(No Model.)

A. L. COOMBS.

STAY CUTTING ATTACHMENT FOR SEWING MACHINES.

No. 456,692. Patented July 28, 1891.

Fig. 1.

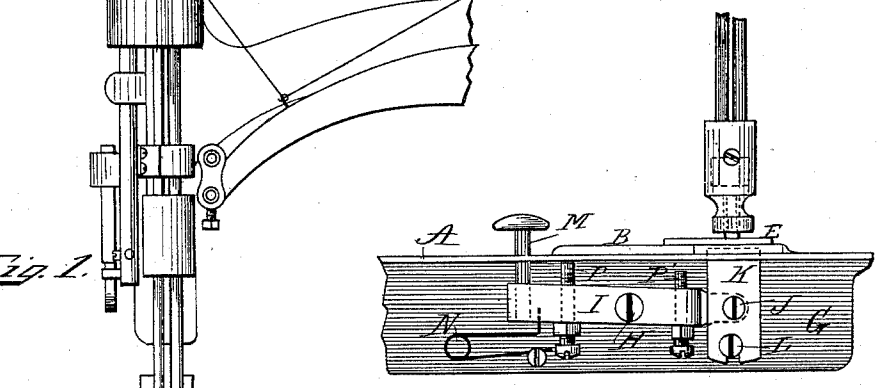
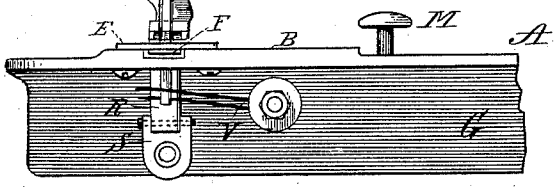


Fig. 2.



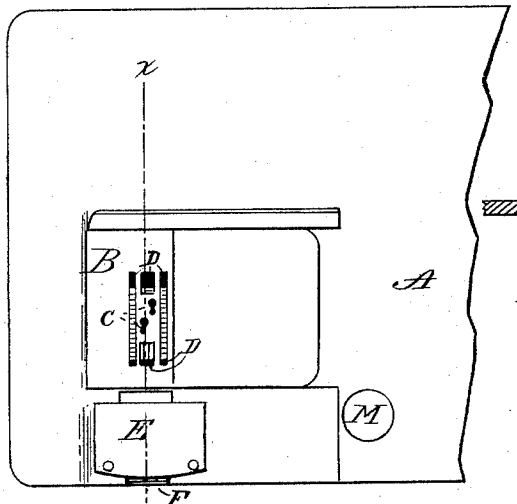


Fig. 3.

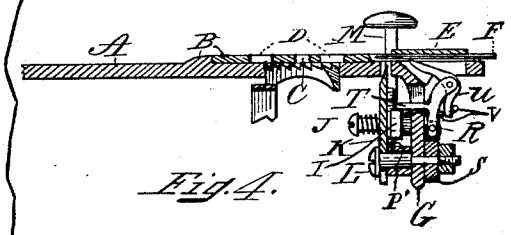


Fig. 4.

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UNITED STATES PATENT OFFICE.

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STAY-CUTTING ATTACHMENT FOR SEWING-MACHINES.

SPECIFICATION forming part of Letters Patent No. 456,692, dated July 28, 1891.

Application filed February 4, 1891. Serial No. 380,113. (No model.)

To all whom it may concern:

Be it known that I, ABRAM L. COOMBS, of Saugus, in the county of Essex and State of Massachusetts, have invented a new and useful Improvement in a Stay-Cutting Mechanism for Sewing-Machines, which will, in connection with the accompanying drawings, be hereinafter fully decribed, and specifically defined in the appended claims.

My invention relates to a stay-cutting mechanism for sewing-machines, employed to reenforce the seams of shoe-uppers and other articles by means of a strip or tape of strengthening material called a "stay," which is extended along and over the back of the seam and secured on either side thereof by a line of stitches passing through the stay and the parts of the upper or article thus seamed together. A two-needle or double-stitching machine is usually employed for such purposes, and it is customary when thus staying the seams of boots or shoes to complete (except as hereinafter stated) the staying of one seam after another without severing the continuous stay-tape, which is drawn from a roll thereof, until a number of shoes have had their seams so stayed. Then by another operation they are separated from each other by cutting the connecting-tape by hand with common scissors or a knife. The exception referred to is in the case of what is termed "overlap shoes," in which the stay is omitted near the edge to avoid too much thickness, as the edge has to be turned, and to thus omit the stay the operator is obliged to stop the machine and cut the stay with scissors on each shoe.

The object of my invention is to enable the operator to readily accomplish such cutting as the staying of the seams progresses by means of a device attached to the stitching-machine, which may be instantaneously operated to sever the tape and without stopping the machine, and which, when the cutter reacts, will advance or feed forward the end of the tape to the stitching devices, to be by them drawn out again to the extent required, thus saving time and labor and avoiding handling the goods over so many times; and my invention consists in the novel devices and combinations of mechanism hereinafter fully described, and specifically pointed out in the appended claims.

In the accompanying drawings, Figure 1 is a front elevation of a detachable portion of the bed of a stitching-machine having my invention applied thereto, and also showing a portion of the overhanging stitching devices of a two-needle machine in their proper relation to my said attachment. Fig. 2 is a rear elevation of the same, omitting the upper portion of the stitching devices shown in Fig. 1. Fig. 3 is a plan of that part of the machine-bed to which my invention is attached. Fig. 4 is a vertical section as on line x x, Fig. 3, and as viewed from the left of said line.

A represents a detachable portion of a machine-bed to which my attachment is applied.

B is the usual needle-plate, having two needle-holes C arranged therein diagonally in accordance with the positions of the two needles in their bar, and apertures D, through which the roughened surface of the underlying feed-bar acts upon the material being stitched to feed the same along in the usual manner.

E is a guide-plate covering a groove in the bed, in which the stay-tape F is passed to the needles and feed, when it is drawn along by the latter as the stitching progresses. To the downward-projecting flange G of the bed-piece A, upon its back or rear side, (see Figs. 2 and 4,) I pivot at H a lever I. To a thin end of the lever I, I pivotally connect at J a blade K, which has an open slot at its lower end fitted to slide on a screw-stud L, as shown, while its upper end is beveled to a cutting-edge. At the opposite end of lever I is shown a thumb-stud M, which passes down through a hole in bed A and is threaded into the end of lever I, as shown in Fig. 2. A spring N is secured to flange G and arranged to uplift by its elastic force this end of the lever. An adjustable stop-screw P is threaded into lever I, so as to project more or less and strike against the under side of bed A, thereby limiting, according to adjustment of the screw, the upward movement of the outer end of lever I. A similar stop-screw P′ is arranged in said lever to limit in like manner the upward movement of the inner end of the lever and the cutting-blade attached thereto. By depressing the thumb-stud M the outer end of the lever is forced downward against the force of spring N, and at the same time the

inner end of the lever, together with the blade K, is raised until the stop P′ comes in contact with the bed, at which time the cutting-edge of the blade will have been raised, through a slot in the bed, high enough to have sheared by the back edge of plate E, and in its passage will have cut off the interposed stay-tape. Then the depressing force being removed from stud M spring N will return the several parts to their original position.

It is necessary, after severing the tape as just described, to have some means for holding the same in its guide and advancing the end thereof again to the needles and feeding devices of the stitching-machine, so that it will go on with the next stitching operation. To accomplish this purpose I employ a lever R, pivoted in a yoke S, secured to the front of flange G, as shown. A pin T, fixed in lever R, projects through a slot in flange G and into the path of the inner end of lever I. Lever R carries a pawl U, pivoted to its upper end. This pawl is arranged to extend up through an opening in the bed into the path of the stay-tape and to bear against the tape when it is extended through its guiding-groove. One arm of a spring V holds the lever R forward against flange G, while another arm of the same spring holds the pawl up to the tape. When the cutter-lever I is employed, as described, to raise the cutting-blade, such movement brings lever I into contact with pin T, and thereby forces pin T upward and backward, turning lever R back upon its pivot and retracting pawl U before the cutting takes place, and after the cutting is thus accomplished, as the cutter is drawn down and the pin T is released by such reverse movement, spring V forces lever R forward again, and with it pawl U, the latter forcing the tape, with which it is in contact, along with it into position to be seized by the machine feed and carried under the needles to be stitched as before.

I claim—

1. The combination, with a sewing-machine having a groove in its bed-plate adapted to receive a stay-tape, of a plate over the groove, a cutting-blade adapted to be reciprocated transversely across the groove and against one edge of the plate, means for operating the blade, and an auxiliary feed mechanism to engage with and carry the tape forward to be operated upon by the stitch-forming mechanism of the sewing-machine, substantially as described.

2. In a stay-tape-cutting attachment for sewing-machines, the combination of a lever adapted to be operated independently of the machine, a cutting-blade secured thereto, an auxiliary feed mechanism engaging with and operated by the lever, and a plate above the feed adapted to coact therewith and with the blade to cut the tape, hold it, and feed it forward after it has been cut, substantially as described.

3. In a stay-cutting attachment to a sewing-machine, the combination of the actuating-lever I, provided with adjustable stop-screws P and P′ for limiting its movement, a vertically-movable blade pivotally secured to one end of said lever, a guide for the blade, and a plate E, arranged opposite to and to co-operate with the blade K to effect the cutting, all substantially as specified.

4. In a stay-cutting attachment to a sewing-machine, the combination, with devices for cutting the stay, of a lever R, provided with a projecting pin T, engaging with and operated by the cutting mechanism, a pawl U, pivoted to lever R, and spring V, acting upon both the pawl and lever, all substantially as and for the purposes specified.

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