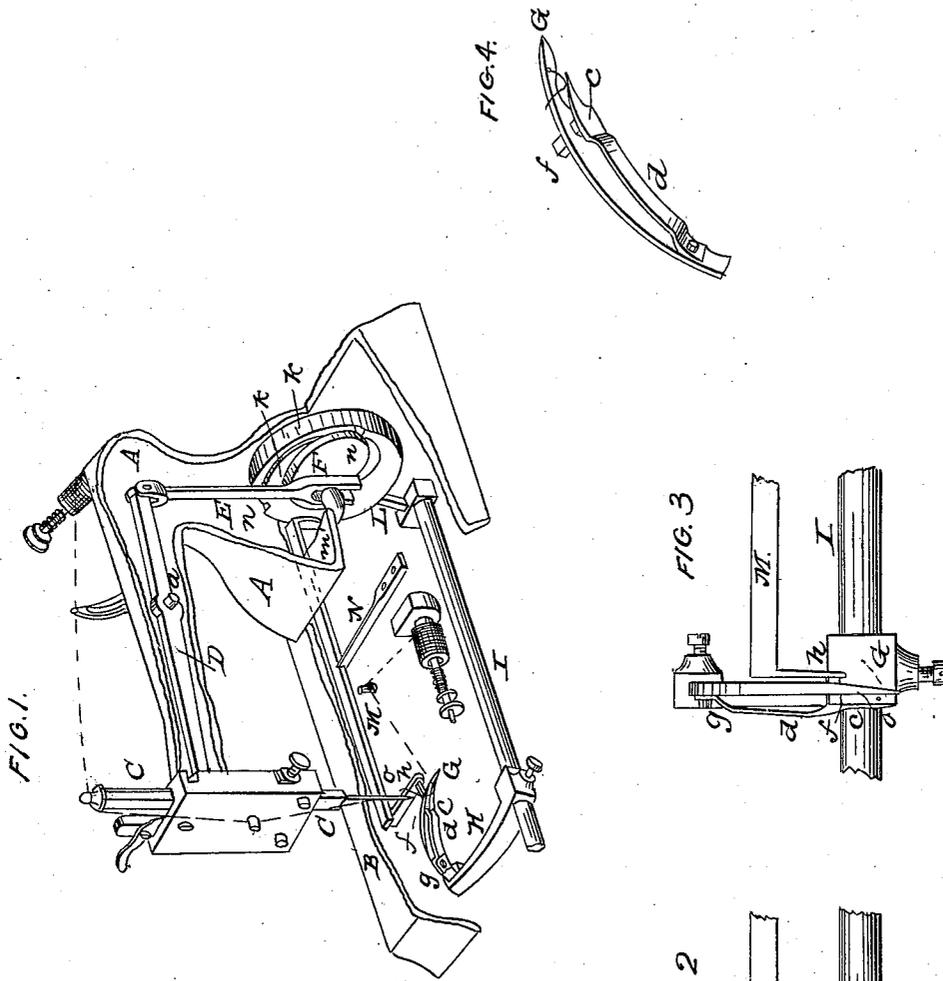


E. BOOTH.
Sewing Machine.

No. 28,959.

Patented July 3, 1860.



WITNESSES
S. Cohen
O. Hensch

INVENTOR
Ezekiel Booth
per atty
A. B. Stoughton

UNITED STATES PATENT OFFICE.

EZEKIEL BOOTH, OF TROY, NEW YORK.

IMPROVEMENT IN SEWING-MACHINES.

Specification forming part of Letters Patent No. 28,959, dated July 3, 1860.

To all whom it may concern:

Be it known that I, EZEKIEL BOOTH, of Troy, in the county of Rensselaer and State of New York, have invented certain new and useful Improvements in Sewing-Machines; and I do hereby declare that the following is a full, clear, and exact description of the construction and operation of the same, reference being had to the accompanying drawings, in which—

Figure 1 represents a perspective view of said sewing-machine, the platform being represented partially as broken away to show the parts below the same. Figs. 2, 3, and 4 represent detached views, hereinafter to be referred to.

My invention relates to that class of sewing-machines in which two threads are used for forming a loop-stitch by means of a needle and looper; and my invention consists in providing said looper with a spreader, which, although moving with said looper, is operated independently of it for the purpose of spreading the loop, thus causing said needle in its downward motion to pass through the loop without failure, and consequently preventing it from making drop-stitches.

To enable others skilled in the art to make and use my invention, I will proceed to describe its construction and operation.

A represents the frame of the machine; B, the table; C, the needle-bar, which is operated by means of the lever D turning on the fulcrum *a*, the lever D being operated by the pitman E, which receives its motion from the cam F, which acts on the pin *b*.

G represents the looper. It is secured to the arm H, which is secured to the rock-shaft I, the latter receiving its motion from a cam-groove on the rear side of the disk K, which operates the arm L, attached to the shaft I, and which is of such a shape as to impart to the looper a reciprocating motion, which, at certain intervals, is arrested to afford the needle sufficient time to pass through the loop of the looper-thread.

c represents the spreader. Its elastic shank *d* is secured to the side of the looper-shank by means of a set-screw, *g*, or otherwise, and its projection or tongue *f* passes through a mortise in the looper-shank, and can play therein longitudinally.

M represents a sliding rod, which can move

in its longitudinal direction within suitable guide-pieces on the lower side of the table B. It is controlled in one of its positions by the spring N, the end of which extends into a notch of said bar. The arm *h* of the rod M is in close proximity or just touches the end of the tongue *f*, and the foot *m* of said rod is in contact with the front side of the disk K, and when operated by said disk is caused to slide over the inclines *n*, by which the rod M is moved longitudinally at certain intervals, and when so moved spreads out the loop of the looper thread.

The operation of the machine is as follows: When the needle *o* commences to rise from its lowest position, the looper G and spreader *c* are in close contact, as represented in Fig. 2, and they thus pass together through the loop of the needle-thread. As soon as the looper has taken up said loop its motion is arrested, while the needle continues to rise, and as soon as the needle has entirely cleared the looper the rod M is moved by one of the inclines *n* of the disk K, and its arm *h*, passing on the tongue *g*, pushes the spreader *c* into the position represented in Fig. 3, in which the loop of the looper-thread (represented in blue) is enlarged to such a degree that the needle on its downward motion cannot fail to pass through it, and thereby insure a perfect stitch. When the needle has taken up the looper-thread, the looper recedes and the rod M is pushed back by the recoil of the spring N, which presses it against the cam *n* on the face of the disk K, and the spreader *c*, being thus released, closes by the action of its elastic shank *d*, and the looper and spreader may pass again through the loop of the needle-thread for making the next stitch.

It will be observed that the opening of the spreader and the spreading of the looper-thread is performed at a time when the looper remains stationary. The loop itself, therefore, remains stationary, while the needle passes through the same, which renders it impossible for the needle to miss the loop. The further advantage of this arrangement is that the spreader can be opened at a time when the needle, in its upward motion, has cleared the same entirely. This is of great importance, for the looper has to take up the needle-thread at the moment the needle commences to rise, and its motion is arrested before the needle

has cleared the same. If, therefore, the motion of the spreader is dependent upon that of the looper, it is a very difficult matter to construct the machine in such a manner as that the needle will clear the looper before the motion of the looper is arrested to operate the spreader, a difficulty which is entirely obviated by giving the spreader a motion independent of the motion of the looper.

Having thus fully described the nature of my invention, what I claim as new in the construction of sewing-machines, and desire to secure by Letters Patent, is—

Causing the spreader *c* to spread the loop of the looper-thread by a mechanism that is independent of the mechanism that operates said looper, and while said looper remains stationary and after the needle has cleared the same, substantially in the manner and for the purpose herein described.

EZEKIEL BOOTH.

Witnesses:

J. B. PARMENTER,
THEODORE MAY.