

No. 645,236.

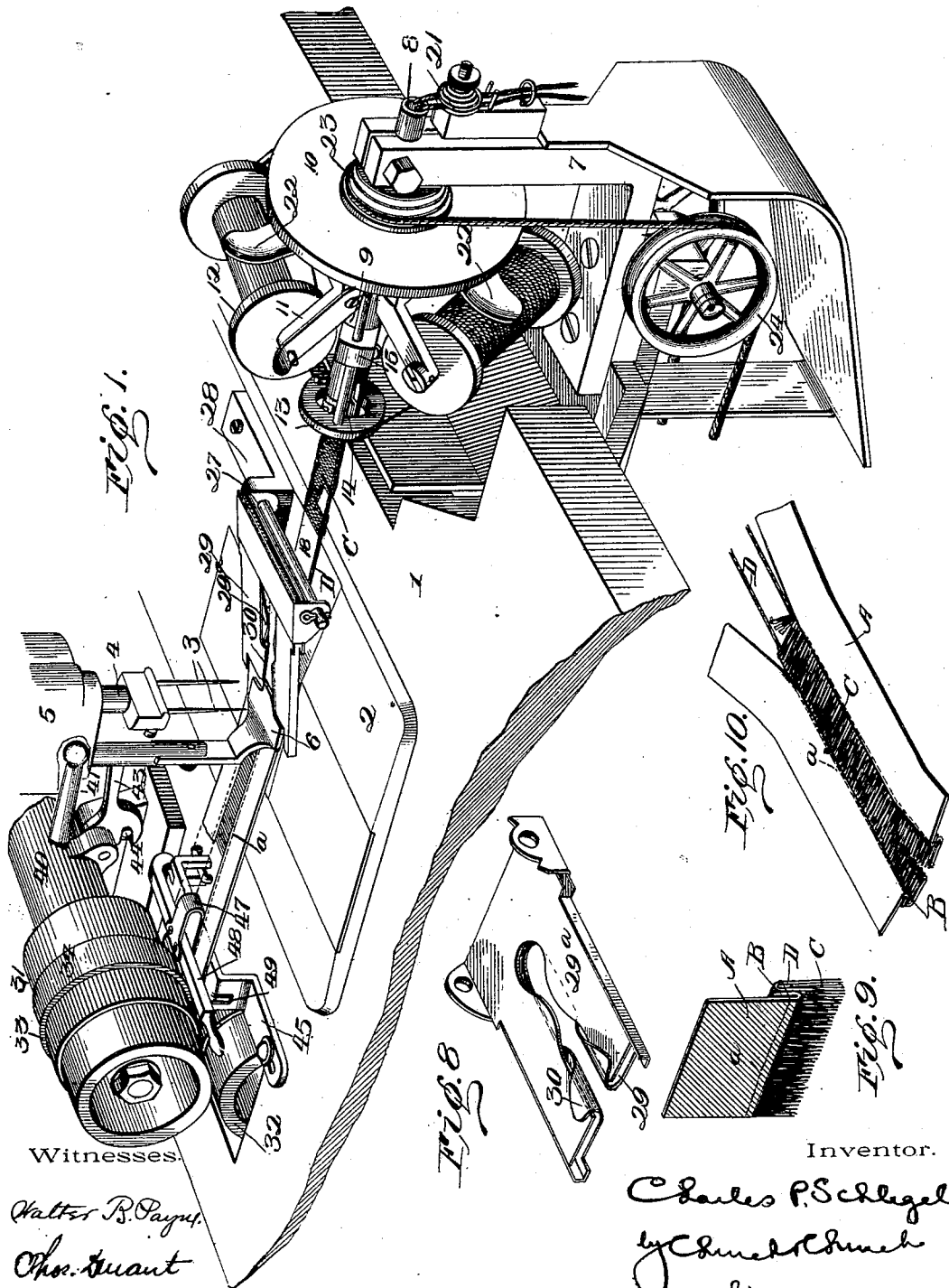
Patented Mar. 13, 1900.

C. P. SCHLEGEL.  
MACHINE FOR MAKING TRIMMINGS.

(Application filed Mar. 10, 1899.)

(No Model.)

3 Sheets—Sheet 1.



Witnesses

Walter R. Payne  
Chas. Stuart

Inventor.

Charles P. Schlegel  
by Charles Schlegel  
his Attorneys

No. 645,236.

Patented Mar. 13, 1900.

C. P. SCHLEGEL.  
MACHINE FOR MAKING TRIMMINGS.

(Application filed Mar. 10, 1899.)

(No Model.)

3 Sheets—Sheet 2.

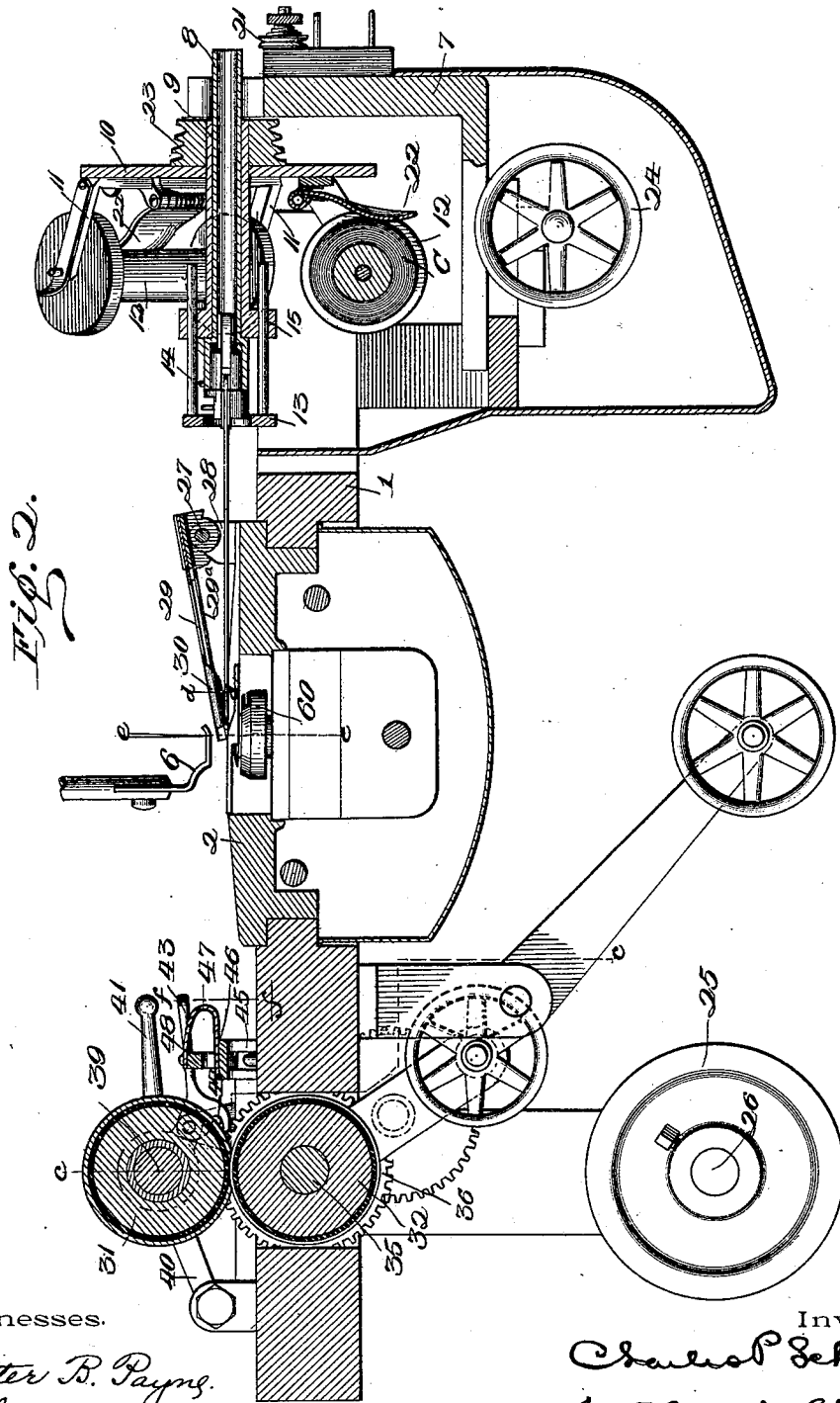


Fig. 2.

Witnesses.  
Walter B. Payne,  
Thomas Durant

Inventor.  
Charles P. Schlegel  
J. Schuchman  
his Attorneys

No. 645,236.

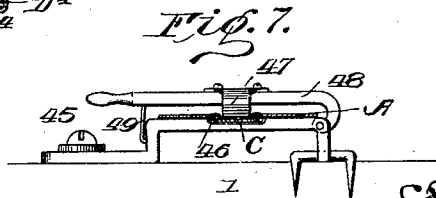
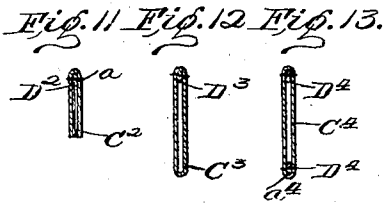
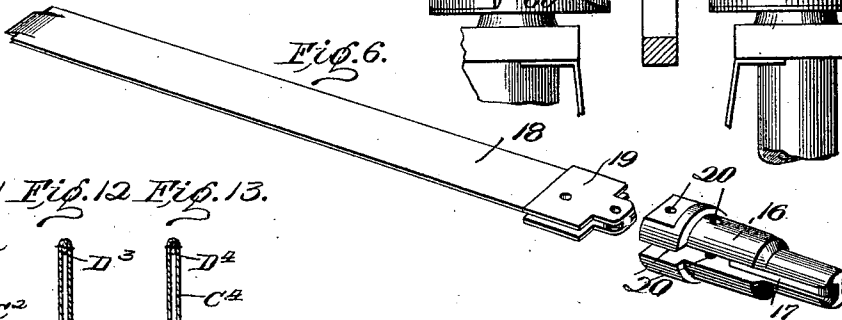
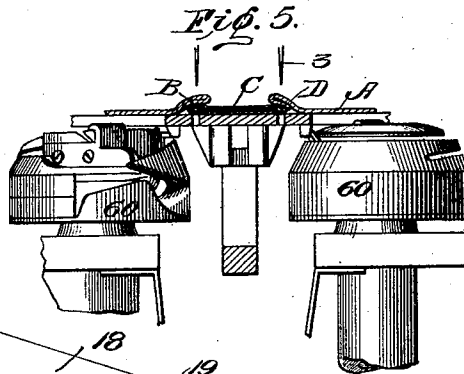
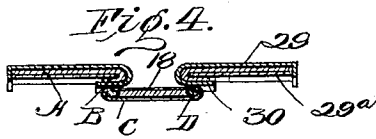
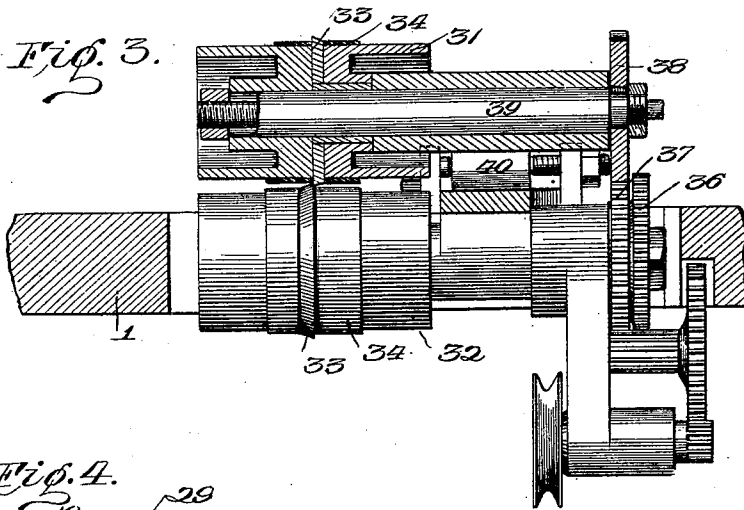
Patented Mar. 13, 1900.

C. P. SCHLEGEL.  
MACHINE FOR MAKING TRIMMINGS.

(Application filed Mar. 10, 1899.)

(No Model.)

3 Sheets—Sheet 3.



Witnesses.

Walter B. Payne.  
Thomas Durant.

Inventor.

Charles P. Schlegel  
by Charles Schlegel  
his Attorneys.

# UNITED STATES PATENT OFFICE.

CHARLES P. SCHLEGEL, OF ROCHESTER, NEW YORK, ASSIGNOR TO  
SCHAEFER & SCHLEGEL, OF SAME PLACE.

## MACHINE FOR MAKING TRIMMINGS.

SPECIFICATION forming part of Letters Patent No. 645,236, dated March 13, 1900.

Application filed March 10, 1899. Serial No. 708,577. (No model.)

*To all whom it may concern:*

Be it known that I, CHARLES P. SCHLEGEL, of Rochester, in the county of Monroe and State of New York, have invented certain new and useful Improvements in Apparatus for Making Trimmings; and I do hereby declare the following to be a full, clear, and exact description of the same, reference being had to the accompanying drawings, forming a part of this specification, and to the reference letters and numerals marked thereon.

My present invention has for its object to provide an improved apparatus or machine for the manufacture of trimming or skirt-binding, termed "brush-edge" skirt-binding and having at its edge a brush formed of loose ends of fibrous material, such as yarn or silk threads or strands, as hereinafter described. The skirt-bindings of this type on the market are generally composed of a woven or braided fabric or heading, and the brush is formed by weft-threads of yarn secured in the heading by weaving with the warp-threads and having their ends free at the edge to form the brush; but such fabric is usually made either by means of a braiding-machine or in a narrow-ware loom, both of which methods of operation are comparatively slow and expensive and require a sufficient amount of material to form a braided or woven heading or fabric strong and heavy enough to hold the brush and also the stitches uniting said binding to the bottom of the skirt or a piece of velveteen or other strong edging or strip, to which it is secured before being applied to the skirt or other garment.

Skirt bindings or trimmings made upon the apparatus forming the subject-matter of my present invention embody in the preferred form a brush edge formed of threads or strands of fibrous material doubled at their middle upon or around a holding cord or tape and said cord or tape and the doubled edges of the brush secured by one or more lines of stitching to a strip of strong fabric, such as bias velveteen.

The apparatus preferably employed by me for manufacturing the article embodies generally devices for feeding and guiding the cords or tapes, means for twisting or wrapping around said tapes the threads or fibers

to form the brush edge, sewing mechanisms for securing by separate lines of stitching to the cords or tapes the doubled edges of the threads or yarns and, if desired, to two strips of fabric, and mechanism for severing the threads or yarns between the cords or tapes around which they extend.

The invention further consists in certain mechanisms and appliances, all as will be hereinafter more fully described, and the novel features pointed out in the claims at the end of this specification.

In the drawings, Figure 1 is a perspective view of a machine for making the trimming according to my method; Fig. 2, a longitudinal sectional view of the same; Fig. 3, a sectional view on the line *cc* of Fig. 2; Fig. 4, a sectional view on the line *dd* of Fig. 2; Fig. 5, a sectional view on the line *ee* of Fig. 2; Fig. 6, a view of the loop-holding blade or support and tape-guide; Fig. 7, a sectional view on the line *ff* of Fig. 2; Fig. 8, a perspective view showing the lower side of the fabric-edge turner or hemmer; Fig. 9, a view of a piece of trimming constructed by the apparatus; Fig. 10, a view showing the trimming during the process of making it; Figs. 11 to 13, views of different trimmings which may be made with the apparatus shown.

Similar reference letters and numerals in the several figures indicate similar parts.

As shown in Fig. 9, the preferred form of trimming embodies the binding or holding strip *A*, preferably of bias velvet, velveteen, or similar smooth-surfaced material, having its edge doubled or hemmed at *B*, and *C* indicates the fibrous filling material of threads or strands forming the brush edge, said strands being doubled at their middle around a cord or tape *D*, which is secured to the fabric *A* by a line or lines of stitching *a*, passing, preferably, through the cord or tape and the strands *C*, thereby binding them firmly to the strip *A*. The free ends of the strands or threads *C* form a thick brush, so that when the finished article is secured to the bottom of a skirt it will present the ends of the threads or fibers, and the wear on the bottom of the skirt will thereby be reduced to a minimum. The stitching by which the lower edge of the binding is secured to the skirt or other

garment passes, preferably, through the cord or tape D, as usual in attaching bindings of this general description. The stitching *a* should pass through the cord or tape and extend transversely over the fibers or threads 5 closely around the upper edge of the cord or tape and form a loop, as shown; but even if they should extend only over the strands C 10 said strands would be firmly bound and the tape would be held in the loops or bights of the strands.

By the construction described the brush may be made of any desired thickness by simply increasing the number of the threads C 15 without appreciably increasing the bulk of the trimming as a whole or the cost, as will be explained.

In Fig. 10 of the drawings I have shown the 20 trimming in process of manufacture by the machine shown in the remaining figures.

In the operation of the machine the cords or tapes C are held spaced a suitable distance apart, and while thus held the continuous 25 threads or strands C are wound about them laterally in sufficient quantity so that the doubled thickness of the threads between the cords or tapes will give the desired weight and thickness to the brush edge to be formed. 30 Then while the cords are held apart the strips A, preferably of bias velveteen, having their edges doubled under or hemmed, as shown, are sewed to the separate cords or tapes by lines of stitching, preferably passing through 35 the latter and through the strips A and over the threads or strands C, fastening the latter securely to them, thus connecting the two strips A by the fibers or threads C and producing a fabric which of itself might be useful for some purposes. In order to form the 40 brush-edge trimming, it is only necessary to cut the transverse threads or fibers C, preferably midway between the folded edges of the strips A. It will be understood that the operation of winding the threads or strands C 45 around the cords or tapes, folding the edges of the strips A, and sewing the parts together are accomplished continuously, and the threads C are severed afterward and preferably while 50 passing through a suitable feeding apparatus or mechanism, if one be employed.

The apparatus or machine forming the subject-matter of my present invention is shown particularly in Figs. 1 to 8, in which 1 indicates a suitable table or support, and 2 the bed-plate or work-support of a sewing-machine, preferably embodying two sets of stitch-forming mechanisms and two vertically-reciprocating needles 3, attached to a needle-bar 4, 60 operating in a head 5, having a presser-foot 6, all said parts being arranged above the table, and below the table are arranged suitable bobbins, hooks, or cooperating stitch-forming devices 60, arranged to coact with the 65 needles. It is immaterial exactly what form of stitch mechanism 60 is employed; but I prefer substantially such an arrangement as

is contained in the sewing-machine manufactured by The Wheeler & Wilson Manufacturing Company and shown generally in 70 Letters Patent No. 578,136, granted March 2, 1897, to Dial and Dimond; but any other single or double thread machine may be employed. As far as the present mechanism is concerned the only requisite of the sewing mechanism 75 is that it be capable of forming stitches in two or more parallel lines, and I have not deemed it necessary to show the details of the stitch-forming mechanism, as any suitable devices may be employed, or two similar sewing-machines operated from a common prime mover 80 may be employed, if desired. It will of course be understood that a suitable fabric-feeding device is employed beneath the presser-foot and in proximity to the needles to carry the 85 goods forward and complete the sewing.

At the front of the table or support 1 is arranged a bracket or support 7, having at its upper end a tubular stationary arbor or shaft 8, with its axis approximately in line with 90 the top of the sewing-machine table, said arbor being surrounded by a rotary sleeve 9, connected to or forming a part of a rotary spool-holder or twister-head, substantially such as is employed on chenille-machines. 95 This twister-head embodies a disk 10, having arms 11 thereon supporting spools 12, adapted to carry the strands or threads C of the trimming, which latter are led over the periphery of the ring 13, as shown particularly in Figs. 1 and 2, so that as the head is rotated said strands will be twisted around material fed through the hollow stationary spindle 8. The ring 13 is supported upon 100 arms or rods 14, which are adjustable upon the head 15, as usual in machines of this description. 16 indicates a plug removably secured in the forward end of the spindle 8, having the slots 17 at the sides and the recess at the front to receive the end of a flat 110 blade or former 18, the inner end of said blade having the plates 19 at the sides and also having apertures through which and suitable apertures 20, formed in the plug 16, are passed securing-pins. The sides of the blade 115 18 are hollowed out or recessed, forming tape-guides for the passage of the tapes or cords C, and said blade extends up to within a very short distance of the needle-holes in the bed-plate of the sewing-machine, said tapes or 120 cords passing from suitable rolls or spools through the plates of the tension device 21, thence through the spindle 8 and alongside the blade. The central portion of the blade is slightly longer than the sides where the tapes 125 are guided, as shown in Fig. 6, to hold the strands C down while being sewed. The spools 12 are adapted to contain the threads or yarns C, a suitable tension being applied by the brakes 22, as usual. The twisting-head is provided at the rear with a suitable 130 pulley 23, around which passes a driving-belt, also extending around guide-pulleys 24 on the bracket 7 or otherwise and thence to a

pulley 25 on a suitable driven shaft 26 beneath the table or elsewhere. Arranged between the sewing mechanism and the twister-head just described and pivotally supported upon a pin 27 on a bracket 28 is a double hemmer or edge-turning device composed of plates 29 and 29<sup>a</sup>, operating to receive the strips of fabric A between them, the former having the curved extensions or ears 30 at the inner edge, which turn under the proximate edges of the fabric to form a hem just in front of the needles and at the sides of the presser-foot of the sewing-machine. Of course two separate edge-turning devices or guides could be employed; but I prefer to use one and have it pivoted, as shown, for convenience in turning it back to inspect the stitching operation. The ears 30 upon the edge-turner are arranged directly over the cords or tapes D, so that the hem will be laid and the stitches passed through the cord and hem, as shown in Fig. 4.

Beyond the sewing mechanism is a device for feeding the material forward and also for cutting the threads C between the edges of the fabric A, as shown particularly in Fig. 3, said feeding devices in the present instance embodying a pair of rollers 31 and 32, having cutting-disks 33 thereon, arranged to cooperate at the center in the space between the folded edges of the strips A and also provided with elastic covers 34, preferably of rubber, arranged upon opposite sides of the cutting-disks to engage the material and evenly feed it positively between them. In the present arrangement the lower feed-roller 32 is mounted upon an arbor 35, mounted in stationary bearings and provided with an operating-gear 36, meshing with suitable driving-gearing and also provided with the gear 37, meshing with the gear 38 on the arbor 39 of the upper roller 31. In order to permit the ready separation of the rollers 31 and 32 and the removal of the cutters when desired, the arbor 39 is journaled in a pivoted arm 40, provided with a handle 41 and adapted to be secured with the surfaces of the rollers in engagement by a hook 43, engaging a pin 44 on the stationary frame. Arranged forward of the feed and cutting rolls and between them and the sewing mechanism is a suitable guiding and tension device embodying a bracket 45, adjustably mounted upon the table 1, provided with a recess or groove 46 in its upper face, in which operates a curved spring 47, mounted upon an arm 48, pivoted upon the bracket 45 and having a catch 49 near its free end. The spring guide or tension 46 is about the width of the space between the edges of the strips A of the fabric and bears upon the threads C, extending between said strips, thereby offering an even tension to the material drawn forward by the rollers and serving to properly position the open space relative to the cutting-disks, and the pivotal connection with the arm 48 enables

the said arm to be lifted up for the purpose of inserting the fabric and also varying the adjustment of the parts when desired. After passing beyond the feeding-rollers 31 and 32 the separate strips of the completed binding may be wound upon the spools or otherwise disposed of.

From the above description the operation of the machine will now be understood.

The cords or tapes D are passed through the spindle 8, alongside the blade, and their ends inserted between the drawing-rollers 31 and 32, which are clamped together and secured. Then the separate strips of fabric A are inserted through the turning devices or hemmers 29, to which they are fed from suitable spools or other holding devices. Then the rotary twisting-head is operated without, however, operating the sewing-machine, twisting the strands or threads C around the blade and feeding them forward by the tension on the cords or tapes D until the first of the loops is beneath the presser-foot of the sewing-machine. Then the sewing-machine is started, the strips A fed through by the ordinary feeding mechanism, turned and stitched to the cord, as described, the stitches passing either through the cords or tapes, as shown, or just beyond them toward the space between the edges of the strips A. All of the mechanisms being now in operation, the united strips pass through between the feed-rollers, and the threads C are severed midway between the strips A and the complete fabric or edging delivered at the end of the machine.

The blade or former 18 serves, primarily, as a means for guiding the tapes D and holding them separated, so that the strands may be twisted or wound around them; but a suitable tension might be given the tapes to hold them separated and the blade thus dispensed with.

If desired to produce an edging which can be used without the fabric strip A, the latter may be dispensed with and the loops of the threads C<sup>2</sup> be sewed directly to the tapes or cords D<sup>2</sup> by one or more lines of stitches *a*, as shown in Fig. 11, the tape then being sewed directly to the garment to be trimmed or secured between two pieces of binding material, or, if desired, the construction may be further modified by using only one tape and not cutting the loops of threads C<sup>3</sup> opposite the tapes or cords D<sup>3</sup>, forming the fabric shown in Fig. 12. A further modification of the article produced by the apparatus is shown in Fig. 13, in which the strips of fabric A are dispensed with and the threads C<sup>4</sup> are secured to the two tapes D<sup>4</sup>, located in the bites thereof, by stitching *a*<sup>4</sup>, said threads C<sup>4</sup> being left intact between the tapes, or such an article as shown in section in Fig. 5 may be produced, this being the same as the one last previously described, excepting that the tapes are secured to the hemmed edges of the strips A.

All of the modified forms of the trimming

just described may be produced by the apparatus shown and by dispensing with the use of one or more of the devices—as, for instance, the fabric-guides.

5 I claim as my invention—

1. In a machine for making trimmings, the combination with a support, means for feeding a tape along one side of the support, of mechanism for winding continuous strands of  
10 fibrous material around the support and tape, and sewing mechanism for uniting the loops of the strands to the tape, as it is fed forward.

2. In a machine for making trimmings, the combination with a support and feeding devices for moving a tape along one side of the support, of means for winding continuous strands of fibrous material around the support and tape, a fabric-guide and sewing mechanism for sewing the fabric, tape and  
20 the loops of the strands together as they are fed forward.

3. In a machine for making trimmings, the combination with means for feeding forward two separated tapes, of mechanism for winding  
25 continuous strands of fibrous material around the tapes, two sewing mechanisms for sewing the loops of fibrous material to the tapes as they move forward, and a cutting device for severing the fibrous material between the tapes.

4. The combination with the rotary twister-head, the blade or former, and a sewing mechanism arranged at one side of the end of the blade.

5. The combination with the rotary twister-head, the blade or former, and a tape-guide at one side thereof, of a sewing mechanism arranged at one side of the end of the blade.

6. The combination with the rotary twister-head, of two separated tape-guides and sewing mechanism arranged in line with each of the tape-guides.

7. The combination with the rotary twister-head, of the two separated tape-guides, the two fabric-guides in line with the tape-guides, and two sewing mechanisms in line with the tape and fabric guides.

8. The combination with the rotary twister-head, of the two separated tape-guides, the two fabric-guides, the two sewing mechanisms, and a cutting mechanism arranged between the planes of the tape and fabric guides.

9. The combination with the twister-head, of the two separated tape-guides, sewing mechanisms in line with the tape-guides, feeding devices for the tapes, and a cutting mechanism arranged to sever material extending between the tapes.

60 10. The combination with the twister-head, the two separated tape-guides, two fabric-guides, and sewing mechanisms in line with the fabric and tape guides, of a feeding device for the tapes and fabrics, and cutting

mechanism arranged to sever the material  
65 extending between the tapes.

11. The combination with the tape-guides, two sewing mechanisms in line therewith, of feeding devices for the tapes, means for twisting strands of fibrous material around the  
70 tapes and means for severing the strands between the tapes.

12. The combination with two sewing mechanisms, means for feeding two separate parallel tapes longitudinally past the sewing  
75 mechanisms, and means for twisting continuous strands of fibrous material around the tapes before reaching the sewing mechanisms.

13. The combination with two sewing mechanisms, means for feeding two separate tapes  
80 longitudinally past the sewing mechanisms, means for twisting continuous strands of fibrous material around the tapes before they reach the sewing mechanisms, and devices for severing the fibrous material between the  
85 tapes.

14. The combination with two sewing mechanisms, means for feeding two separate tapes longitudinally past the sewing mechanisms, means for twisting continuous strands of  
90 fibrous material around the tapes before they reach the sewing mechanisms, means for guiding strips of fabric upon the tapes at the sewing mechanisms, and devices for severing the fibrous material between the tapes.

15. The combination with the feeding-rollers, of the guide having the supporting-bar, the removable top bar, and the spring-tongue thereon.

16. The combination with the feeding-rollers, of the guide having the supporting-bar, the hinged top bar, the catch for securing it, and the curved spring-tongue.

17. The combination with the twisting-head, the blade or support, having the tape-guides at the side, and the portion extending  
105 beyond the guide, of the sewing mechanism arranged at the end of the tape-guide.

18. The combination with the twisting-head, the blade or support having the tape-guides, at the sides, and the central portion  
110 extending beyond the guides, of two sewing mechanisms arranged at the ends of the guides.

19. The combination with the twisting-head, of means for guiding two separate tapes, a fabric guiding and turning or hemming device in line with each tape and sewing mechanisms, one for each tape adapted to secure  
120 the tapes and fabrics together.

20. The combination with the twisting-head, the blade and the tape-guides, of the pivoted double fabric-hemmer, and sewing mechanisms in line with the tape-guides.

CHARLES P. SCHLEGEL.

Witnesses:

F. F. CHURCH,

G. A. RODA.