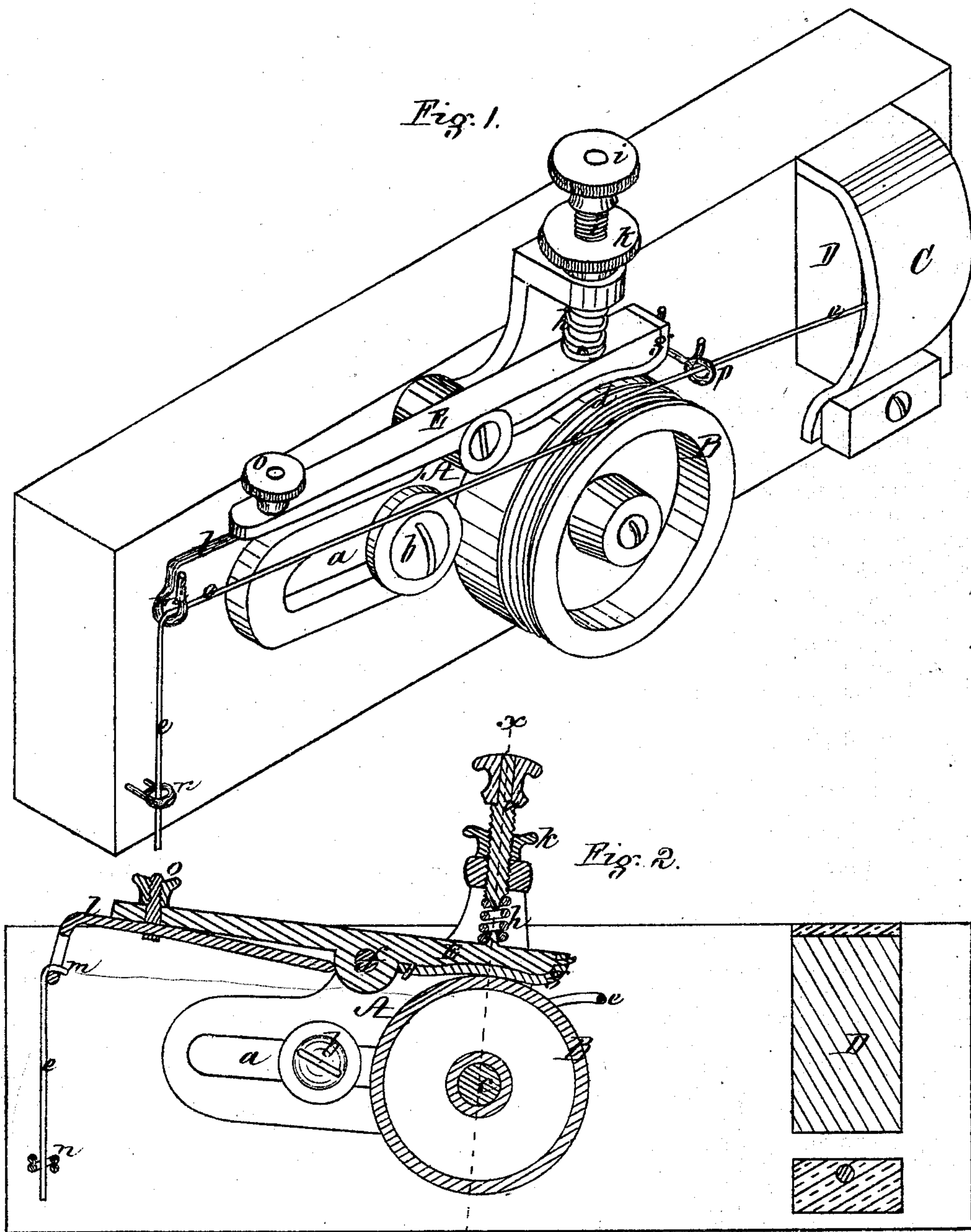


S. S. SPEAR.

Improvement in Tension Mechanism for Sewing Machines.

No. 123,054.

Patented Jan. 23, 1872.



Witnesses,
N. W. Stearns
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UNITED STATES PATENT OFFICE.

SAMUEL S. SPEAR, OF SOUTH WEYMOUTH, MASSACHUSETTS.

IMPROVEMENT IN TENSION MECHANISM FOR SEWING-MACHINES.

Specification forming part of Letters Patent No. 123,054, dated January 23, 1872.

To all whom it may concern:

Be it known that I, SAMUEL S. SPEAR, of South Weymouth, in the county of Norfolk and State of Massachusetts, have invented certain Improvements in Tension Mechanism for Sewing-Machines, of which the following is a full, clear, and exact description, reference being had to the accompanying drawing making part of this specification, in which—

Figure 1 is a perspective view of my improved tension mechanism. Fig. 2 is a longitudinal vertical section through the same.

My invention consists in a brake-lever bearing upon the wheel over which is conducted the thread as it comes from the spool, the thread passing through a guide at or near the outer end of the lever, so that any additional strain upon the thread will cause the friction of the brake upon the wheel or upon the thread to be instantly relieved, thereby equalizing the tension as required.

To enable others skilled in the art to understand and use my invention, I will proceed to describe the manner in which I have carried it out.

In the said drawing, A represents a plate provided with a slot, *a*, and secured in place by a clamping-screw, *b*. From this plate A projects a stud, *c*, upon which revolves a tension-wheel, B, around which, in a groove, *d*, is passed the thread *e* as it comes from the spool, not shown. C is a strip of rubber, between which and a block, D, passes the thread *e*, which device is commonly used in wax-thread sewing-machines to remove the surplus wax from the thread. Pivoted upon a stud, *f*, also projecting from the plate A, is a lever, E, the inner end of which is provided with a strip, *g*, of leather or other suitable material, which is pressed down upon the smooth portion of the periphery of the tension-wheel B by a spiral spring, *h*, the power of which is regulated by

a thumb-screw, *i*, provided with a check-nut, *k*. The lever E, with its spring *h*, thus acts as a brake to produce the required degree of friction upon the tension-wheel. To the outer end of the lever E is fitted an adjustable spring-guide, *l*, through the eye *m* of which and another guide, *n*, the thread is conducted to the needle.

Should any additional strain be brought upon the thread *e* by the passage of a knot or enlargement between the rubber C and the block D, or from any other cause, the outer end of the lever E will be drawn down by the thread, and its inner end raised against the resistance of the spring *h*, thus relieving the friction of the brake upon the wheel and reducing and equalizing the tension upon the thread as required, and preventing its breaking, which would otherwise be liable to occur. To increase the spring of the guide *l* to enable it to take up the slack of the thread, it is drawn out from the outer end of the lever E and held in place by the clamping-screw *o*, the plate A being moved in the opposite direction sufficiently to bring the eye *m* in line with the guide *n* and the needle.

Claim.

What I claim as my invention, and desire to secure by Letters Patent, is—

A tension mechanism for sewing-machines, consisting of the tension-wheel B, brake-lever E, guides *l* and *p*, and spring *h*, the lever being pivoted and arranged in connection with the wheel to operate as and for the purpose described.

Witness my hand this 11th day of November, 1871.

SAMUEL S. SPEAR.

In presence of—

N. W. STEARNS,
W. J. CAMBRIDGE.