May 9, 1950 W. BISHOP 2,506,916

MACHINE FOR MAKING FABRIC CYLINDERS

Filed Nov. 7, 1947 4 Sheets-Sheet 1

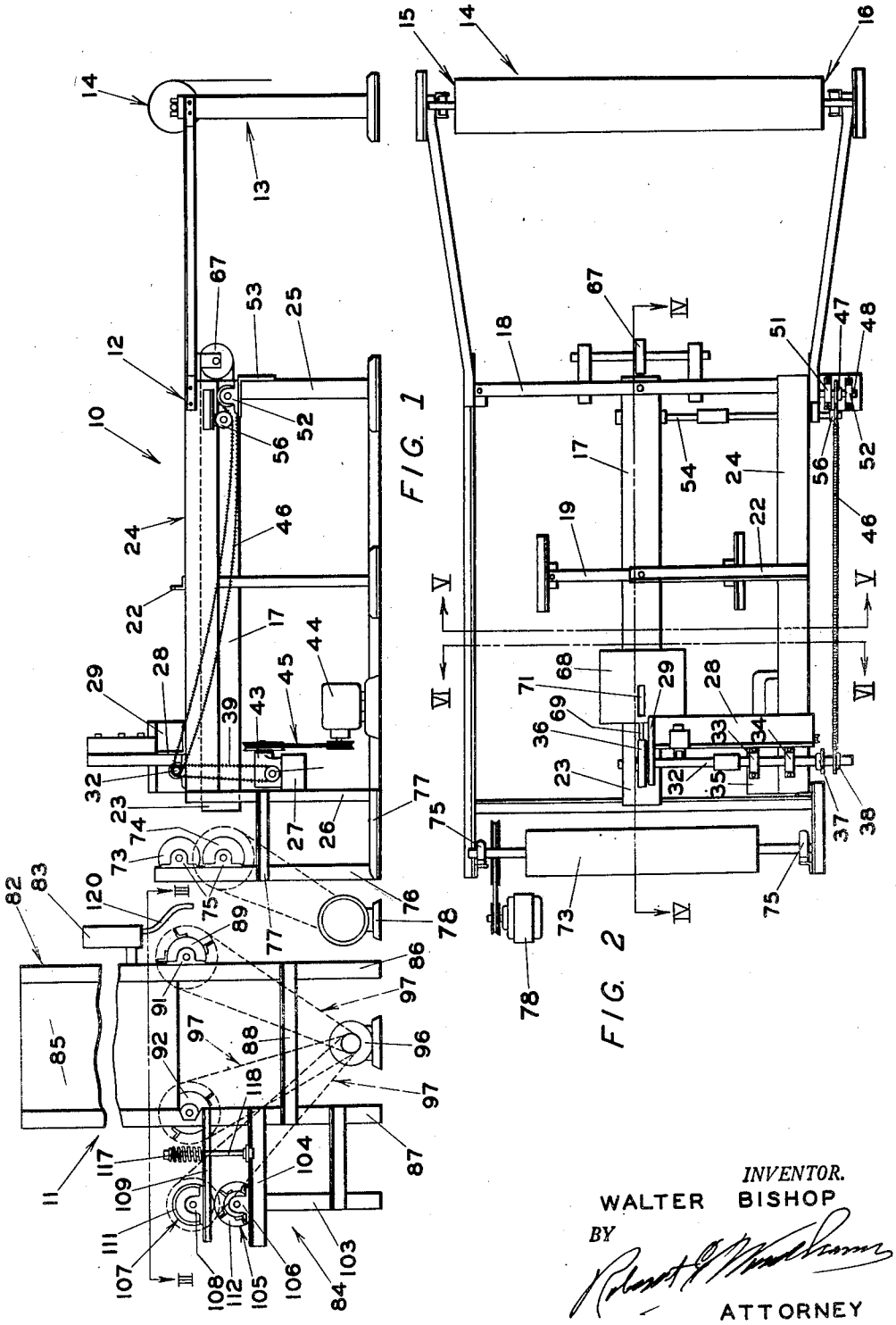


FIG. 1

FIG. 2

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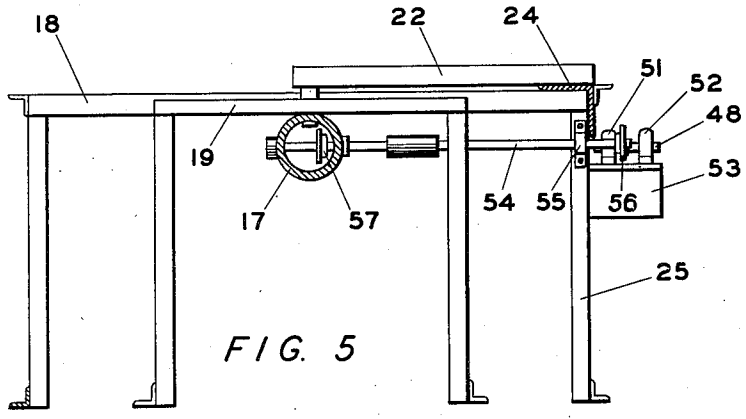


FIG. 5

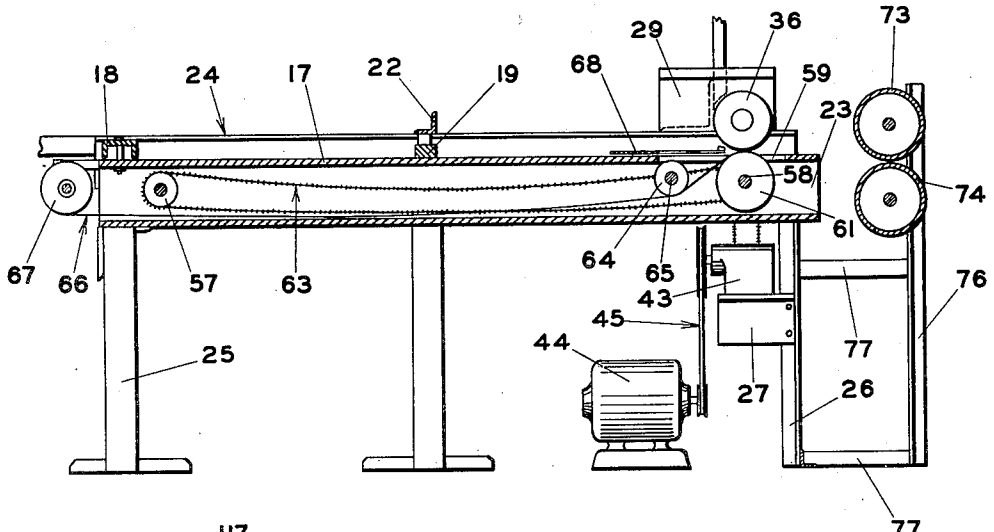


FIG. 4

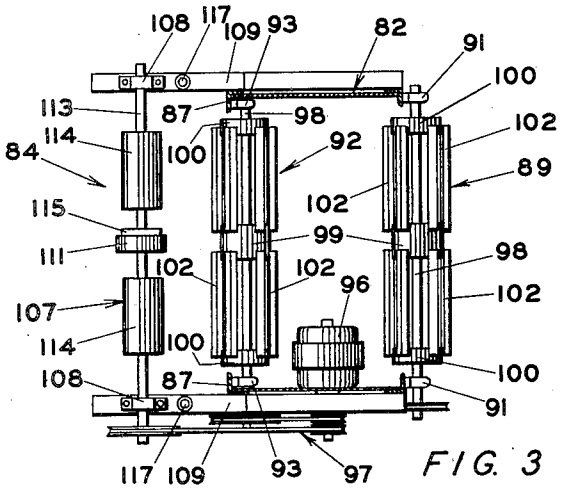


FIG. 3

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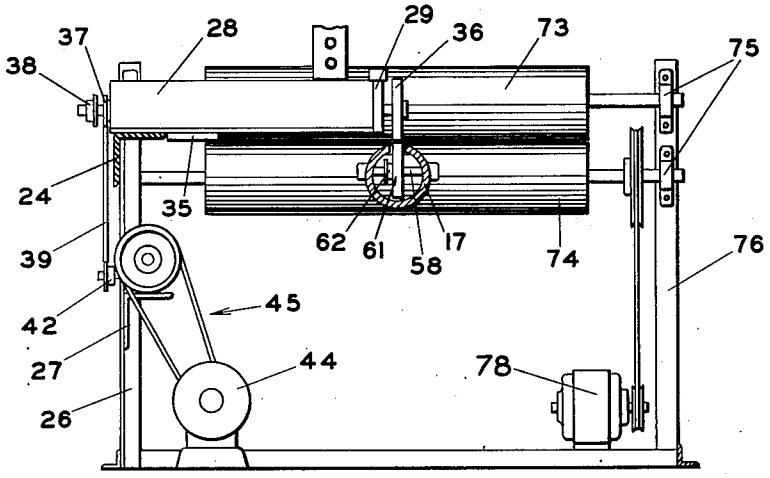


FIG. 6

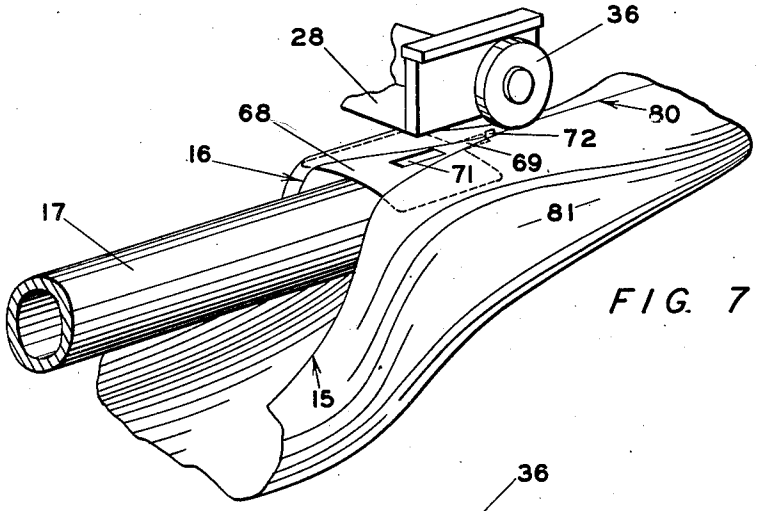


FIG. 7

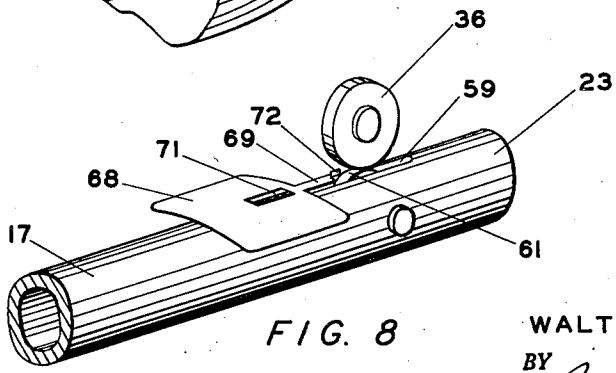


FIG. 8

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MACHINE FOR MAKING FABRIC CYLINDERS

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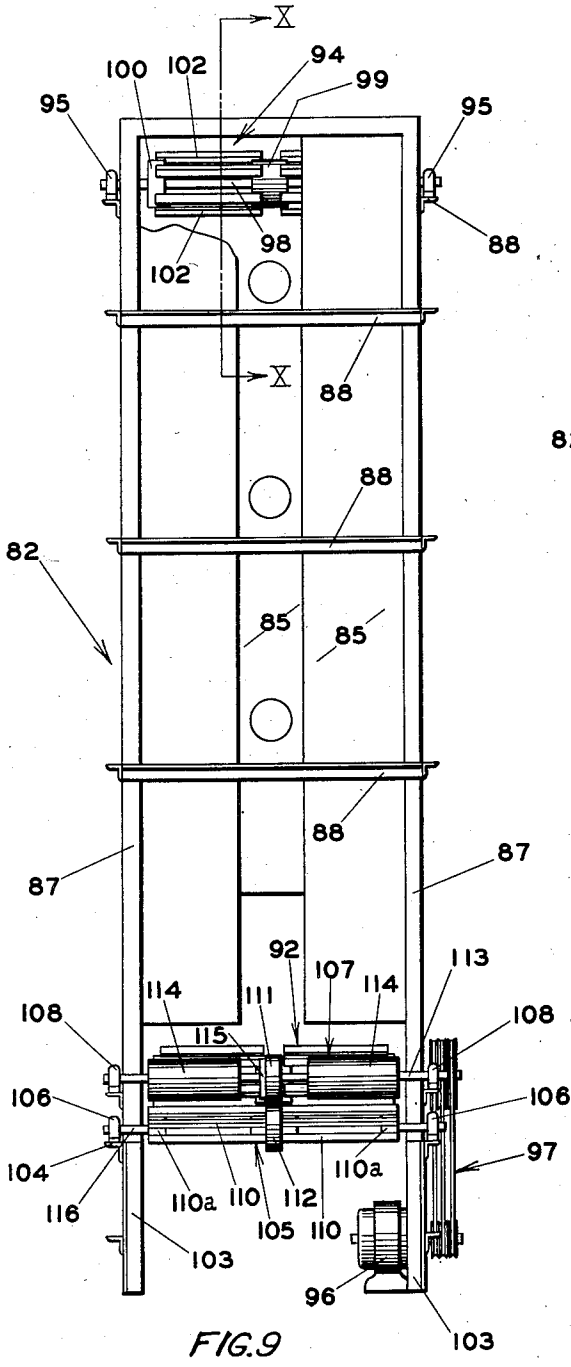


FIG. 9

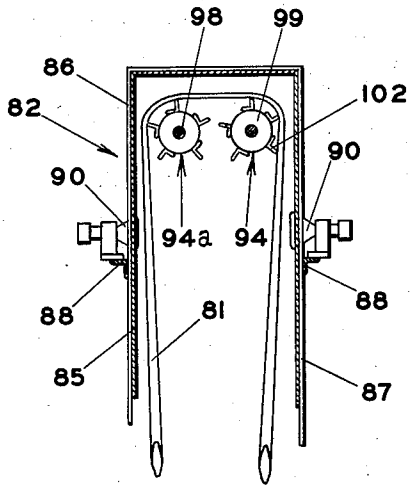


FIG. 10

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UNITED STATES PATENT OFFICE

2,506,916

MACHINE FOR MAKING FABRIC CYLINDERS

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Application November 7, 1947, Serial No. 784,566

6 Claims. (Cl. 154—42.3)

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This invention relates to a machine for securing together the longitudinal, substantially parallel edges of a sheet of fabric to form a cylinder.

In the manufacture of certain fabric products, such as seat covers, for example, a great quantity of coated binding tape is required. It is a well established fact among persons familiar with the use of fabrics that best results are obtained with binding tape cut on the bias. It is also established in the art that such bias binding tape can be most economically made by effecting a spiral or helical cut in a cylinder of fabric whose warp threads are longitudinally disposed with respect to said cylinder.

According to present methods said cylinder of fabric is produced by sewing together the longitudinal, substantially parallel edges of a sheet of fabric with a belt stitch. However, after the strip of bias tape has been cut from said cylinder and is being used, it has been found that said tape is weak and unsightly at those points where said stitching appears. Consequently, some new method has been sought by which said parallel edges of a sheet of fabric could be secured together other than by stitching.

Accordingly, a primary object of this invention is to provide a machine by means of which the longitudinal, substantially parallel edges of a sheet of coated fabric may be joined together in a stronger and more attractive manner than by stitching.

A further object of this invention is to provide a machine, as aforesaid, whereby the joint between the two said parallel edges may be made invisible.

A further object of this invention is to provide a machine whereby said process may be carried out semi-automatically.

Other objects and purposes, not specifically mentioned above, will become apparent to persons familiar with this general type of equipment upon examination of the accompanying drawings and upon reading the following specification.

In order to meet the above objects and purposes, as well as others incidental thereto and associated therewith, I have conceived a machine for carrying out the above described objectives in which the longitudinal, substantially parallel edges of a sheet or strip of coated fabric may be joined together with a strip of tape to form a cylinder of said fabric. The cylinder is then flattened and the air within said

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cylinder is expelled to insure its remaining flat, after which a substance similar to the coating on said fabric is applied to the joint and caused to harden. After said substance upon said joint has reached a desired state of firmness, it is exposed to suitable embossing means which gives said covered joint the same appearance as the rest of the coated fabric and thereby entirely hides the joint.

For an illustration of a preferred embodiment of one, but by no means the only, machine whereby said objectives may be carried out, attention is directed to the drawings in which:

Figure 1 is a partially broken side elevation view of the machine to which this invention relates.

Figure 2 is a top plan view of a portion of the machine shown in Figure 1.

Figure 3 is a cross-sectional view of Figure 1 taken along the line III—III.

Figure 4 is a cross-sectional view of Figure 2 taken along the line IV—IV.

Figure 5 is a cross-sectional view of Figure 2 taken along the line V—V.

Figure 6 is a section taken on the line VI—VI of Figure 2.

Figure 7 is a fragmentary, oblique view of the fabric joining portion of the machine including a piece of fabric.

Figure 8 is a fragmentary, oblique view of substantially the same portion of the machine shown in Figure 7, but without the fabric.

Figure 9 is a left end elevation view of the machine as appearing in Figure 1.

Figure 10 is a section taken on the line X—X of Figure 9.

Construction

The following description discloses a particular, preferred embodiment of a machine illustrating the invention and whereby the above enumerated objectives may be carried out. Said machine, as shown in Figure 1, is comprised of a joining section 10 and a resurfacing section 11.

The joining section

The joining section 10 has a frame 12, fabricated from any suitable material such as structural iron angles, channels and wood, which may be secured together by welding, bolting or other similar, convenient means. The rightward end 13 of the frame 12, as appearing in Figures 1 and 2, rotatably supports a roll 14 of coated fabric whose edges 15 and 16 are to be joined together.

In order to simplify the following description,

the right end of the machine as appearing in Figure 1 will be referred to as the "rightward" end or as the "forward" end, and the left end of the machine will be referred to as the "leftward" end or as the "rearward" end. The ends of the joining section 10, appearing in Figure 2, will also similarly be referred to as "leftward" and "rightward" ends, respectively.

Although the machine to which this invention relates will be hereinafter described and disclosed for illustrative purposes as used with fabric having a coated surface, it will be clearly understood that section 10 of the machine, which joins the parallel edges 15 and 16 of said fabric 14 together, may be applicable to any type of fabric whether coated or not. It will be further understood that although the coating on said fabric 14 is hereinafter referred to as pyroxylin, said coating may be any conveniently soluble coating substance presently in use.

A long tube 17, which is preferably made from a sturdy material such as steel or aluminum and is longitudinally disposed with respect to the joining section 10 of the machine, is supported at one extremity by means of a first crossbar 18. Said tube is also supported midway between its extremities, by a second crossbar 19 which is attached to said frame 12 by means of the tie bar 22. Said cross bars 18 and 19 and the tie bar 22 which are substantially perpendicular to the longitudinal axis of the tube 17 and the joining section 10, may be made from any suitable material such as structural iron angles or channels, or wood as aforesaid.

The unsupported or free end 23 of the tube 17, remote from that extremity supported by the crossbar 18, is unsupported in any way beyond the crossbar 19. The horizontal, side angle member 24, which is substantially parallel with and at about the same height as the tube 17, is preferably a much larger angle iron than the remaining frame members and is approximately the same length as the tube 17. Said side angle member 24, which is supported at both ends upon legs 25 and 26 of any convenient type is perpendicularly engaged at its rightward end by an end of the crossbar 18, and is perpendicularly engaged intermediate its extremities by the end of the tie bar 22 remote from the tube 17.

The leftward end of said side angle member 24 as appearing in Figure 2, is perpendicularly engaged by a horizontal end angle member 28 of shorter length but preferably the same size structural angle as the side angle member. That end of said end angle member 28, remote from said side angle member 24, is provided with an end plate 29.

An upper pressure wheel shaft 32, which lies adjacent to and approximately parallel with said end angle member 28, is rotatably supported within a suitable opening in the end plate 29 and by a pair of standard bearings 33 and 34. The outboard bearing 34 is mounted upon the leftward end of said side angle member 24 and the inboard bearing 33 is mounted upon a base plate 35 which plate is in turn secured to said end angle member 28 adjacent to said side angle member 24, in any convenient, conventional manner.

The end of said shaft 32, which extends through the end plate 29, supports an upper pressure wheel 36 preferably, but not necessarily exactly, directly over the longitudinal axis of the said tube 17. The end of said shaft 32, remote from said wheel 36, extends beyond the outboard bearing 34 where it supports a driven gear pinion 37 and a driving gear pinion 38.

The driven gear pinon 37 is engaged by a suitable chain 39 which chain also engages the driving gear 42 of an appropriate gear box 43. Said gear box, which may be supported upon a bracket 27 attached to the leftward leg 26 of the frame in any suitable manner, is driven by a motor 44 through any appropriate means such as by the V-belt drive 45.

The driving gear pinion 38 is engaged by a suitable chain 46, which chain also engages and drives the driven gear 47, which gear is located adjacent to the rightward end of said side angle member 24. The gear 47 is mounted upon and rotatable with a stub shaft 48 between the conventional bearings 51 and 52. Said bearings 51 and 52 are supported upon a bracket 53 which is secured to the rightward side angle leg 25.

A drive shaft 54 is supported at one end by a bearing 55 (Figure 5) mounted on the rightward side angle leg 25, and is supported at its other end within a pair of suitable bushed diametrically opposed openings in the rightward end of the tube 17. A gear pinion 56 is secured to and rotatable with the end of said shaft 54 extending beyond the bearing 55 and is so positioned that it is engaged by the chain 46, said chain thus being adjustably supported by the pinion 47 and driving the pinion 56.

A gear pinion 57 is mounted upon, and rotatable with, that portion of the shaft 54 within the tube 17 near the rightward end thereof. As shown in Figures 4, 6 and 8, a lower pressure wheel shaft 58 is horizontally and rotatably mounted within suitable bearings in the unsupported end 23 of the tube 17. A slot 59 is provided in the top of said tube 17, longitudinally disposed therewith and adjacent to said lower pressure wheel shaft 58.

A lower pressure wheel 61 is affixed upon and rotatable with said shaft 58, directly in line with the slot 59, so that the upper peripheral surface of said lower wheel 61 will extend through said slot 59 for engagement with the lower peripheral surface of said upper wheel 36.

A gear pinion 62 (Figure 6) is secured to and rotatable with the shaft 58, within the tube 17 and adjacent to the lower wheel 61. Said gear pinion 62 is engaged by and driven by a chain 63 (Figure 4), which chain also engages, and is in turn driven by, the gear pinion 57.

It will be understood that the gear pinions, chains and other drive devices hereinabove specifically mentioned are so mentioned for illustrative purposes only. It will be obvious to persons familiar with this general type of equipment that many, well known variations may be introduced into the drive and transmission system hereinbefore and hereinafter described without departing materially, if any, from the scope of the invention.

A tape guide wheel 64 is rotatably supported in any convenient manner upon a shaft 65 within the tube 17, in line with and adjacent to said lower wheel 61. Said guide wheel is also in line with and directly below the slot 59, and is inboard of the lower wheel 58 with respect to the leftward, or unsupported, end of the tube 17.

Suitable tape 66, which may be taken from a roll 67 appropriately supported upon the frame 12, is fed through the tube 17, under the guide wheel 64 and thence up and between the pressure wheels 36 and 61.

A fabric guide plate 68 (Figures 4, 7 and 8)

is secured in any convenient manner, such as by bolting, to the top of said tube 17 so that the guide finger 69 extends into the region between the pressure wheels 36 and 61, but not the nip thereof, as illustrated in Figures 7 and 8. An elongated opening 71 is provided in said guide plate 68 in line with said guide finger 69, and is so positioned that it rests directly over that portion of the slot 59 above the tape guide wheel 64. Thus, the feed of the tape 66 on the guide wheel 64 may be observed during the operation of the machine through the opening 71 and the slot 59.

A vertical flange 72 is provided at the end of the finger 69 next to but not in contact with the said pressure wheels 36 and 61. Said flange 72 is preferably on a line between the center of the engaging portion of the pressure wheels and the centerline of the opening 71. Thus, the edges 15 and 16 of the fabric being made into a cylinder are brought against opposite sides of the flange 72 just before these edges feed between the pressure wheels 36 and 61. The tape 66, which is provided with a suitable pressure responsive type of adhesive on one side, is fed between the fabric and the lower pressure roll with the adhesive side against the fabric where the seam is created.

A pair of air ejecting rolls, indicated in Figures 1, 4 and 6 as the upper roll 73 and lower roll 74, are rotatably supported by means of standard bearings 75 upon a pair of conventional angle iron uprights 76 adjacent to the unsupported end 23 of the tube 17. Said uprights 76 may be secured to the frame 12 of the joining section by any suitable means such as the braces 77.

The air ejecting rolls 73 and 74 are positioned so that there is enough clearance between their opposed surfaces to pass with ease the fabric cylinder made on said joining section while at the same time squeezing out any air from within the collapsed cylinder. Roll 74 may be driven by a prime mover 78 and drive as appearing in Figures 2 and 6.

Resurfacing section

After the edges 15 and 16 of the said fabric have been secured together by the tape 66 as above described, a visible seam 80 remains in the resultant cylinder of fabric 81 (Figure 7). The resurfacing section 11, hereinafter described in detail, conceals said seam 80.

Said resurfacing section 11 is comprised of a drying loft 82, shown in Figures 1, 3 and 9, to which is attached the coating fluid container 83 and the embossing mechanism 84. Said drying loft 82 may be a vertical, rectangular shaft, substantially as shown, in which the side sheets 85 are supported by two front corner posts 86 and two rear corner posts 87. Said corner posts may be made of any suitable material, such as structural angles, which may be braced with additional structural brace angles 88. The side sheets 85 may be made of any suitable sheet material such as pressed wood, plywood or the like. The height of the drying loft is determined by the time required to obtain the requisite drying, or other hardening, of the fabric coating as hereinafter provided.

Electric drying lamps 90 (Figure 10) are suitably energized and mounted at appropriate positions throughout the length of the loft on the inside of the front and rearward walls thereof for the purpose of applying a drying heat to the seam of the fabric cylinder 81 after it has been treated with a suitable coating fluid along the seam 80.

The loft 82 is provided with a feed-in roll 89 (Figures 1 and 3), which is rotatably mounted upon the said front corner posts 86 by means of the conventional bearings 91 on approximately the same level with the upper air ejecting roll 73. A feed-out roll 92 is rotatably mounted upon the rear corner posts 87 by means of the conventional bearings 93, preferably at the same level as the feed-in roll 89.

A first top guide roll 94, as shown in Figures 9 and 10, is rotatably supported at one upper corner of the loft 82 by any suitable means, such as the standard bearings 95 which are mounted in a conventional manner upon the structural brace angles 88. A second top guide roll 94*a*, similar to the first top guide roll, is similarly mounted at the other upper corner of the loft. These two rolls are positioned to space the fabric cylinder as desired from said lamps 90.

The feed-in and feed-out rolls 89 and 92, respectively, may be driven by an electric motor 96 (Figure 9) through suitable transmission means 97 such as a V-belt drive.

The feed-in roll 89, feed-out roll 92 and top feed rolls 94 and 94*a* may all be fabricated similarly to each other. As illustrated in Figures 3 and 9, these feed rolls, which are mounted substantially parallel to each other, are each comprised of a roll shaft 98, a center angle support disk 99, two end angle support disks 100 and two sets of gripping angles, 102.

In this particular embodiment of the invention, the support disks 99 and 100 are secured to and rotatable with said shaft 98. The gripping angles 102, which are provided in two sets of equal lengths for each roll, are each secured as by welding at their extremities to the middle disk 99 and one end disk 100. Sufficient space is left between the adjacent ends of the two sets of gripping angles 102, where they engage the center disk 99, to allow the freshly coated seam portion of the fabric cylinder to pass over said feed rolls without being contacted thereby during the drying process. It will be recognized, of course, that the upper guide rolls 94 and 94*a*, do not need this space, but for convenience in repair and replacement it is still desirable to have all four rolls the same.

The embossing mechanism 84 is comprised of support legs 103 and cross brace angles 104 which tie said legs 103 to the rear corner posts 87. A backing roll 105 is rotatably supported upon said cross brace angles 104 by means of appropriate bearings 106.

An embossing roll 107 is rotatably supported upon a pair of bearings 108, directly above and parallel with said backing roll 105. Each of said bearings 108 is mounted upon a structural angle 109 near one end thereof. The opposite ends of said structural angles 109 are pivotally secured, one each, to the rear corner posts 87 so that said angles 109 are substantially parallel and horizontal when the embossing disk 111 and the backing disk 112, respectively, of the said embossing and backing rolls are in operating position.

The embossing roll 107 (Figures 3 and 9) may be comprised of a shaft 113, said embossing disk 111, centrally located upon said shaft, and a pair of drive rolls 114, one on either side of said embossing disk 111 and of sufficiently less diameter than said disk to insure firm embossing but without destroying the tight grip of said drive rolls. Said disk 111 is preferably provided with a heating unit 115 adjacent thereto.

The backing roll 105 (Figures 1 and 9) is com-

prised of a shaft 116, a backing disk 112, centrally located upon said shaft, a pair of end disks 110a, spaced from and arranged on either side of said backing disk 112, and two sets of drive angles 110 which are secured, as by welding, to said backing disk 112 and the end disks 110a.

Resilient means, such as the coiled springs 117 and center rods 118, which are anchored upon said cross brace angles 104 engage said structural angles 109 about midway between their extremities and tend to augment gravity in holding said embossing disk 111 down against said backing disk 112. When said disk 111 and 112 are engaged, there is sufficient clearance between said drive rolls 114 and said backing roll 105 to permit the free passage of the cylinder of fabric which is being resurfaced but with sufficiently firm engagement by said rolls for reliable driving.

The embossing roll shaft 113 and the backing roll shaft are synchronously driven by a suitable means such as an electric motor and gear or chain drive mechanism similar to the other drive mechanism used herein.

The coating fluid container 83 (Figure 1) which may be any convenient, conventional dispenser, is preferably supported upon said drying loft 82 between the two front corner posts so that the fluid contained in said dispenser may flow through a suitable spout 120, wherefrom a controlled discharge may be had onto the visible seam 80 in the fabric cylinder 81 as said cylinder leaves the air ejecting rolls 73 and 74.

Operation

Preliminary adjustments of the machine, whose construction has been hereinabove disclosed, include providing appropriate spacing between the pressure wheels 36 and 61, and between the air ejecting rolls 73 and 74. The tape 66 is placed under the guide wheel 64 and passed up between the pressure wheels 36 and 61. The fabric is drawn from the roll 14 below the cross bars 18 and 19, and the edges 15 and 16 of said fabric are brought up over the sides of the guide plate 68 until they bear against opposite sides of the vertical flange 72 and are held between the pressure wheels 36 and 61.

The electric motor 44 may be then energized, thereby actuating the gear box 43 through the V-belt drive 45. The upper pressure wheel 36 is driven by said gear box 43 through the chain 39 and the shaft 32. The lower pressure wheel 61 is driven through the pinion 38 on the shaft 32, the chain 46, the pinion 56, the shaft 54, the pinion 57, the chain 63, the pinion 62 and the shaft 58 as shown in Figures 2, 4, and 6. The pinions, shafts and chain are selected so that said upper and lower pressure wheels will rotate at the same peripheral speed.

The fabric is fed between said pressure wheels 36 and 61 and the air ejecting rolls 73 and 74 until there is a sufficient length of the completed, but flattened, fabric cylinder to pass under the feed-in roll 89, up the forward side of the loft 82 over the top feed rolls 94 and 94a back down the rearward side of the loft 82 and beneath the feed-out roll 92, and between the embossing roll 107 and the backing roll 105. The electric motor 44 is preferably stopped, and the seam forming part advanced by hand, while the fabric cylinder is initially threaded through the loft 82, and the embossing rolls as aforesaid.

The entire machine is now set into operation, which includes actuation of said pressure wheels, said feed-in and feed-out rolls, said embossing and backing rolls and said fluid dispenser. An operator is required to feed the edges 15 and 16 of the fabric against opposite sides of the flange 72 while another operator may dispose of the fabric cylinder 81 as it leaves the embossing and backing rolls 107 and 105, such disposition usually being folding into a receiving box but it may involve winding by hand or automatically onto a suitable reel.

The edges 15 and 16 of the fabric on the roll 14 are held together by a strip of tape 66 which has pressure sensitive adhesive on that side which engages said fabric. The pressure wheels 36 and 61 press the butted edges 15 and 16 against said tape 66. As the resultant cylinder of fabric 81 leaves said pressure wheels, it passes between the air ejecting rolls 73 and 74 where substantially all of the air in said cylinder is squeezed back towards said pressure wheels and the cylinder is fully collapsed.

As the collapsed cylinder moves from the air ejecting rolls to the feed-in roll 89, it passes beneath the dispenser 83 where a coating of the fluid held therein is applied through the spout 120 to the said fabric cylinder along the visible seam 80 thereon. This fluid may be any fluid which will amalgamate with the coating on the fabric to provide a perfectly smooth, seam concealing, coating and will carry a suitable quantity of coloring pigment similar to that in the coating. For a pyroxylin coating, the fluid will be pyroxylin and a solvent such as acetone. The said fluid coating, which covers said seam, is caused to dry, or otherwise harden, as desired while the collapsed cylinder passes up and down through the loft 82 past the said electric heating lamps around the feed rolls 89, 94, 94a and 92. The applied seam concealing coating, by the time it reaches the embossing roll 107, is dried enough to be firm but not too hard to receive an embossing impression.

The embossing disk 111 is provided with the necessary markings to effect an impression in the coating on said seam 80, which causes the coated portion to resemble the remainder of the fabric and the seam thus to be completely concealed. The heating element 115, acting through the embossing disk, completes the hardening of the coating.

Persons acquainted with the type of equipment herein disclosed will be able to recognize many ways in which the machine described may be altered, modified or otherwise revised without departing from the scope of the invention. Therefore, it will be clearly understood that such alterations, modifications and revisions become a part of this invention unless specifically stated to the contrary in the hereinafter appended claims.

I claim:

1. In a machine for bonding the longitudinal, substantially parallel edges of a sheet of coated fabric to a single strip of tape to form a fabric cylinder, and for removing substantially all traces of the seam between the joined parallel edges of said coated fabric, the combination comprising: means for rotatably supporting a roll of said coated fabric; horizontal tubular means perpendicularly disposed with respect to said roll of coated fabric; a frame engaging said tubular means at one point intermediate its extremities and at another point adjacent to that extremity nearest to said roll of fabric, thereby leaving one end of said tubular means unsupported; a slot

through the uppermost wall of said tubular member and near its unsupported end; means supplying binding tape having a pressure sensitive adhesive on one side thereof to the supported end of said tubular means; pressure applying means comprising a pair of opposed pressure wheels, one pressure wheel being rotatably mounted within the unsupported end of said tubular means, so that its periphery extends through and slightly above said slot in the top of said tubular means, and the other pressure wheel being rotatably supported upon said frame means directly above and peripherally engaged by said one pressure wheel; driving and transmission means including a prime mover and a gear box secured to said frame means for rotating said pressure wheels; guide means mounted upon said tubular means adjacent to said pressure wheels whereby said parallel edges of said fabric are brought into engagement without overlapping before being fed between said pressure wheels; air ejecting means comprising a pair of horizontal, parallel, vertically opposed rolls rotatably mounted adjacent to the unsupported end of said tubular means and positively driven in timed relationship therewith; fluid dispensing means for applying a coating to said fabric cylinder along the junction between the said parallel edges after discharge thereof from said last-named rolls; drying means comprising a vertical loft and drying elements placed therein and power driven feed rolls rotatably mounted thereon; embossing means comprising a pair of horizontal, parallel, vertically opposed rolls, the lower roll being rotatable and fixed with respect to said drying loft and the upper roll being rotatable and resiliently mounted with respect to said drying loft and said lower wheel; and driving and transmission means for rotating said lower and upper rolls, all arranged and constructed so that the said parallel edges of the said sheet of fabric are secured together by means of said strip of adhesive coated binding means to form a fabric cylinder with a visible seam, which seam is covered with a fluid coating, after the air has been ejected from said cylinder, and said fluid coating is dried after which it is embossed so that the seam disappears and the coated portion of the fabric cylinder adjacent to the seam resembles the remainder of the fabric surface.

2. In a machine for bonding the longitudinal substantially parallel edges of a sheet of coated fabric to a single strip of tape to form a fabric cylinder, and for removing substantially all traces of the seam between the joined parallel edges of said coated fabric, the combination comprising: means for rotatably supporting a roll of said coated fabric; tubular means perpendicularly disposed with respect to said roll of coated fabric; a frame engaging said tubular means at one point intermediate its extremities and at another point adjacent to that extremity nearest to said roll of fabric, thereby leaving the other extremity of said tubular means unsupported; a slot through the uppermost wall of said tubular member and adjacent its unsupported end, means supplying binding tape having a pressure sensitive adhesive on one side thereof to the supported end of said tubular means; pressure applying means comprising a pair of opposed pressure wheels, one pressure wheel being rotatably mounted within the unsupported end of said tubular means, so that its periphery extends between the walls defining said slot in the top of said tubular means, and the other pressure wheel being rotatably supported upon said frame means directly above and peripherally engaged by said one wheel; driving and transmission means including a prime mover and a gear box secured to said frame means for rotating said pressure wheels; guide means mounted upon said tubular means adjacent to said pressure wheels whereby said parallel edges of said fabric are brought into engagement without overlapping before being fed between said pressure wheels; air ejecting means comprising a pair of horizontal, parallel, vertically opposed rolls rotatably mounted adjacent to the unsupported end of said tubular means for receiving said fabric cylinder and squeezing the air out therefrom; fluid dispensing means for applying a coating to said fabric cylinder along the junction between the said parallel edges; drying means comprising a vertical loft and drying elements placed therein and power driven feed rolls rotatably mounted thereon; a pair of coacting, positively driven rollers engaging said fabric cylinder, along the junction between said parallel edges one thereof applying embossing marks to the area along said junction; all arranged and constructed so that the said parallel edges of the said sheet of fabric are secured together by means of said strip of adhesive coated binding means to form a fabric cylinder with a visible seam, which seam is covered with a fluid coating, after the air has been ejected from said cylinder, and said fluid coating is then dried after which it is embossed so that the seam disappears and the coated portion of the fabric cylinder adjacent to the seam resembles the remainder of the fabric surface.

3. In a machine for bonding the longitudinal, substantially parallel edges of a sheet of coated fabric to a single strip of tape to form a fabric cylinder, and for removing substantially all traces of the seam between the joined parallel edges of said coated fabric, the combination comprising: means for rotatably supporting a roll of said coated fabric; horizontal tubular means perpendicularly disposed with respect to said roll of coating fabric; a frame engaging said tubular means at one point intermediate its extremities and at another point adjacent to that extremity nearest to said roll of fabric, thereby leaving one end of said tubular means unsupported, and a slot through the uppermost wall of said tubular means near its unsupported end; means supplying binding tape having a pressure sensitive adhesive on one side thereof to the supported end of said tubular means, pressure applying means comprising a pair of opposed pressure wheels, one pressure wheel being rotatably mounted within the unsupported end of said tubular means, so that its periphery extends through and slightly above said slot in the top of said tubular means, and the other pressure wheel being rotatably supported upon said frame means directly above and peripherally engaged by said one pressure wheel; driving and transmission means including a prime mover and a gear box secured to said frame means for rotating said pressure wheels; guide means mounted upon said tubular means adjacent to said pressure wheels whereby said parallel edges of said fabric are brought into engagement without overlapping before being fed between said pressure wheels; a pair of rollers receiving the fabric cylinder from said pressure rolls, flattening same and ejecting substantially all air therefrom; a drying loft and rollers therein conducting said flattened cylinder

in the manner of a single web therethrough; and means positively engaging said flattened cylinder and drawing it through said drying loft in timed relation to its discharge from said pressure rolls.

4. In a machine for bonding the longitudinal, substantially parallel edges of a sheet of coated fabric to a single strip of tape to form a fabric cylinder, and for removing substantially all traces of the seam between the joined parallel edges of said coated fabric, the combination comprising: means for rotatably supporting a roll of said coated fabric; horizontal tubular means perpendicularly disposed with respect to said roll of coated fabric; a frame supporting said tubular means by engaging only one portion thereof and leaving the remainder unsupported; means supplying pressure sensitive binding tape to said tubular member from the end thereof nearest said roll of coated fabric; a slot near the unsupported end of said tubular means on the upper side thereof; a lower pressure roll within said tube and extending through said slot sufficiently that its uppermost peripheral surface is slightly higher than the uppermost peripheral surface of said tubular member and an upper pressure roll coacting therewith for engaging and pressing together said tape and adjacent edges of said fabric as same are manually introduced between said pressure rolls; means positively rotating said pressure rolls; fluid dispensing means for applying a coating to said fabrics along the junction between said adjacent edges; a pair of rolls receiving the fabric cylinder from said pressure rolls, flattening same and ejecting substantially all air therefrom; a drying loft and rollers therein conducting said flattened cylinder in the manner of a single web therethrough; and means including an embossing roll positioned for bearing against said coating along said edges positively engaging said flattened cylinder and drawing it through said drying loft in timed relation to its discharge from said pressure rolls, whereby the said parallel edges of the said sheet of fabric are secured together by means of said strip of adhesive coated binding means to form a fabric cylinder with a visible seam, which seam is covered with a fluid coating, after the air has been ejected from said cylinder, and said fluid coating is dried after which it is embossed so that the seam disappears and the coated portion of the fabric cylinder adjacent to the seam resembles the remainder of the fabric surface.

5. In a machine for bonding the longitudinal, substantially parallel edges of a sheet of coated fabric to a single strip of tape to form a fabric cylinder, the combination comprising: means for rotatably supporting a roll of said coated fabric; horizontal tubular means perpendicularly disposed with respect to said roll of coated fabric; a frame supporting said tubular means by engaging only one portion thereof and leaving the remainder unsupported; means supplying pressure sensitive binding tape to said tubular member from the end thereof nearest said roll of coated fabric; a slot near the unsupported end of said tubular means on the upper side thereof; a lower pressure roll within said tube and extending through said slot sufficiently that its uppermost peripheral surface is slightly higher than the uppermost peripheral surface of said tubular member and an upper pressure roll coacting therewith for engaging and pressing together said tape and adjacent edges of said fabric as same are manually introduced between said pressure rolls; means positively rotating said pressure rolls; a pair of rolls receiving the fabric cylinder from said pressure rolls, flattening same and ejecting substantially all air therefrom; a drying loft and rollers therein conducting said flattened cylinder in the manner of a single web therethrough; and means positively engaging said flattened cylinder and drawing it through said drying loft in timed relation to its discharge from said pressure rolls.

6. In a machine for bonding the longitudinal, substantially parallel, edges of a sheet of coated fabric to a single strip of tape to form a fabric cylinder, the combination comprising: a horizontal tubular member; a frame supporting said tubular member by engaging one end portion thereof and leaving the other end portion unsupported; means supplying a continuous sheet of said coated fabric to said supported end of said member; means supplying pressure sensitive adhesive tape to said tubular member at its supported end; a slot near the unsupported end of said tubular member in the upper side thereof; a lower pressure roll within said tube and extending through said slot sufficiently that its uppermost peripheral surface is not lower than the uppermost peripheral surface of said tubular member, and an upper pressure roll coaxial therewith for engaging and pressing together said tape and the adjacent edges of said fabric as same are manually introduced between said pressure rolls; means for positively rotating said pressure rolls; a pair of rolls receiving the fabric cylinder thus formed from said pressure rolls, flattening same and ejecting substantially all the air therefrom; a drying rack and rollers therein conducting said flattened cylinder in the manner of a single web therethrough; and means positively engaging said flattened cylinder and drawing it through said drying rack in timed relation to its discharge from the pressure rolls.

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