

G. L. MARK.
BELT MACHINE.
APPLICATION FILED MAR. 25, 1912.

1,094,801.

Patented Apr. 28, 1914.

5 SHEETS—SHEET 1.

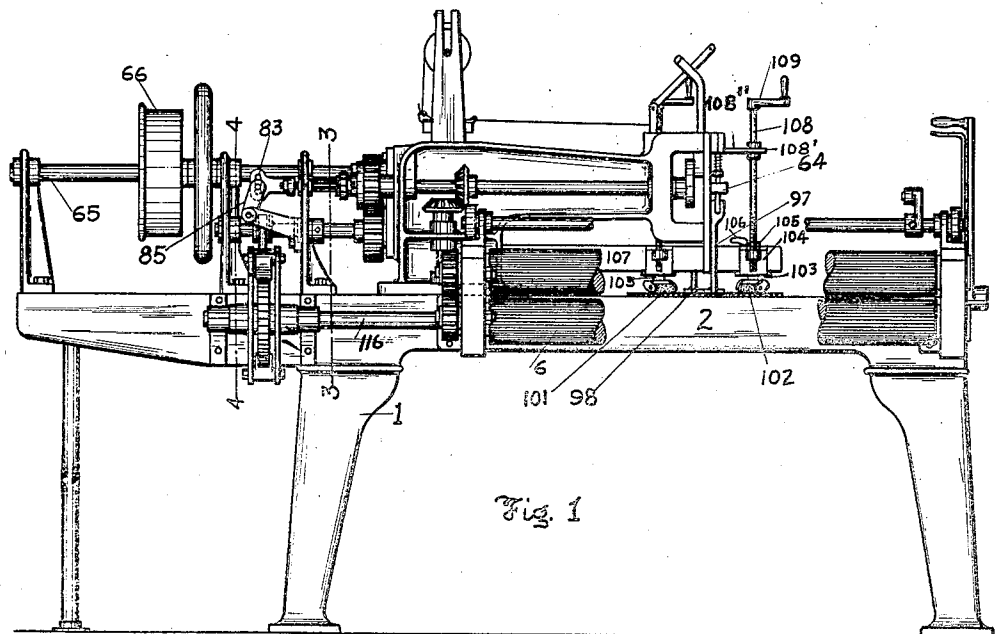


Fig. 1

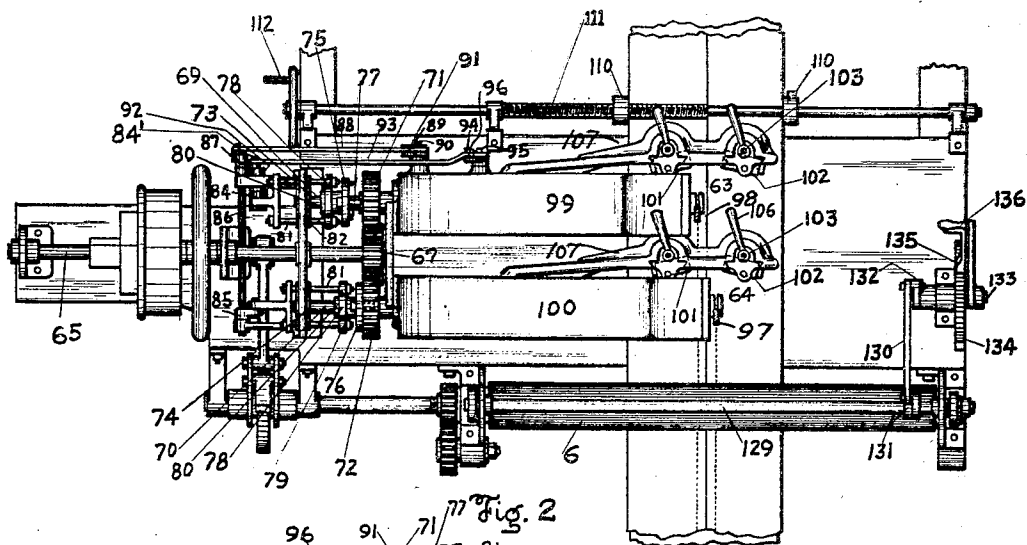
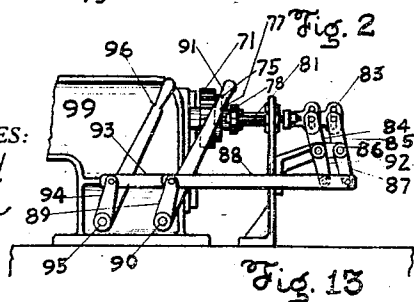


Fig. 2

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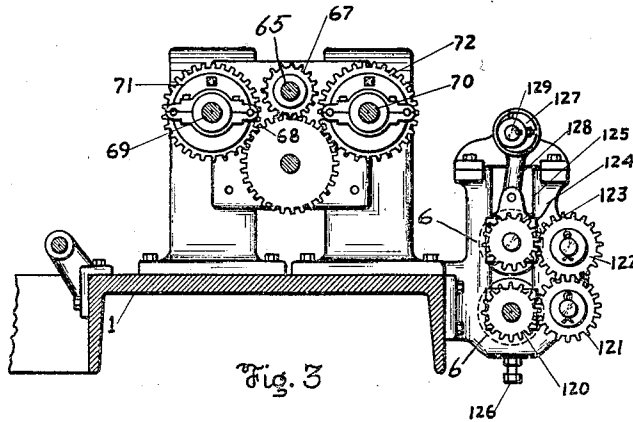
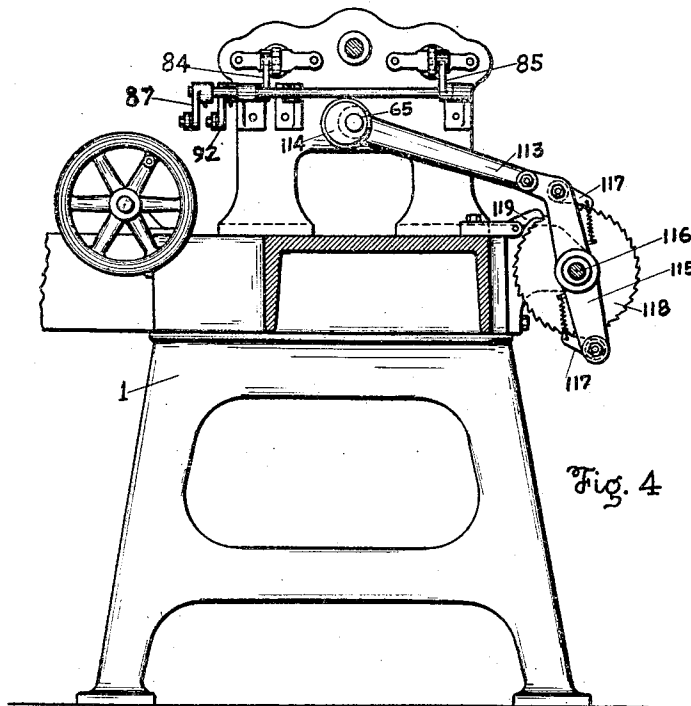


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5 SHEETS—SHEET 2.



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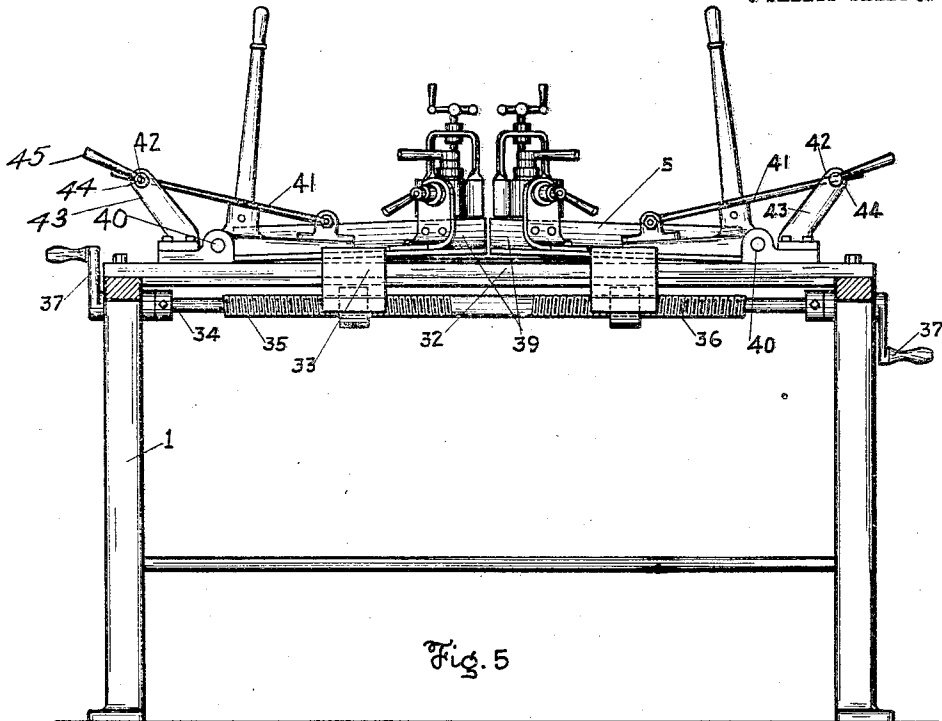
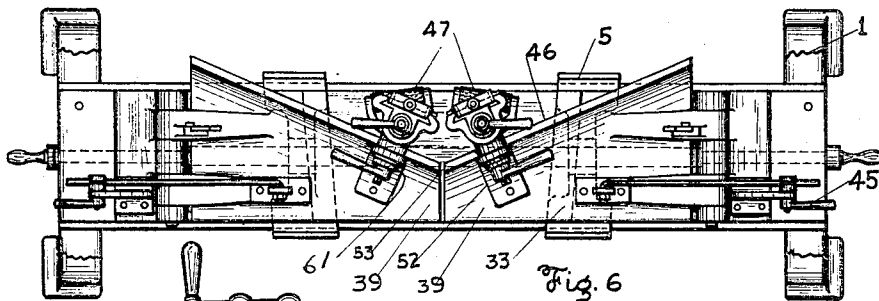
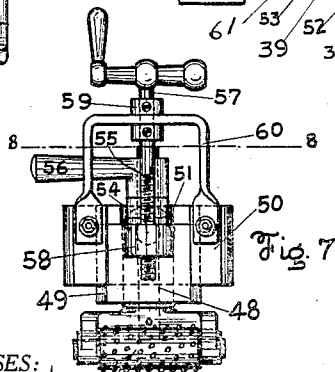
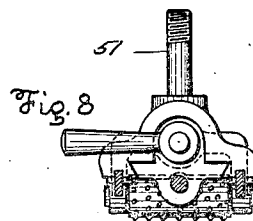
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5 SHEETS—SHEET 3.



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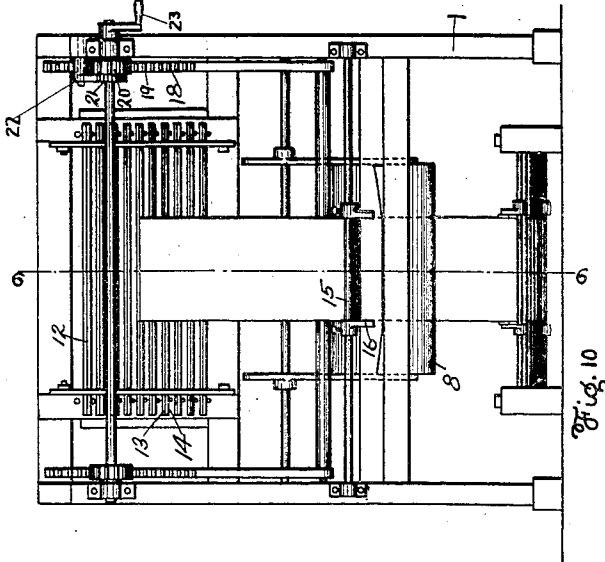
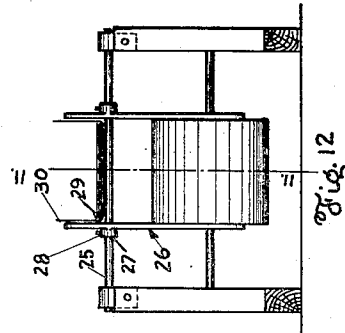
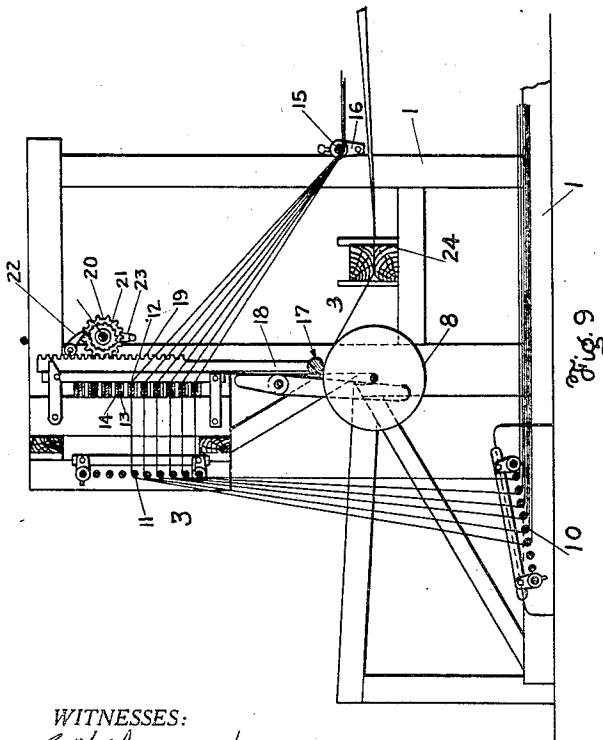
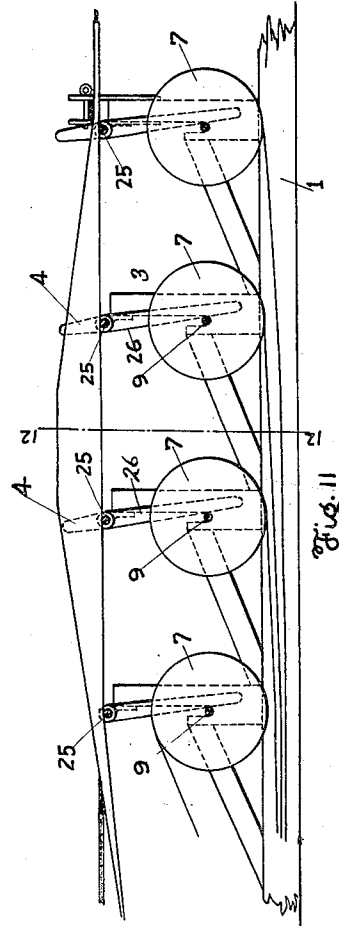
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5 SHEETS—SHEET 4.



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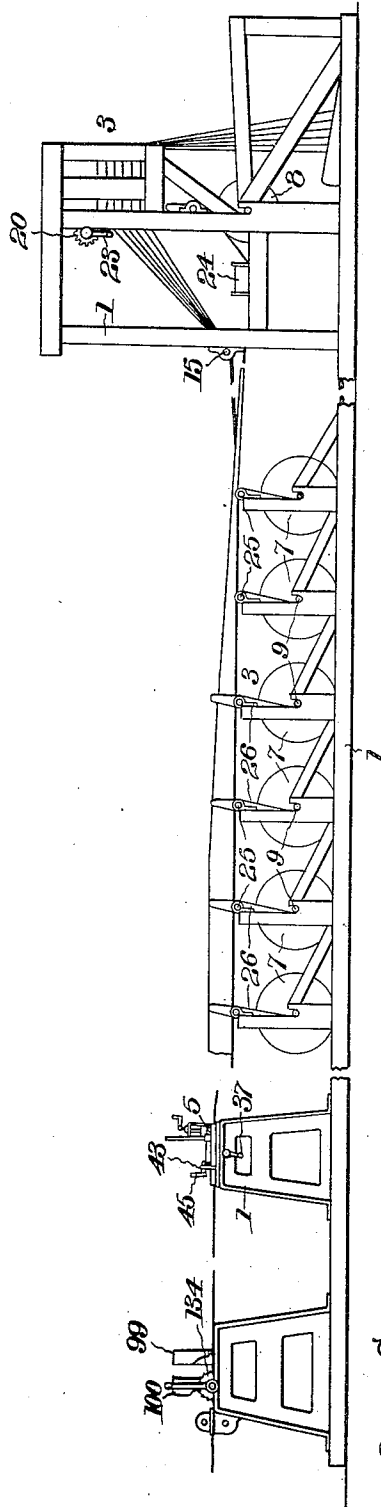
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5 SHEETS—SHEET 5.

Fig. 14.



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UNITED STATES PATENT OFFICE.

GEORGE LAWRENCE MARK, OF ROLAND PARK, MARYLAND, ASSIGNOR TO THE GANDY BELTING COMPANY OF BALTIMORE CITY, A CORPORATION OF MARYLAND.

BELT-MACHINE.

1,094,801.

Specification of Letters Patent.

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To all whom it may concern:

Be it known that I, GEORGE LAWRENCE MARK, a citizen of the United States of America, residing at Roland Park, county of Baltimore, State of Maryland, have invented certain new and useful Improvements in Belt-Machines, of which the following is a specification.

This invention relates to a machine for the manufacture of stitched belting preferably of fabric as canvas or duck.

The belting of the kind to which I refer is composed of a series of canvas bands of the width of the finished belt, about which is folded a cover of similar material of substantially twice the width of the belt. The present practice in the manufacture of such belts is to assemble them by hand, laying the bands in registration and folding the cover about them so that the edges of the cover meet, or overlap in the center of one face of the belt. Next the edges are basted, then the belt is fed to a sewing machine, and is stitched through and through with two rows of stitching, one on each side of the contacting edges of the cover. After the belt has been assembled, it is stitched in a series of longitudinal lines, spaced at regular intervals over the entire width. In assembling the belt by hand, aside from the obvious expense in labor, numerous difficulties have been encountered which render the production of a perfect belt in the heavier grades extremely difficult, if not impossible. In order that the whole surface of the belt, particularly the portion near the edges, may be hard and smooth, and afford a uniform bearing surface, it is necessary that the cover be drawn over the inner bands, with extreme tightness, and it is also important that all wrinkles be removed from the material and that the tension of the same be uniform. In making a belt by hand, it is often necessary to open it up and dispose of wrinkles formed in assembling. This is a laborious and expensive operation.

I am aware that various machines have been designed and patented which have as an object the production of canvas and rubber belting. These machines are not adapted to produce a stitched belt, or to assemble a belt preparatory to stitching.

The object of this invention is to produce a machine by means of which the

belts may be assembled without handling the material, and whereby the central bands are presented and laid under uniform tension, the cover drawn tight, and the edges drawn together, either contacting or overlapping and held in the desired position until stitched, the material being so held during the entire operation that no kinks or wrinkles will be present in the finished product. When so treated, the belt is of uniform thickness and hardness from the center to and including the edges, and the bearing surface presented thereby is uniform, and because of the uniform bearing thus produced, the belt is capable of transmitting to the pulleys the maximum amount of pull per unit of contact area and runs smoothly.

It is also an important feature of my invention that by providing means for holding the edges of the cover and drawing them together so that they are stitched under exactly the desired conditions of tension, the necessity for basting is dispensed with, and thereby there is a large resulting economy both in thread and labor.

In the operation of stitching which I have described, a machine with two needles mounted on a single bar has been used. The breakage of one thread is of not infrequent occurrence, and occasionally one needle or the other is rendered inoperative for other reasons. Before the machine can be stopped, a single line of stitching of greater or less length is sewed along one edge of the cover. In this case it is necessary, in order to produce a neat and otherwise desirable belt, to rip out and remove all traces of the single line of stitching sewed since the breakage, by the needle which continues in operation. This is for the reason that when the machine is repaired and again started, both needles must start simultaneously. To do away with the necessity for picking out the seam, I have provided a machine with two heads and means for starting and stopping each head independently of the other. It is thus made possible, after drawing the belt back to the position it occupied when the break occurred, to start one head and sew up to the point on the belt opposite that reached by the other head and from there to continue the double operation.

A machine embodying the various features of my invention in their preferred

form is shown in the accompanying drawings, of which—

Figure 1 is a back view of the machine, the feed rolls being broken away to show the stitching mechanism and temple rolls. Fig. 2 is a plan of the drive, stitching heads, feed rolls and temples. Fig. 3 is a section through the driving mechanism taken on the line 3, 3 of Fig. 1. Fig. 4 is a view of the driving mechanism taken on line 4, 4, Fig. 1. Fig. 5 is a transverse section showing the folder in elevation. Fig. 6 is a fragmentary plan of the machine, illustrating the folder. Fig. 7 is an elevation showing a temple roll of the kind used, on the folder. Fig. 8 is a plan of the same. Fig. 9 is a central longitudinal section on the line 9, 9 of Fig. 10 showing the tension and the cover web supply. Fig. 10 is a front elevation of the machine. Fig. 11 is a fragmentary central longitudinal section showing the folding rack. Fig. 12 is a transverse section through the same on the line 12, 12 of Fig. 11. Fig. 13 is an elevation of the clutch controlling mechanism. Fig. 14 is a side elevation of the machine, certain parts being broken away for convenience in illustration.

The machine, as shown, consists of a frame 1, at one end of which is mounted stitching mechanism 2, at the other end there is means 3 for supplying the material under suitable tension. Intermediate these two elements is a rack 4 for guiding the material and turning the edges of the cover, as hereinafter described, and a folder proper 5. Beyond the stitching mechanism are feed rolls 6 by means of which the material is drawn through the machine. The means 3 for supplying the material includes rolls 7 for the central bands or laminations, and a roll 8 for the cover. The latter is preferably a little over twice the width of the central bands and the rolls may be correspondingly related. The rolls 7 are mounted in suitable bearings 9 beneath the rack, the internal strips or bands being drawn forward horizontally, as shown in Fig. 9, then deflected upward about the bars 10 and again deflected to the horizontal by being turned about transverse bars 11 arranged in a vertical line, one over the other, from which bars the strips or bands are led to the tensions 12. These, as shown, are also vertically arranged and consist each of a horizontal guide-bar 13 over which the material is drawn, and a top bar 14 which rests on the material and imparts uniform tension thereto. In this case the force of gravity is utilized in applying tension but other means may be employed within the scope of my invention. From the tensions 12 the internal bands are deflected downward and led beneath a guide-bar 15 on which are mounted side guides 16. The central bands

are thus placed in registration and delivered to the rack in this arrangement and under uniform tension. The cover strip is led from the roll 8. Tension may be applied to this strip by means of the weighted rod 17 which rests on the top of the roll parallel to the axis. This rod is mounted on vertical arms 18 having rack teeth 19 engaged by the toothed gear 20 to which is attached a ratchet 21 controlled by the usual pawl 22. The gear is operated by means of a crank arm 23 to lift tension rod 17 when desired, and the pawl serves to hold the rod suspended in the desired position when it is withdrawn. At 24 I have shown, applied to the cover strip, a gravity tension similar to the tension 13 used in connection with the internal strips. After passing through this tension 24, the cover strip passes backward into the machine beneath the internal bands, strips or laminations, the latter being preferably over the central portion of the cover strip.

Back of the guide 15 and preferably extending in the general direction in which all the webs or bands have thus far been led, is the rack 4. This consists of a series of horizontal transverse rods 25 upon which the web is supported, the internal strips resting upon the center of the cover strip and the latter being in contact with the rods. Mounted upon each rod 25 are two side guides in the form of upright bars 26. As shown, the rods 25 pass through the bars which are adjustable along the rods, and are provided with bosses 27 in each of which is a set-screw 28. The bars 26 are adjusted to the width of the central bands or laminations, being spaced apart a distance substantially equal to the width of the bands. The cover is turned up at each side, the fold coming at the intersection of the bars 26 with the rod 25, and the former serve to support the upright or folded portion of the cover strip or web. This, as shown, is of equal width on each side of the web indicated by reference character 30. Forward of the rack I have shown a folder indicated in a general way by reference character 5. This folder consists of a bottom guide or support 32, side guides 33 and top guides 39. The first is in the form of a horizontal bar extending across the bed of the machine. Side guides 33 consist of two laterally adjustable blocks preferably mounted to slide upon the bar 32. These blocks may be moved in any suitable manner. In the device illustrated there is a screw-shaft 34 having a right-hand thread 35 to engage one block and a left-hand thread 36 to engage the other, so that when the shaft is rotated by means of the crank 37, the blocks are caused to approach or recede from each other. It will be noted that the opposed surfaces of the blocks 33 are inclined in a

horizontal plane converging in the direction of the feed. The top guide, as shown, consists of two arms 39 mounted on pivots 40 extending in the direction of the feed so that the arms may be swung upward and outward laterally. The position of these arms is controlled each by means of a rod 41 pivotally connected at one end to the arm and mounted to slide in a bearing 42 supported by any suitable means as brackets 43 on the frame of the machine. For the purpose of holding the rod and the corresponding arm 39 in adjusted position, there is a set-screw 44 on each bracket to engage the rod in the bearing. This screw, as shown, is provided with a hand-lever 45. The front faces 46 on the guide arms 39 are inclined and converge in the direction of the feed, and these faces are given an upward curve in order that no sharp edges may be presented to the material. The folder is provided with temple rolls 47. These are preferably mounted one on each arm, the axes of the rolls, when in adjustment, being substantially horizontal. The bearings of each roll are carried by a shank 48 mounted to rotate in a block 49 which has a sliding bearing in a block 50 which in turn is mounted to rotate about a horizontal journal 51 which has a bearing in the bracket 52 secured to the arm 39. The roll is rotatably adjustable in a horizontal plane about the shank 48 as an axis. The shank 40 is held against rotation in the block 49 by means of lock-nuts 54 and 55, the latter being provided with an arm 56. These nuts engage screw-threads on the shank 48, and the former nut bears against the top of the block 49 or a suitable washer as shown. The roll is vertically adjusted by means of screw 57 which has a threaded bearing 58 in the block 49, and a thrust-bearing 59 in the yoke 60 mounted on the block 50. The block 50 is rotatably adjustable about the journal 51 as an axis, and is held in adjusted position by means of lock-nuts 61 on the shank of journal 51.

As the material is led through the machine, the cover is folded about the central strips and inserted in the folder, the arms 39 being swung upward to receive the material and then closed down upon the top of the belt, the free sides of the cover being folded against the top of the central strips. The web is thus led through a closed form and the cover drawn tight. This is done by means of the temple rolls, which, in adjusted position, have their axes inclined and converging toward the rear or in the direction from which the material is fed. The rolls are provided with spines or teeth 62, and by this means grip the cover, and as the material is drawn forward, it tends to move in a direction at right angles to the axes of the rolls, *i. e.*, the portion engaged

by the rolls tends to move on lines converging in the direction of the feed. In this manner the edges are drawn inward. As has been stated, the arms are not only pivoted to be swung open to receive the material, but are provided with means for holding them in a fixed position and for adjusting them as to this fixed position, that is, the rod 41, bearing 42 and the screw 44. This latter adjustment is for the purpose of providing for a variation in thickness of the belt. The arms are intended to bear upon the belt and guide it to folded position as the edges are drawn inward.

Next beyond the folder and at the rear of the machine is a stitching device. This is preferably a multiple needle machine, and in this case is shown as provided with two stitching heads 63 and 64. Both stitching mechanisms and the feed, to be hereinafter described, are driven from the shaft 65 which carries a pulley 66 rigidly secured thereto. A gear 67, secured to the shaft 65, meshes with a second gear 68, shown as having a diameter twice that of the first. Meshing with this latter gear and loosely mounted upon shafts 69 and 70 of each head, are gears 71 and 72. These gears are adapted to be connected with their respective shafts to drive the same at the will of the operator by means of clutches 73, 74, one for each shaft 69, 70. Each clutch has a sliding disk 75, 76 keyed to the shaft and mounted to slide thereon, each disk and the corresponding gear being provided with locking means whereby each disk is caused to rotate in unison with its gear when thrown into contact therewith. The disks 75, 76 are mounted each in a yoke 78 to rotate relatively thereto, each disk being provided with a hub 79, having a bearing in the yoke and provided with a collar 80 on each side of said bearing. Each yoke, as shown, embodies two rods 81 parallel to the shafts 69 and 70. These rods have bearings in the frame of the machine at 82. The yokes are adapted to be separately actuated to throw the gears 71 and 72 into and out of connection with the shafts 69 and 70 by the following means: The yokes have each a vertical bearing slot 83 engaged by a pin mounted in a corresponding arm 84, 85. The arm 85 is secured to a transverse shaft 86, and secured to said shaft at a convenient point is a second arm 87 which is connected by means of a rod 88 to a crank arm 89 having a bearing on a fixed pin 90 in the frame of the machine, this crank arm being rotated by means of a hand-lever 91. The other arm 84 is secured to the short shaft or pin 84', and the latter shaft or pin is rotated by means of an arm 92 secured thereto and connected by means of a rod 93 to an arm 94 on the pin 95 in the frame of the machine, the arm 94 being rotated by means of a hand-lever 96.

In the machine shown, each head is provided with a needle 97, 98, actuated from the corresponding shaft 69, 70 by a crank and connecting rod, or any suitable means.

5 It will be noted that the needles 97, 98 are placed one in the rear of the other, and also that the relative length of the arms 99, 100 bearing the heads 63, 64 is such as to place the needle 98 on one side of the center of the

10 belt and the needle 97 on the other side. In front of each needle 97, 98, that is, in the direction from which the material is fed, there is a pair of temple rolls 101, 102. These rolls are mounted each in suitable

15 bearings on a shank 103 which itself has a bearing in a block 104 so the shank may be rotated in the block for the purposes of adjustment and held in position by means of a lock-nut 105 actuated by a hand-lever 106.

20 The blocks 104 slide vertically in ways in arms 107, and are adjusted vertically by means of a screw 108 having suitable thrust bearings at 108 in an arm 108' and actuated by means of crank 109. It will be apparent

25 that the temple rolls, which are toothed rolls of the kind described in connection with the folder, may be adjusted to any desired angle about the axis of the shank 103, but in operation the axes of these rolls are inclined and converge in the direction from

30 which the material is fed.

Guiding of the folded belt adjacent the front needles is accomplished by means of laterally adjustable side guides 110, see Fig.

35 2. These are mounted on a transverse screw 111 having oppositely disposed threads engaging the guides and actuated by hand-wheel 112.

Feeding of the material through the machine is accomplished by means of fluted rolls 6 placed beyond or back of the materials. These rolls draw the material forward through all the operating members which I have described. The rolls are

40 driven from an eccentric 114 on the shaft 65 by means of a connecting rod 113. This eccentric is pivotally connected to a radial arm 115 pivoted centrally on the shaft 116 of the lower roll. At each extremity of the

45 arm 115 is a pawl 117 which engages ratchet teeth on a gear 118 secured to the shaft. There is also a stop pawl 119 on the frame of the machine engaging the teeth of the ratchet 118 to prevent reversal of the feed.

50 The shaft 116 is connected by gears 120, 121, 122, and 123 to the upper roll of the pair of rolls 6, and this roll is made adjustable toward and from the lower roll, the bearings of the rolls being in square blocks 124 which

55 are mounted in vertical slots 125 in the machine frame. The lower roll is adjusted by means of screws 126, and the top roll is adjusted by means of eccentrics 127 having connecting rods 128 pivotally connected to

60 the top blocks 124. The eccentrics 127 are

mounted on a shaft 129 parallel to the rolls. This shaft is controlled by means of a connecting rod 130 pivoted at its extremities, at one end to an upright arm 131 on the shaft 129, and at the other end to an upright arm 132 on a shaft 133 having a bearing in the machine frame. Secured to the frame concentric with the shaft is a ratchet segment 134 engaged by a pawl 135 on a crank arm 136 secured to the shaft. The position of the top roll is varied at will by rotation of the segment 134 through the crank 136, the shaft being held in the desired position by the engagement of the teeth of the stationary segment.

80 The operation of my machine will be apparent from the description taken in connection with the drawings. As has been previously set forth, the central bands or strips drawn from the rolls 7 are fed

85 through the tension devices 12 and brought into contact and registration by means of the side guides 16. A cover strip of about twice the width of these strips is fed beneath the same, the internal bands being over the center of the cover strip. When the material is first led into the machine, the edges of the cover strip are folded up at each side of the central strip and supported in this position by means of the bars 26 of the rack

90 4. The whole web is then drawn forward and inserted in the folder, the arms 39 being swung upward and outward to admit the web. The side portions of the cover are folded down against the top of the central

95 webs. The side guides 33 are adjusted to the exact width of the belt, and the arms 39 are depressed. The rolls 47 are placed with their peripheries in contact with the cover strip near the edges, one on each side

100 of the center, the axes of the rolls being inclined so that they converge in the direction from which the material is fed. For the purpose of adjusting the arms, the screws 44 have been loosened to permit the

105 rods 41 to slide. When the arms have been adjusted, they are of course tightened. At the stitching mechanism the guides 110 are adjusted to the width of the belt and both sets of rolls 101, 102 are adjusted as described in regard to the rolls 47, and the material in folded position is led through the rolls 6 which are then caused to grip the material. The machine is now started,

110 the pulley 66 with its belt being suitably connected. The material is drawn forward through the machine by the feed rolls 6, the rack creasing the sides of the cover and turning them up about the edges of the central bands as the web is presented and

115 advanced, the sides thus folded up being turned down over the central webs by the folder 5, and the edges drawn together by the rolls 47 as hereinbefore described. The temple rolls 101 and 102 adjacent the two

120 130

needles serve to further draw the cover edges together and preferably cause them to overlap. These rolls hold the material during stitching, draw the cover tight over the edges of the central bands, and in connection with the feed rolls 6 put the material under exactly the desired tension, so that basting is rendered wholly unnecessary and the finished belt is uniform throughout its entire area, the surface and edges being hard and uniform.

I have thus described in minute detail a single embodiment of my invention in order that its nature and operation may be clearly understood. However, the specific terms herein are used in their descriptive rather than in their limiting sense, and the scope of the invention is defined in the claims.

I claim—

1. In a machine for making stitched belting, having central bands and a cover, stitching means including a needle, feed rolls beyond the stitching means, means for driving the feed rolls to draw the material forward, and temple rolls adjacent the needle to draw and hold the edge portions of the cover together.

2. In a machine for making stitched fabric belting, having central bands and a cover, stitching means, feed rolls for drawing the material forward, and temple rolls having their axes converging in the direction from which the material is fed, placed adjacent the stitching means, for drawing and holding the edge portions of the cover together.

3. In a machine for making stitched fabric belting, having a cover inclosing central bands, in combination, means for drawing the material through the machine, means for supplying internal strips or layers, means for applying tension to each strip, means for supplying a cover strip, means for applying tension to that strip, means for folding the cover about the internal strips, inwardly inclined temple rolls, all on the same side of the material and engaging the material from that side to draw the edges together and hold them, and means for stitching the edges when so held.

4. In a belt making machine, in combination, means for supplying central bands or strips, means for supplying a cover, means for drawing the material through the machine, a rack to guide the bands and turn the cover at each side about the bands, a folder, and temple rolls thereon to guide the edges of the cover and draw them together, a sewing machine having a plurality of needles, a pair of temple rolls in front of the needles to draw and hold the edges of the material together as they are presented to the needles.

5. In a belt making machine, in combina-

tion, means for supplying central bands, means for supplying a cover strip twice as wide as the bands, means for guiding the bands, and means for turning the cover at each side about the bands, a folder, freely rotating temple rolls thereon to engage the edges of the cover and draw them together, the rolls converging in the direction from which the material is fed, being placed above the material and engaging the material on the upper side, and means for drawing the material through the machine and stitching the edges of the cover.

6. In a belt making machine, stitching mechanism having needles spaced in the direction of the length of the belt and laterally, a pair of freely rotating temple rolls above the material, converging toward the rear and placed in front of each needle to draw and hold the edges of the material together as they are presented to the needles, and a feed to draw the material forward through the machine.

7. In a belt making machine, in combination, means for supplying bands of material, means for supplying a cover twice the width of the bands, means for guiding the bands and cover, and superimposing them one on the other, and means for turning the edges of the latter about the bands, a folder, and temple rolls one on each side of the meeting edges of the belt cover to draw the edges of the cover inward, and means for stitching the edges of the cover to hold them in place and feed rolls forward of the stitching means and temple rolls, the feed rolls serving to draw the material forward through the temple rolls, folder and stitching means.

8. In a belt making machine, means for laying bands, means for folding the cover about the bands so that the edges of the cover come on the flat side of the belt, stitching mechanism for securing the edges of the cover, means beyond the stitching mechanism for drawing the belt forward, freely rotating temple rolls adjacent the stitching mechanism, the rolls being placed above the material as fed and engaging the material from the upper side to hold the edges of the cover and draw them together, the axes of the rolls being inclined and converging in the direction from which the material is fed.

9. In a belt making machine, means for laying bands, means for folding the cover about the bands, stitching mechanism for securing the edges of the cover, feeding means for drawing the belt forward, and freely rotating temple rolls above the material and adjacent the stitching mechanism for holding the edges of the cover and drawing them together, the axes of the rolls being inclined and converging in the direction from which the material is fed.

10. In a belt making machine, means for laying bands, means for folding a cover about the bands, a stitching mechanism having a needle to stitch each edge of the cover, means beyond the stitching mechanism for
 5 drawing the material through the machine, and freely rotating temple rolls adjacent each needle of the stitching mechanism for holding the edges of the cover and drawing them together, the axes of the rolls being
 10 inclined and converging in the direction from which the material is fed.

11. In a machine for making belting folding means, stitching means, feed rolls beyond
 15 the needles for drawing the material forward, and freely rotating temple rolls adjacent the folding means and stitching means, each roll being adjustable about a vertical axis, and means for moving and adjusting
 20 the roll vertically.

12. In a belt making machine feeding means, a folder consisting of swinging top guides having their axes parallel to the direction of feed, and means for holding said
 25 top guides in various positions of adjustment about said axes so that they may be swung upward and opened to receive a new length of material, and then forced down on the material and fastened to hold the
 30 material in folded position, side guide blocks, and means for adjusting the blocks laterally, means for drawing material forward and a plurality of stitching means spaced apart in a direction transverse to the
 35 feed.

13. In a belt making machine, a folder consisting of side, top and bottom guides, the top guide consisting of two arms pivoted to swing upward and outward from
 40 operative position to receive the material, and means for locking the arms in operative position, said means being adapted to vary the operative position of the arms to suit the thickness of the belt, a plurality of
 45 stitching means spaced apart laterally and means beyond said stitching means for drawing the material forward through the folder, and stitching mechanism.

14. In a belt making machine, a folder consisting of side, top and bottom guides, the top guide composed of two arms pivoted to swing upward and outward from operative
 50 position, means for locking the arms in operative position, temple rolls on the arms, a plurality of stitching means spaced apart laterally and means beyond said stitching
 55 means for drawing the material forward through the folder, and stitching mechanism.

15. In a belt making machine, a folder form consisting of side, top and bottom guides, the top guide being pivoted to swing
 60 upward and outward from operative position, temple rolls on the top guide, a plurality of stitching means spaced apart later-

ally and means beyond said stitching means for drawing the material forward through the folder, and stitching mechanism.

16. In a belt making machine, a folder consisting of side, top and bottom guides, 70 the top guide being pivoted to swing upward and outward from the operative position, and means for locking the arm in operative position, said means being adapted to vary the position to suit the thickness of the belt, a temple roll on the arm having an
 75 axis inclined in a plane parallel to the belt, means for varying the position of the roll to compensate for the variation in position of the arm, a plurality of stitching means
 80 spaced apart laterally and means beyond said stitching means for drawing the material forward through the folder, and stitching mechanism.

17. In a machine for assembling stitched belting, means for laying strips in registration, means for folding a cover about such strips, the edges of the cover meeting or
 overlapping on one of the flat faces of the belt in combination with a plurality of
 90 stitching heads, driving means, separate means connecting both heads thereto, a clutch for each head, and means for actuating each clutch independently of the other so that either one or both stitching heads
 95 may be actuated at the will of the operator.

18. In a machine for making laminated stitched belting, in combination means for supplying internal strips or layers, means
 100 for applying tension to each strip consisting of a support over which the material is drawn and a bar which rests on the material, means for supplying a cover strip, and means for applying tension to the strip, means for folding the cover about the internal strip consisting of a rack, a folder,
 105 means for drawing the edges together consisting of temple rolls freely rotating and having their axes converging in the direction from which the material is fed, means
 110 adjacent the rolls for stitching the edges of the cover, and feed rolls for drawing the material through the machine.

19. In a machine for making stitched belting having a cover and central bands, means
 115 for supplying the material and laying the bands, means for folding the cover about the bands including a form having inclined temple rolls, stitching mechanism for stitching the edges of the cover, and inclined temple rolls adjacent the stitching mechanism
 120 for holding and drawing the cover while being stitched.

20. In a machine for making stitched canvas belting having central bands and a cover inclosing the same, means for guiding the
 125 central bands, means for guiding and folding a cover about said bands, means for drawing the edges of the cover together, two stitching heads each including a needle, a
 130

driving shaft, positive driving means connecting each stitching mechanism to the shaft, a clutch between each stitching head and the driving shaft, separate means in the control of the operator for actuating each clutch, feeding rolls beyond the stitching mechanism for drawing the material through the machine, and means positively connecting the rolls to the driving shaft so that a uniform ratio is maintained between the speed of the rolls and that of the needles.

21. In a machine for making stitched canvas belting having central bands and a cover inclosing the same, means for guiding the bands, means for guiding the cover, means for folding the cover about the bands and drawing the edges together, two stitching heads, a needle for each head, the needles being placed one in advance of the other in the direction of the feed but slightly offset, a driving shaft for each stitching head and clutch means cooperating with each shaft, the shafts being on the same side of the needles and the clutches being adjacent each other, separate means in the control of the operator for actuating each clutch to throw either stitching head into or out of opera-

tion, and means for drawing the material forward in operative relation to the stitching head.

22. In a machine for making stitched canvas belting having central bands and a cover inclosing the same, means for presenting the bands, means for presenting the cover, means for folding the cover about the bands and drawing the edges together, two stitching heads, a needle for each head, the needles being placed one in advance of the other in the direction of the feed but slightly offset, means for driving each stitching head, and separate clutch means cooperating with each said means, separate means in the control of the operator for actuating each clutch to throw either stitching head into and out of operation, and means for drawing the material forward in operative relation to the stitching and folding means.

Signed by me at Baltimore, Md. this 21st day of March 1912.

GEORGE LAWRENCE MARK.

Witnesses:

ARMSTEAD M. WEBB,
JAMES E. STEUART.