, in connection with said disk, the lever N, one arm carrying pawls *r s*, to engage said ratchet, the other arm in connection with the vibrating arm of the ruffler, substantially as described.

4. In a ruffling attachment for sewing-machines, the combination of the horizontal sliding bar E, constructed with a right-angular slot, L, the guide F, the disk M, carrying the stud *e* in said slot L, the ratchet R in connection with said disk, the lever N, one arm carrying pawls *r s*, to engage said ratchet, the other arm bifurcated, forming two prongs, *lm*, between which the arm D of the ruffler-lever will play, and an adjusting-screw, *n*, substantially as and for the purpose described.

5. In a ruffling attachment for sewing-machines, the combination of a guide to conduct the strip to be ruffled, a pawl and ratchet arranged to impart a right and left intermittent movement to said guide, a vibrating lever, one arm of which carries said pawl, the other arm being in connection with the ruffling mechanism, whereby a vibratory movement is imparted to said lever, and said lever provided with a set-screw, whereby the extent of vibration of said lever, and consequent throw of the pawl, may be varied or adjusted, substantially as described.

6. In a ruffling attachment for sewing-machines, the combination therewith of the plate P, carrying the guide F, and the mechanism, substantially such as described, for imparting a right and left step-by-step movement to said guide, the said plate constructed with hook-shaped ears T T, arranged to stand each side the separator-arm 4 and beneath the base-plate 3 of the ruffler, and the key 5, to interlock said plate with the base-plate by means of said hooks T and arm 4, substantially as described.

JOSEPH S. SACKETT.

Witnesses:

JOS. C. EARLE,
J. H. SHUMWAY.