

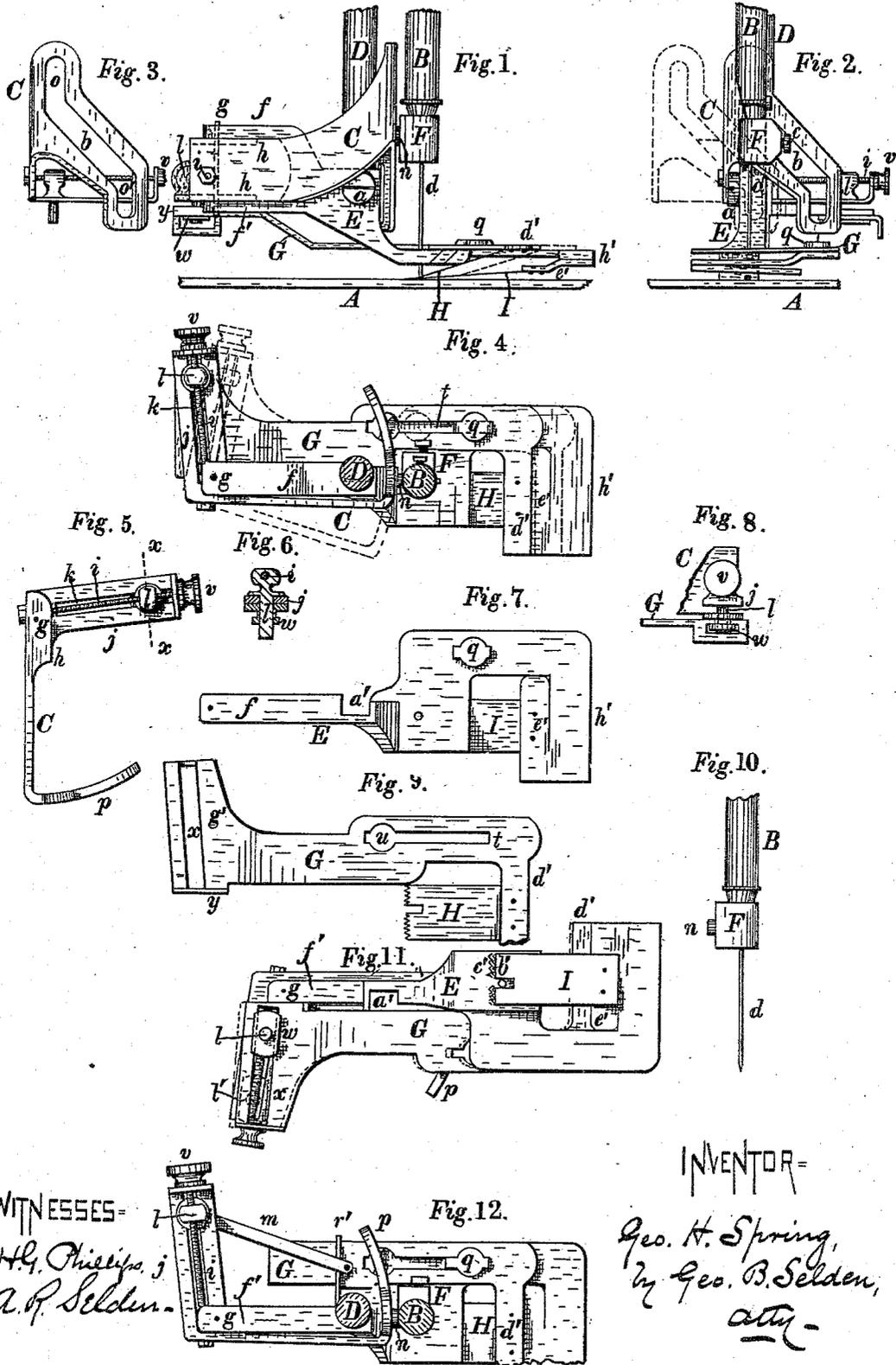
(No Model.)

G. H. SPRING.

RUFFLING ATTACHMENT FOR SEWING MACHINES.

No. 295,301.

Patented Mar. 18, 1884.



WITNESSES:
 H. Phillips, j
 A. P. Selden.

INVENTOR=
 Geo. H. Spring,
 by Geo. B. Selden,
 atty -

UNITED STATES PATENT OFFICE.

GEORGE H. SPRING, OF BATH, ASSIGNOR OF ONE-HALF TO EDWARD J. SUGRU, OF ROCHESTER, NEW YORK.

RUFFLING ATTACHMENT FOR SEWING-MACHINES.

SPECIFICATION forming part of Letters Patent No. 295,301, dated March 18, 1884.

Application filed June 28, 1883. (No model.)

To all whom it may concern:

Be it known that I, GEORGE H. SPRING, of Bath, Steuben county, New York, have invented certain Improvements in Ruffling Attachments for Sewing-Machines, of which the following is a specification, reference being had to the accompanying drawings.

My invention relates to certain improvements in ruffling attachments for sewing-machines, which improvements are fully described in the following specification, and the novel features thereof pointed out in the claims.

My improved ruffling attachment is represented in the accompanying drawings, in which Figure 1 is a side elevation. Fig. 2 is an end elevation. Fig. 3 is a view of the vibrating slotted lever detached. Fig. 4 is a plan view. Fig. 5 is a plan view of the vibrating slotted lever detached. Fig. 6 is a section on the line *x x*, Fig. 5. Fig. 7 is a plan view of the frame detached. Fig. 8 is an end view of the sliding connection between the vibrating lever and the blade-carrier. Fig. 9 is a plan view of the sliding blade-carrier detached. Fig. 10 represents the needle-bar and attached roller for actuating the vibrating lever. Fig. 11 is an inverted view. Fig. 12 represents a modification.

In the accompanying drawings, representing my improved ruffler attachment, A is the cloth-plate or bed of the sewing-machine; B, the needle-bar; C, the vibrating lever; D, the presser-bar; E, the supporting-frame attached to the lower end of the presser-bar; G, the sliding blade-carrier, and H the ruffler-blade. The supporting-frame E is attached to the lower end of the presser-bar by the screw *a*, Fig. 1, so that the ruffling attachment may be substituted for the ordinary presser-foot. The frame extends in each direction from the needle-bar in the line of the feed of the machine, being constructed to afford support for the forward end of the sliding blade-carrier in front of the needle, and to sustain the vibrating lever C in rear thereof. The frame also carries the stationary spring-blade I. The presser-bar is fitted to a notch, *a'*, Fig. 7, in the supporting-frame. The slotted lever C is vibrated on the pivot *g* in the rear end of the

supporting-frame, as indicated by the full and dotted lines in Figs. 2 and 4, by the roller or stud *n*, attached to a collar, F, on the needle-bar, working in the inclined slot *b* in the curved plate on the end of the lever C. The pin *g* is inserted in the arm *f'* on the supporting-frame below the lever, the upper end of the pin being sustained, if preferred, by the bent arm *f*, reaching upward from the frame. The lever C is bent on itself in curved form, as represented most clearly in the plan view, Fig. 5; the bent portion or plate *p* being made of suitable shape and size to contain the inclined slot *b*, in which the roller *n* travels. The slot *b* terminates at either end in the straight or vertical parts *o o'*, Fig. 3, the object of this construction being to secure the movement of the blade H in either direction while the needle *z* is traversing the central part of its up-and-down movement, and to keep the blade stationary at the extremities of the reciprocation of the needle. The curved plate *p* of the vibrating lever passes between the needle-bar and the presser-bar, as represented in Fig. 4. The sliding blade-carrier is attached to the frame E, so that it may reciprocate thereon, by the button or lug *q*, which projects through the slot *t* and laps over its edges. The slot *t* is widened at *u*, Fig. 9, for the purpose of permitting the removal of the blade-carrier from the frame. At its rear end the blade-carrier is pivotally connected with the arm *j* of the vibrating lever C in such manner that the distance traveled by the blade may be varied. The arm projects outward from the lever above the blade-carrier, and is provided with a slot, *k*, in which the pivot *l* is arranged to slide, being adjusted therein by the screw-rod *i*, having at its outer end the thumb-nut *v*, and supported in suitable bearings at either end of the arm. The screw-rod *i* passes through a threaded hole in the sliding pivot *l*. Below the arm *j* the pivot passes freely through the block *w*, which is arranged to slide in the slot *x*, Fig. 9, in the blade-carrier. By moving the pivot *l* toward the pin *g*, by the rotation of the screw-rod *i*, the throw of the blade-carrier is reduced, and vice versa, the movement of the blade H being correspondingly reduced or increased.

In order to form a guide for the rear end of the sliding blade-carrier, a flange, *y*, Fig. 9, is turned up on its edge, which flange fits a groove in the lower side of the arm *f'* of the supporting-frame. (See Fig. 11.)

The operation of my improved ruffler attachment will be readily understood from the preceding description.

The cloth is inserted above the spring I and below the ruffler-blade H, and the sewing-machine being operated in the usual manner, the cloth will be ruffled or plaited by the reciprocation of the blade H.

In order to vary the position of the serrated edge of the ruffling-blade at the extremity of its stroke, I make the slots *k* and *x* at an angle with the line of the reciprocation of the blade-carrier. When at mid-throw of the lever C, the slot *k* is about at right angles with the line of feed of the machine. The slot *x* is also inclined with this line, as represented in the drawings, the result of this arrangement being that when the ruffler-blade is making its shortest throw—that is, when the pivot *l* is in the position represented by the full lines in Fig. 11—the serrated edge of the blade comes even with or projects a short distance beyond the edge of the stationary blade I, as represented at *b'*, Fig. 11, while when the pivot *l* is at *l'* the edge will project farther beyond the stationary blade, as represented at *c'*. By placing the slot *k* at right angles with the radial line joining the pivot *g* and the central point of the slot *b* in the plate *p*, I reduce as much as possible the friction on the pivotal connection between the arm *j* of the lever and the sliding blade-carrier.

The placing of the slot *x* at an angle with the sliding blade-carrier G has practically the result of varying the length of the blade-carrier when the pivotal connection with the arm *j* is shifted in the slot *x*. Changing the length of the blade-carrier causes the ruffling-blade to travel farther beyond the needle, as represented in the drawings. By this arrangement the needle is caused to come down in the center of the plait without regard to its width.

The sliding blade-carrier is provided with an arm, *d'*, which projects across the line of feed, and to which the ruffling-blade is attached. The supporting-frame also has a projecting arm, *h'*, from which the portion *e'* is split and bent downward, (see Fig. 1,) to afford attachment for the spring-blade I.

In Fig. 12 I have represented a modification in which the blade-carrier G is attached to the adjustable pivot *l* by means of the pivoted connection *m*, a suitable guide, *r'*, being employed on the frame, if desired, to secure the blade-carrier in place.

I claim—

1. The combination, with a sewing-machine needle-bar carrying stud or roller *n*, of the supporting-frame E, the sliding blade-carrier G, serrated ruffling-blade H, and the swinging lever C, pivoted to the frame behind the needle-bar, and arranged to vibrate horizontally across the line of feed, and provided with the arm *j*, and the slotted plate *p*, located between the needle-bar and the presser-bar, and a suitable adjustable pivotal connection between the arm *j* and the blade-carrier, substantially as described.

2. The combination, with a sewing-machine needle-bar carrying projection *n*, of the supporting-frame E, the sliding blade-carrier G, serrated ruffling-blade H, and the horizontally-swinging lever C, pivoted to the supporting-frame and provided with inclined slot *b*, having straight ends *o o'*, and a suitable connection between the lever and the sliding blade-carrier, substantially as and for the purposes set forth.

3. The combination, with a sewing-machine needle-bar carrying projection *n*, of the supporting-frame E, the horizontally-swinging lever C, pivoted to the supporting-frame and provided with inclined slot *b* and arm *j*, and the sliding blade-carrier G, serrated ruffling-blade H, and an adjustable pivotal connection between the lever and the blade-carrier, arranged to be adjusted at an angle with the line of feed, substantially as and for the purposes set forth.

4. The combination, with a sewing-machine needle-bar carrying projection *n*, of the supporting-frame E, the sliding blade-carrier G, provided with slot *x*, serrated ruffling-blade H, and the horizontally-swinging lever C, pivoted to the supporting-frame and provided with inclined slot *b*, adjusting-screw *i*, pivot *l*, and sliding block *w*, substantially as and for the purposes set forth.

GEO. H. SPRING.

Witnesses:

JACOB SPAHN,
H. G. PHILLIPS.