J. R. MOFFATT.

SEWING MACHINE AND TRIMMING MECHANISM THEREFOR.

APPLICATION FILED APR. 6, 1914.

1,312,412.

Patented Aug. 5, 1919.

4 SHEETS—SHEET 1.

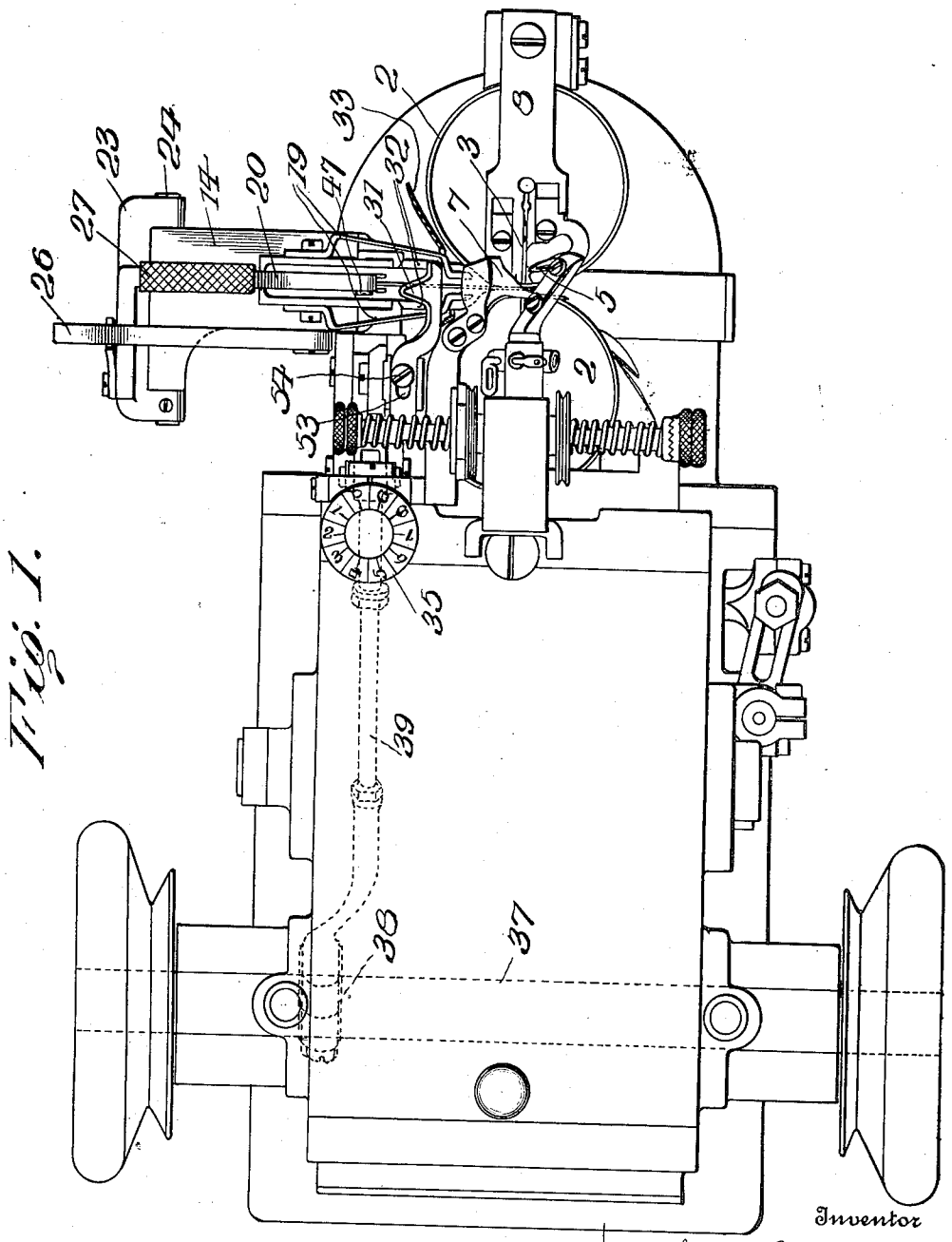


Fig. 1.

Witnesses

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4 SHEETS—SHEET 2.

Fig. 2.

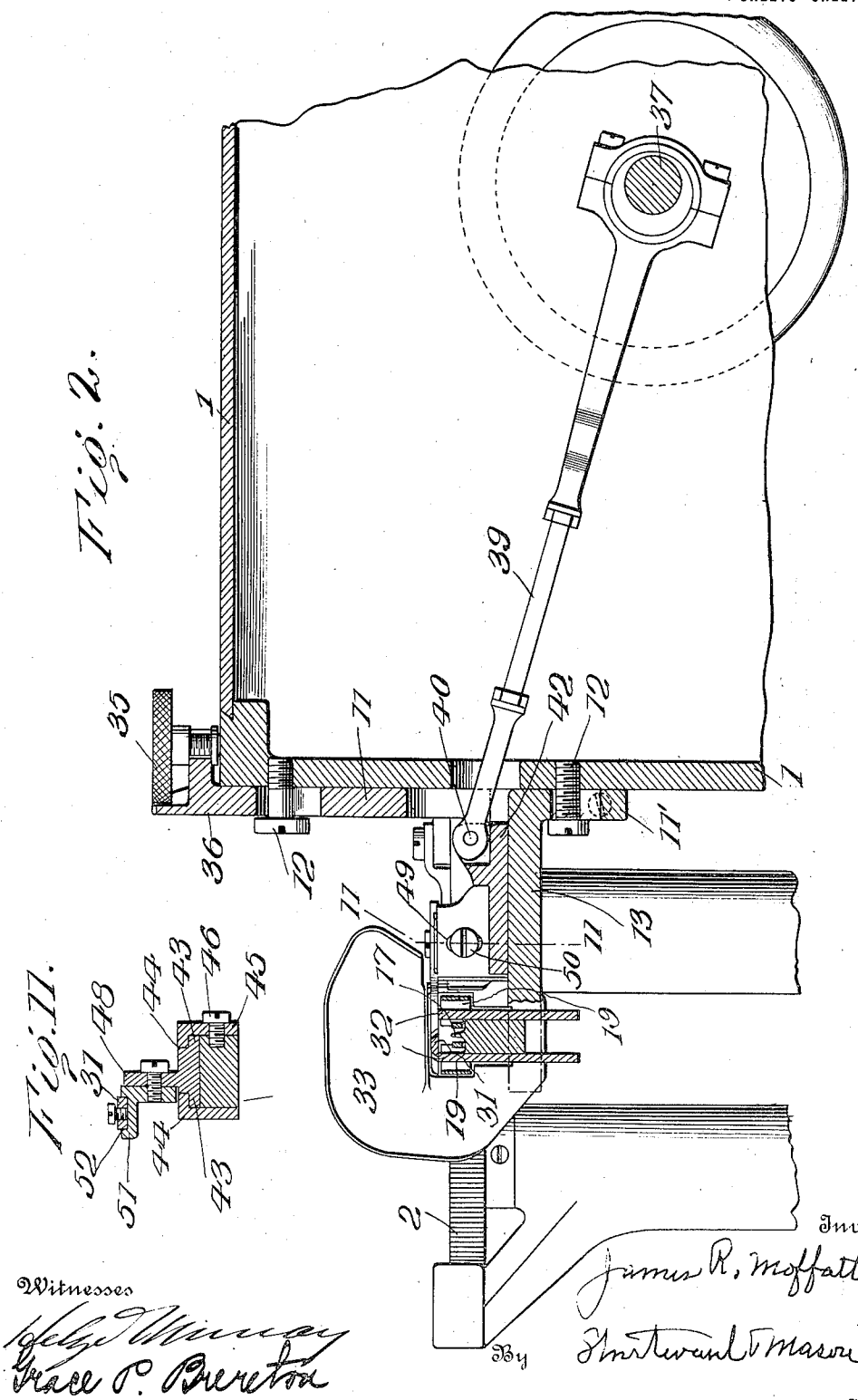


Fig. 11.

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4 SHEETS—SHEET 3.

Fig. 3.

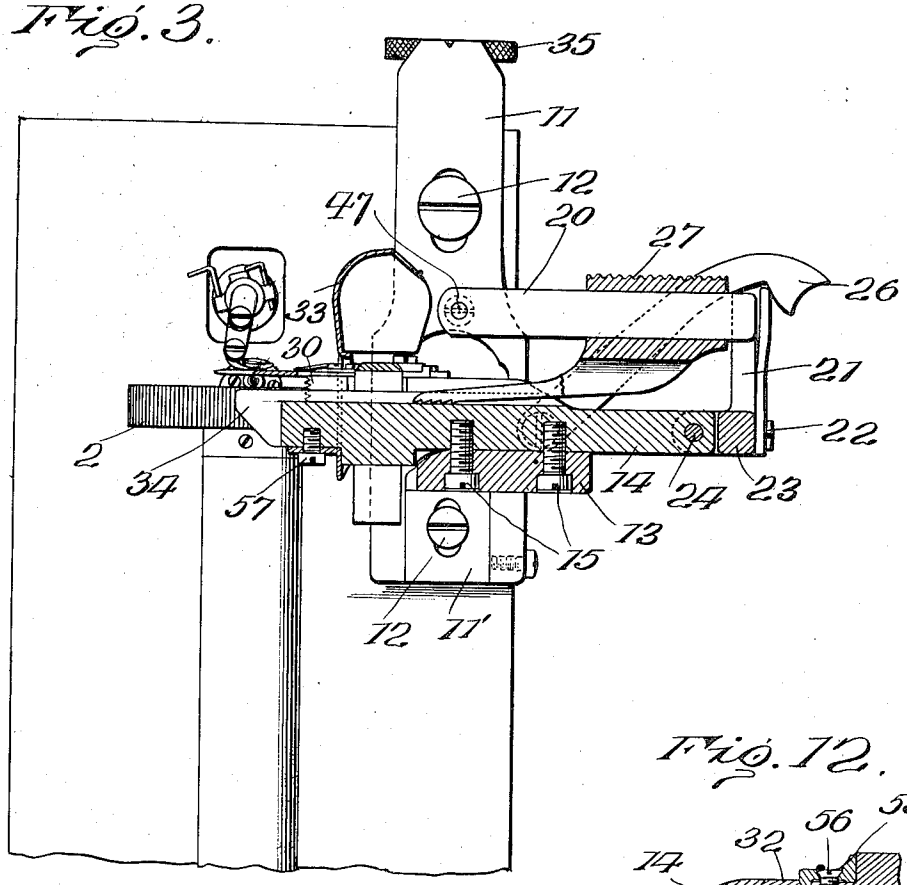


Fig. 12.

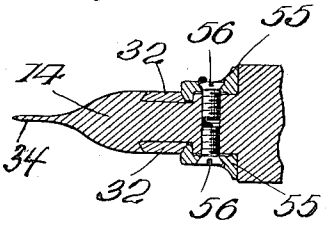
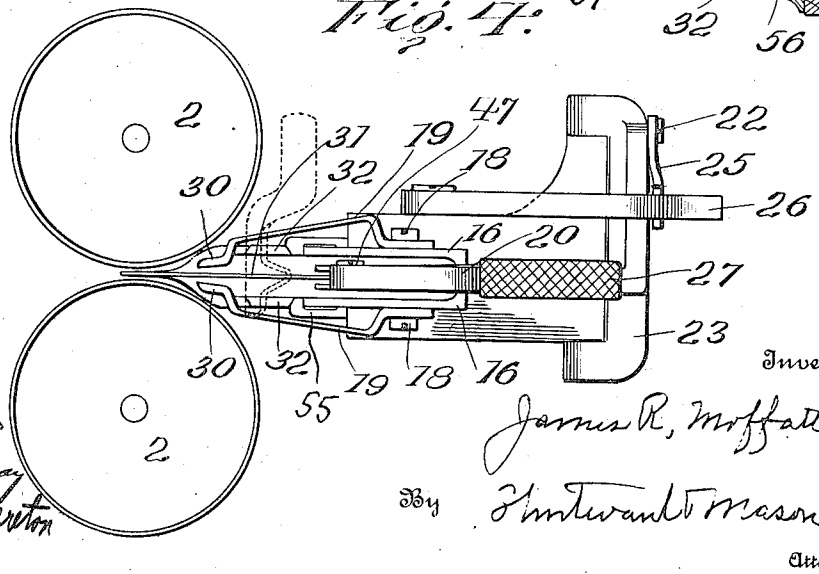


Fig. 4.



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4 SHEETS—SHEET 4.

Fig. 5.

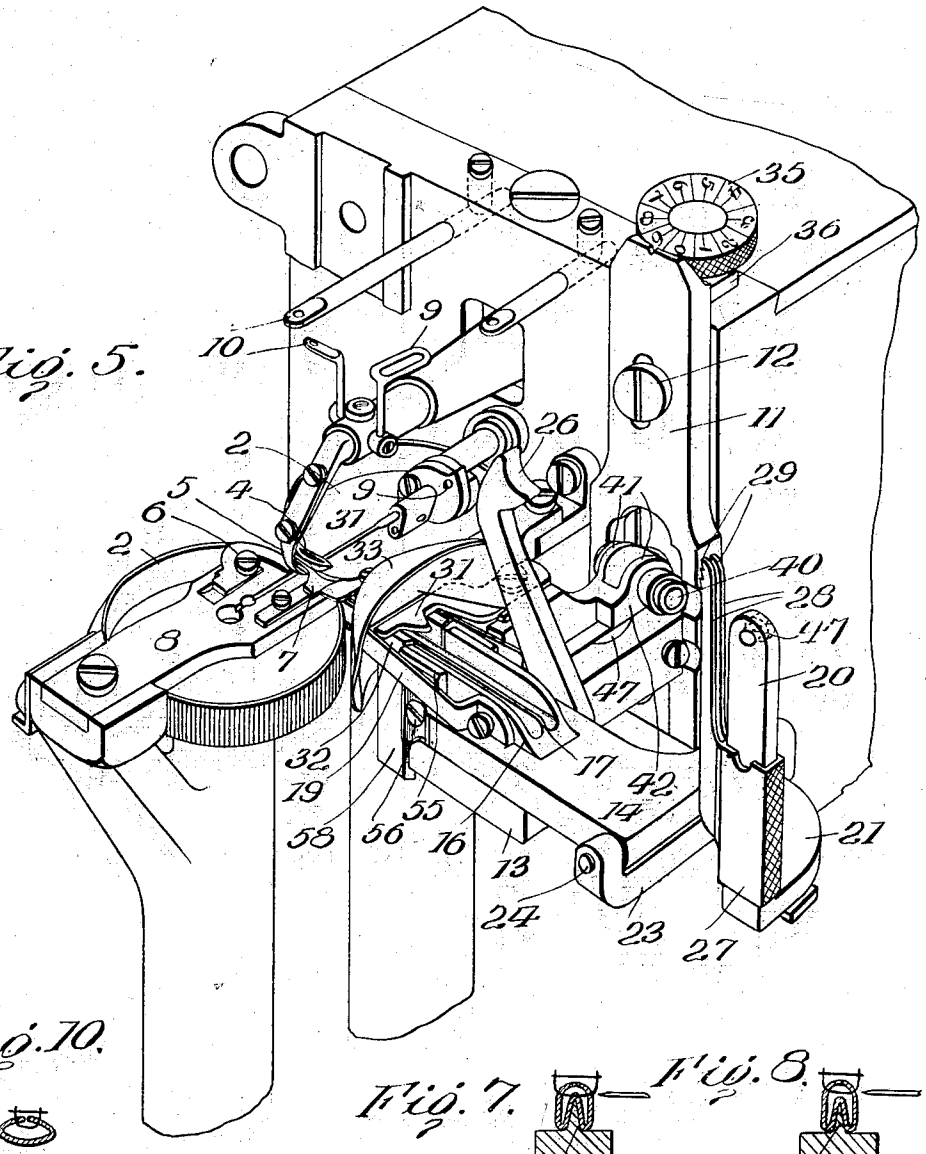


Fig. 10.

Fig. 7.

Fig. 8.

Fig. 6.

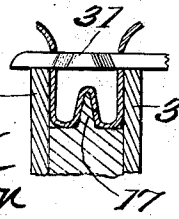


Fig. 9.



Witnesses

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UNITED STATES PATENT OFFICE.

JAMES R. MOFFATT, OF CHICAGO, ILLINOIS, ASSIGNOR TO UNION SPECIAL MACHINE COMPANY, OF CHICAGO, ILLINOIS, A CORPORATION OF ILLINOIS.

SEWING-MACHINE AND TRIMMING MECHANISM THEREFOR.

1,312,412. Specification of Letters Patent. Patented Aug. 5, 1919.

Application filed April 6, 1914. Serial No. 829,913.

To all whom it may concern:

Be it known that I, JAMES R. MOFFATT, a citizen of the United States, residing at Chicago, in the county of Cook, State of Illinois, have invented certain new and useful Improvements in Sewing-Machine and Trimming Mechanism Therefor, of which the following is a description, reference being had to the accompanying drawing, and to the figures of reference marked thereon.

My invention relates to improvements in sewing mechanism and more especially to a trimming device for attachment to a sewing machine of the cup feed type, wherein the material is fed by two feeding disks and overseamed by suitable stitch-forming mechanism.

Such a character of machine is well known in the art, being used for glove sewing, sweater sewing, stocking hemming, etc., and the particular type to which the present invention relates is known as the Union Special cup feed machine.

The object of the present invention is to provide a trimming device for attachment to such a machine, whereby a narrow strip of fabric which has been folded by a special folding device may have its raw edges cut off and may then be fed to the overseaming mechanism, and small tubes with the raw edges covered formed, or the raw edges covered and blindstitched in the center to the body fabric, as in the formation of flat, trousers belt-loops.

A further object is to provide a construction of trimming attachment having a horizontally movable part coöperating with two vertical ledger blades to alternately shear both edges of the material.

Another object is to provide a trimming device having two vertically disposed and vertically adjustable ledger blades and a horizontally disposed reciprocating knife which is adjustable both vertically and horizontally.

Still another object of my invention is to provide a trimming device and folder for a sewing machine, the parts of the trimmer being individually adjustable independently of the folder, and the two being simultaneously and uniformly adjustable bodily with respect to the stitch forming mechanism.

Another object is to provide a special means for supporting and operating the reciprocating trimmer blade.

The invention, therefore, consists in the matters hereinafter described and referred to in the appended claims.

In the accompanying drawings illustrating the invention,—

Figure 1 is a top plan view of a cup feed machine, showing my invention applied thereto, a portion of the main shaft and knife operating means being shown in dotted lines;

Fig. 2 is a longitudinal section of the same, the parts not necessary to an understanding being removed.

Fig. 3 is an end view partly in section;

Fig. 4 is a top plan view of the folding device and cup feeds and stationary ledger blades, the movable blade being shown in dotted lines;

Fig. 5 is a perspective view of a portion of a cup feed machine, showing my invention applied thereto;

Fig. 6 is a detail sectional view of the crimping fin of the folder, the ledger blades and the movable blade;

Figs. 7 and 8 are detail views representing the formation of blind stitched and tubular strips respectively;

Figs. 9 and 10 represent the strips as completed according to Figs. 7 and 8, respectively;

Fig. 11 is a vertical section on line 11—11 of Fig. 2; and

Fig. 12 is a detail of the ledger blade supporting means.

In these drawings, 1 represents a portion of the casing of a cup feed machine of the type referred to, having the two cup feeding disks 2, 2. The needle is shown at 3, the looper at 4, the deflector for both needle and looper thread loops at 5, the support for holding up the edge of the fabric at 6, the stitch finger at 7, the plate having the needle-guiding groove at 8, the needle thread guides at 9, and the looper thread guides at 10. All these parts are of the usual construction, and need not be more specifically referred to. A supporting bracket 11 adjustably supported on the frame of the machine by the elongated slot and screw connection 12, is divided at its lower end, and has secured to it a part 13, having the vertical plate 11′, through which

slot and screw connection 12 is made with the machine frame. This part 13 supports the folder and trimmer. I will first describe the folding mechanism which forms the subject-matter of another application filed of even date herewith, Serial No. 829,911, but which has been designed for use especially in connection with the special form of trimmer forming the subject of this application.

The folder has a stationary base 14 secured by screws 15 to the part 13. The stationary base carries the stationary side wings 16 and central fin 17. These wings extend forwardly between the cups 2, the central fin well in, as shown in Fig. 4 at 34, and attached to the outside of the side wings by screws 18, are spring fingers 19. The movable part of the folder is composed of a bar 20 formed with an angle arm 21 and a yoke piece 23 pivoted at 24 to the base 14. A spring 25 secured by screws 22 to the yoke piece and adapted to be engaged by a pivoted latch 26, normally holds the bar 20 from being swung upwardly.

This bar 20 carries a slidable sleeve 27, to which are attached the two spaced fingers 28, which when swung down to position, straddle the central fin 17 and coöperate therewith, and with the side wings 16 to properly fold the material as it is fed to the cups. The forward ends of the fingers 28 are toothed, as at 29, to engage the material and push it into the cups as the sleeve 27 is slid forward on the bar 20, and the inner faces of the spring fingers 19 have teeth 30 to prevent the withdrawal of the material. The spring fingers 19 also accommodate different thicknesses of material, and extend beyond the ledger blades 32 of the trimmer, as hereinafter described. A stop pin 47 limits the movement of the sleeve 27.

The operation of the folder is as follows: The latch 26 is released and the bar 20 with the sliding sleeve and fingers 28 swung upwardly; the goods are then placed in position across the stationary wings and fin of the folder, and the movable part swung down, so that the spaced fingers will straddle the fin and form the fold in the fabric. Before returning the part to its normal position, the sleeve is moved rearwardly, and when the lowered position is reached, the slide 27 is shifted along the bar 20, to push the material into the cups, so they will take hold of the same. Occasionally this movement is not enough to shift the material a sufficient distance to permit the cups to act thereon. It is, therefore, necessary to return the sleeve for a short distance and repeat the operation, the teeth 30 at the end of the spring fingers 19 gripping the material and preventing it from being pulled back with the return movement of the sleeve 27.

It will thus be seen that the movable part not only coöperates with the stationary part to fold the material to proper shape to have the edges overseamed, but also enables the operator to initially position the material between the cups. The bodily vertical adjustment of this folding device through the slot and screw adjustment 12, enables the bite of the needle into the goods to be varied, so that it may either engage the portion of the fabric which is pressed up from the center by the fin 17 coöperating with the spaced fingers 28, thus overseaming the edges and uniting them to the body fabric at the center, as in Figs. 7 and 9, or simply uniting the edges and overseaming them, as in Fig. 8, making a tube, as shown in Fig. 10.

A gage 35 composed of a suitably graduated nut bears on the ledge 36 formed on the vertical part of the bracket 11, and by manipulating the same, the precise adjustment desired may be secured, as shown in detail in Fig. 2.

The trimming device includes a horizontal trimming blade 31, which reciprocates back and forth and acts, in connection with stationary ledger blades 32 which form extensions of the side wings 16, to trim off the surplus material, the trimming mechanism as a whole being supported on the same bracket as the folder, and partaking of the adjustments of the latter. It also has a deflecting plate 33 to deflect the trimmed-off strips. The spaced parallel ledger blades form in effect a passage for the material to be fed.

Mounted on the main shaft 37 along with the other eccentrics which operate the stitch forming mechanism and feeding mechanism as shown in an application filed by Lansing Onderdonk on the 28th day of October, 1913, No. 797,775, is an eccentric which with its strap 38 lie partially within a recess of the wall of the bed plate and reciprocate the pitman connection 39, which at its outer end projects through the front of the casing 1, and is pivoted at 40 to the forked end 41 of the sliding block 42, which slides on the horizontal member of the part 13, and has shoulders 43, fitting under corresponding shoulders 44, on angle plates 45 secured by screws 46 to the part 13, recesses being provided to allow oil to be fed to the guide way for the sliding block. The sliding block has a vertical web 48, having an elongated vertical slot 49, through which passes a screw 50, into an angle plate 51, the horizontal portion of which has a dovetailed groove 52 to receive the shank of the trimmer blade 31, which is of V-shape and has a cutting surface on both side edges.

The shank of this trimmer blade has an elongated horizontal slot 53, through which a screw 54 passes into the horizontal part of the angle plate 51. It will be seen, there-

fore, that through the slot and screw adjustment 49 and 50 and 53 and 54, respectively, the reciprocating trimmer blade 31 may be adjusted both vertically and longitudinally. Coöperating with the severing edges of the reciprocating knife 31, and arranged on either side thereof, are the two vertical ledger blades 32.

The ledger blades 32 are chamfered on one edge to fit a recess in the base 14 and are clamped in place by plates 55 attached to the base, screws 56 passing through said plates into the folder base 14. The vertical plates 55 rest against the side wing of the folder, and, as before stated, the ledger blades form a continuation of the side wings. These ledger blades are adjustable vertically and by means of this adjustment and that of the horizontal blade, the trimming device may be adjusted relative to the folder, to vary the amount of edge trimmed off from the folded strip. As said above, the horizontally moving cutting blade reciprocates between the two ledger blades to alternately shear both sides of the material.

The deflector 33 is supported on the base 14 by a screw 57.

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

1. In combination with the stitch forming mechanism of a sewing machine, a folding device and a trimming device, a common support for the two, and means for simultaneously and uniformly adjusting them with respect to the stitch forming mechanism, and means for adjusting the trimming device independently of the folding device.

2. In an overseaming machine including a horizontal needle and coöperating stitch forming devices, a folding device comprising vertically arranged stationary wings and cooperating folding members, and a movable trimming member with means for reciprocating it horizontally, a coöperative stationary trimming member, and a common vertically adjustable support for the folding device and trimming members, and means for adjusting the trimming members independently of the folding device.

3. In a cup feed overseaming machine for blind stitching belt loops, a folding device comprising stationary vertically projecting side wings and a central crimping fin, a coöperating folding member movable vertically to engage and crimp and fold the fabric, means whereby it may be moved horizontally to initially feed the material to the cups, means for adjusting the folding device bodily with respect to the stitching mechanism, and a trimming device simultaneously and uniformly adjustable with the folding device, and means for adjusting the trimming device independently of the folding device.

4. In a sewing machine, feeding devices including two horizontally rotating cups between which the material is clamped, a needle mounted to reciprocate above said cup feeding devices, a loop taker coöperating therewith, a trimming device mounted in advance of and in a plane above said feeding devices, said trimming device operating in a horizontal plane.

5. A sewing machine including in combination, a reciprocating needle and complemental stitch forming mechanism, a feeding mechanism, a trimming mechanism for trimming the edges of the material prior to the stitching of the same, including a plurality of spaced cutting elements, and a movable cutting member coöperating with first one cutting element and then the other.

6. In a sewing machine having suitable stitch forming mechanism and trimming mechanism including a support, a plurality of spaced ledger blades carried by a support and respectively disposed in parallel planes at right angles to the plane of said support, and a movable cutting member coöperating with said ledger blades.

7. In a sewing machine having suitable stitch forming mechanism and trimming mechanism including a support, a plurality of spaced ledger blades carried by the support and respectively disposed in parallel planes at right angles to the plane of said support, and a movable cutting member cooperating with said ledger blades, said ledger blades being longitudinally adjustable, and a movable trimming member mounted to alternately engage said ledger blades.

8. In a sewing machine having suitable stitch forming mechanism and trimming mechanism including a work support, a plurality of spaced ledger blades carried thereby and respectively disposed in parallel planes at right angles to the plane of said support, the edges of said blades remote from the support forming cutting edges, and a movable trimming member coöperating with said blades and having slidable contact therewith.

9. In a sewing machine having suitable stitch forming mechanism and trimming mechanism including a work support, a plurality of spaced ledger blades carried thereby and respectively disposed in parallel planes at right angles to the plane of said support, and a reciprocatory trimming member coöperating with said ledger blades and operating across a space therebetween, said movable trimming member being provided with a forwardly extending point and having cutting edges on opposite sides of said point.

10. In a sewing machine having stitch

forming mechanism, a work support, a crimping device including spaced walls forming a trough for the passage of the material to be stitched, a trimming mechanism including stationary ledger blades respectively disposed in alinement with said walls, and a movable trimming member coöperating with said ledger blades.

11. In a sewing machine, a needle and a loop taker, a crimping device acting on the fabric to be stitched, said device including a plurality of spaced parallel members, a trimming mechanism including stationary ledger blades disposed in alinement with said parallel members, and a movable trimming member coöperating with said ledger blades.

12. In a sewing machine, a work support, a needle, a trimming mechanism, and means to simultaneously adjust said work support and trimming mechanism relative to said needle.

13. In a sewing machine, a work support, a needle, a trimming mechanism, means to simultaneously adjust said work support and trimming mechanism relative to said needle, and means for adjusting said trimming mechanism relative to said support.

14. In a sewing machine, a work support, a needle, a ridge forming rib carried by said support, a trimmer, means for adjusting the support relative to the needle, and means for adjusting the ridge forming rib relative to said trimming mechanism.

15. In a sewing machine, a work support, a needle, a crimping device carried by said support and including spaced walls and an intermediate rib, a trimming mechanism including ledger blades arranged on opposite sides of said rib, and a movable trimming member coöperating with said ledger blades.

16. In a sewing machine, a needle and a loop taker, a work support, a ridge forming rib disposed in advance of said needle, a trimming mechanism operating in a plane above said ridge forming rib, and means to adjust the trimmer relative to said rib.

17. In a sewing machine, a needle and a loop taker, a main shaft for actuating said needle and loop taker, an adjustable work support carried by the machine, a trimming mechanism mounted on said support, and an adjustable connection between said shaft and said trimming mechanism.

18. In a sewing machine, a needle, a work support adjustable relative to said needle, and a trimming mechanism adjustably mounted on said support.

19. A sewing machine including in combination, a horizontally disposed needle, a looper coöperating therewith, a pair of rotating feed wheels for feeding fabric sections vertically to the needle, trimming members, means for supporting said trimming members in advance of the needle, whereby the fabric sections being stitched may be trimmed, and means for operating said trimming members.

20. In a sewing machine, the combination of a stitch forming mechanism including a horizontally arranged needle and a loop taker coöperating therewith, and a feeding mechanism including two horizontally rotating cups, and a trimmer for the material disposed in coöperative relation to said mechanism and including a stationary cutting part arranged parallel with the line of feed, and a movable cutting part operable in a plane at right angles thereto.

21. In a sewing machine having a horizontal needle and coöperating stitch forming mechanism, a trimming device including a horizontally reciprocating blade having both its edges severing edges, and coöperating ledger blades on opposite sides of the reciprocating blade, and a folding device arranged to fold a fabric and deliver two separated edges to the trimming blade to be alternately cut thereby.

22. In a sewing machine having a horizontal needle and coöperating stitch forming mechanism, a trimming device including a horizontally reciprocating blade having both its edges severing edges, coöperating ledger blades on opposite sides of the reciprocating blade, a folding device arranged to fold a fabric and deliver two separated edges to the trimming blade to be alternately cut thereby, means for bodily adjusting the folding device and entire trimming mechanism uniformly and simultaneously, and means for adjusting the ledger blades vertically and the movable blade both vertically and horizontally.

23. In a cup feed overseaming machine having a horizontal needle and coöperative stitch forming mechanism, a folding device for folding a narrow strip of goods and delivering it to the stitch forming mechanism, and a trimming device including a horizontal trimmer blade and means for reciprocating it, and coöperating ledger blades on opposite sides of the cutting edges of the movable blade.

24. In a sewing machine, a needle, a loop taker, a sliding block, a horizontal trimmer blade carried thereby and having a two edged cutting surface, and vertical ledger blades on opposite sides of said cutting surface whereby said cutting surfaces act alternately to sever the edges of the fabric.

25. In a sewing machine, a needle, a loop taker, a sliding block, a horizontal trimmer blade vertically and horizontally adjustable thereon and having a two edged cutting surface, and vertically adjustable ledger blades

on opposite sides of said cutting surfaces, whereby said cutting surfaces act alternately to sever the edges of the fabric.

26. In a cup feed overseaming machine having a horizontal needle and coöperative stitch forming mechanism, a folding device for folding a narrow strip of goods and delivering it to the stitch forming mechanism, and a trimming device including a horizontal trimmer blade, and means for reciprocating it, and coöperating ledger blades on opposite sides of the cutting edges of the movable blade when the latter is in ineffective position, said folding device being located in advance of the trimmer and arranged to deliver two raw edges to be severed to the trimming mechanism adjacent the ledger blades.

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

JAMES R. MOFFATT.

Witnesses:
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H. C. ABEL.