

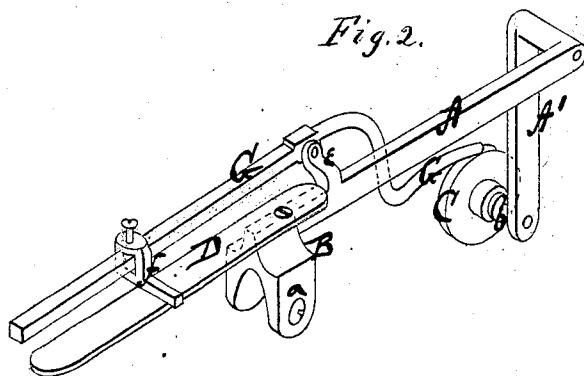
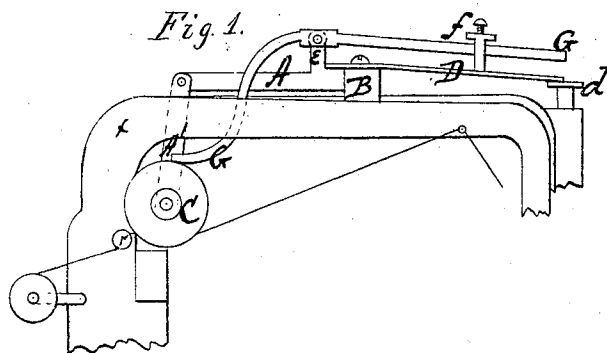
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EDWARD M. ESTABROOKE.

Improvement in Tension Regulators for Sewing Machines.

No. 119,589.

Patented Oct. 3, 1871.



Witnesses:

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UNITED STATES PATENT OFFICE.

EDWARD M. ESTABROOK, OF NEW YORK, N. Y.

IMPROVEMENT IN TENSION-REGULATORS FOR SEWING-MACHINES.

Specification forming part of Letters Patent No. 119,589, dated October 3, 1871.

To all whom it may concern:

Be it known that I, EDWARD M. ESTABROOK, of the city of New York, in the county of New York and in the State of New York, have invented certain new and useful Improvements in Tension-Regulator for Sewing-Machines; and do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawing and to the letters of reference marked thereon making a part of this specification.

The nature of my invention consists in the construction and arrangement, as hereinafter described, of a tension-regulator for sewing-machines of that class in which the tension is regulated automatically by the varying thickness of the material inserted under the presser-foot.

In order to enable others skilled in the art to which my invention appertains to make and use the same, I will now proceed to describe its construction and operation, referring to the annexed drawing, in which—

Figure 1 is a side view of a portion of a Wheeler & Wilson sewing-machine with my device attached thereto, and Fig. 2 is a perspective view of my tension-regulator.

A represents a straight bar, of suitable length, having at its front end a clamp, B, with set-screw *a*, for the purpose of attaching the same to the presser-foot arm of a sewing-machine. From the rear end of the bar A an arm, A', extends outward for a short distance and then downward, as shown. The bar A and arm A' may, in fact, be considered as one piece. Upon the lower end of the arm A' is a spindle, *b*, upon which is placed a wheel, C, deeply grooved around its circumference. In a Wheeler & Wilson sewing-machine this wheel is placed at the point marked *x* in Fig. 1, and has a certain device for regulating the tension, the spool-thread passing around the same. The spool or needle-thread in this case passes also around this wheel, but the tension is regulated in a different manner, making it automatic or self-regulating. On top of the front end of the bar A is secured a movable

spring, D, the front end of which rests upon the upper end of the presser-foot bar *d*. To a short standard, *e*, on the bar A is pivoted a lever, G, the rear end of which is curved, as shown, so as to bear on top of the wheel C, while the front end of said lever is straight, and provided with a slide, *f*, which rests upon the upper side of the spring D. This slide *f* being placed nearer to or further from the outer end of the spring D increases or diminishes the effect of the spring upon the lever G, and consequently the amount of friction upon the wheel C.

A thin material being operated upon requires little tension upon the thread, and the pressure of the spring upon the presser-bar being adjusted, by means of the clamp and the adjustable slide, upon this basis, the device will adjust the amount of tension according to the thickness of the material operated upon; for if a thicker material be inserted under the presser-foot it will be raised, raising with it the spring D and the forward end of the lever G, which, being pivoted at or near the center, lowers the rear end of the same, and increases the friction on the wheel C and tightens the thread.

The advantage of my device is that, being once adjusted upon a machine, there is no further trouble as to the tension of the thread, the same being self-regulating by means of the spring and lever.

Having thus fully described my invention, what I claim as new, and desire to secure by Letters Patent, is—

The combination of the bar A A', clamp B, wheel C, spring D, lever G, and slide *f*, all constructed, arranged, and operating substantially as and for the purposes herein set forth.

In testimony that I claim the foregoing I have hereunto set my hand this 9th day of September, 1871.

E. M. ESTABROOK.

Witnesses:

WM. EATON,
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