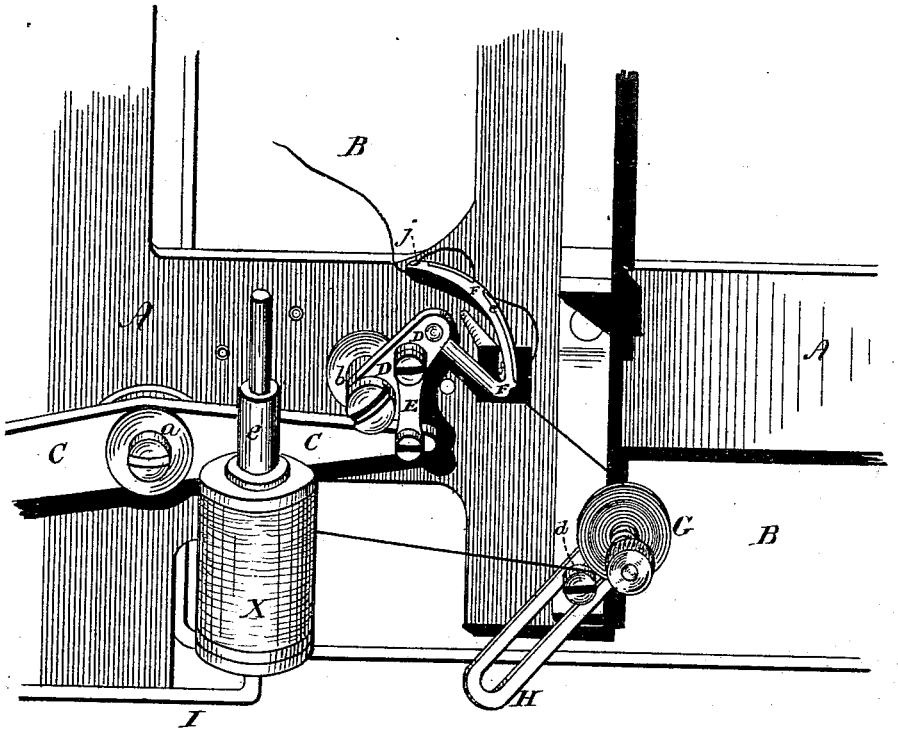
W. G. BECKWITH.

Sewing-Machine.

No. 167,382. Patented Sept. 7, 1875.



WITNESSES.

E. G. Johnson.

J. P. Crawford.

INVENTOR.

William G. Beckwith.

Per A. B. Burgin, Atty.

UNITED STATES PATENT OFFICE.

WILLIAM G. BECKWITH, OF NEWARK, NEW JERSEY.

IMPROVEMENT IN SEWING-MACHINES.

Specification forming part of Letters Patent No. **167,382**, dated September 7, 1875; application filed January 30, 1875.

To all whom it may concern:

Be it known that I, WILLIAM G. BECKWITH, of Newark, Essex county, New Jersey, have invented certain Improvements in Sewing-Machines, of which the following is a specification:

My invention relates to that class of double-thread machines in which the stitch is formed by the under thread being interlooped with the upper by means of a reciprocating needle or hook; and it consists in a novel construction, combination, and arrangement of parts, which have for their object to simplify said machines and improve their operation.

The drawing, which is a view underneath the machine, shows this invention as applied to, and operating with, the machine patented to me April 18, 1871, No. 113,724, May 21, 1872, No. 126,921, and November 26, 1872, No. 133,351.

A is part of the frame or bed-plate of the machine; B, the cloth-plate secured thereto; C, a lever pivoted to the bed-plate at *a*, and which is oscillated on its pivot by the means described in Letters Patent No. 133,351. F is the under needle or looping-hook, which interloops the under with the upper thread. It is secured to the short arm or shank D, which rocks on the pivot *b*. This needle is of the shape shown in the drawing, its curved portion being very nearly an arc of a circle, having the point *b* as a center, and *b* F as its radius. The outer curve of the needle F has a longitudinal groove, *c*, for the thread to lie in when stretched on the hook, and this groove is bridged or has eyes to retain the thread. E is a link connecting the hook shank or arm D with the lever C. The motion of the lever thus imparts to the hook a quick oscillating or rocking motion in a horizontal plane and in the arc of a circle, having the pivot *b* as its center, and *b* F as its radius. The motion of the under needle is considerable in extent, it moving in an arc of about eighty degrees. Thus it will be perceived that the object of the parts described is not merely to impart a reciprocating motion to the under needle, but to swing or oscillate it through an arc (of considerable degree) of a circle, of which the curve of the needle itself is an arc, or nearly so. It will be further seen that the lever C and shank work in the same horizontal plane, and are pivoted directly to the bed-plate of the machine on its under side. This greatly simplifies the machine, and obviates the inconvenience of having the parts extending or working far below the bed-plate, and thus always in the way of the operator. In adjusting the machine the relative position of the under needle or hook H and the tension-disks G affects the operation of the machine, and it is found in practice that the most advantageous location for the tension-disks varies considerably in different machines constructed according to my invention, no matter how nearly alike all the parts may be, and to render the tension adjustable in relation to the hook it is mounted on the extremity of the slotted bar H, which is secured to the bed-plate A by means of the screw *d*, which passes through the slot in the bar. I is a spindle, on which the under spool of thread turns, and is held by the piece of rubber tubing *e*. *f* is the hole in the cloth-plate through which the upper or sewing needle passes. The under thread is taken from the spool X, carried between the tension-disks, and thence to the hook F, being entered at the eye at the bend of the hook, then under the bridge *h*, and finally passed through the eye at the point.

The manner in which the two needles co-operate and the threads loop together is well known in the art, and need not be set forth herein.

I claim—

1. The combination of the hook or under needle secured to the shank D, pivoted directly to the bed-plate A on its under side, lever C, similarly pivoted and working in substantially the same plane with the shank D, and the link F, connecting the two, constructed and operating substantially in the manner described and specified.

2. The combination of the tension G and the slotted bar H, whereby the tension is rendered adjustable in its relative position to the hook or under needle, substantially in the manner described and specified.

WM. G. BECKWITH.

Witnesses:

E. H. JOHNSON,

J. KOHLER.