(No Model.) 3 Sheets—Sheet 1.

S. ARNOLD.

MEANS FOR TRIMMING FABRICS.

No. 249,734. Patented Nov. 22, 1881.

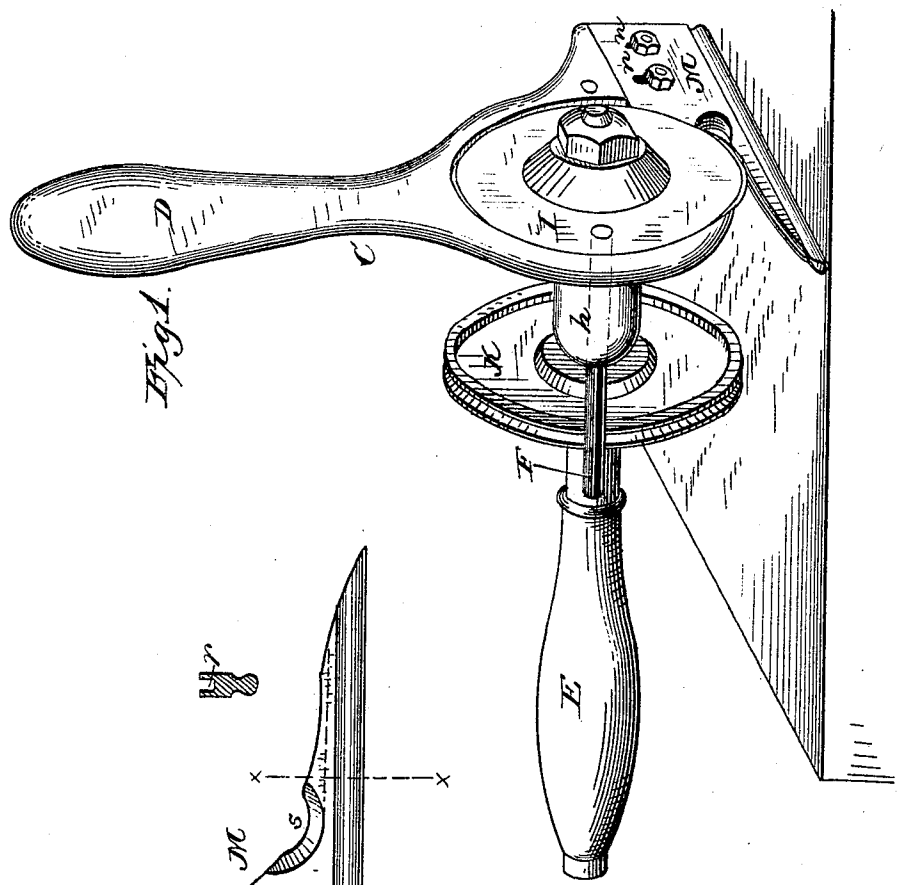


Fig. 1.

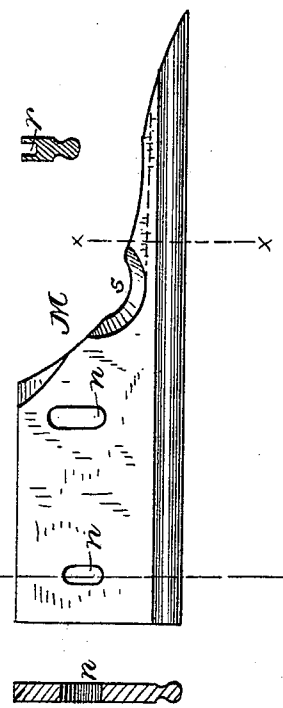


Fig. 2.

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Hrylmun & Kane
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N. PETERS. Photo-Lithographer. Washington, D. C.

(No Model.)

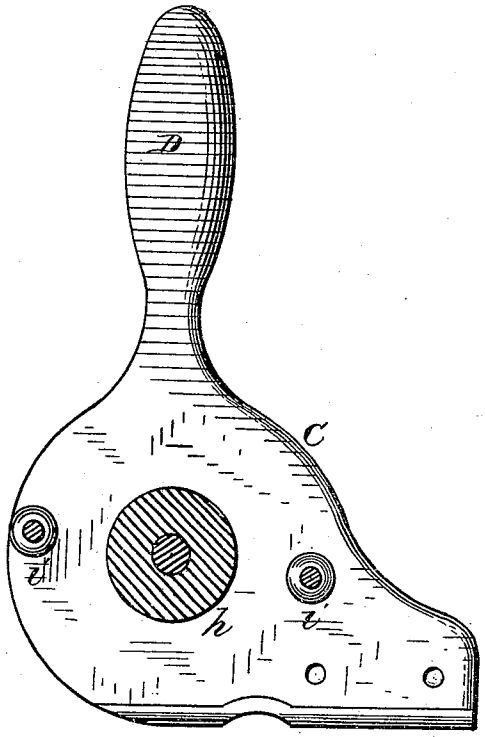
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Fig. 3.



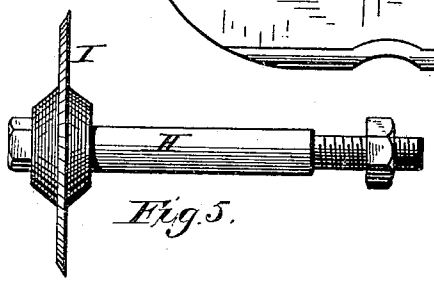


Fig. 5.

Fig. 9.

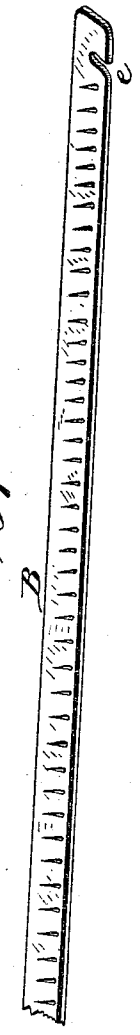
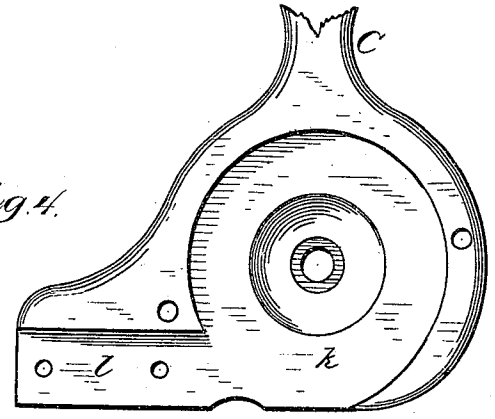


Fig. 4.



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(No Model.) 3 Sheets—Sheet 3.

S. ARNOLD.

MEANS FOR TRIMMING FABRICS.

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Fig. 7.

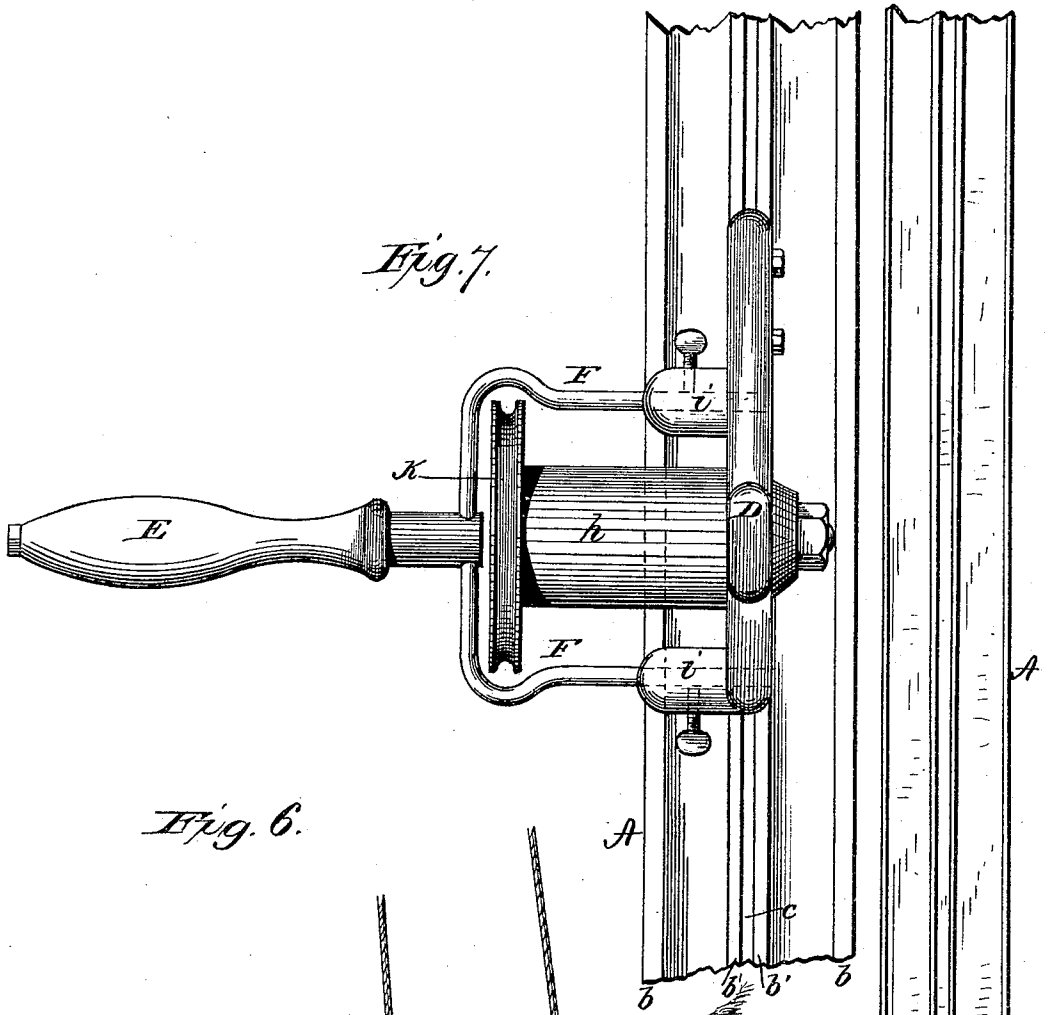


Fig. 6.

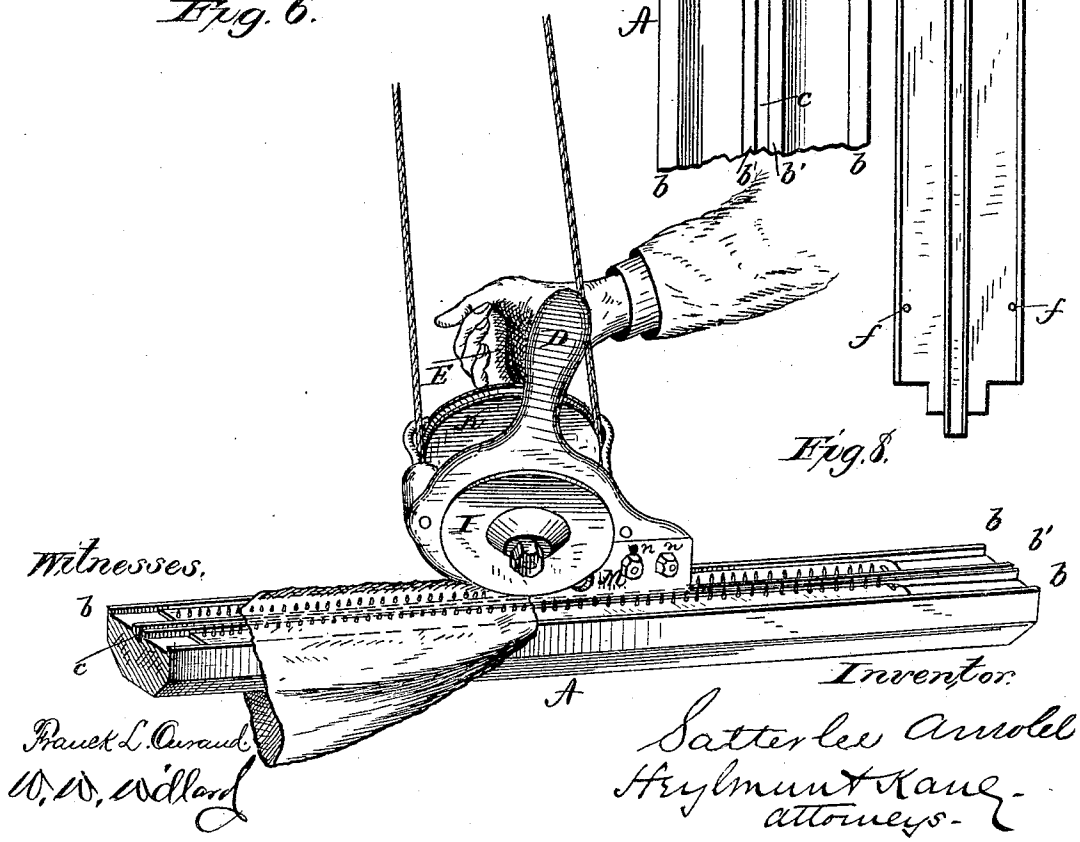


Fig. 8.

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UNITED STATES PATENT OFFICE.

SATTERLEE ARNOLD, OF TROY, ASSIGNOR TO ANNA M. ARNOLD, OF NEW YORK, N. Y.

MEANS FOR TRIMMING FABRICS.

SPECIFICATION forming part of Letters Patent No. 249,734, dated November 22, 1881.

Application filed August 11, 1881. (No model.)

To all whom it may concern:

Be it known that I, SATTERLEE ARNOLD, a citizen of the United States of America, residing at Troy, in the county of Rensselaer and State of New York, have invented certain new and useful Improvements in Means for Trimming Fabrics; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to letters or figures of reference marked thereon, which form a part of this specification.

This invention relates to means for trimming fabrics, especially elastic goods, to seaming or sewing edges preparatory to sewing them together.

Heretofore it was thought essential to employ a clamping or top plate arranged above the fabric to confine it in position on the pin-plate during the process of trimming the goods; but practice in the more expeditious modes has disclosed the fact that a clamping or top plate is not necessary, especially when a rotary cutter is employed as the means for trimming the goods.

My invention consists in the combination, with a holding device having an edge, of a base or bottom plate underlying the holding device, and provided with a guiding-edge subtending the edge of the holding device at a desired distance for the purpose of trimming the fabric on the subtended edge of the base or bottom plate.

My invention further consists in two holding devices arranged parallel, or nearly so, to each other, with an intervening space for holding the goods in position and permitting the same to be trimmed to a seaming-edge.

My invention further consists in a rotary cutter with a guide-shoe for trimming the edges of the fabric.

My invention further consists in the combination of two holding devices, arranged parallel to each other, with an intervening space for holding the goods in a position to be trimmed, and a trimming device.

My invention further consists in a bed-surface having a central longitudinal groove and two holding devices, in combination with a rotary cutter provided with a guiding-shoe to work in the groove of the bed-surface.

My invention further consists in the novel construction and combination of parts, as will be hereinafter described and claimed.

In the accompanying drawings, Figure 1 is a representation of a perspective view of the trimmer. Fig. 2 is a side view of the shoe and transverse sectional views taken through the lines *x x* and *y y* of said side view. Fig. 3 is a rear view of the trimmer-handle. Fig. 4 is a front view of the lower portion of the trimmer-handle, showing the concavity and recess for the rotary cutter and shoe. Fig. 5 is a side view of the arbor, clamping-washers, and rotary cutters. Fig. 6 is a perspective view of the guide-rail, pin-plates, and trimmers, showing the mode of trimming the fabric. Fig. 7 is a plan view of a portion of the guide-rail and the trimmer, showing the relative arrangement. Fig. 8 is a plan view of the inner portion of the guide-rail, on a reduced scale; and Fig. 9 is a perspective view of one of the pin-plates.

The letter A (see Figs. 6 and 8) represents a guide-rail, formed on its upper surface with two depressed surfaces extending the entire length of the guide-rail. These depressed surfaces form traveling-ways for the adjustable or movable pin-plates hereinafter described, and are guided by the vertical flanges *b b'*, serving as guiding-walls for the pin-plates in their sliding movements. These traveling-ways (see Fig. 8) are made narrower at the outer end than at the inner end, for the purpose of aiding in drawing the holding devices or pin-plates nearer together in feeding the fabric to the sewing-machine.

Between the depressed surfaces constituting the traveling-ways is a groove or furrow, *c*, of a greater depth, and of a width to suit a guiding-shoe of a trimmer running parallel with the traveling-ways. The inner vertical flanges, *b'*, of the guide-rail serve also as guide-walls for the shoe of the trimmer in the forward movement of the tool. These guide-rails, which are made of any desired length, are provided

at the outer end with two small studs or pins (not shown in the drawings) for engaging with the slots *e* in the outer ends of the pin-plates B to temporarily secure the pin-plates in position during the process of fastening the fabric to the pin-points and trimming the edges thereof to a sewing-seam.

At or near the upper end of the guide-rail are arranged two pins or studs, *f*, (see Fig. 8,) alongside of the outer vertical flanges, *b*, of the pin-plate ways. The office of these studs or pins, owing to the arrangement, is to force positively the pin-plates nearer together, as moved forward or fed to the sewing-machine, by any suitable means, thereby forming a combined wide and narrow gage. Thus, it will be observed, this inward movement, or the approach of the pin-plates carrying the trimmed fabric, will cause the trimmed edges of the fabric to be brought closer together to make a fuller seam.

The letter C (see Fig. 1) represents the trimming-tool, having horizontal and vertical handles D and E. The frame C (see Fig. 3) is made of cast metal and formed on one of its sides with an arbor-journal bearing, *k*, and two sockets, *i*, arranged opposite each other, for the attachment of the frame F, with its handle E. The frame C is also formed on the opposite side, Fig. 4, with a circular conical recess, *k*, to receive a circular cutter and protect the same, and a shouldered recess or offset, *l*, to receive the guiding-shoe, hereinafter described.

The letter H represents the arbor, (see Fig. 5,) to which is secured at one end the circular trimmer or rotary cutter I, clamped in position by means of the conical washers and nut. The other end of the arbor is reduced in size to receive a drive-pulley, which is secured in position by means of a jam-nut engaging with the screw-threads of the arbor. The arbor carrying the circular trimmer is passed through its bearing, so as to present the beveled side of the trimmer outward. The pulley K is now applied to the other end and made fast thereon by means of the screw-threads and jam-nut, which fastening also draws the inner washer of the rotary trimmer to its conical seat and the trimmer within the recess of the frame C.

The letter M represents the guiding-shoe, (see Figs. 1 and 2,) having its lower edge rounding and formed with two oblong slots, *n*. The forward portion of the shoe is inclined, curved, and pointed and formed with a short longitudinal groove, *r*, terminating in a depression, *s*, for discharging the fibers from the groove collected therein during the process of trimming. This shoe is secured to the base of the frame C by arranging a washer or packing-plate in the recess *l*, and fitting and adjusting the shoe so that the groove thereof will straddle the lower portion of the cutter and the slots thereof register with the holes in the washer and the frame when it is secured in position by means of fastening bolts or rivets.

By reference to Figs. 1 and 6 of the drawings it will be seen that the forward end of the guide-shoe extends beyond the trimmer and forms a nose or plow-point to the shoe, so as to raise the fabric to be trimmed and hold the same in contact with the revolving trimmer for action.

The mode of operation of trimming the fabric to seaming or sewing edges to form goods of cylindrical shape is as follows: The pin-plates being properly arranged on the guide-rail in their respective traveling-ways, one edge of the fabric is placed upon the row of pin-points so as to leave the small projecting edge extending beyond the pin-points and over the central groove of the guide-rail, in which position the fabric is pressed down upon the pin-points, and the other edge of the fabric is passed under the guide-rail, and from thence passed over the row of pin-points, overlapping the other edge on the central groove, in which position it is secured to its pin-plate by the pressing device. The guide-shoe of the trimming-tool is now introduced into the furrow of the guide-rail, and the cutter, having a high rate of speed through the agency of the driving-pulley and the band, is moved forward by the operator, so that the forward extended portion of the shoe will slightly raise the overlapping edges of the fabric and present them to the rotary cutter for the trimming action. As the fabric is lifted by the forward portion of the shoe the rotary cutter trims the edge, and the trimmer is moved forward by the hand of the operator to the end of the fabric, thus trimming both edges of the fabric, ready for sewing together, as indicated in Fig. 6 of the drawings. When this operation is accomplished the trimmer is removed from the guide-rail, leaving the fabric still held on the pin-points of the pin-plates, and the pin-plates are now released from their fastening devices and fed forward with the trimmed fabric in the guide-rail. A pointed wire now serves to depress the cut edges into the central furrow of the guide-rail, whereby the ragged edges are turned inward from the face of the fabric and hid on the inside of the garment, the central furrow being formed of such a width as to properly hold the edges, and the sides of the furrow hold the edge inwardly or toward the opposite edge, and thus the two edges of the fabric are pressed one against the other, and this enables a very short bend on a very narrow edge to be made, say, nearly a right angle on one-sixteenth of an inch of edge, and in which position the goods are sewed, and no welt of any appreciable thickness can be perceived or is made.

It will be observed from the foregoing description that the inner edge of the pin-plate having the outline of the seam to be formed abuts against a guiding-edge of the guide-rail, which serves as a bed or bottom plate, so as to subtend the edge of the pin-plates at a desired distance for the purpose of trimming the fabric on the subtended edge of the guide-rail, supporting the subtending edge of the knit-cloth fabric and preventing it from curling out of position.

The side frame, F, serves to hold the driving band or belt in contact with the pulley, to prevent displacement of the belt from same.

I reserve the right to change the construction of the parts without departing from the spirit of my invention as herein described.

Having thus described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. The combination, with a holding device having an edge conforming to the seam, of a guide-rail or bottom plate underlying the holding device, and provided with a guide-edge subtending the edge of the holding device at a desired distance for the purpose of trimming the fabric on the subtended edge of the guide-rail or bottom plate, substantially as described.

2. The combination, substantially as described, of two pin-plates arranged parallel, or nearly so, in the same horizontal plane to each other, with an intervening space for holding the goods in position to be trimmed to a seaming or sewing edge.

3. The combination, substantially as described, of two pin-plates arranged parallel, or nearly so, in the same horizontal plane to each other, with an intervening space for holding the goods in position to be trimmed, and a trimming device.

4. In combination with a bed-surface or a guide-rail having a centrally longitudinal groove with two parallel rows of pin-points, a rotary cutter provided with pointed guide-shoes to work in the centrally longitudinal groove of the bed-surface or guide-rail, substantially as described.

5. The combination, with a guide-rail having two parallel traveling-ways and a centrally longitudinal groove or furrow of a greater depth, of the pin-plates arranged in the parallel traveling-ways of the guide-rail, substantially as described, and for the purpose set forth.

6. The combination, with two pin-plates, of a guide-rail having two ways with means, substantially as described, to cause the pin-plates to approach each other, as set forth.

7. A trimming device composed, essentially, of a rotary cutter and a guide-shoe with a curved base, the latter supporting and guiding the rotary cutter, and also supporting the fabric closely on one or both sides of the edge of the cutter, substantially as described.

8. In a rotary trimming-tool adapted to be driven by a pulley and belt, a guide-shoe with a curved narrow base and a longitudinal slot terminating in a discharge recess or opening, and a frame for retaining the belt in contact with the pulley, substantially as described.

9. In a trimming-tool having a rotary cutter, a guide-shoe formed with a longitudinal slot terminating in a concave recess, *s*, for the purpose stated.

10. As a new article of manufacture, the trimming device consisting of the frame C, arbor H, cutter I, driving-pulley K, and guide-shoe N, substantially as and for the purpose set forth.

11. A guide-rail formed with two parallel, or nearly so, traveling-ways, and a central groove of a greater depth, substantially as described.

12. A guide-rail having combined wide and narrow traveling gageways, and provided at the upper or inner end with pins or their equivalents, substantially as and for the purpose set forth.

13. The means hereinbefore described for trimming fabrics to seaming or sewing edges, consisting of a guide-rail formed with traveling-ways, central groove or furrow, the pin-plates arranged in the traveling-ways of the guide-rail, and a rotary trimming device, substantially as described.

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

SATTERLEE ARNOLD.

Witnesses:
W. W. WILLARD,
JOHN W. SCOFIELD.