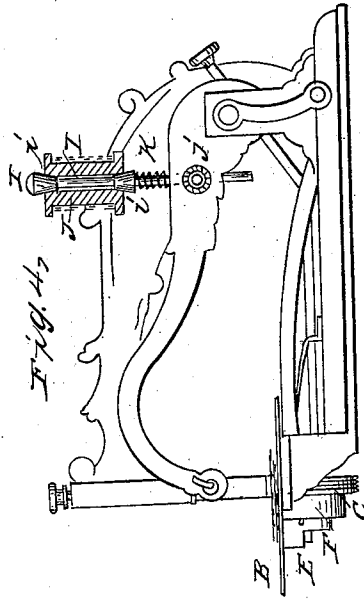
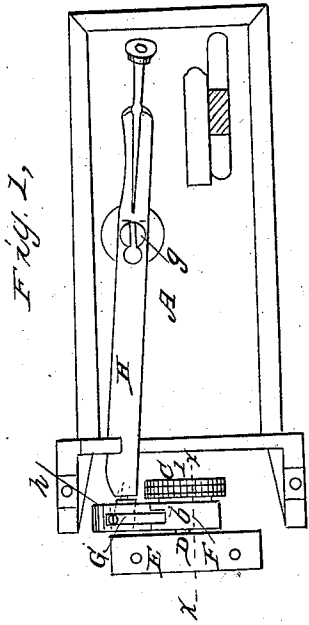
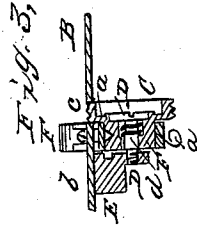
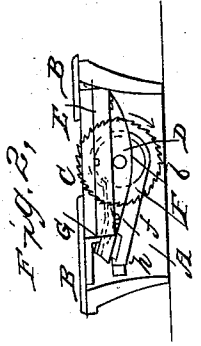


D. W. CLARK.  
Sewing Machine.

No. 23,823.

Patented May 3, 1859.



Witnesses:  
D. W. Clark  
L. C. Clark

Inventor:  
D. W. Clark

# UNITED STATES PATENT OFFICE.

D. W. CLARK, OF BRIDGEPORT, CONNECTICUT.

## IMPROVEMENT IN SEWING-MACHINES.

Specification forming part of Letters Patent No. 23,823, dated May 3, 1859.

### *To all whom it may concern:*

Be it known that I, D. W. CLARK, of Bridgeport, Fairfield county, State of Connecticut, 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 of my invention, which will enable any person skilled in the art to make and use the same.

In the accompanying drawings, Figure 1 is a plan view, in part sectional. Fig. 2 is an end sectional elevation; Fig. 3, a cross-sectional elevation of the feeding-wheel; and Fig. 4 a sectional elevation of the tension parts, and general side view.

Similar letters of reference in all the figures indicate the same parts.

A is the base of the frame, which may be made in the usual manner. B is the table upon which the fabric to be sewed rests. The usual aperture for the passage of the needle is made in the table; also an opening through which the teeth of the feed-wheel C pass, so as to touch the under surface of the cloth. The latter is pressed down upon the surface of the wheel by means of the usual spring foot or pad. The wheel C rotates upon a pivot or axis, D, which is made in the form of a screw, and passes through the wheel C and secures the same to a block, E. This block is fastened to the under side of the table. The wheel C is provided with a shoulder, *b*, in which is a groove, *a*. The shoulder *b* passes through the end of a lateral lever, F. A spring, G, is attached to the outer end of the lever F, said spring extending through an aperture in that portion of the lever which girdles the shoulder *b* to the groove *a*. The extremity of spring G is provided with a beveled block, *c*, which fits into said groove *a*. Spring G thus serves as a pawl, and by bearing into the groove *a* sufficient friction is produced by throwing up the end of lever F to cause the wheel C to rotate in direction of arrow 1. When the end of the lever is thrown down the block *c* slips in the groove *a* and does not carry the wheel C backward. To insure the rest of wheel C during the descent of the lever F, a coil-spring, *d*, is placed upon the axis D, which spring bears upon the head of the axis at one end, and upon the wheel C at the other, thus pressing one end of the wheel against its block E with a slight fric-

tion. The necessary up-and-down motion of the lever F to give rotation to the feed-wheel is obtained by having an inclined slot, *f*, cut in the extremity of the lever F, which slot receives the end of a vibrating lever, H, pivoted at *g* to the frame A. The end of the lever H, which fits into slot *f*, is composed of a separate piece, *h*, and pivoted to H. By thus having the piece *h* pivoted the said piece remains in the slot *f* during the up-and-down motion of the lever F, the said piece turning on its pivot to accommodate the horizontal vibration of its lever H. Thus by the vibration of H the wheel C is rotated. Lever H is moved and also constructed in the same manner as shown in my other patents, so that no special description is here required. If the end piece, *h*, were not pivoted, a spring or other device would be required to move the lever F in one of its directions, because the end piece, *h*, could not then remain in the slot during both the up and down strokes of lever F; but by my arrangement the lever H gives both the up and down motion of F in a sure and certain manner, without any springs or other uncertain parts.

The tension of the thread is regulated by having the spool J placed between two center pieces, *i i*, which are movable upon the rod I, as shown in Fig. 4. The upper center piece *i* is prevented from slipping off from the rod I by the head thereof. The rod I passes through a hole in the needle-arm or other convenient part of the frame, and is adjusted to any desired height or position by the set-screw *j*. A spring, *k*, of spiral form, is placed between the bottom of the lower center piece *i*, and the top of the needle-arm, which spring passes up against the bottom of center piece *i* with a force that depends upon the relative height of adjustment of rod I. When it is desired to increase the tension, it is only necessary to slacken the screw *j* and depress the rod I. The spring *k* will thus be caused to press with greater force upon the center piece *i* and prevent it from so easily revolving and carrying the spool. If the tension is to be diminished, the screw *j* is loosened and the rod I raised, when the spring *k* will press with less force upon the center piece *i*, and thus allow the spool J to revolve more easily.

A common method of arranging the tension is to have the spool-rod fixed and a screw-

thread cut upon its upper end to receive a nut which presses a spring upon the spool or its center piece. This plan necessitates the having of a projecting screw and spring above the spool, which, besides being unsightly, leaves a point upon which the goods are liable to catch in handling and become torn. My improvement leaves no projection, but permits a rounded elegant finish of the part above the spool, and the goods are not liable to injury.

I claim as my invention, and as an improvement on my patent of August 31, 1858—

The combination and arrangement of mechanism herein described for the purpose of controlling the feed-wheel in the manner set forth.

Bridgeport, Connecticut, November 8, 1858.

D. W. CLARK.

Witnesses:

J. CURTIS,  
SAMUEL IWOYLE.