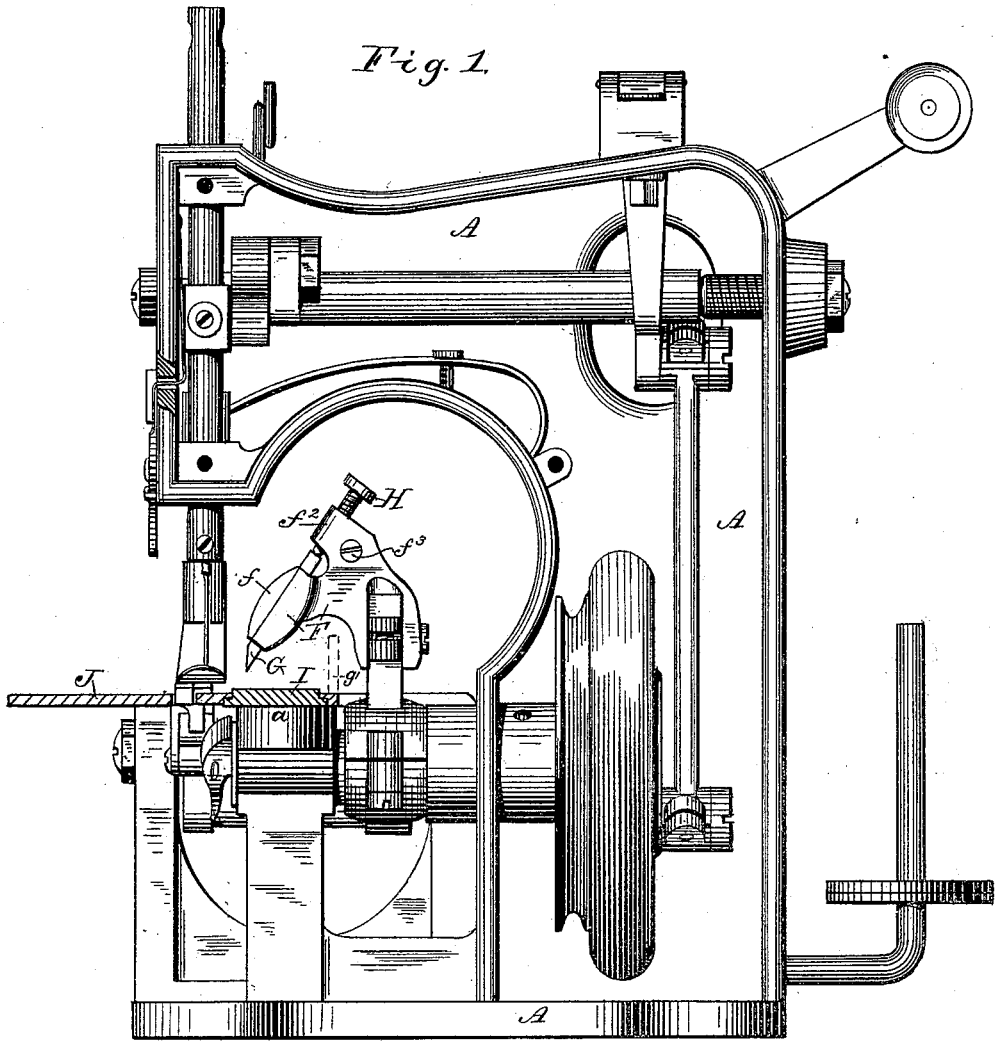
(Model.) 2 Sheets—Sheet 1.

P. DIEHL.

TRIMMING DEVICE FOR SEWING MACHINES.

No. 348,113. Patented Aug. 24, 1886.

Fig. 1.



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(Model.)

2 Sheets—Sheet 2.

P. DIEHL.

TRIMMING DEVICE FOR SEWING MACHINES.

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Fig. 2.

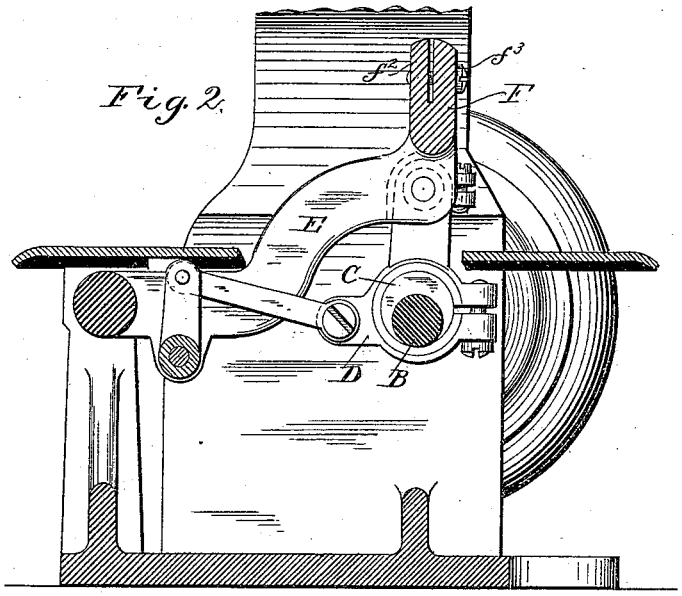


Fig. 3.

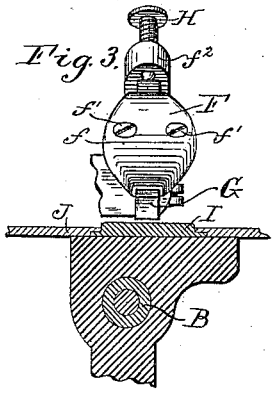


Fig. 4.

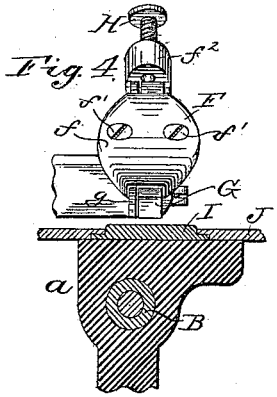


Fig. 5.

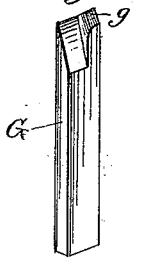
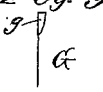


Fig. 6.

Fig. 7.

Fig. 8.

Fig. 9.



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UNITED STATES PATENT OFFICE.

PHILIP DIEHL, OF ELIZABETH, NEW JERSEY, ASSIGNOR TO THE SINGER MANUFACTURING COMPANY OF NEW JERSEY.

TRIMMING DEVICE FOR SEWING-MACHINES.

SPECIFICATION forming part of Letters Patent No. 348,113, dated August 24, 1886.

Application filed October 8, 1885. Serial No. 179,286. (Model.)

To all whom it may concern:

Be it known that I, PHILIP DIEHL, a citizen of the United States, residing at Elizabeth, in the county of Union and State of New Jersey, have invented certain new and useful Improvements in Cutting or Trimming Devices for Sewing-Machines, of which the following is a specification, reference being had therein to the accompanying drawings.

The object of my invention is to provide a simple and effective cutting mechanism for sewing-machines, adapted to trim off the surplus material parallel with and adjacent to the seam simultaneously with the sewing. To this end I provide a cutting-knife carried by a reciprocating head operated by an eccentric on the driving-shaft and working against a metallic cutting bed or block which rests on a solid standard, preferably formed integral with the frame of the machine. I deem it advisable to grind and adjust the cutting-knife so that while the rear portion of its edge will be a trifle blunt, and will in operation positively strike the cutting-block, the front portion of said edge (when the knife is at the lowest limit of its stroke) but lightly touching said block. When ground and adjusted in this manner, the brunt of the downward thrust of the knife against the cutting-block will be sustained by the blunt rear portion of its edge, and the forward or working portion of said edge will remain sharp, except as it becomes blunted by cutting the goods; or, instead of utilizing the rear portion of the edge of the knife to take the downward thrust of the knife-carrier at the terminations of the downstrokes of the latter, a separate device, either moving with the knife or stationary with the work-plate, may be employed for this purpose.

In the drawings forming part of this specification, Figure 1 is a side elevation of a sewing-machine embodying my invention. Fig. 2 is a partial transverse section of the same. Fig. 3 is a detail elevation of the cutting devices, and Fig. 4 is a similar view illustrating a modified form of my invention. Fig. 5 is a detail perspective view of one form of my cutting-knife; and Figs. 6, 7, 8, and 9 illustrate, by enlarged diagrams the cutting ends of several forms of knives.

The machine in connection with which I have herein illustrated my invention is the same as that which I have shown and more fully described in my applications Nos. 179,285, 179,287, and 179,288, filed simultaneously herewith, and I do not therefore wish to claim in this application any features of this machine, excepting as hereinafter indicated.

A denotes the frame of the machine, in the lower portion of which is journaled the driving-shaft B, carrying the eccentric C, surrounded by the strap D, and serving in the present instance to operate the feeding mechanism of the machine, as described in my application No. 179,285, above referred to. The strap D is connected with a pivoted arm, E, provided with a head, F, carrying the cutting-knife G, secured between the fixed or main portion of said head and a removable portion, *f*, thereof, the latter being clamped by its attaching-screws *f'* against the knife, and thus serving to hold the latter firmly in place.

Tapped in a projection, f^2, of the head F is a screw, H, by which, when the screws *f'* are slightly loosened, the knife G may be accurately adjusted. The projection f^2 is split, (see Fig. 2,) so that it may be compressed by a clamping set-screw, f^3, and thus securely retain the screw H in any position to which it may be adjusted.

The frame A is provided with an integral post or standard, *a*, on the top of which rests the cutting bed or plate I, projecting slightly above the work-plate J, and provided on its under side with a flange recessed into the work-plate, as shown in Fig. 1, so as to be held firmly in place on the standard or post *a*. The plate I is preferably made circular, so that it may be turned to bring different parts thereof beneath the knife G, said plate being of metal or similar hard material. The knife G is preferably made with the rear portion of its edge more or less blunt, as indicated by the enlarged diagrams, Figs. 7 and 8. This blunt portion *g* of the knife serves as a striker to take the most of the thrust of the knife against the cutting-block, the knife being so ground and adjusted that the sharp or forward part of the cutting-edge will but barely or lightly touch the cutting bed or plate.

Instead of making the striker *g* integral with the knife, it may be made separate therefrom (sse Fig. 9) and be secured to the knife-carrying

head F, so as to move with the knife, as shown in Fig. 4, or it may be merely a small pin or post, as *g'*, (indicated by dotted lines in Fig. 1,) stationary with the work-plate or cutting-bed, and arranged in the line of movement of some part of the knife-carrying head F, so that the latter at the end of its downstroke will impinge against it, and thus prevent the force of its thrust from being transmitted to the cutting-bed through the knife.

From the foregoing it will be apparent that when the driving-shaft B is rotated the eccentric C thereon will cause the arm E to vibrate, thus moving the head F and the knife G carried thereby up and down, and the said knife operating against the cutting-bed, as above explained, will trim off the edges of the goods parallel with the seam or line of stitches.

I claim as my invention—

1. In a sewing-machine, the combination, with the stitch-forming mechanism, of a flat plate or bed of hard material adjacent thereto, a straight-edged trimming-knife above said plate or bed, having its edge parallel with the line of feed, mechanism for reciprocating said knife to cause it to cut or trim the material being sewed, and a striker for softening the thrust of said knife against the surface of the said plate or bed, substantially as set forth.

2. In a sewing-machine, the combination, with the stitch-forming mechanism, of a flat plate or bed of hard material adjacent thereto, a straight-edged trimming-knife arranged to cut against said plate or bed, and having its edge parallel with the line of feed, mechanism for reciprocating said knife to cause it to trim the material being sewed, and a striker movable with said knife for softening the thrust of the latter against the said plate or bed, substantially as set forth.

3. The combination, with the frame of a sewing-machine having a post, as *a*, integral therewith, of a cutting plate or bed secured against the top of said post and having a flat upper surface, and a reciprocating trimming-knife adjusted to cut against the said surface, substantially as set forth.

4. In a sewing-machine, the combination, with the stitch-forming mechanism, of a shaft having an eccentric thereon, a flat plate or bed adjacent to said mechanism, a vibrating arm connected with said eccentric and having a knife-carrying head or portion, a knife adapted to cut against the upper surface of said plate or bed and having its edge parallel with the line of feed, and a striker for softening the thrust of the said knife against said plate or bed, substantially as set forth.

5. The combination, with the stitch-forming mechanism of a sewing-machine, of a reciprocating knife-carrying head having a split projection, a knife longitudinally adjustable in said head, an adjusting-screw tapped in said projection, and a clamping or set screw for compressing the jaws or parts of said projection against said adjusting-screw, substantially as set forth.

6. The combination, with the frame A, having the supporting-post *a*, of the flanged cutting plate or bed, and the recessed work-plate by which said cutting-plate is secured to the top of said post, substantially as set forth.

In testimony whereof I affix my signature in presence of two witnesses.

PHILIP DIEHL.

Witnesses:
JAMES G. GREENE,
WM. H. PUSLEE.