(No Model.) 2 Sheets—Sheet 1.

J. H. TROWBRIDGE.

RUFFLER FOR SEWING MACHINES.

No. 423,399. Patented Mar. 11, 1890.

Fig. 1.

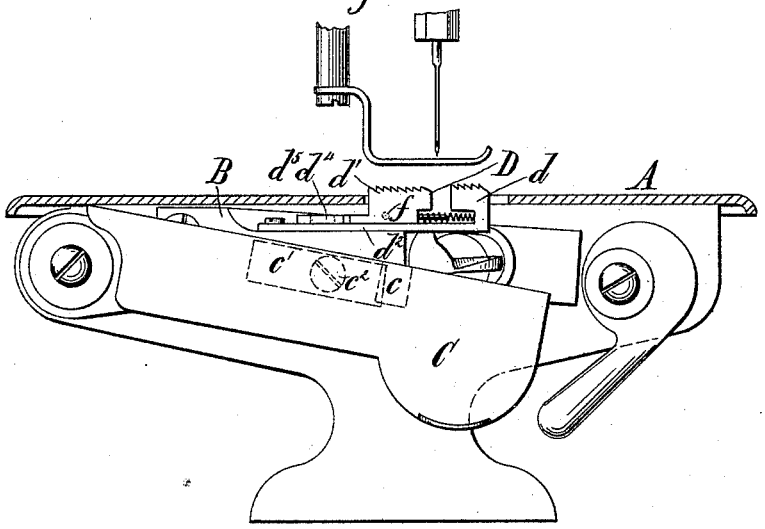


Fig 2

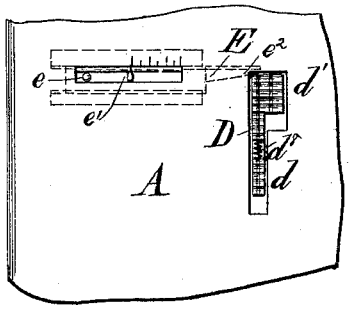
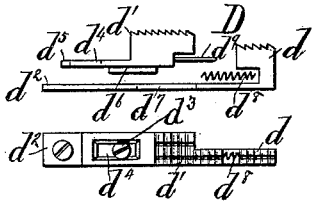


Fig. 3.



Witnesses;
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Katie A. Payne

Inventor;
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by his atty
Chas F. Dane.

(No Model.) 2 Sheets—Sheet 2.

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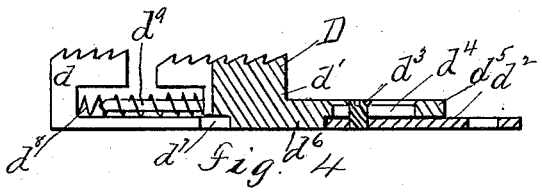

Fig. 4.

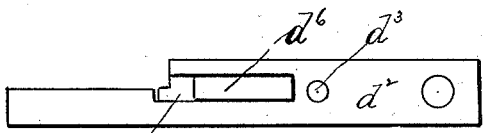

Fig. 5.

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UNITED STATES PATENT OFFICE.

JOHN H. TROWBRIDGE, OF NEWARK, NEW JERSEY, ASSIGNOR OF ONE-HALF TO EDWIN R. PARSIL, OF SAME PLACE.

RUFFLER FOR SEWING-MACHINES.

SPECIFICATION forming part of Letters Patent No. 423,399, dated March 11, 1890.

Application filed June 21, 1889. Serial No. 315,046. (No model.)

To all whom it may concern:

Be it known that I, JOHN H. TROWBRIDGE, a citizen of the United States, residing in the city of Newark, Essex county, and State of New Jersey, have invented new and useful Improvements in Sewing-Machines, of which the following, taken in connection with the accompanying drawings, is a specification.

My invention relates to sewing-machines; and it consists in adapting the ordinary sewing-machine to gather or ruffle goods without detachment or displacement of the operating parts, which I accomplish by forming the feed in two parts or sections and providing means for adjusting the length of throw of one part in its relation to the other, to gather or ruffle the material operated upon, or to cause said parts or sections to operate in unison for ordinary sewing, as will hereinafter be more fully described in detail.

The object of my invention is to so construct the ordinary sewing-machine as to allow the operator to change from plain stitching to ruffling or gathering without removing the goods or other article being operated upon from its position on the cloth-plate and without changing the position of the operating parts.

Referring to the drawings, in which my invention is shown as applied to a Willcox & Gibbs machine, although it is obvious, as will appear from the accompanying specification, that the same may be adapted for any sewing-machine, Figure 1 represents an end view of a sewing-machine provided with my improvements in position thereon; Fig. 2, a top plan view of a section of the cloth-plate of said machine; Fig. 3, a top and side view in detail of the feed detached from position on the machine; Fig. 4, a side view in section of the feed, and Fig. 5 a bottom view of the same.

To explain in detail, A represents the cloth-plate; B, the feed-carrier; C, the feed-cover, and D the feed, which in the instance shown is formed in two parts or sections, one of which is movable or adjustable in its relation to the other. The forward section d is secured on the feed-carrier B by means of its supporting-bar d^2 in the usual manner, as shown in Fig. 1, to be carried and operated thereby, as well known by those skilled in the art, and the rear section d' is loosely secured on the feed or supporting bar d^2 by means of a screw or rivet d^3, the head of which spans or engages the beveled edges of a longitudinal slot d^4, located in an arm or extension d^5 of said rear section d', as more clearly shown in Fig. 3, said section being also provided on its under side with a projection d^6, adapted to project and slide within a slot d^7 in the bar d^2, (see Fig. 3,) both of which (said screw or rivet d^3 and lower projection d^6) serve to retain in position and guide said rear or movable section d' on the bar d^2 when operated thereon, as will hereinafter be set forth. d^8 represents a coiled spring located between said sections d and d' and held in position on a stem d^9, projecting from one of said sections, (more clearly shown in Fig. 3,) adapted to yieldingly support or hold said rear section d' in an extended position from the forward section d, for the purpose to be hereinafter set forth. The upper or roughened engaging-surface of the forward section d in the instance shown projects slightly above the rear section d' and is slightly yielding in a vertical direction, owing to its location on the end of its supporting-bar d^2, which at this end projects beyond the feed-carrier B, as clearly shown, and has no direct support, which fact, in connection with its reduced size, allows the said section d to yield when in operation according to the thickness of the gathers, or, in plain sewing, to the seams or other irregularities in the material, as will appear obvious to those skilled in the art. When it is desired to gather or ruffle the fabric, the length of throw of said rear or movable section is altered in its relation to the forward section d to form gathers or ruffles by means of a suitable adjusting device.

In Fig. 2 I have provided an adjusting device E, consisting of a wedge-shaped plate (shown in dotted lines) located beneath the cloth-plate, adapted to slide in a dovetail groove or guideway therein, in a line transversely to the direction of the line of feed, as shown, and said adjusting-lever on its engaging side, near its free end e^2, is beveled or cut away toward a point to form an inclined engaging-surface adapted to engage the rear

side of the said rear or movable section d' to change the throw of the latter in its relation to the forward section d more or less, according to the position of the inclined engaging-surface of said adjusting-lever in its relation with said section, as will appear obvious to those skilled in the art. Said adjusting-lever is provided with a suitable knob or handle e, projecting through a slot or opening e' in the cloth-plate, by which it is operated, the movement of the same in its relative position to the said rear or movable section d' to adjust the throw of the latter being regulated by a scale located at the side of the slot e' in the cloth-plate, as shown. It is obvious, however, that said adjusting-lever may be operated from below the cloth-plate of the sewing-machine by means of a suitable knob or handle projecting therefrom instead of from above the cloth-plate, as described.

Referring to Fig. 1, I have shown in dotted lines another means for adjusting the throw of said movable section d'. In this instance I have provided said section with a pin or projection f on one side thereof adapted to project within an opening c, located in the upper edge of the feed-cover C, one side of which opening is made adjustable by means of an adjusting-plate c', which is supported and adjusted on the said feed-cover adjacent to the opening c therein, by means of a set-screw c^2, to lessen the width of said opening c and engage the pin or projection f on said movable section d' sooner or later to adjust the throw of the same, as will appear obvious to those skilled in the art.

The operation of my improved machine is as follows: In ordinary sewing the adjusting device E is moved back from engagement with the said rear or movable section d' of the feed, and the spring d^8 serves to keep the said movable section d' stationary in its relative position to the forward section d to allow the feed, consisting of the two said sections, to move or operate in unison to feed the material being operated upon uniformly, or, if desired, the said two sections may be locked together by a catch or other suitable means to close the opening between said sections to prevent any liability of thin fabrics falling or catching in said opening, and when the operator desires to gather or ruffle the material the said sections are disconnected and the adjusting device E is moved forward more or less, according to the width of gather desired, to engage with the said rear or movable section d' of the feed and limit the movement of the latter, and by thus shortening the throw of the rear section d' the forward section d, having a longer throw, feeds the material faster than the rear or movable section d', and thus gathers or ruffles the material, as will be readily understood by those skilled in the art.

Having thus set forth my invention, what I claim as new, and desire to secure by Letters Patent of the United States, is—

1. The combination, in a sewing-machine, with the stitching mechanism, of a feed-dog constructed in two parts or sections, said sections being supported and carried by a feed-carrier, and a spring located between said sections to elastically separate the same, whereby the same may be automatically varied in their relative length of throw by means substantially as and for the purpose set forth.

2. In a sewing-machine for gathering fabrics, the combination, with the stitching mechanism, of a feeding-dog consisting of two parts or sections carried and supported by a feed-carrier, one of which sections is provided with an arm, upon which the other is supported and guided, a spring for elastically separating said sections, and an adjusting device for engaging one of said sections, whereby the throw of one may be varied in its relative length of throw to the other, substantially as and for the purpose set forth.

3. In a sewing-machine, the combination, with the stitching mechanism, of a feeding and gathering dog formed in two parts or sections supported and carried by the feed-carrier, a spring for elastically separating said sections, an adjusting device, and a scale, arranged substantially as described, and for the purpose set forth.

4. In a sewing-machine, the combination, with the stitching mechanism, of a feeding and gathering dog formed in two parts or sections supported and carried by a single feed-carrier, the upper engaging-surface of one of which sections projects slightly above the other and is vertically yielding in its relation thereto, a spring for separating said parts or sections, and an adjusting device, substantially as described, and for the purpose set forth.

JOHN H. TROWBRIDGE.

Witnesses:
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CHAS. F. DANE.