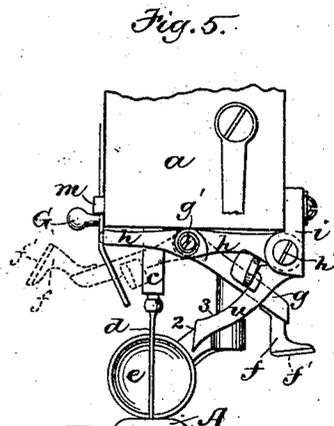
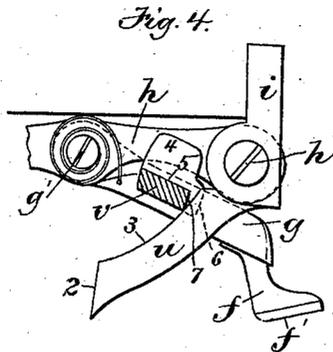
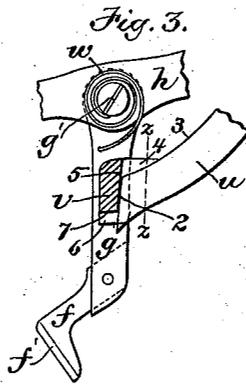
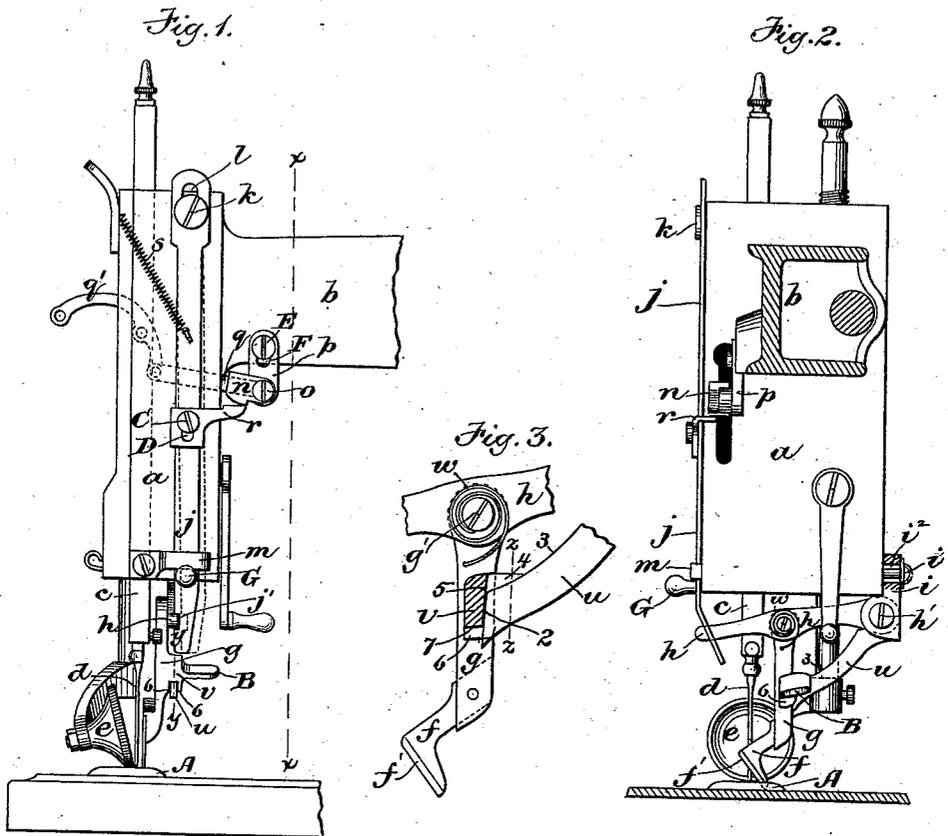


(No Model.)

L. L. BARBER.  
SEWING MACHINE TRIMMER.

No. 296,508.

Patented Apr. 8, 1884.



Witnesses.  
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A. L. White.

Inventor.  
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# UNITED STATES PATENT OFFICE.

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## SEWING-MACHINE TRIMMER.

SPECIFICATION forming part of Letters Patent No. 296,508, dated April 8, 1884.

Application filed May 7, 1883. (No model.)

To all whom it may concern:

Be it known that I, LYMAN L. BARBER, of Boston, in the county of Suffolk and State of Massachusetts, have invented certain Improvements in Sewing-Machine Trimmers, of which the following is a specification.

This invention has for its object to provide an improved trimmer attachment adapted to be operated by the power of a sewing-machine, to be made operative and inoperative whenever desired without stopping the machine, and to have its cutting edge or blade sharpened without removal from the machine.

To these ends my invention consists in the improvements which I will now proceed to describe and claim.

Of the accompanying drawings, forming a part of this specification, Figure 1 represents a front view of a portion of a sewing-machine provided with my improvements. Fig. 2 represents a section on line *x x*, Fig. 1, looking toward the outer end of the head or arm of the machine. Fig. 3 represents a section on line *y y*, Fig. 1. Fig. 4 represents a similar section, showing the parts in different positions. Fig. 5 represents an elevation of the lower portion of the head of the machine, showing the trimming-knife in the same position as in Fig. 4. Fig. 6 represents a section on line *z z*, Fig. 3.

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

In the drawings, *a* represents the head or vertical casing at the end of the arm *b* of a sewing-machine. *c* represents the needle-bar, *d* the needle, and *e* the presser-foot.

My improved trimming attachment is composed of a trimming-knife, *f*, having a cutting-edge, *f'*, a shank or knife holder, *g*, to which said knife is attached, a knife-holder support or lever, *h*, pivoted at *h'* to a hanger, *i*, attached to the rear side of the head *a*, and at *g'* to the knife-holder *g*, a vertical bar, *j*, adapted to slide vertically and oscillate laterally on the front side of the head or casing *a*, said bar or slide being pivoted at its upper end on a screw, *k*, which passes through a vertical slot, *l*, in said bar, an elongated guide or plate, *m*, which holds the lower end of said bar in contact with the head *a*, a rocking cam,

*n*, secured rigidly to the usual take-up link, *q*, which is pivoted at *o* to a plate or bracket, *p*, attached to the arm *b*, and connected in the usual manner with the take-up arm *q'*, which is pivoted to the needle-bar, an arm or bracket, *r*, attached to the bar *j* and bearing against the cam *n*, and a spring, *s*, connected at one end to the bar *j* and at its other end to the head *a*, and serving to hold the arm *r* in yielding contact with the cam *n*. The slide or bar *j* has a notch, *j'*, which is caused by the spring *s* to automatically engage the outer end of the support or lever *h*. The ordinary operation of the machine causes the take-up link *q* to oscillate in the usual manner, the oscillations of the latter causing the cam *n* to oscillate, and by the aid of the spring *s* to reciprocate the bar or slide *j* vertically, and oscillate the lever *h* and vertically reciprocate the knife-holder *g*, with the blade *f*. *u* represents an arm or guide rigidly attached to or formed on the bracket *i*, and having a substantially vertical or slightly inclined guide or face, 2, and an inclined or curved guide or face, 3. The knife-holder *g* has an offset, *v*, having flanges 4 4, which bear against the opposite sides of the arm *u*, and a vertical face, 5, between said flanges, bearing against the guide 2 of said arm when the knife *f* is in its operative position, (shown in Figs. 2 and 3,) and with two downwardly-projecting flanges, 6 6, and a face, 7, between said flanges, adapted to bear on the inclined or curved guide 3 of the arm *u* when the knife is displaced from its operative position, as shown in Figs. 4 and 5.

*w* represents a spring which presses the face 5 against the guide 2 on the end of the arm *u* when the knife is in its operative position, and throws the knife and its holder *g* upwardly, as shown in Figs. 4 and 5, when the face 5 is raised above the guide 2.

It will be seen that when the slide or bar *j* is engaged with the lever *h* the outer end of the latter is held in a depressed position, so as to cause the face 5 of the knife-holder *g* to bear against the guide 2 of the arm *u*. Therefore, when the slide or bar *j* is reciprocated, the blade *f* will be guided in a combined vertical and forward motion, due to the fact that the pivot *g'* of the knife-holder is moved in

the arc of a circle when the lever *h* is depressed, the knife-holder being thus depressed and also tilted somewhat on the guide 2, as on a fulcrum, so that its cutting-edge is at once  
 5 forced downward and forward, giving it a curved movement. The cutting-edge of the knife is thus caused to cut the work at each descent of the blade, the point of the knife passing through a slot in the throat-plate A of  
 10 the machine. When it is desired to discontinue the trimming operation, the slide or bar *j* is moved laterally on its pivot, as shown in dotted lines in Fig. 1, until the lever *h* is released, when the pressure of the face 5 of the  
 15 knife-holder *g* against the guide 2 of the arm *u*, caused by the spring *w*, causes said knife-holder to slide upwardly on the guides 2 and 3 of the arm *u* to the position shown in Figs. 4 and 5, the knife being thus elevated  
 20 above the throat-plate of the machine and made inoperative. When the knife-holder *g* is in the position last described, the flanges 6 6, embracing the upper edge of the arm *u*, prevent the knife-holder *g* from being displaced  
 25 laterally. When the trimming operation is to be resumed, the operator grasps a thumb-piece, B, projecting laterally from the knife-holder *g*, and moves said holder downwardly along the arm *u* until the face 5 of the knife-  
 30 holder *g* bears against the guide 2 of the arm *u*, the lever *h* at the same time engaging automatically with the notch *j'* in the slide or bar *j*, and thus retaining the holder *g* and the knife *f* in the position shown.  
 35 Both of the described operations—namely, removing the knife from and returning it to its operative position—can be performed without stopping the machine; hence the operator is enabled to suspend and renew the trimming  
 40 operation without loss of time. This feature is particularly advantageous in trimming the upper edges of boot-legs having straps, which have to be avoided in trimming. The operator removes the knife from the work when the  
 45 strap is reached and replaces it when the strap has passed by the point where the knife acts. The substantially vertical direction in which the knife moves when leaving and entering the work enables it to trim close to the strap and recommence trimming close to  
 50 the strap. The yielding pressure of the knife-holder against the guide 2 enables the work to move the knife-holder away from said guide and cause the knife-holder to reciprocate  
 55 loosely, without cutting, when a scalloped edge with acute angles between the scallops is being trimmed and the work is being turned after the completion of one scallop to commence trimming the next. The act of turning  
 60 the work under these circumstances causes the work to bind against the sides of the blade, and swing the blade and its holder slightly forward and separate the knife-holder from the rest 2 while the work is turning. The knife  
 65 therefore reciprocates without cutting, and is prevented from making a series of incisions

in the work at the re-entrant angle between two scallops, as it would do if it continued to make its operative movements while the work was being turned.

The knife-holder *g* may be thrown forward on its pivot, as shown in dotted lines in Fig. 5, to bring the cutting-edge of the knife *f* into such position that it can be readily sharpened without being removed from the machine.

The arm or bracket *r* is secured to the slide or bar *j* by a screw, C, passing through a vertical slot, D, in said arm, so that the arm can be adjusted vertically to regulate the throw or length of movement imparted to the slide or bar *j* by the cam *n*.

The plate or bracket *p*, to which the link *q* is pivoted, is also made vertically adjustable in the usual manner by means of a slot, F, in said plate, and a screw, E, passing through said slot and securing the plate *b* of the machine.

The slide or bar *j* has a handle, G, which enables the operator to move said bar laterally at its lower end and disengage it from the lever *h*. Said handle also forms a stop to bear against the guide-plate *m* and limit the upward movement of the slide or bar *j*.

The distance between the trimmed edge formed by the knife and the line of stitches may be regulated by adjusting the support or hanger *i* on the head *a*, so as to bring the knife nearer to or farther from the needle. To this end the hanger *i* should be provided with slots or holes *i'*, larger than the shanks of the screws *i'*, which attach it to the head *a*. The bar *j* has sufficient freedom of movement to enable it to conform to any required adjustment of the hanger *i* and lever *h*.

I claim—

1. In a sewing-machine, the combination of a knife-holder having a trimming-knife, a lever to which said knife-holder is pivoted, mechanism for oscillating said lever about its fulcrum, whereby the knife is vertically reciprocated, and a guide which governs and secures the downward and forward movement of the knife, substantially as described.

2. In a sewing-machine, the combination of a knife-holder having a trimming-knife, a pivoted support or lever to which said holder is pivoted, mechanism for oscillating said support and reciprocating the knife-holder in contact with the fulcrum, and a guiding-fulcrum, 2, on which the knife-holder is tilted while moving downwardly, whereby the knife is given simultaneous downward and forward motion, as set forth.

3. In a sewing-machine, the combination of a knife-holder carrying a trimming-knife, a lever to which said holder is pivoted, and mechanism, substantially as described, for oscillating said lever so as to reciprocate the knife vertically, with means for imparting to it a forward movement, and means for disengaging said lever from the operating mechanism, substantially as stated.

4. In a sewing-machine, the combination of a knife-holder having a trimming-knife, a pivoted lever to which said holder is pivoted so as to reciprocate vertically, as described, 5 and a guide-bar, as *v*, having a face, as 2, which serves as a fulcrum for the knife-holder when in operating position, and guiding-faces which control the position of the knife when not operating, substantially as described.

10 5. In a sewing-machine, the combination of a knife-holder having a trimming-knife and a slotted offset, *v*, a vertically-movable support to which said bar is pivoted, means for disengaging said support from the operating 15 mechanism thereof, fixed guides 2 and 3, with which said slotted offset is engaged, and a spring whereby, when the support is disengaged from its operative mechanism, the knife-holder and its support are raised until the offset *v* rises above the guide 2, and the knife-holder is then turned on its pivot and moved 20 backwardly on the guide 3, as set forth.

6. In a sewing-machine trimmer, the combination of the knife and knife-holder, the 25 pivoted lever to which the knife-holder is piv-

oted, the reciprocating slide-bar which engages and operates said lever, but may be disconnected, as described, the adjustable bracket on said bar, and the cam and spring for reciprocating said slide-bar, all substantially as described. 30

7. The oscillating take-up link *g*, provided with the cam *n*, combined with the slide or bar *j*, having the arm *r* and notch *j'*, the spring *s*, the pivoted knife-holder support *h*, and the 35 knife-holder *g*, as set forth.

8. The combination of the knife-holder support *h*, the knife-holder *g*, having knife *f*, the laterally-movable slide or bar *j*, and the hanger *i*, adjustably secured to the head of the ma- 40 chine, whereby the knife-holder and knife may be adjusted with reference to the needle, as set forth.

In testimony whereof I have signed my name to this specification, in the presence of two sub- 45 scribing witnesses, this 4th day of May, 1883.

LYMAN L. BARBER.

Witnesses:

ALONZO WARREN,  
C. F. BROWN.