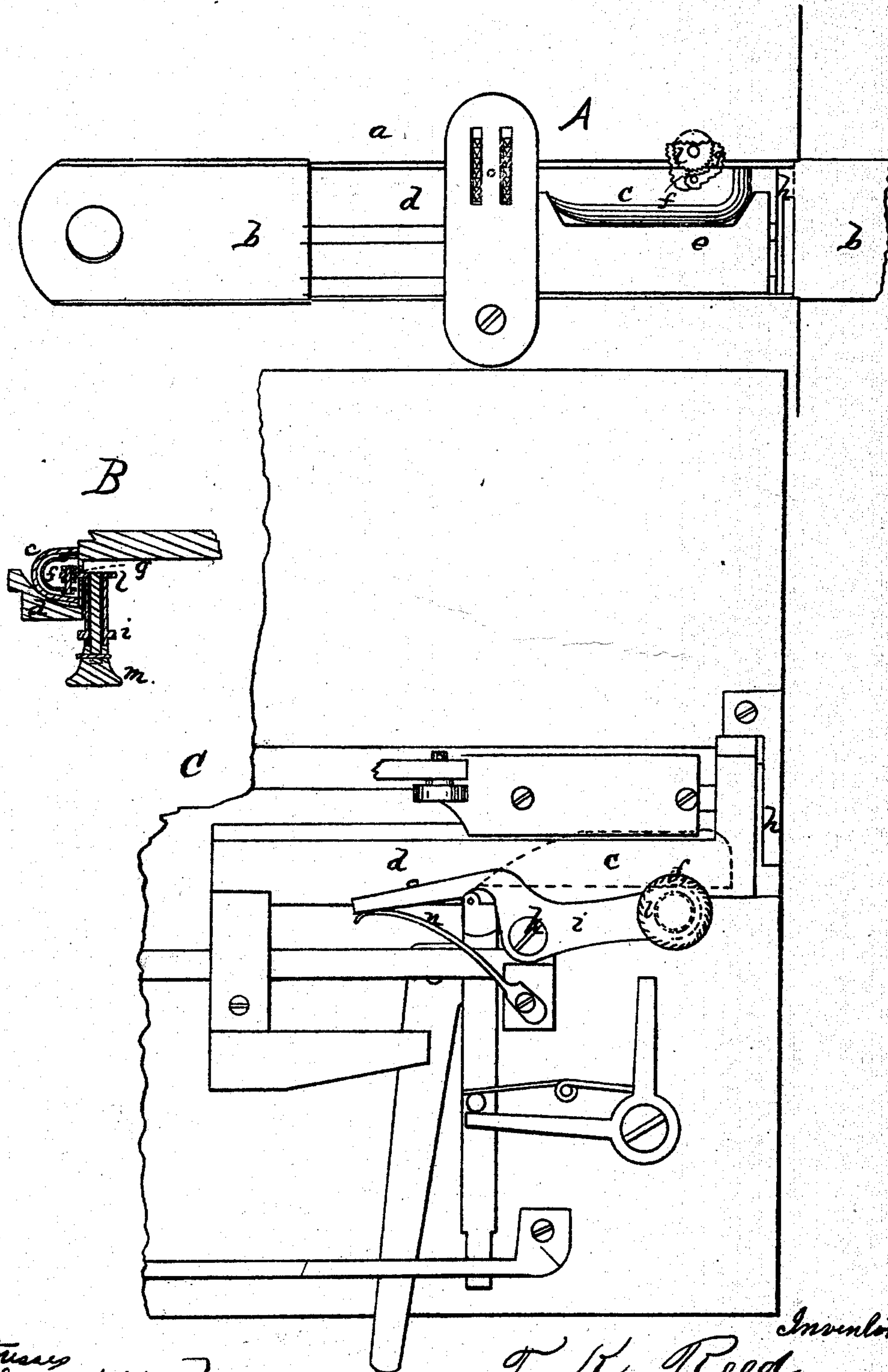


T. K. REED.
SEWING MACHINE.

No. 62,287.

Patented Feb. 19, 1867.



Witnesses
S. W. Hilder
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United States Patent Office.

T. K. REED, OF EAST BRIDGEWATER, MASSACHUSETTS.

Letters Patent No. 62,287, dated February 19, 1867.

IMPROVEMENT IN SEWING MACHINES.

The Schedule referred to in these Letters Patent and making part of the same.

TO ALL WHOM IT MAY CONCERN:

Be it known that I, T. K. REED, of East Bridgewater, in the county of Plymouth, and State of Massachusetts, have invented an Improvement in Sewing Machines; and I do hereby declare that the following, when taken in connection with the drawings which accompany and form part of this specification, is a description of my invention sufficient to enable those skilled in the art to practise it.

Letters Patent of the United States, No. 60,241, dated December 4, 1866, have been granted to me for an improvement in sewing machines, such improvement relating to means for adjusting the tension of the shuttle-thread while the machine is in operation, such adjustment being effected by the movement or traverse of the shuttle.

My present invention relates to means for regulating the tension of the shuttle-thread while the machine is not in operation, but without removing the shuttle-thread from the machine, these means being preferably connected with or so as to form part of the machine.

In my invention I apply to the shuttle a screw-shaft, or other equivalent device, by rotation or action of which the pressure upon the thread is increased or diminished, providing this device with a wheel or other means for operating it; and I construct the shuttle-race with a slot opening through it, in the plane of movement of the tension-operating wheel, or other device, so that when the shuttle is brought to a certain fixed point in the race, the tension device shall be directly adjacent or opposite to this slot, enabling an instrument to be introduced through the same to operate such device. I prefer, however, to combine with such arrangement or construction, a mechanism forming part of the machine, so constructed and located that when the shuttle is brought to rest, as just mentioned, this mechanism may be thrown into connection with and so as to operate the tension-regulating mechanism of the shuttle to change the tension upon the thread. It is in these peculiarities of construction and arrangement, through which the tension may be adjusted without removing the shuttle, that my present invention consists.

The drawings represent enough of a sewing machine embodying my improvement to enable the invention to be clearly understood, A showing such part of the machine partly in plan and partly broken; B, a cross-section through the tension-screw of the shuttle; C, a reversed plan of the mechanism directly connected with the invention. *a* denotes the table or work-supporting surface; *b b*, the slides through which access is had to the shuttle; *c*, the shuttle, traversing in a shuttle-race, *d*, by the action of a shuttle-driver, *e*, in the usual manner. The shuttle has a screw-shaft supported in bearings, between which bearings a spur-wheel or nut, *f*, is placed upon the shaft, rotation of this nut impelling the shaft lengthwise and causing a greater or less stress to be exerted by a C spring on the tension-plate, one end of this spring being fixed to the shaft and the other end connected to the tension-plate. Through the side wall of the shuttle-race is an aperture, *g*, in the horizontal plane of the reciprocating movement of the wheel or nut *f*; and when the shuttle is brought to rest at some fixed point, (as, for instance, when the driver *e* comes up to a stop, *h*,) the wheel *f* is brought directly opposite to the aperture *g*, as seen at A and C. Upon the under side of the table *a* is a swing-plate, *i*, turning on a pin, *k*, and having on its front end a bearing for a vertical shaft, which carries at its top a gear or spur-wheel, *l*, and at its lower end a finger-wheel, *m*, by turning which the wheel *l* is rotated. This wheel is situated directly opposite the opening *g*, and is normally held back from said opening by the action of a spring, *n*. When the shuttle is brought to a stop, as above set forth, by pressing the finger-wheel towards the shuttle-race, the spur or gear-wheel *l* is thrown into connection with the teeth on the nut *f*, so that by rotating the finger-wheel the nut is turned and the pressure upon the thread increased or diminished, according to the direction in which the nut is rotated. When the finger-wheel is released the spring *n* carries the wheel *l* back from the shuttle-race to its normal position.

Now, it will be readily understood that the specific arrangement and construction of the devices shown may be varied to suit the many styles and kinds of shuttles or machines in use, in each case, however, an aperture being made through one of the plates, within which the shuttle reciprocates, in such manner as will permit the introduction of some device, by which, when the shuttle is brought to some fixed point, a connection may be made between said device and the tension-changing device upon the shuttle to change the stress exerted upon the shuttle-thread.

I claim, in combination with a sewing-machine shuttle-race, an aperture or provision for insertion of an instrument or device through one of the walls or plates thereof, so that when the shuttle is brought to rest at a fixed position, connection can be made between such instrument or device and the tension mechanism of the shuttle, and the stress upon the shuttle-thread may be regulated by such connection, substantially as described.

I also claim combining with such provision a device fixed to or forming part of the machine, and so located that it may be thrown into and out of connection with the tension mechanism of the shuttle when the shuttle is at rest, and be made to operate such tension mechanism; substantially as set forth.

Witnesses:

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