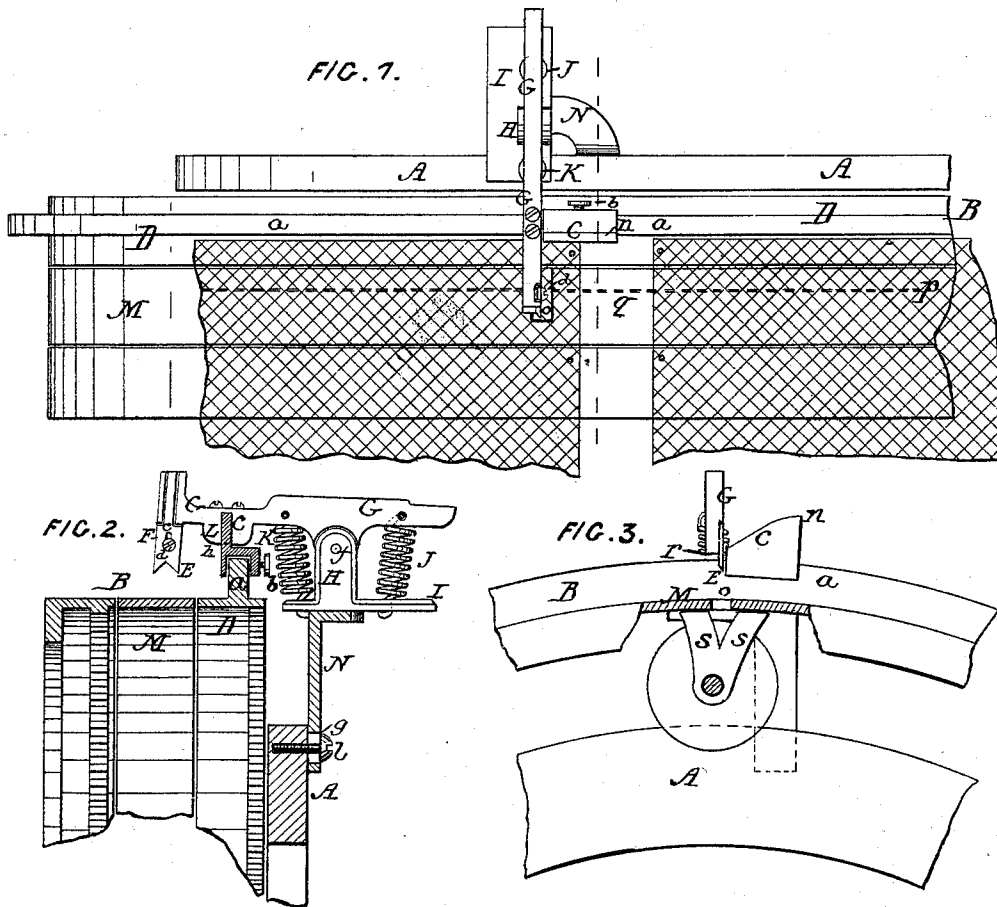


W. A. RAYER & W. S. LINCOLN.  
Sewing-Machines.

No. 142,042.

Patented August 19, 1873.



WITNESSES.

J. P. M<sup>re</sup> Elroy.  
C. A. Pease

INVENTORS.

William A. Rayer  
and  
William S. Lincoln  
per  
Brown Brothers  
Attorneys.

# UNITED STATES PATENT OFFICE.

WILLIAM A. RAYER AND WILLIAM S. LINCOLN, OF BOSTON, MASS.

## IMPROVEMENT IN SEWING-MACHINES.

Specification forming part of Letters Patent No. **142,042**, dated August 19, 1873; application filed July 22, 1873.

*To all whom it may concern:*

Be it known that we, WILLIAM ANDERSON RAYER and WILLIAM STILLWELL LINCOLN, both of Boston, Suffolk county, and State of Massachusetts, have invented an Improvement in Sewing-Machines, of which the following is a specification:

This invention relates to sewing-machines used for sewing together strips of cotton cloth end to end, more particularly to the sewing-machine for that purpose embraced and fully described in the Letters Patent heretofore granted to us, dated November 1, 1870, and March 18, 1873, Nos. 108,827 and 137,007, respectively.

The operation of our machine, as well as all others of the class stated, is substantially continuous—that is, as the carrying wheel-frames for the goods turn around they bring one set of goods to the sewing-machine, and then another set, and so on, the sewing or stitching continuing from one to the other set of goods, making thus a connection of stitches between the two sets of goods. This connection by stitches requires to be cut, separating the one set of goods from the other, and heretofore this has been done by the operator or by hand.

The object of this invention is to secure this severing or cutting of the said connection of stitches through the operation of the machine; and for this purpose the invention consists of a lever pivoted to a post or support projecting from the frame of the machine, and carrying at one end a cutter having a V-shaped cutting-edge, said lever being operated in the manner hereinafter described, in order to cut or sever the stitches for separating one set of goods from another.

In the accompanying plate of drawings, the present invention is illustrated, in connection with the machine, more particularly described and shown in the Letters Patent hereinbefore referred to, dated March 18, 1873.

Figure 1 is a plan view; Fig. 2, a side elevation of the cutting instrument with other parts of the machine in vertical section; and Fig. 3, a front view.

A in the drawings represents a part of the frame-work of the machine to which this invention is applied, and B a portion of an annular frame, such as is shown and described

in the said Letters Patent of March 18, 1873, for carrying the goods to the sewing-machine proper to be sewed. This annular frame B is constructed, as described in said Letters Patent, and under this invention, to operate the cutting instrument. It is provided with a cam-edge, C. This cam-edge C is secured to the projecting flange or edge *a* of one part, D, of the rotary annular frame B by a set-screw, *b*, as fully shown in Fig. 2. E, a knife or cutting-edge, made of an inward V-shape. This cutting-edge E is at one end of a blade, F, that is slotted for a portion of its length, and, by such slot *c* and a set-screw, *d*, is secured to one end of a lever or arm, G, extending across and at right angles to the length of such arm. This lever G is hung upon a fulcrum-pin, *f*, of a post, H, to a plate or block, I, secured to a bar, N, which is adapted to be fastened, through its slot *g*, to the part A of the frame-work of the machine. J and K, two spiral springs, both secured by their one end to the lever G, and by their other end to the plate or block I, one upon each side of the fulcrum-post H. L, a block, fastened to lever G between its fulcrum and the knife, and through this block the cam-edge C of the annular frame acts to raise the cutter, as will be hereafter described, the cam-edge bearing against the edge *h* of the block L.

The cutting-edge E, with its several carrying parts, each constructed and arranged the one with regard to the other, as above described, is applied to the frame-work A of the machine, as shown—that is, the cutting-edge E, as to its width, extends in a direct line across the width of the annular rotating frame B, and is above the central sectional stationary part M of such frame B, and the bar N is secured to the frame-work A by a set-screw, *l*, which is applied to the frame A through the slot *g* of said bar N, the whole occupying the position relatively to the cross-section of the annular frame B and the frame-work A, as shown in the drawings. The cutting-edge E, in its application to the machine, as above described, is located, as regards the sewing-machine proper, upon the side at which the goods pass from the sewing-machine, having been sewed thereby, and the cam-edge C is located, as described, upon the annular frame, so that, in

the rotation of the said frame to carry the goods to the sewing-machine, the cam-edge will pass under the edge of the block L of the cutter-lever at the same time that the stitches of connection between two sets of goods are being carried along under the plane of the cutting-edge E by the annular frame B. The shape of the cam-edge C is such that, as it moves under the block-edge h of the cutter-lever G, it lifts the cutting end of the lever until the end n of the cam C passes the block L, which leaves the lever free for its springs J and K to actuate it, as hereinafter described. The stationary part M of the annular frame B is cut out (see Figs. 1 and 3 at o) in line with the swing of the cutting-edge E. The adjustment and application of the cutting-knife with its described appurtenances to the machine is such that, sufficiently depressing the cutting-edge E, it will intersect the peripheral line of the annular frame B in the line of stitches from the sewing-machine.

Thus, having described the cutting-knife E and its application as to position with regard to the sewing-machine proper, and the action of the cam C on the lever carrying the cutting-knife, we will now proceed to describe the manner in which the stitches of connection between two sets of goods are severed by the knife.

Referring to Fig. 1 of the drawings, suppose, as therein illustrated, one set of goods to have been sewed together end to end, and to have been carried beyond the action of the sewing-machine proper, and that the sewing-machine is now sewing the next set of goods in order upon the annular frame B, the plane of sewing being at p, Fig. 1. Between the two sets of goods stitches continue to be made, forming a connection of stitches, as shown at q, Fig. 1. To this connection of stitches the cam-edge C is adjusted to lift the knife-edge E and leave it free to fall, as herein described, before the connection of stitches has passed fully beyond the position of the cutting-edge.

The lifting of the cutting-edge compresses the spring J and distends the spring K. On the release of the cam from the knife-lever G the springs J K then, reacting, throw the cutting-edge against the stitches of connection with sufficient force to cut and sever the same, thereby separating the set of goods already sewed from the set next following and being sewed. The cutting-edge then resumes its normal position, and, on a succeeding formation of stitches of connection, it is again operated, as above described. In the throw of the cutting-edge, above described, the shoulder r of the lever G strikes the part M of annular frame B, and, to brace the said part M against the blow of the lever, a stay, S, is applied, as shown in Fig. 3. The lever-shoulder r on its striking-face may be cushioned with rubber, if desired.

In lieu of springs, weights may be used to throw the cutting-knife; and, furthermore, the knife may be thrown through a running-part of the machine to which it is suitably connected therefor. Furthermore, in lieu of operating the knife-lever from the rotation of the annular guide-frame B, it may be driven from other running-parts of the machine; but the arrangement described is found most practical and efficient.

By the V-shaped cutting-edge a draw-cut is obtained—obviously an advantage; but a straight cutting-edge will answer the purpose, although it is not quite so efficient as the V-edge.

Having thus described our invention, what we claim, and desire to secure by Letters Patent, is—

In a sewing-machine, the lever G, pivoted to the post H, and carrying the cutter F, all combined and operated in the manner and for the purpose specified.

W. A. RAYER.

Witnesses:

W. S. LINCOLN.

EDWIN W. BROWN,  
J. P. McELROY.