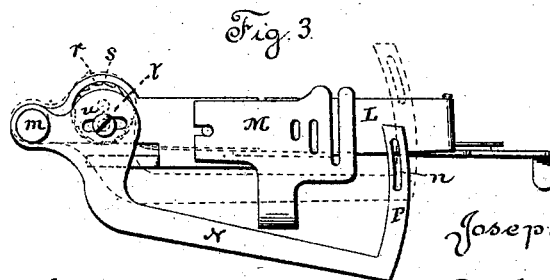
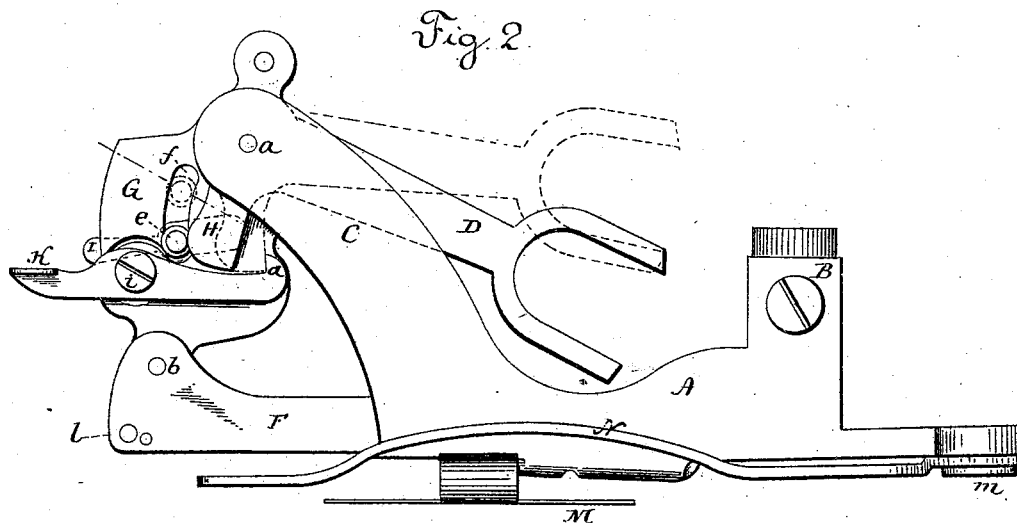
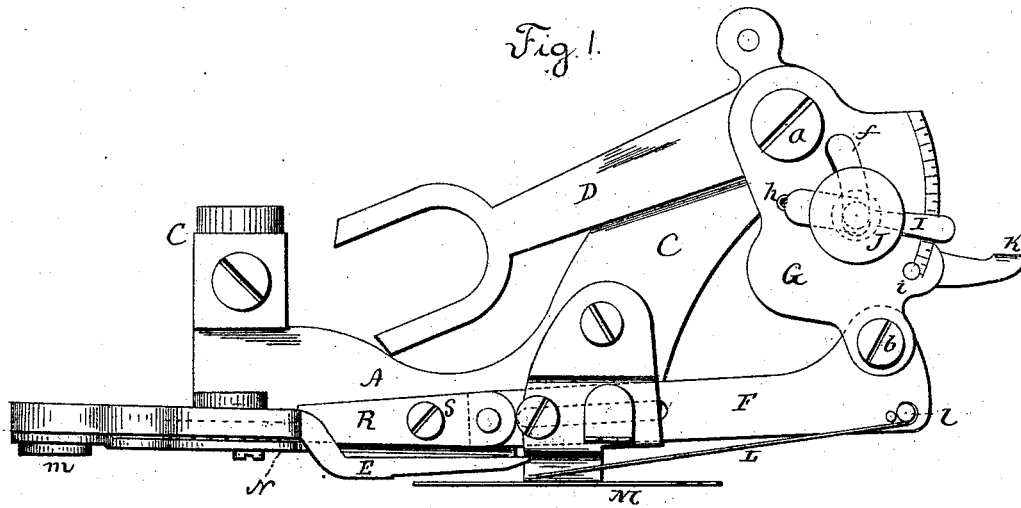


J. P. LAVIGNE.

COMBINED RUFFLER AND SCALLOPER FOR SEWING MACHINES.

No. 343,463.

Patented June 8, 1886.



Witnesses.
J. H. Shumway
And C. E. Carter

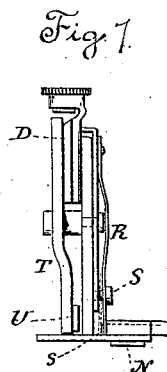
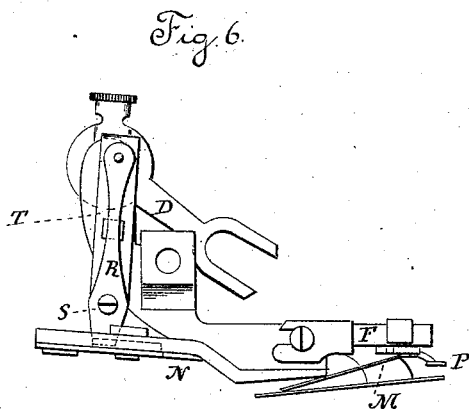
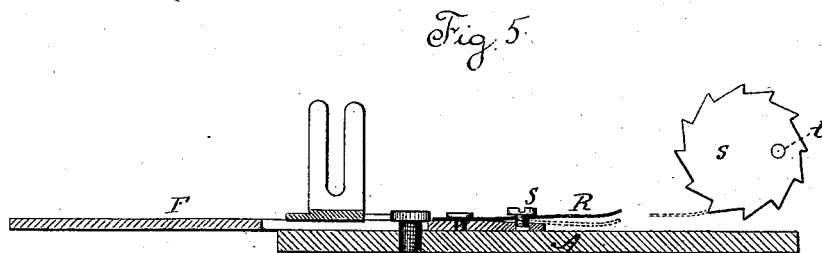
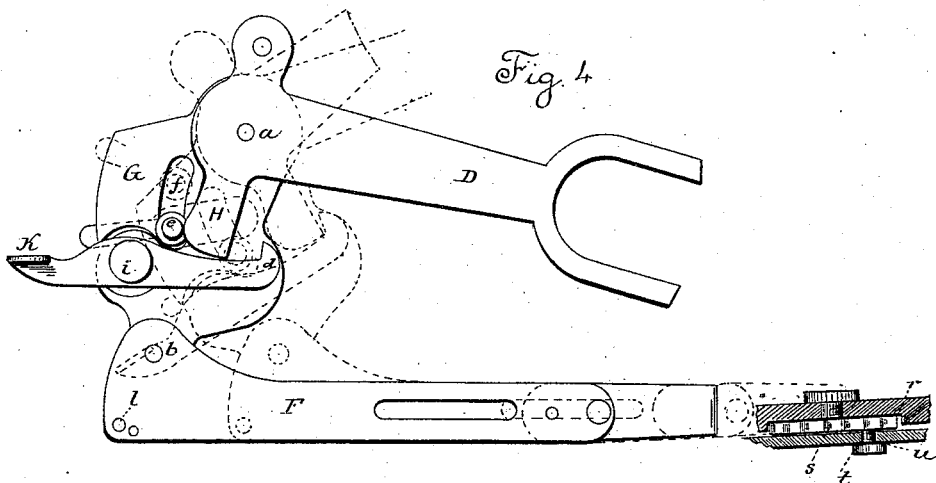
Joseph P. Lavigne,
Inventor.
By Atty.
Wm. C. Carter.

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UNITED STATES PATENT OFFICE.

JOSEPH P. LAVIGNE, OF NEW HAVEN, CONNECTICUT, ASSIGNOR TO JANE HALLIWELL, OF SAME PLACE.

COMBINED RUFFLER AND SCALLOPER FOR SEWING-MACHINES.

SPECIFICATION forming part of Letters Patent No. 343,463, dated June 8, 1886.

Application filed September 14, 1885. Serial No. 177,010. (No model.)

To all whom it may concern:

Be it known that I, JOSEPH P. LAVIGNE, of New Haven, in the county of New Haven and State of Connecticut, have invented a new Improvement in a Combined Ruffler and Scalloper 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 side view of the attachment, looking from the left; Fig. 2, a side view, looking from the right; Fig. 3, an under side view; Fig. 4, a side view of the actuating-lever, slide, and their connections, showing a section of the base and lever, with the ratchet in connection therewith; Fig. 5, a detached sectional view, looking down upon the pawl and ratchet; Figs. 6 and 7, side and front views showing modification, Figs. 3, 6, and 7 being substantially full size, the remaining figures considerably enlarged for convenience of illustration.

This invention relates to an improvement in that class of sewing-machine attachments which are designed to shirr a strip of fabric as it is stitched, and so that the line of stitches will secure the shirrs, commonly called "ruffling attachments," and particularly to that class in which the strip is guided to the shirring apparatus in such a manner that the strip will be presented to the needle at gradually-increasing distances from the edge through a certain number of shirrs, then gradually diminishing in distance through a like number of shirrs, and so that the edge of the ruffle will present a scallop shape, such devices being commonly called "scalloping devices," the object of the invention being to combine a scalloper and ruffler in a single attachment, so that the scalloper may be used or not, as occasion requires—that is, so that the same attachment may be employed in the making of a ruffle with a straight edge or with a scalloped edge; and the invention consists in the construction hereinafter described, and more particularly recited in the claims. The attachment is best made so as to be secured to the presser-foot bar, and I so illustrate it.

A represents the base or body of the attach-

ment, which is fixed to or made a part of a socket, B, adapted to be secured to the presser-foot bar. From the base an arm, C, extends upward, to which the usual vibrating arm, D, is hung upon a pivot, *a*, the free end of the arm bifurcated to be attached to the needle-arm, and so that the up-and-down movement of the needle-arm will impart a vibratory movement to the lever in the usual manner.

E is the presser-foot, which is fixed to the base, and beneath which the work passes also in the usual manner. In this illustration the vibrating arm is shown as hung in rear of the presser-foot.

F is a slide arranged in suitable guides in the base, and with which connection is made from the vibrating arm D in the usual manner; but as I have shown the construction a lever, G, is hung by one end upon the same pivot, *a*, as the lever D, the other end hung to the slide F at *b*. From the hub of the lever D an arm, H, extends downward, forming with D what may be called a "bell-crank lever." The arm H extends down between the supporting-arm C and the lever G, as seen in Fig. 2, and on the lever G is a stop, *d*, against which the arm H of the actuating-lever will strike as the lever rises, and as indicated in broken lines, Fig. 2, and on the lever G, upon the opposite side of the arm H to the stop *d*, is a second stop, *e*, against which the arm H will strike in the descent of the actuating-lever, and as also seen in Fig. 2, and so that the lever in operation, the arm H working between the two stops *d e*, imparts reciprocating movement to the slide F. The stop *e* is made adjustable in a slot, *f*, in the lever G, the said slot being nearly vertical, and so that the stop may be moved nearer to or farther from the pivot *a*, on which the levers work.

As represented in Fig. 2, the stop stands at its extreme down position, and so that it will receive its greatest extent of movement in the descent of the actuating-lever. If the stop be raised, say, to the up position, (seen in broken lines, Fig. 2,) it will be observed that the descent of the lever must be to a greater extent before the arm H can reach the stop; hence the stop *d*, being a fixed stop, limits the advance movement of the slide F. The retreating movement will vary according to the po-

sition of the stop *e* in the slot, the retreat being greater as the stop is moved downward in its slot, or less as it is moved upward. To thus adjust the stop it is fixed in a lever, I, hung upon a pivot, *h*, at one side of the slot, the lever extending across to the opposite side in the form of a handle, as seen in Fig. 1. The slot should be of segment shape, drawn from the pivot *h*, and so that by means of the handle the stop may be raised or lowered accordingly, and an index may be provided, as seen in Fig. 1, to show the extent of movement. A set-nut, J, is also provided to set the stop at any position to which it may be adjusted. As illustrated, the stop *d* is hung upon a pivot, *i*, with a handle, K, extending rearward, by which it may be thrown into or out of the path of the arm H; but this device is the invention of another, and constitutes no part of my invention.

To the slide F a crimping-blade, L, is hung upon an axis, *l*, extending at right angles from the slide F, and so that the blade L will partake of the reciprocating movement imparted to the slide F by the actuating-lever.

M is the usual separator. Upon the under side of the base, and upon a pivot, *m*, forward of the presser-foot, a lever, N, is hung. (See Fig. 3.) This lever extends rearward, it being turned to one side so as to pass the other mechanism of the ruffler, and at its rear end is turned inward to form an arm, P, in which is a slot, *n*, at right angles to the path of the needle. The length of this slot is substantially the width of the strip to be ruffled. In the under side of the base, near the pivot *m*, a recess, *r*, is formed in a plane parallel with the lever N, and the lever N is constructed to substantially cover this recess, as indicated in Fig. 4. In the recess a toothed ratchet-wheel, *s*, is arranged free to turn independent of the base or the lever N. From the ratchet *s* is a downwardly-projecting stud, *t*, the said stud being eccentric to the disk, and this stud extends through a longitudinal slot, *u*, in the lever N, as seen in Figs. 3 and 4, and so that if the wheel *s* be revolved the stud *t* will work as a crank through the slot *u* in the lever, and will impart to the lever a vibratory movement, as indicated in Fig. 3, first to one extreme and then to the other, such movement being step by step, according to the teeth of the ratchet.

From the slide F a pawl, R, extends forward, and so as to receive the same reciprocating movement as the slide F, and so that if in the forward or advance movement of the slide the pawl engages the teeth of the ratchet, as indicated in broken lines, Fig. 5, it will impart to the wheel *s* a movement, say, of one tooth. If, on the contrary, the pawl R be thrown out of the path of the wheel *s*, then the reciprocating movement of the slide F will have no effect upon the wheel *s* or the lever N. That the pawl may be so thrown into or out of engagement with the wheel *s*, it

is made elastic, and through the pawl into the lever is a screw, S, (see Fig. 5,) which by withdrawing permits the pawl to spring out into active position; or, if the screw be turned inward, it will force the pawl out of such active position, as indicated in broken lines, Fig. 5.

When the pawl R is in its out or active position, each advance movement of the slide F, carrying the crimping-blade, will impart a partial rotation to the wheel *s*, which rotative movement will be communicated to the lever N as one step in its vibration. The strip to be ruffled passes through the slot *n* in the arm P of the lever N, and such movement of the lever N will move the strip at right angles to the path of the needle, and so continuing the ratchet will be turned, tooth by tooth, and impart a step-by-step movement to the arm P across the path of the needle, and carry the strip accordingly, first through a series of steps to one side, and then returned by a like series of steps. This movement of the lever or strip-carrying device step by step from side to side is a common and well-known device, and, broadly considered, is not my invention. If at any time this transverse movement of the strip be undesirable—as, for illustration, supposing that it be desired to make a ruffle having first a series of scallops and then a space without scallops—after the series of scallops have been formed the screw R will be turned inward to throw the pawl away from engagement with the ratchet, as seen in broken lines, Fig. 5. Then the work will continue without the operation of the scalloping device; then so soon as the scalloping device is required, the screw is withdrawn to permit the pawl to move into its engaging position, so at any time when the scalloper is not required its use may be dispensed with by throwing the pawl out of engagement, or, when required, may be used by throwing the pawl into engagement.

I have illustrated this construction as having the actuating-arm hung in rear of the needle-bar. In some ruffling devices the actuating-arm is hung forward of the scalloper, as seen in Fig. 6. In this case an intermediate lever, T, is hung between the actuating-arm D and the slide F, which carries the crimping-blade, (see Figs. 6 and 7,) this intermediate lever being necessary, that the downward movement of the actuating-lever may impart an advance movement to the crimping-blade—a construction of device too well known to require particular description. In this case, to actuate the ratchet-wheel, I arrange a pawl, R, on the vertical lever, and apply the screw S in like manner as before described, so that the pawl may be thrown into its active engagement, as seen in Fig. 7, or thrown out of such engagement, as seen in broken lines in that figure. Substantially the same arrangement of the ratchet and lever N exists in both cases. This modification of the pawl with re-

lation to the ratchet will be sufficient to enable those skilled in the art to which this invention pertains to apply the pawl, ratchet, and scalloping-levers to the various constructions of rufflers, the essential feature of my invention being the scalloping-lever hung beneath the base, and so as to swing in a horizontal plane across the path of the needle, with a ratchet carrying an eccentric stud, and adapted to impart to said lever a vibratory movement, and the pawl to which a reciprocating movement is imparted by the actuating-lever, the said pawl being adapted to be thrown into or out of engagement with said ratchet.

I do not broadly claim an adjustable stop between the actuating-lever and the slide which carries the crimping-blade, whereby the throw of the blade may be adjusted, as such, I am aware, is not new.

I claim—

1. In a ruffling attachment for sewing-machines, the combination of the slide F, the crimping-blade L, hung thereto, the bell-crank actuating-lever D H, the lever G, hung by one end to the same pivot as the actuating-lever and by the other to the said slide, a stop on said lever G, against which the arm H will strike in the ascent of the actuating-lever, the said lever G constructed with a vertical slot, *f*, on the side of said arm H opposite said stop, and a stop, *e*, adjustable in said slot, substantially as described.

2. In a ruffling attachment for sewing-machines, the combination of the slide F, the crimping-blade L, hung thereto, the bell-crank actuating-lever D H, the lever G, hung by one end to the same pivot as the actuating-lever and by the other to the said slide, a stop on said lever G, against which the arm H will strike in the ascent of the actuating-lever, the said lever G constructed with a vertical slot, *f*, on the side of said arm H opposite said stop, and a lever, I, hung to said lever G upon one side of said slot, the said lever I carrying a stop, *e*, extending through said slot, and against which the said arm H will strike as the actuating-lever descends, substantially as described.

3. In a ruffling attachment substantially such as described, the combination therewith of the lever N, hung to the base and constructed with an arm, P, having a slot, *n*, therein, the said lever adapted to swing in a horizontal plane

across the path of the needle, a toothed ratchet, *s*, carrying an eccentric, *u*, adapted to work in a corresponding slot in said lever, and whereby under the rotation of said ratchet vibratory movement is imparted to said lever N, and a pawl hung upon the movable part of the ruffling attachment and adapted to reciprocate in a plane parallel with the plane of said ratchet, the said pawl made adjustable, whereby it may be thrown into or out of engagement with said ratchet, as occasion may require, substantially as described.

4. In a ruffling attachment for sewing-machines, the combination therewith of a lever, N, hung to the base and so as to vibrate in a horizontal plane, said lever constructed with an arm, P, having a slot, *n*, therein to carry the strip to be ruffled, the base of the ruffler constructed with a recess, *r*, a toothed ratchet, *s*, in said recess, carrying an eccentric adapted to work through a corresponding slot in said lever N, and whereby the rotation of the ratchet will impart horizontal vibratory movement to said lever, and a pawl hung to a movable part of the ruffler and so as to receive a reciprocating movement in the plane of the ratchet, the said pawl made adjustable, whereby it may be thrown into or out of engagement with the teeth of the ratchet, as required, substantially as described.

5. In a ruffling attachment for sewing-machines, the combination of the slide F, carrying the crimping-blade, and a lever constructed to engage the needle-arm and in connection with said slide, whereby the reciprocating movement of the needle-arm will impart corresponding reciprocating movement to said slide, a lever, N, hung to the base and arranged to swing in a horizontal plane, a toothed ratchet carrying an eccentric working in a slot in said lever, and a pawl, R, hung to said slide and so as to partake of its reciprocating movement, the said pawl made adjustable to engage or escape from the teeth of said ratchet under such reciprocating movement of the slide, as occasion may require, and substantially as specified.

JOSEPH P. LAVIGNE.

Witnesses:

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WILLIAM ALDEN.