

O. S. HAZARD.
Sewing-Machines.

No. 155,798.

Patented Oct. 13, 1874.

Fig. 3.

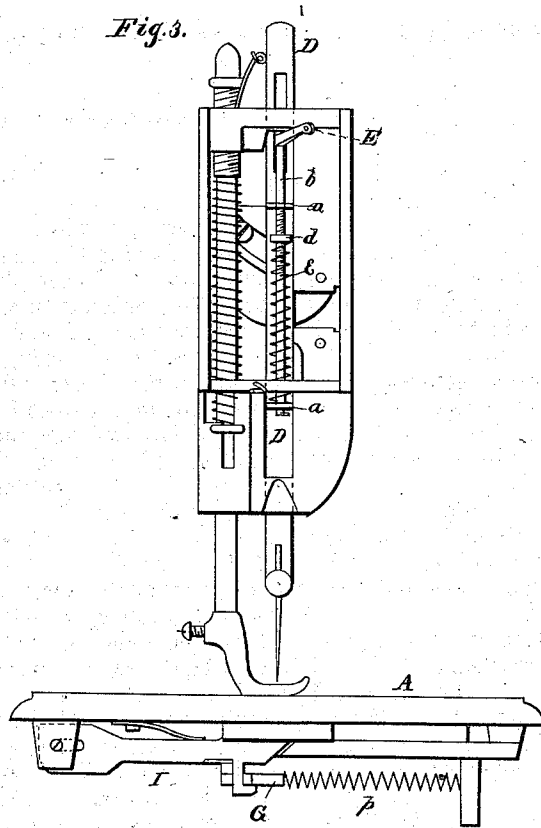


Fig. 5.

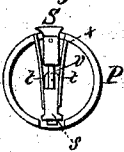


Fig. 4.

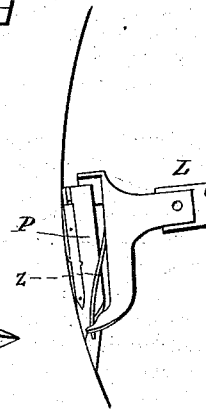
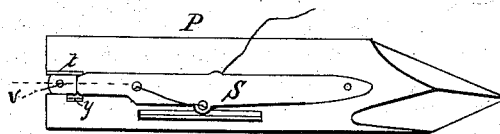
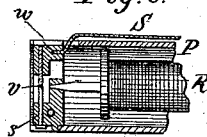


Fig. 6.



Witnesses:

Henry N. Miller
H. F. Du Rameau

Inventor:

Olivier S. Hazard
Per H. J. Abbott
Attorney.

UNITED STATES PATENT OFFICE.

OLIVER S. HAZARD, OF ANTHONY, RHODE ISLAND.

IMPROVEMENT IN SEWING-MACHINES.

Specification forming part of Letters Patent No. **155,798**, dated October 13, 1874; application filed March 28, 1874.

To all whom it may concern:

Be it known that I, OLIVER S. HAZARD, of Anthony, county of Kent and State of Rhode Island, have invented certain new and useful Improvements in Sewing-Machines, of which the following is a specification:

The nature of my invention consists, first, in the construction and arrangement of the "take-up;" and, second, in the construction of the shuttle, all of which will be hereinafter more fully 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 improvements. Fig. 2 is a bottom view of the same, the inner end of the feed-lever being broken off and shown detached. Fig. 3 is an end view of the machine. Fig. 4 is a plan view of the shuttle; Fig. 5, an end view of the same; and Fig. 6, a longitudinal section of the heel part thereof.

In this specification I do not deem it necessary to describe any more of a sewing-machine than what is necessary for a full understanding of my improvements.

A represents the bed of the machine, with the usual standard B, at the end of which is the head C. In the head C the needle-bar D is moved vertically up and down. On the side of the needle-bar are two projections, *a*, through which passes a rod, *b*, having a head upon its lower end. Screw-threads are formed on this rod, so that a nut, *d*, may be adjusted up and down on the same below the upper projection *a*; and between this nut and the lower projection a spiral spring, *e*, surrounds the rod, which rod is thus suspended by the nut *d* resting on said spring. While the needle-bar is down, the shuttle passes part through the loop, and, as it rises, the upper end of the rod *b* comes in contact with and pushes the take-up lever E, pivoted in the head C, upward. Being suspended on the spring *e*, the rod drops as the spring contracts and pushes the take-up continuously harder until the shuttle has passed through, when the spring expands and draws up the slack

and forces the take-up ahead of the shuttle, thereby causing the shuttle to draw the upper thread down into the cloth. G represents the feed-lever, which is pivoted near its middle to a circular plate, H, and this plate is hung, by trunnions *f f*, in bearings *h h* formed on or attached to the under side of the bed-plate A, thus allowing the ends of the feed-lever to rise and fall, and also move horizontally. The front end of the lever G is connected to the feed-bar I. The back end is in the form of a plate, with a cam, *i*, on its upper surface, and at its outer edge is attached a pin with roller *k*. The upright shaft J of the machine is in crank form at the lower end. Upon the crank-pin *m* is a roller, *m'*, and below is fastened an adjustable cam, K, the crank-pin extending below said cam a suitable distance. As the shaft J revolves, the roller *m'* operates the shuttle-lever L. The end of the crank-pin *m* comes in contact with the incline or cam *i* on the inner end of the feed-lever G, and thereby raises the feed-bar I. The cam K at the proper time comes in contact with the roller *k*, and moves the feed-bar forward. A spring, *p*, draws the lever back to place. It will thus be observed that the feed-lever G transmits all the different motions direct to the feed-bar. P represents the usual hollow shuttle used in machines where the shuttle describes part of a circle in its movement back and forth. *s* is the heel of the shuttle, which reaches high enough up to receive the journal of the bobbin R, as shown in Fig. 6. On the sides of the heel *s* are riveted springs *t t*, one of which has a notch, *x*, cut at its upper end, to allow that part of the spring to pass under the upper part of the shuttle, as shown in Fig. 5, to prevent the heel from rising, and to permit the remaining portion of the spring to enter a notch, *y*, made in the shuttle, as shown in Fig. 4, to keep it in place. A hole is made through the heel *s* for the passage of a screw, *v*, which connects with a latch or catch, *w*. This latch-catch is made in elbow-form, with a hole in each end, one hole having a thread cut in it to connect with the screw *v*, and the other hole to connect with the tension-spring S on the top of the shuttle. By turning the screw *v*, the latch-catch *w* may be raised or lowered, and the spring thereby made to press more or

less, and thus regulating the tension of the shuttle-thread. The shuttle is held against the face-plate by means of a wire spring, *z*, attached to the shuttle-lever, and passing over the top and down on the side of the shuttle.

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

1. The rod *b*, with spring *e* and nut *d* arranged upon the needle-bar, as described, and operating in combination with the needle-bar and take-up lever, substantially as and for the purposes herein set forth.

2. The combination, with the shuttle *P*, having a notch, *y*, of the heel *s* and springs *t t*,

one of said springs being cut with the notch *x*, all substantially as and for the purposes herein set forth.

3. The combination of the heel *s*, screw *v*, latch-catch *w*, and spring *S*, all constructed substantially as and for the purposes herein set forth.

In testimony that I claim the foregoing as my invention, I hereunto affix my signature this 19th day of March, 1874.

OLIVER S. HAZARD.

Witnesses:

ROBERT F. STERRAT,
JOHN WINSOR.