

J. S. FLETCHER.
SEWING-MACHINE.

No. 173,278.

Patented Feb. 8, 1876.

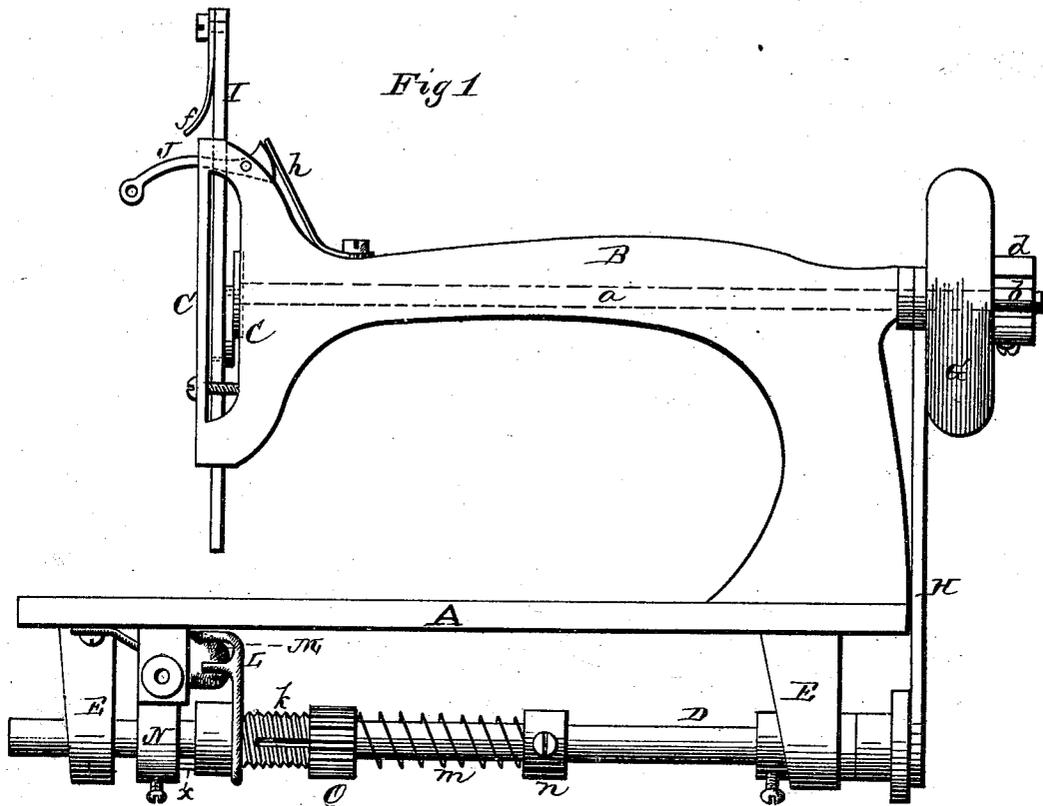


Fig 3



Fig 4

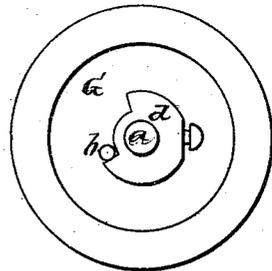
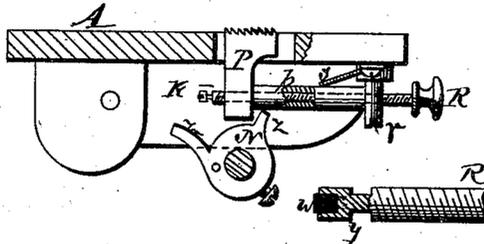


Fig 2



WITNESSES
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JAMES S. FLETCHER, OF APPLETON, WISCONSIN.

IMPROVEMENT IN SEWING-MACHINES.

Specification forming part of Letters Patent No. **173,278**, dated February 8, 1876; application filed July 26, 1875.

To all whom it may concern:

Be it known that I, JAMES S. FLETCHER, of Appleton, in the county of Outagamie and in the State of Wisconsin, have invented certain new and useful Improvements in Sewing-Machines; and 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, making a part of this specification.

My invention relates to sewing-machines, and has for its object to simplify the construction thereof; and the nature of my invention consists in the construction and arrangement of the parts, all as more fully hereinafter set forth.

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 elevation of a sewing-machine embodying my invention. Fig. 2 is a view of the feed-mechanism. Fig. 3 is a view of the shuttle-carrier, and Fig. 4 is a side view of the fly-wheel, showing its connection with the shaft.

A represents the bed-plate of the machine, and B is the usual L-shaped arm or standard thereon, with the head C upon its outer end. In hangers E E, upon the under side of the bed-plate, is placed a shaft, D, running the entire length of the machine. The shaft receives its motion from an eccentric formed on the hub of the fly-wheel G, and a pitman placed around said eccentric and connecting with a crank-pin on the end of the shaft D. The fly-wheel G is placed loosely on the shaft *a* that passes horizontally through the upper part of the arm or standard B. From the side of the fly-wheel G projects a pin, *b*, which enters a clutch *d* secured on the end of said shaft. This device so times the movement of the shuttle and feed that the machine runs equally well backward or forward, and enables inexperienced persons to run the machine readily, and permits the operator to start the machine with the foot without fear of breaking the needle or thread. On the opposite end of the shaft *a* is the ordinary mechanism

for operating the needle-bar I. J represents the take-up, pivoted in the head C back of the needle-bar, and passes forward through a slot in said bar. On the needle-bar I is secured a spring, *f*, which at the proper moment presses down the take-up, and when the take-up is down to its lowest point the passage of the spring over the take-up allows the needle-bar to continue its downward movement. The recoil of the spring during the ascent of the needle-bar keeps the take-up down long enough to permit the loop to be caught by the shuttle. The inner end of the take-up is rounded, as shown, and on the same bears a spring, *h*, which is fastened to the arm or stand B. This spring acts as a brake on the take-up, and prevents motion, excepting when the take-up is forced up or down by the needle-bar and spring. K is the shuttle-race, against which the shuttle M is held by the shuttle-carrier L. This shuttle carrier or driver is formed with an elongated hub, *k*, placed on the shaft D, and provided at one end with a hole to fit over a pin, *x*, projecting from the feed-cam N. The other end of the hub *k* is provided with exterior screw-threads, and is cut or split longitudinally, as shown in Figs. 1 and 3. A nut, O, is then screwed on this end of the hub, and a spring, *m*, holds the shuttle-driver up in its place, said spring abutting against a collar, *n*, on the shaft.

By this means the shuttle can readily be removed from below the table A when the machine is covered with work. It also enables the operator to remove the shuttle-carrier to smooth it if it should be rough, and the nut O allows the operator to clamp the shuttle-driver firmly to the shaft, if required.

P represents the feed-bar, attached to a screw-sleeve, *p*, which is loosely connected to a post, *r*, under the table. Through this sleeve passes a screw, R, formed with a shoulder, *y*, on its inner end. The feed-cam N is constructed, as shown in Fig. 2, with projections *z z* for moving the feed back and forth, one of said projections operating on the shoulder *y* of the screw, so that by turning said screw the stitch may be lengthened or shortened as desired. The feed is raised by the cam N and lowered by the spring *s* bearing on top of the sleeve *p*.

It will be noticed that both the shuttle-driver and feed-movement are connected directly to the shaft D, thereby doing away with a great deal of machinery generally used to move the feed-bar and shuttle. It will also be noticed that the feed-bar and shuttle move in the same direction, and that the shuttle passes through the loop when it is traveling from the operator.

To lessen the noise, rubber or other soft substance *w* is inserted in a recess made in the inner end of the feed-screw R.

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

1. The combination, with the arm B, of the shaft *a*, passing through the same, the fly-wheel G placed loosely on the end of the shaft, and provided with the pin *b*, the clutch *d* secured on the shaft B, and the connecting-rod or pitman H, and the shaft D, whereby the shuttle and needle are brought into relative position, all substantially as and for the purposes herein set forth.

2. The combination of the needle-bar I, provided with vertical spring *f*, the take-up J, having a cam on its inner end, the head C, and the spring *h*, secured to the standard, and bearing on the cam of the take-up, all substantially as and for the purposes herein set forth.

3. The combination of the shuttle-carrier L, with elongated hub *k*, having one end split, and provided with exterior screw-threads, the nut O, and spring *m*, all substantially as set forth.

4. The combination of the feed P, tube *p*, with spring *s*, regulating-screw R, with shoulder *y*, and the cam N, with projections *z*, substantially as and for the purposes herein set forth.

In testimony that I claim the foregoing I have hereunto set my hand this 5th day of June, 1875.

JAMES S. FLETCHER.

Witnesses:

T. J. FRANKLIN,
ARTHUR LEBERMAN.