

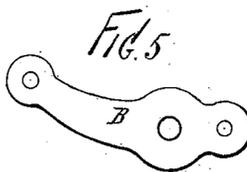
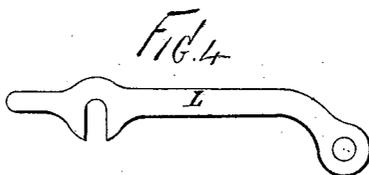
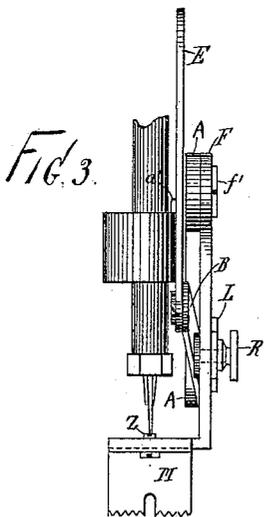
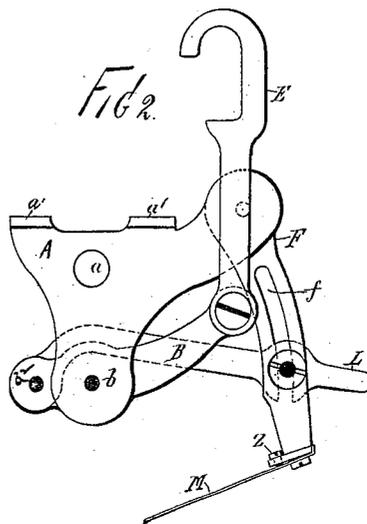
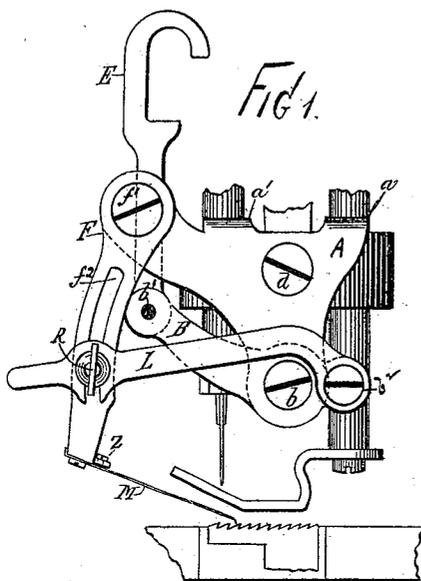
(No Model.)

L. ONDERDONK.

RUFFLING AND GATHERING ATTACHMENT FOR SEWING MACHINES.

No. 298,309.

Patented May 6, 1884.



Witnesses:
Henry P. Wells
Charles G. Coe
R. Van Buren

Inventor:
Louis O. Onderdonk
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UNITED STATES PATENT OFFICE.

LANSING ONDERDONK, OF PAMRAPO, NEW JERSEY.

RUFFLING AND GATHERING ATTACHMENT FOR SEWING-MACHINES.

SPECIFICATION forming part of Letters Patent No. 298,309, dated May 6, 1884.

Application filed June 7, 1883. (No model.)

To all whom it may concern:

Be it known that I, LANSING ONDERDONK, of Pamrapo, in the county of Hudson and State of New Jersey, have invented a new and useful Improvement in Gathering and Ruffling Attachments for Sewing-Machines, of which the following is a specification, reference being had to the accompanying drawings.

My invention consists of a new form of gathering or ruffling attachments for sewing-machines, in which the motion of the parts when they work upon each other is reduced to a minimum, thus securing great durability, while at the same time the range of work is greatly increased over the gatherers and rufflers heretofore used:

In the drawings, Figure 1 represents an elevation of my attachment viewed from the right. Fig. 2 represents an elevation of the same viewed from the left. Fig. 3 represents an elevation viewed from the front. Fig. 4 represents a detached view of the pitman L. Fig. 5 represents a detached view of the lever B.

In the drawings, A represents the frame of the attachment as secured to the head of a sewing-machine by the screw *a* and lugs *a'* *a'*.

B is a lever having its fulcrum on the screw *b*, and having its shorter arm pivoted to the pitman or connecting-rod L at *b'*, and its longer arm pivoted to a connecting-hook, E, at *b'*.

E is a connecting-hook, one extremity of which is hooked over the needle-arm of the sewing-machine, while the other is secured to the lever B at the point *b'*, and imparts the motion of the needle-arm to the lever. The longer arm of the lever B receives a bend away from the spectator viewing Fig. 1, so that the connecting-hook E may pass clear of the frame A, behind which it is located, as shown in that figure.

F is a lever having its fulcrum at *f'*, and there pivoted to an extension of the frame A. This lever is provided with a curved slot, *f*², through which passes the adjustable set-screw R. The lower end of the lever F is bent at a right angle, as shown in Fig. 3, and to this bend the crimping-blade M is attached.

L is a connecting-rod or pitman, one end of which is pivoted to the short arm of the lever B, and terminating at the other extremity in a hook adapted to engage the adjustable set-screw R.

N is the crimping-blade, by which the cloth is ruffled or gathered.

Z is a set-screw passing through an ear on the lower portion of the swinging lever F, to which the crimping-blade is attached.

My attachment is operated as follows: The frame A, having been secured to the sewing-machine, the connecting-hook E is secured to the needle-arm, so as to rise and fall with it. The connecting-rod L is hooked over the adjustable set-screw R, the cloth is placed below the crimping-blade M, and the attachment is ready for work. The slot *f*² in the swinging lever F is an arc of a circle, of which the point of connection between the connecting-rod or pitman L and the lever B is the center. The adjustment of the set-screw R in the slot *f*² nearer the fulcrum of the swinging lever F increases the amplitude of the oscillations of that lever, and consequently of the range of movement of the crimping-blade which is attached to it. The reverse adjustment of the set-screw R produces a reverse effect.

The tension of the crimping-blade M on the goods may be increased or diminished by the use of the set-screw Z, a feature that will be found valuable in passing from light to heavy goods, and vice versa. Generally the lighter the goods the less tension of the gathering-blade M is required to produce the best result; but this can be better adjusted by experiment than by direction, since there is such wide difference in the quality and stiffness of various kinds of goods even of the same thickness.

Should it be desired to do plain sewing without removing the attachment from the sewing-machine, the connecting-rod or pitman L may be disengaged from the set-screw R, and so placed that the extension of the pitman beyond the hook rests upon said set-screw. The result will be that no motion will be communicated to the swinging lever F, and the attachment will cease to operate.

The lost motion requisite to enable the needle to catch the goods before the crimping-blade recedes is obtained as follows: It will be noticed that when the long arm of the lever B begins to descend (the descent of the needle) and its short arm to rise, that the connecting-rod or pitman rises for some time before it takes any motion in the direction of its length. During this rising motion therefore no motion

is imparted to the swinging lever F nor to the crimping-blade; but as soon as the fold or gather has been caught and held by the needle the rising motion of the connecting-rod or pitman L changes gradually into a motion in the direction of its length, thus moving the swinging lever F and the crimping-blade away from the needle. It will thus be seen that though the requisite degree of lost motion is obtained, yet there is no time or point where the crimping-blade is not absolutely controlled by the lever. Therefore an accidental or varying pull on the cloth will not vary the width of the ruffle, as is the case in the ruffler now in use. This peculiar relation of the fulcrum of the lever B to that lever's connection with the pitman L, I regard as of great value in any sewing-machine attachment in which the goods are actuated by a crimping-blade, for not only does it produce the result stated above, but it also moves the crimping blade M with the greatest power at the last of the up and first of the down stroke of the lever B—that is, the last part of the approach of the crimping-blade to the needle and the first part of its retreat—at which time the greatest resistance occurs.

My attachment is shown in the drawings forming part of this specification as attached to a Willcox & Gibbs sewing-machine. By slight modifications, which would suggest themselves to any one familiar with sewing-machine attachments, it may be adapted to any form of sewing-machines.

Having now described my invention, what I claim as new, and desire to patent, is—

1. In a ruffling attachment for sewing-machines, the combination of the main plate, the lever pivoted thereto, and adapted to be actuated by the rise and fall of the needle bar or arm, the pitman pivoted to the short arm of the actuating-lever, the blade-carrier jointed to the pitman, the fulcrum of the lever, and

the point of attachment of the pitman thereto being arranged relatively to each other, as described, whereby when the needle is at or near the beginning or completion of its stroke the movement of the ruffling-blade is suspended, substantially as set forth.

2. The combination, with the crimping-blade carrier, the arm of its lower end and the crimping-blade secured thereto, of the set-screw adapted to bear upon the blade, whereby the tension of the same may be regulated, substantially as specified.

3. In a gathering or ruffling attachment for sewing-machines, an actuating-lever, a pitman, an arm hinged at one extremity and bearing a crimping-blade at the other, said arm being provided with a slot and set-screw adjustable within said slot and connecting said pitman to said arm, all so combined and arranged that by varying the position of said screw in said slot the range of oscillation of said arm may be varied, as and for the purposes described.

4. In a gathering and ruffling attachment for sewing-machines, an actuating-lever, a pitman united to said lever at one extremity, and at the other connected to a swinging arm bearing a crimping-blade, said arm being provided with a stud and said pitman with a hook, the whole so combined and arranged that the pitman may be engaged with or disengaged from the arm by engaging or disengaging said hook from said stud, as and for the purpose described.

In testimony that I claim the foregoing improvement in gathering and ruffling attachments for sewing-machines, as above described, I have hereunto set my hand this 2d day of May, 1883.

LANSING ONDERDONK.

Witnesses:

HENRY P. WELLS,
CHARLES G. COE.