F. H. BROWN.

Sewing-Machine.

No. 131,735. Patented Oct. 1, 1872.

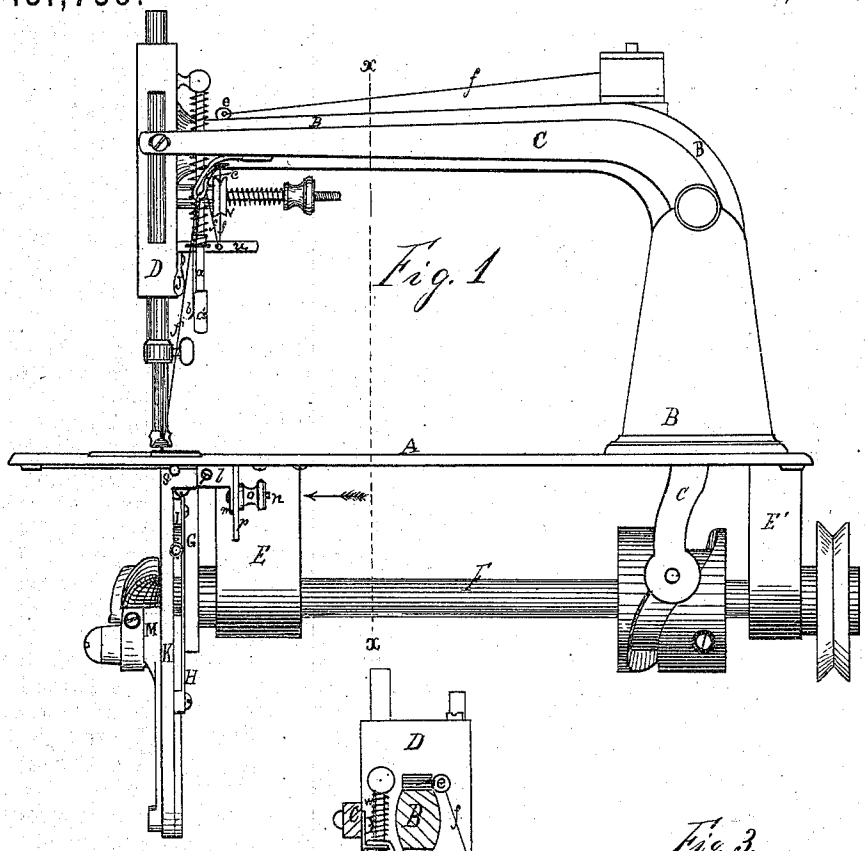

Fig. 1

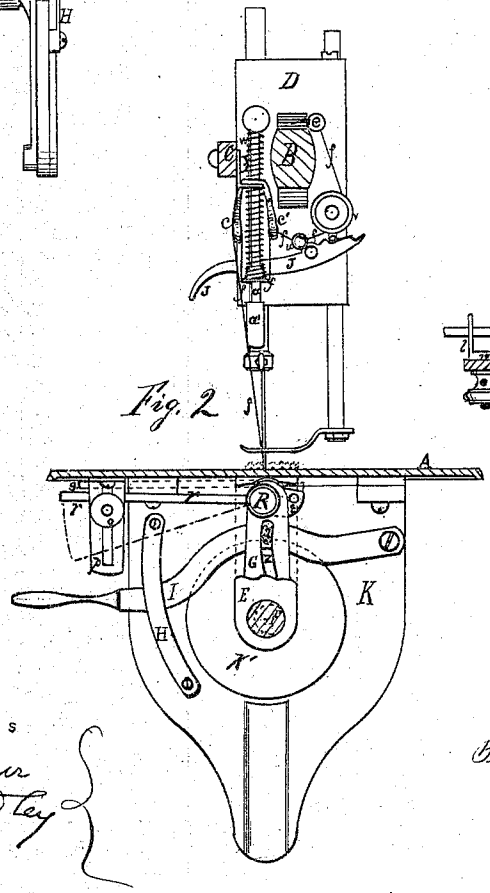

Fig. 2

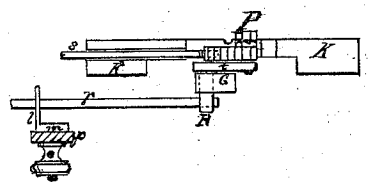

Fig. 3

Witnesses

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FRANKLIN H. BROWN, OF CHICAGO, ILLINOIS.

IMPROVEMENT IN SEWING-MACHINES.

Specification forming part of Letters Patent No. **131,735**, dated October 1, 1872.

To all whom it may concern:

Be it known that I, FRANKLIN H. BROWN, of Chicago, Cook county, and State of Illinois, have invented new and useful Improvements in Sewing-Machines; and I do hereby declare that the following is a full, clear, and exact description thereof, which will enable those skilled in the art to make and use the same, reference being had to the accompanying drawing forming part of this specification, in which—

Figure 1 represents a side view of a sewing-machine provided with my improvements; Fig. 2 is a vertical transverse section of the same taken at the dotted line *x x* of Fig. 1, and viewed in the direction indicated by the arrow; and Fig. 3 is a detail top view of the feeding mechanism.

Like letters indicate like parts.

My invention relates to sewing-machines, and consists in a novel method of regulating the position of the feed-bar so far as its height is concerned, to enable the operator to raise or lower the same with ease and dispatch preparatory to sewing upon heavy or light goods; a novel arrangement of parts to act as a "take-up" for the needle-thread.

In the drawing, A represents the bed-plate of the machine, which also serves as a frame to which to attach certain other parts of the machine. B B is the neck. C is the vibratory arm. D is the head of the machine. E and E′ are pendants or lugs cast on the under side of the bed-plate, in which lugs the shaft F has its bearings. G is a swinging or vibrating bar, operated by an eccentric upon the shaft F to actuate the feed-bar P. H is a flexible bridge fastened to plate K by any suitable means, under which bridge the lever I is passed, and, by the friction occasioned by the contact and pressure of these several parts, the lever is held in any desired position under the bridge, for the purpose of insuring the formation of stitches of a uniform length, the length of the stitch depending upon the position of the fulcrum *y* in the slot *z*. When the fulcrum *y* is placed low down in slot *z* the stitch will be long, but when it is raised to the upper part of the slot the stitch will be short; therefore the stitch may be graduated to any desired length between the two extremes by placing the fulcrum *y* in any desired intermediate position in the slot *z*, and it will be retained in any such position by friction occasioned by the pressure of the bridge upon lever I. In other words, the position of the lever I may be changed and held in any desired position without manipulation further than simply raising or lowering the same. E is a bearing for the forward end of the main shaft F, and arranged behind the face-plate K and the feed-actuating mechanism. *r* R *t* is a bent lever. The feed-bar P is pivoted to the vibratory arm *t* of said lever, shown in Figs. 2 and 3, arm *t* being rigidly attached to the part R working in a bearing through the upper end of the bar G, and held in position by means of the rod *r*, which is also rigidly attached to the part R, and is controlled at its outer end by the plate *l*, through which it passes and works. The rod *s* is fastened directly to the feed-bar P for the purpose of supporting it as it moves in a horizontal plane. When sewing thick or heavy goods the feed-bar P should be raised and made to act above the bed-plate much higher than will be necessary when sewing light or thin goods, and to enable the operator to graduate and regulate the position of the feed-bar with reference to the bed-plate so far as its altitude is concerned, I support the end of the arm *r* freely in an opening in plate *l*. The vertical part *m* of plate *l* is provided with a screw-pin, *n*, which projects through the slot of the pendant *p*. *o* is a thumb-screw run upon the pin *n* for the purpose of holding the piece *l* in any desired position. By loosening nut *o* the position of the plate *l* may be changed, thus making the adjustment referred to. *u* is a pin projecting horizontally from the head D, and provided with a perforation through which the thread is passed. This perforation is arranged at a point sufficiently distant from the head of the pin to prevent the slack thread from becoming entangled or broken by the end of the pin *u*. *c* and *c′* are open loops attached to the vibratory arm C, and preferably made flexible, and in form substantially as shown, so that the thread may be readily placed therein by pressing it over the ends of the loops instead of the difficult process of passing the end of the thread through the eyes formed by the loops. *a a′* is a vertical rod attached to a post projecting from the rear of the head D, and is provided with a vertical slot sufficiently wide to receive the thread. The rod *a* is provided with a spiral spring sur-

rounding it. The thread *f* passes from the tension device *v* through the perforation in the post *u*, from thence into the loop *c'*, and into the vertical slot in the post or rod *a;* from thence it is carried upward and suspended by the loop *c* from which it is carried through the eye of the perforating-needle.

It will be observed that in the operation of sewing the slotted rod *a* operates in connection with the post *u*, loops *c c'*, and spiral spring *w* as a "take-up" device. *a'* is an extension of the rod *a*, and forms a shoulder upon the same to support the spiral spring, and extends far enough downward to prevent the slack thread at this point from becoming entangled or broken about the lower end of the extension *a'*. One side of the slot in rod *a* is made flexible, so that it will readily open to admit the thread *f* and retain it therein, as shown at *b*, Fig. 1.

In my former improvements in sewing-machines the front bearing of the main shaft has been in the face-plate between the shuttle-carrying disk and the feed-actuating mechanism. My present improvement relating thereto consists in removing the bearing from the face-plate and placing it back of the feeding mechanism in an independent bearing there arranged. By this improved arrangement I secure greater compactness of the parts, and prevent the accumulation of oil and dust about the disk and face-plate where it would soil the thread.

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

1. The feed-bar P and the supporting and guiding-rod *s*, in combination with the lever *r* R *t*, having a bearing in the bar G, and pivoted to the feed-bar P.

2. The plate *l m*, provided with a screw-pin, *n*, in combination with the slotted pendant *p* and thumb-screw *o*, for the purpose of adjusting the lever *r* R *t* and regulating the feed-bar P, substantially as specified.

3. The rod *a*, provided with a spring or tongue, *b*, constituting a slot therein, and also provided with a spiral spring, *w*, in combination with loops *c* and *c'*, and post *u*, substantially as and for the purposes specified.

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Witnesses:

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N. C. GRIDLEY.