(No Model.)

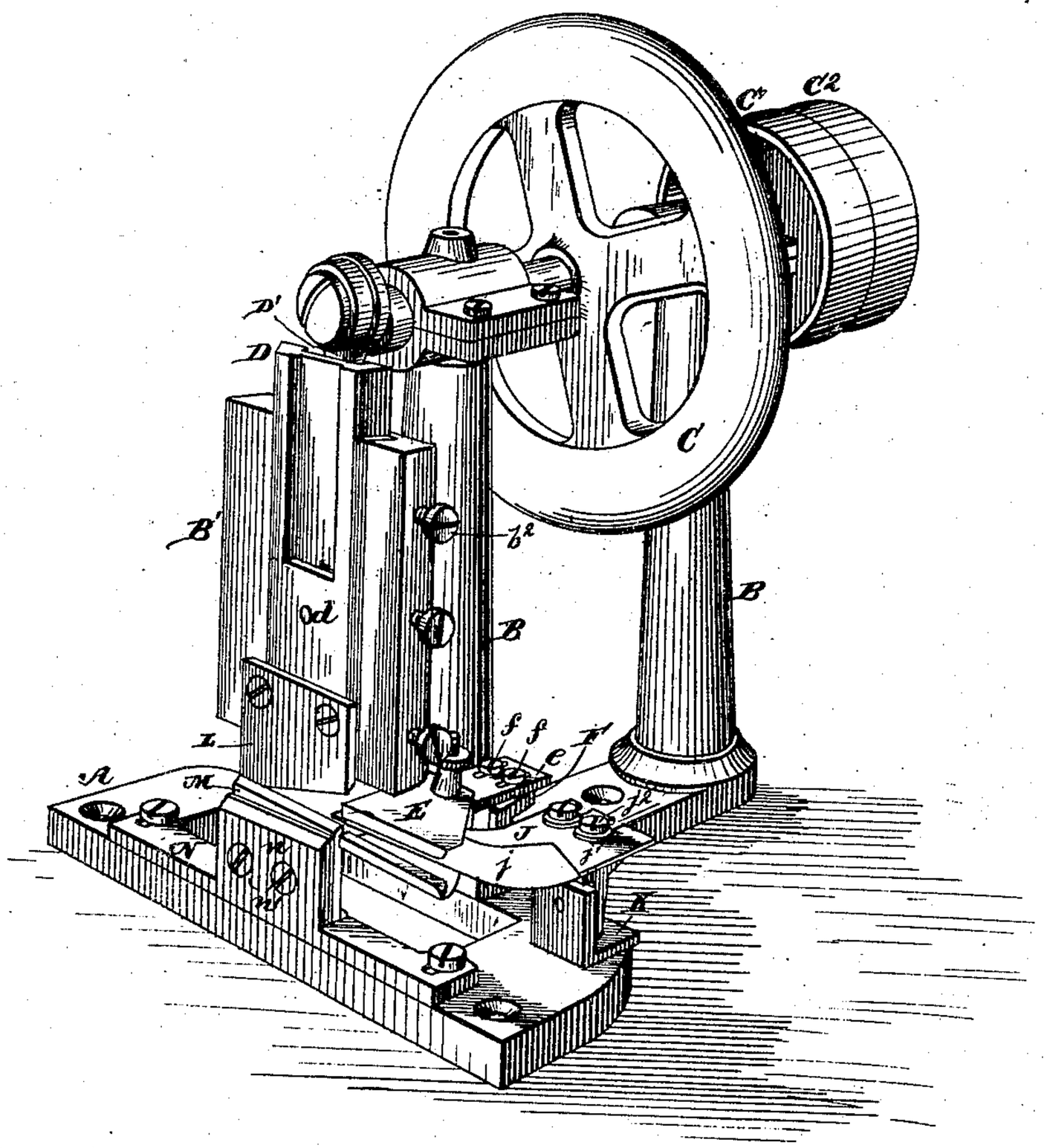
2 Sheets—Sheet 1.

N. H. BRUCE.

MACHINE FOR TRIMMING THE SEAMS OF GARMENTS, &c.

No. 257,286. Patented May 2, 1882.

Fig. 1.



Witnesses.
Robert Ewalt
J. A. Rutherford

Inventor:
Norman H. Bruce.
By James L. Norris.
Atty.

(No Model.)

2 Sheets—Sheet 2.

N. H. BRUCE.

MACHINE FOR TRIMMING THE SEAMS OF GARMENTS, &c.

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Fig. 2

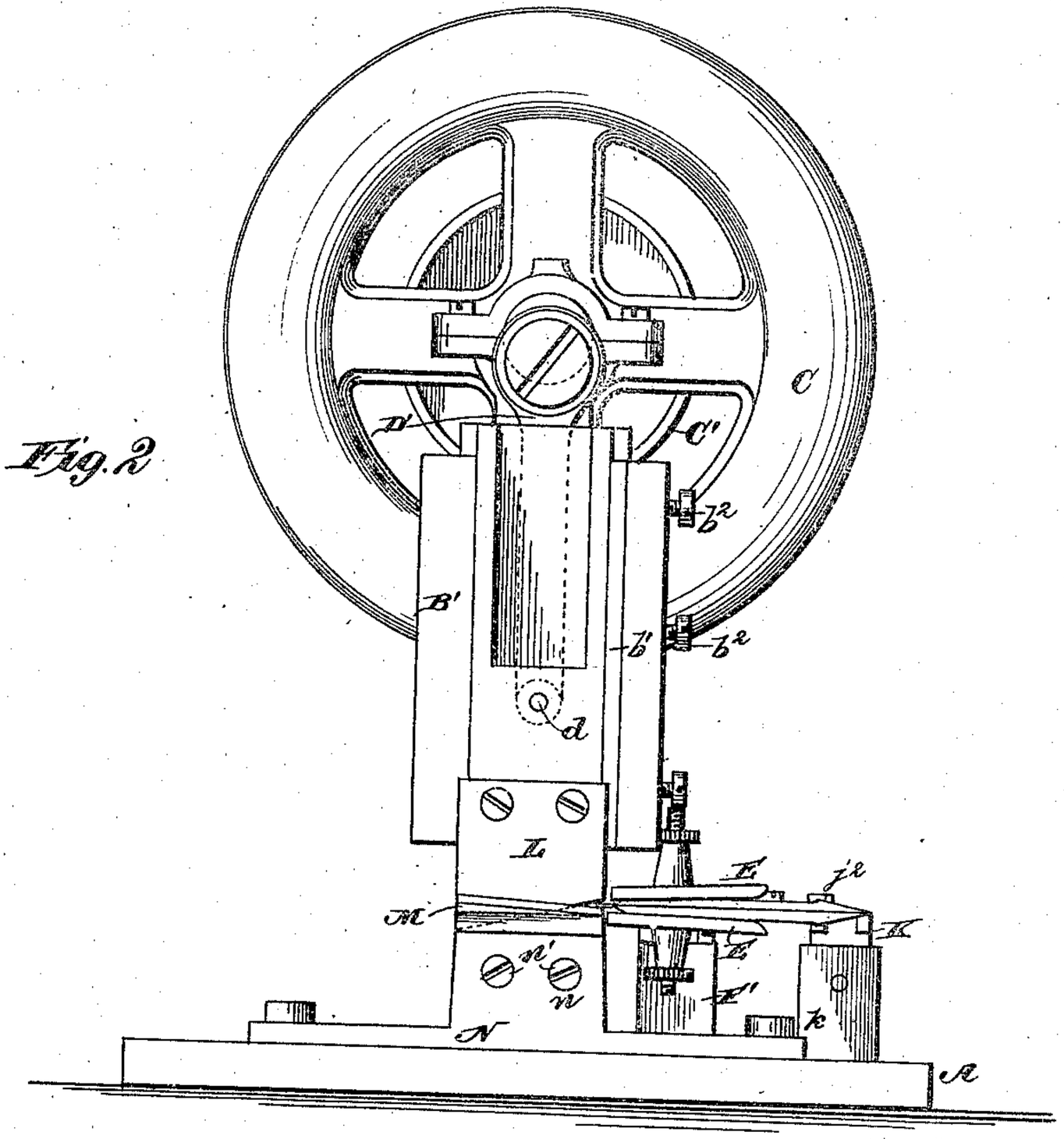


Fig. 6.

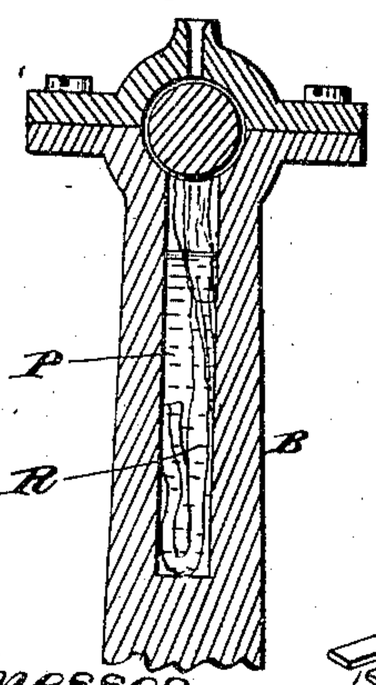


Fig. 3.

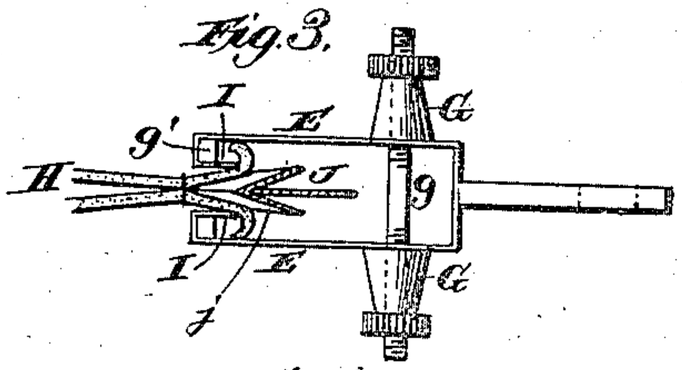
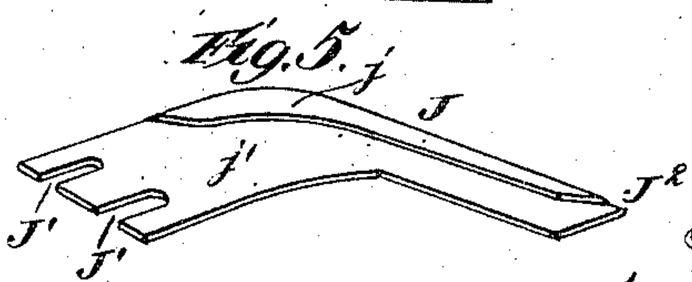


Fig. 4.

Fig. 5.



Witnesses.
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J. A. Rutherford

Inventor:
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UNITED STATES PATENT OFFICE.

NORMAN H. BRUCE, OF WEST TROY, NEW YORK.

MACHINE FOR TRIMMING THE SEAMS OF GARMENTS, &c.

SPECIFICATION forming part of Letters Patent No. 257,286, dated May 2, 1882.

Application filed March 20, 1882. (No model.)

To all whom it may concern:

Be it known that I, NORMAN H. BRUCE, a citizen of the United States, residing at West Troy, in the county of Albany and State of New York, have invented new and useful Improvements in Machines for Trimming the Seams of Garments and other Sewed Articles, of which the following is a specification.

This invention relates to a machine for trimming the loose and rough edges of the seams of sewed articles—such, for example, as the seams of knitted underwear.

The object which I have in view is to provide an improved guide which shall be efficient in guiding the article to be trimmed to the knives, and which shall also serve to hold the same while the article is being cut; also, to provide an improved centering-guide which shall fit the seam and act in conjunction with the retaining-guide to guide the article to be trimmed to the knives, and also to hold the same while it is being cut; finally, to provide certain improvements in the details of construction of parts, all of which are hereinafter fully described, and illustrated in the annexed drawings, in which—

Figure 1 is a perspective view of my improved machine. Fig. 2 is a front elevation of the same. Fig. 3 is a detail view, showing the retaining-guide. Fig. 4 is an edge view, and Fig. 5 a perspective view, of the centering-guide that is located in the retaining-guide. Fig. 6 is a vertical section taken through one of the standards for supporting the driving-shaft, and illustrates the way in which the shaft is lubricated.

Upon a suitable base or bed plate, A, are mounted the standards B B, provided at their top ends with boxes or bearings for the driving-shaft. This driving-shaft carries a fly-wheel, C, for equalizing the motion of the machinery, and it is further provided with the fast and loose pulleys C′ C², to which the driving-belt can be alternately applied for the purpose of applying power or for disconnecting the shaft from the motor.

The reciprocating knife-bar D, that carries a knife for trimming the edges of the fabric, is reciprocated by means of a pitman, D′, which is swiveled at its upper end upon a wrist-pin located eccentrically on the enlarged front end of the driving-shaft, the lower end of said pitman being provided with a stud or pin, which enters a socket, *d*, formed in the reciprocating knife-bar. This reciprocating knife-bar slides in a dovetailed way formed in a head, B′. A wear-plate, *b′*, that is interposed between the knife-bar and one of the beveled walls of the dovetailed way in the head, can be adjusted by means of the set-screws *b²* for the purpose of taking up the wear.

E refers to the retaining-guides, in which the article to be trimmed is inserted and moves forward to the knives. This retaining-guide consists of a pair of spring-plates or of a single plate bent so as to form a pair of spring-leaves. As a means for holding the retaining-guides in proper relative position to the knives, the said spring-plates are connected with a plate, *e*, that is provided with slots and adjustably secured upon a supporting-bracket, F, by means of set-screws *f f*, passing through said slots into the bracket. This bracket can be supported upon the bed-plate in any suitable way—as, for example, by adapting it to be adjustably connected to a support, F′, (see Fig. 2,) that is secured upon the bed plate, this adjustability on the part of the bracket admitting of the retaining-guide being readily set at the required height. The support F′ will be conveniently formed of angle-iron, and formed with a slot through which the bolt that secures it to the bed-plate will pass, thereby admitting of the adjustment of the support in order to bring it into the required position.

The spring-leaves of the retaining-guide E are normally spread apart by their individual spring action. It is sometimes necessary, however, to vary the distance between them, so as to adapt the retaining-guide to sewed articles of various thickness. To such end these spring-leaves can be brought more or less closely together by means of a pair of tightening-nuts, G, arranged to bear upon the outer sides of the spring-leaves, and fitted upon a screw-threaded rod, *g*, which passes through the said spring-leaves and extends out from the same, so as to receive the nuts.

As the loose and rough edges of stitched fabrics have a tendency to curl up along their seams, as illustrated in Fig. 3, in which H indicates the stitched fabric before it has been

trimmed, I thicken or rib the inner sides of the spring-leaves of the retaining-guides along their front edges, as at *g'*, and along each one of these ribs or thickened portions I form an inwardly-projecting lip or flange, I, whereby a space will be provided between such lip and the spring-leaf for receiving the curled edge of the fabric.

A centering-guide, J, located between the spring-leaves of the retaining-guide, is adjustably secured to a bracket, K, which is in turn connected with a support, *k*. This support can be formed similar to the support F' and adjustably secured to the bed-plate in a like manner. The centering-guide J, which centers and guides the seam within the retaining-guide, is provided with a wedge-shaped front edge, *j*, and having a flexible metal plate bent into V shape and secured thereto, so as to form the wedge-shaped front edge, *j*. The spring-plate *j* is formed at its rear end with slots J' for the screws j^2, that secure it to the bracket, whereby the centering-guide can be adjusted horizontally within the retaining-guide in order to bring their front edges into the required relative position. The centering-guide can also be adjusted vertically by means of the adjustable connection of the bracket to which it is secured with the support *k*, upholding said bracket. When the stitched article to be trimmed is inserted in the retaining-guide the wedge-shaped front edge of the centering-guide will enter the seam and spread apart the two thicknesses of the material, and the edges of the latter will curl into the spaces between the lips I and the spring-leaves of the retaining-guide. These spring-leaves of the retaining-guide converge in the direction of the knives, so that, while ample space is afforded at one end of the guide for the insertion of the stitched fabric, it will be seen that as the said article is moved along the retaining-guide toward the knives it will be more closely confined within the narrower portion of the retaining-guide that is formed by the said convergence of its two spring-leaves, the two thicknesses being retained between the ribbed edges of the leaves and the wedge-shaped centering-guide with the curled loose edges of the fabric received in the space between the lips I and the leaves of the retaining-guide. It will of course be understood that the operator will hold the seam within the retaining-guide and well up to the knife-edge of the centering-guide, and that these guides assist such operation.

L indicates the reciprocating knife that is secured to the knife-bar, and M refers to the stationary knife that is attached to a vertical portion, *n*, of a plate, N, that is formed with slots for the bolts or set-screws *n'*, which secure it to the bed-plate, whereby it can be adjusted upon the latter in order to bring the knife M close to the knife carried by the knife-bar. These knives are formed with their cutting-edges inclined in opposite directions, so that when the upper movable knife has reached the highest point in its upward movement the two cutting-edges will converge in a direction away from the guides. The knives are adjusted so that after the upper knife has been raised to the highest point, as just mentioned, the point of convergence of the two cutting-edges will be at the lower corner of the cutting-edge of the movable knife and the upper corner of the cutting-edge of the stationary knife, the cutting-edges meeting at this point, above which the movable knife cannot be raised. Hence, although the upper knife reciprocates with great rapidity, yet the above meeting of the knives at the highest point in the upstroke of the knife-bar will prevent the operator from pushing the trimmed edge of the fabric inwardly and under the knives. Thus it will be seen that the trimmed edge will, as the fabric is moved along, be at the outer side of the cutters at their said meeting corners, and hence said meeting corners will form a barrier which will prevent the fabric from being accidentally pushed inwardly or under the cutting-edges.

It may happen that the operator will, during the operation of trimming, draw the fabric forward too rapidly upon the knives, so that it will be cut with a somewhat ragged edge. To avoid this the end J^2 of the centering-guide is extended beyond the retaining-guide, so as to project a short distance slightly in the path of the upper reciprocating knife. Hence, as the upper reciprocating knife is completing its downstroke the upper corner of its inclined cutting-edge is acting upon the thickness of the fabric lying over the free end J^2 of the centering-guide, and will fail to cut the fabric, the elasticity of the centering-guide allowing it to yield to the pressure of the knife without presenting sufficient resistance to admit of the fabric being reversed. Upper thickness of the fabric will thus be held between the upper-knife edge and the free end of the centering-guide until the said knife has completed its downstroke, and it will also be thus held during a portion of the upstroke of the knife, the centering-guide, as the knife ascends, returning to its normal position by reason of its individual spring action.

In order to lubricate the driving-shaft in its bearings, I form a bore or chamber, P, in the upper end of each one of the standards B, and within each of such chambers place a sufficient quantity of lubricating-oil, with a wick, R, for conducting the oil up to the shaft. In this way the shaft can be lubricated without any danger of the oil flying off from the same and spattering over the work.

What I claim is—

1. In a machine for trimming the seams of sewed articles, a retaining-guide adapted to hold and direct the article to be trimmed to the cutting-knives, and composed of a pair of spring plates or leaves, with an intermediate space for receiving the seam, substantially as described.

2. In a machine for trimming the seams of sewed articles, the retaining-guide E, provided with the lip I, extending inwardly from its

front edges, so as to leave a space between the upper and lower walls of the guide and the said lips for receiving the curled loose edges of the sewed article, substantially as described.

3. In a machine for trimming the seams of sewed articles, the retaining-guide E, located in position to direct the article to be trimmed to the knives, and formed with its inner walls converging toward the knives, substantially as described.

4. In a machine for trimming the seams of sewed articles, the retaining-guide E, located and adapted to direct the article to be trimmed to the knives, and comprising a pair of spring-leaves with a screw-threaded rod passing through the said leaves, and the tightening-nuts fitted upon said rod for the purpose of contracting the guide when desired, substantially as described.

5. In a machine for trimming the seams of sewed articles, a spring centering-guide, J, located within the retaining-guide and adapted to enter between the loose portions of the seam, substantially as described.

6. The combination, in a machine for trimming seams, of the retaining-guide E, having the inwardly-projecting lips I, with centering-guide J, having a wedge-shaped front edge and located within the retaining-guide, substantially as described.

7. The combination, in a machine for trimming seams, of a guide for directing the article to be trimmed to the knives, with the centering-guide located within the retaining-guide, and composed of a spring-plate, *j'*, with a flexible metal strip bent into V shape and secured to said plate to form the wedge-shaped front edge of the guide, substantially as described.

8. The combination, in a machine for trimming the seams of sewed articles, of the reciprocating knife having an inclined cutting-edge, with the spring centering-guide J extended slightly in the path of the knife, whereby the article that is being trimmed will be caught and held between the guide and the knife during a portion of the movements of the latter, substantially as described.

9. The combination, in a machine for trimming the seams of sewed articles, of the knives, with the horizontally-adjustable retaining-guide E, and the adjustable centering-guide J, located within the retaining-guide, substantially as described.

In testimony whereof I have hereunto set my hand in the presence of two subscribing witnesses.

NORMAN H. BRUCE.

Witnesses:

JAMES L. NORRIS,

JAMES A. RUTHERFORD.