J. ROWE.

SEWING MACHINE.

No. 26,638. Patented Dec. 27, 1859.

Fig. 4.

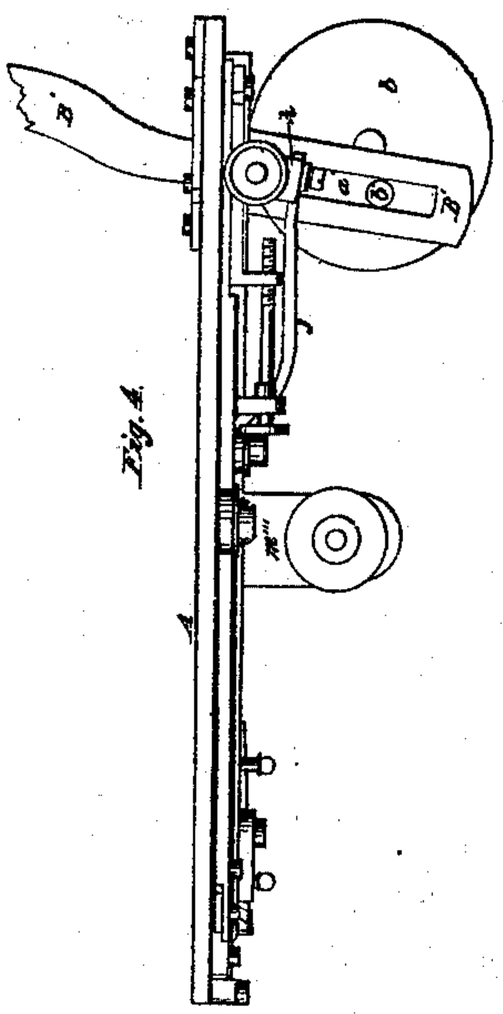

Fig. 3.

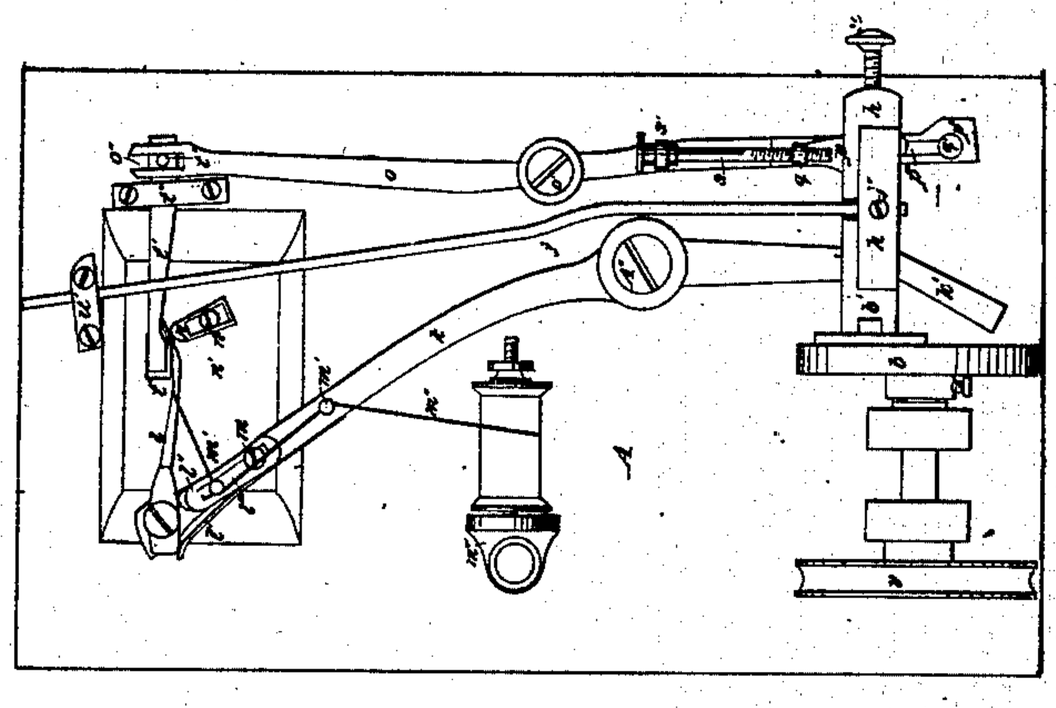

Fig. 2.

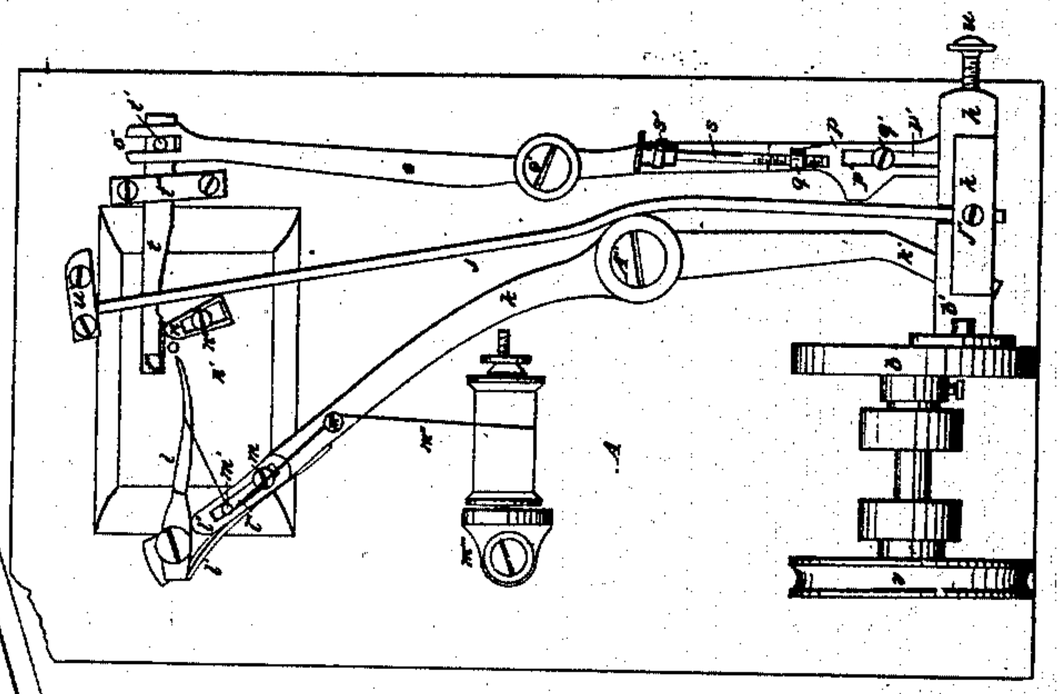

Fig. 1.

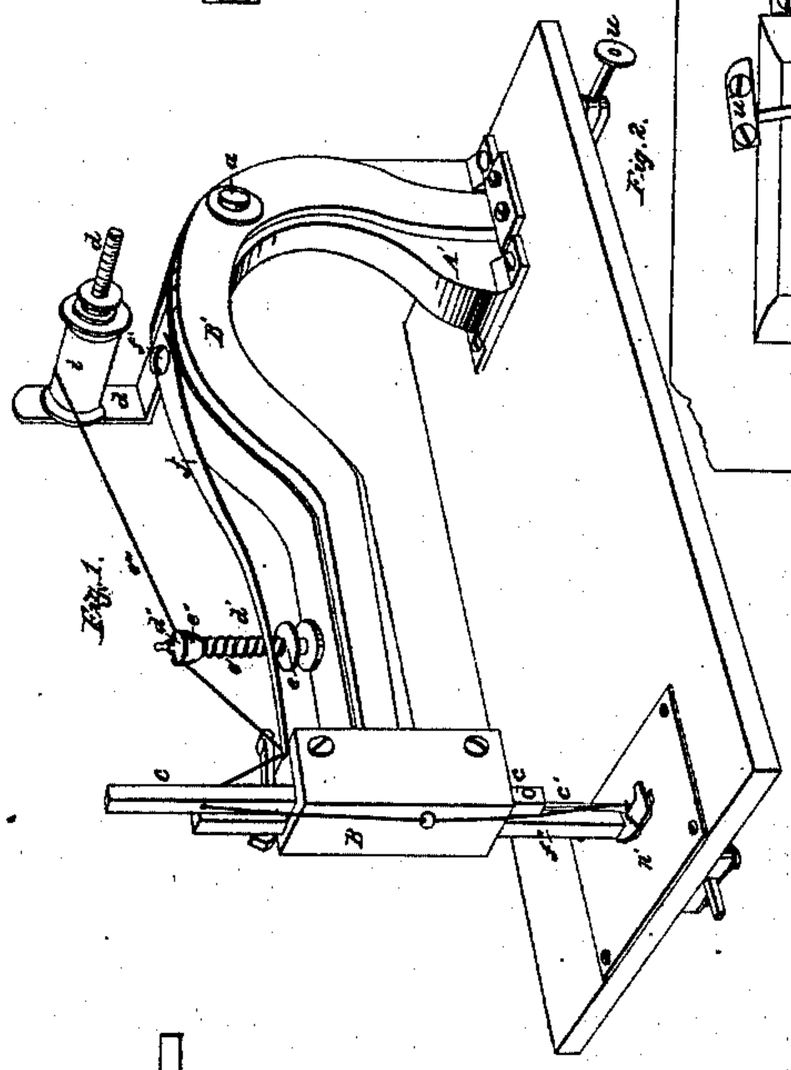

Fig. 5.

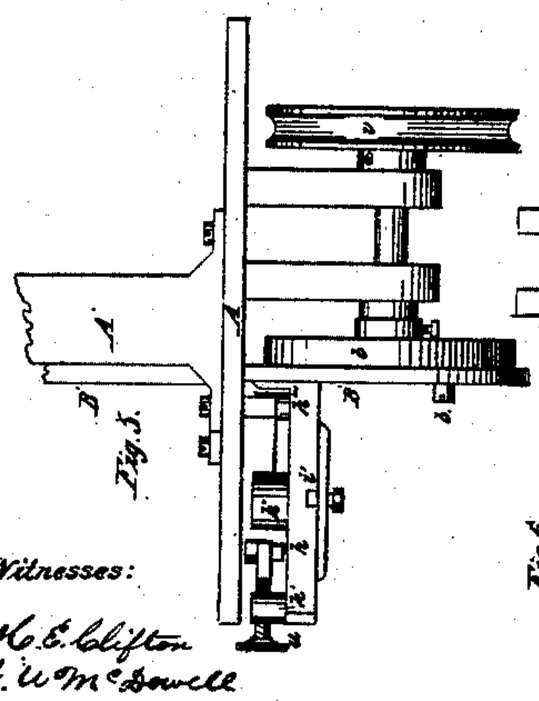

Fig. 6.

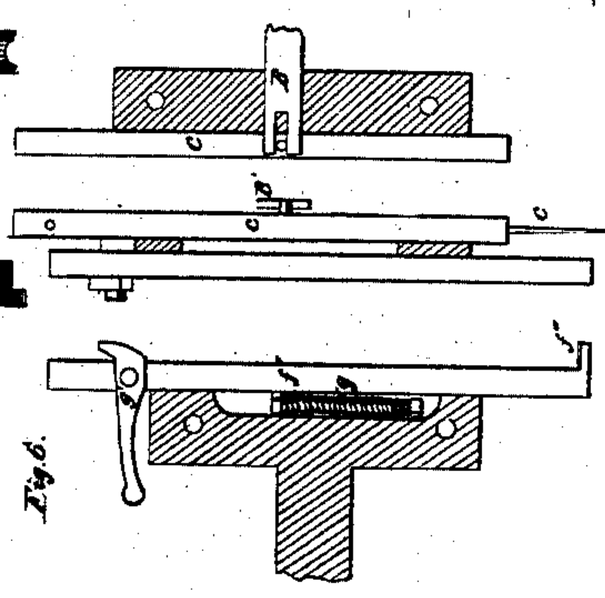

Fig. 7.

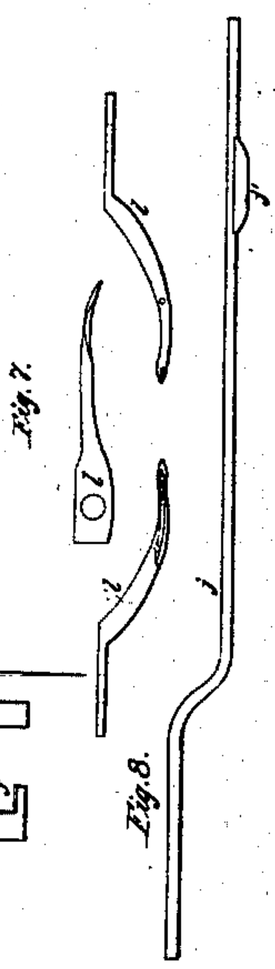

Fig. 8.

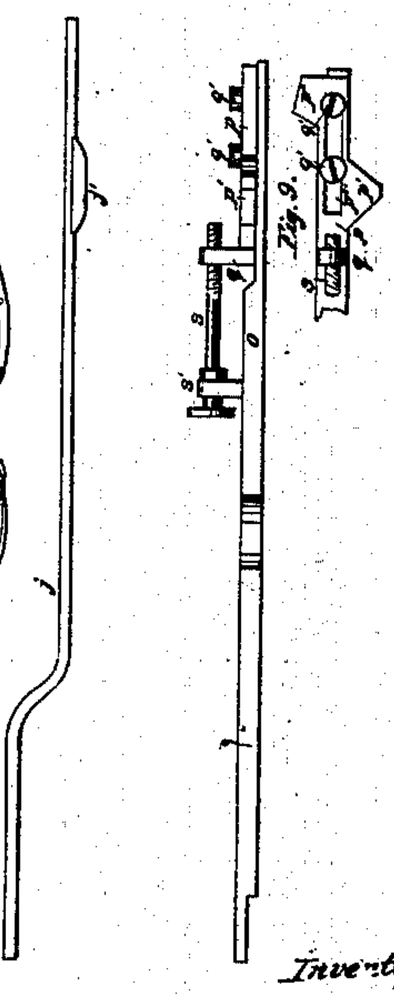

Fig. 9.

Witnesses:

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UNITED STATES PATENT OFFICE.

JAMES ROWE, OF CINCINNATI, OHIO, ASSIGNOR TO HIMSELF AND MARTIN B. EWING, OF SAME PLACE.

IMPROVEMENT IN SEWING-MACHINES.

Specification forming part of Letters Patent No. **26,638**, dated December 27, 1859.

To all whom it may concern:

Be it known that I, JAMES ROWE, of Cincinnati, in the county of Hamilton and State of Ohio, have invented a new and useful Improvement in Sewing-Machines; and I do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawings, and to the letters of reference marked thereon, and made to form a part of this specification.

The nature of my invention relates to certain improvements in sewing-machines, by means of which I am enabled to construct a sewing-machine which will be simple, durable, and fully efficient in every particular, at a much less cost than that of ordinary machines that form a similar stitch.

In reference to the accompanying drawings, Figure 1 is a perspective view, Figs. 2 and 3 are bottom views, Fig. 4 is a side elevation, Fig. 5 is an end elevation, and Fig. 6 is a sectional view, of the machine. Fig. 7 represents side and top views of the looper. Fig. 8 is a side elevation of the device for operating the feeder. Fig. 9 is a top view of a portion of the bar which operates the feeder.

A represents the bed-plate of the machine. A′ is an arm secured upon the top of the bed-plate, upon which the post or head B for holding the needle and pressure bars is arranged. B² is a bent lever pivoted to the arm A′ at *a′*, and passing downward through the plate A, where it is formed with a slot, *a′*, which is adapted to receive the crank or pin *b′* of the driving-wheel *b*, by means of which, through the medium of said lever B′, the needle-bar *c* and needle *c′* may be operated.

d is a spool-frame attached to the arm A′.

d′ is a tension-post attached to the arm A′, formed with a cap or shoulder, *d″*, and provided with a nut, *e*, which is made to turn upon the screw-thread of the post *d′*, and also with a spiral spring, *e′*, and cup *e″*, which is formed to fit the shoulder *d″*. The thread *e‴* from the spool *i* is made to pass through the post *d′* below the shoulder *d″*, so that by turning the nut *e* any desired tension may be secured to the thread *e‴*.

f is a spring attached to the arm A′ at *f′*, and, extending therefrom beyond the post *d′*, is adapted to regulate properly the slack thread between the said post *d′* and the needle *c′* during the operation of sewing.

The pressure-bar *f″* and needle-bar *c* are arranged within the head or post B, as is usual in like machines, the pressure-bar *f″* being formed with a foot, *f‴*, which is adapted to bear upon the cloth, and provided with a spring, *g*, by means of which the said foot is held down upon the cloth, and with a lever, *g′*, by means of which the said bar *f″* may be raised when it may be desired to move the cloth.

h (fully shown in Figs. 2 and 3) is a bar attached to the lever B′ below the bed-plate A, so that it is made to vibrate as the lever is operated by means of the crank-wheel *b b′*. The said bar *h* is provided with three pins, *h′ h″ h‴*, and formed with a slot, *i′*, for the reception of rod *j*. *k* is a bent lever pivoted upon the under side of plate A at A″, the end *k′* being bent, and to pass between pins *h″ h‴* of bar *h*, so that as said bar is made to vibrate the said lever *k* is made to operate in such manner as to give reciprocating motion to the looper *l*. The said bar *k* is provided with a spring, *l′*, which is made to bear against the looper, as shown in Figs. 2 and 3, in such manner as to hold the looper *l* from the needle, or prevent it from striking against the needle as the machine is made to operate.

l″ is an adjustable guide formed with a slot, *l‴*, and is also arranged to bear against the looper, as represented, and is secured upon the lever *k*, and also adjustable by means of the set-screw *m*, so that the looper *l* may always be made to approach and leave the needle in the proper manner to form the loop. *m* are posts attached to the lever *k*, and serve as guides for the thread *m″* from the spool-frame *m‴* to the looper, and by means of which, in combination with the backward motion of the forward end of lever *k*, the slack of the thread *m″* may be properly taken up as the needle is withdrawn from the cloth.

n is a cam secured to the needle-plate *n′*, and adjustable by means of set-screw *n″* with reference to the looper *l* and needle *c′* in such manner as to hold the point of the looper in the

proper position for the needle to enter the loop, and by means of this cam precision and certainty in effecting the loop and forming the stitch may be secured.

o is a lever pivoted to the plate A at *o'*, the forward end of which is made with a slot, *o''*, which is adapted to receive the pin *t'* of the feeder *t*. The rear end of said lever *o*, which passes between the pins *h' h''* of the bar *h*, is provided with an adjustable sliding bar, *p*, which is formed with two cams, *p' p''*, slot *p'''*, and projection *q*, and secured upon the said lever *o* by means of screws *q'*. The said bar *h* is adjustable by means of the screw-rod *s*, which passes through the lug *s'* of lever *o*, in such manner that the cams *p' p''* may be made to impinge against the pins *h' h''* of the bar *h* at the proper time to operate the feeder *t*, so that the cloth may be moved while the needle is raised above it.

u is a screw arranged to pass through the pin *h'*, and thereby to impinge against the cam *p''* when it may be required to form longer stitches, greater vibration being thereby imparted to the lever *o* and longer stroke given to the feeder *t*.

j is a bent rod, which is provided with an inclined plane, *j'*, and made to pass through the slot *i'* of the bar *h*, where it is secured by means of screw *j''*, and also through the guide-piece *u'* of plate A by means of the screw *j'''*. The said rod *j* may be so adjusted that the inclined plane *j'* may be made to bear upon the feeder at any desired time in the operation of the machine, so that the feeding of the cloth may be accomplished at the precise moment necessary to the perfect working of the machine. The feeder *t* is made in the form of a spring, so that it may be free from the cloth, except when acted upon by the said inclined plane *j'*, and it is adjusted, as is usual in sewing-machines, so as to operate upon the cloth through the slot *t''* of the needle-plate *n'*, and it may be properly secured by means of the bracket *t'''* of plate A.

Having described the construction of my invention, its operation may be set forth as follows: The driving-wheel *b*, being made to rotate by means of a band running over pulley *v*, the arm B', needle-bar *c*, needle *c'*, and vibratory bar *h* will be operated, as before described, the machine being made to operate from that position of its parts shown in Fig. 2, in which the vibratory bar *h* is at the extremity of its backward motion. As the machine continues to operate and the bar *h* to move forward, the pin *h''* is made to impinge against the bent portion *k'* of levers *k*, and thereby operate the forward end of said lever in such manner as to force the looper forward. During this operation the needle is being withdrawn by the upward motion of the forward end of lever B', so that when the point of the looper arrives at the needle the loop of the needle will be in proper position to receive the point of the looper. The machine continuing to operate, the looper will be forced forward, its point will impinge against the cam *n*, and thereby be forced forward in the direction of the needle *c'*. At this period in the operation of the machine the needle will be withdrawn free from the cloth. The pin *h''* now impinges against the cam *p'* of the bar *p*, before described, by means of which the lever *o* will be operated in such manner as to force the feeder forward at the same time the inclined plane of the rod *j* is made to bear upon the feeder, thereby causing the feeder to press against the cloth between it and the foot *f'''* of the pressure-bar *f''*, so that the cloth may be fed the proper distance for one stitch, while the needle is free from it. The bar *h* is now at the extremity of its forward motion. The machine continuing to operate, the needle is again forced to enter the cloth. The rod *j* is withdrawn by the backward motion of the bar *h*, so that the inclined plane *j'* will not press upon the feeder. The said feeder now being free, the pin *h'* impinges against the cam *p''*, by means of which the feeder will be retracted. The needle, having again passed through, arrives at the proper position to pass through the loop of the looper *l* before the point of said looper has been retracted from the cam *n*, thereby rendering it certain that the needle must pass through said loop. The pin *h'''* now impinges against the bent portion *k'* of the lever *k*, thereby operating the said lever *k* in such manner as to retract the looper, thereby taking up the slack of the thread *m''* and giving the under chain of the stitch sufficient tension for practical sewing, the upward motion of the needle being sufficient to give the thread *e'''* sufficient tension to form a perfect stitch upon the upper side of the cloth. In case the feeder *t* is made to act too soon or too late for the perfect operation of the machine the screws *q'* will be loosened, and the screw-rod *s* operates so as to adjust the bar *p* in such manner that the pins *h' h''* may rock the cams *p' p''* at the proper time to render the action of the feeder perfect, and should longer stitches be required than those formed by the natural action of the cams *p' p''*, the screw *u* will be turned so that the cam *p''* may act upon the point of said screw *u* instead of pin *h'*, thereby giving greater lateral motion to the forward end of lever *o* and greater stroke to the feeder *t*, by means of which the cloth may be fed in such a manner that stitches of any required length may be formed.

I do not wish to be understood as claiming anything for the mode of operating the needle-bar, or of securing tension to the upper thread, as I am aware that similar devices are in common use for like purposes; but

Having described the construction and operation of my invention, what I claim as my invention, and desire to secure by Letters Patent, is—

The bar or bracket *h* on the lower end of the needle-bar, so that it shall drive, in combination, the looper-bar *k k'* and the feeding-levers *j* and *o*, by positive movement, when it is driven by the crank-pin *b'*, all operating in the manner and for the purpose set forth.

In testimony of which invention I have hereunto set my hand in presence of witnesses.

JAMES ROWE.

Witnesses:
H. E. CLIFTON,
F. A. MCDOWELL.