

April 12, 1949.

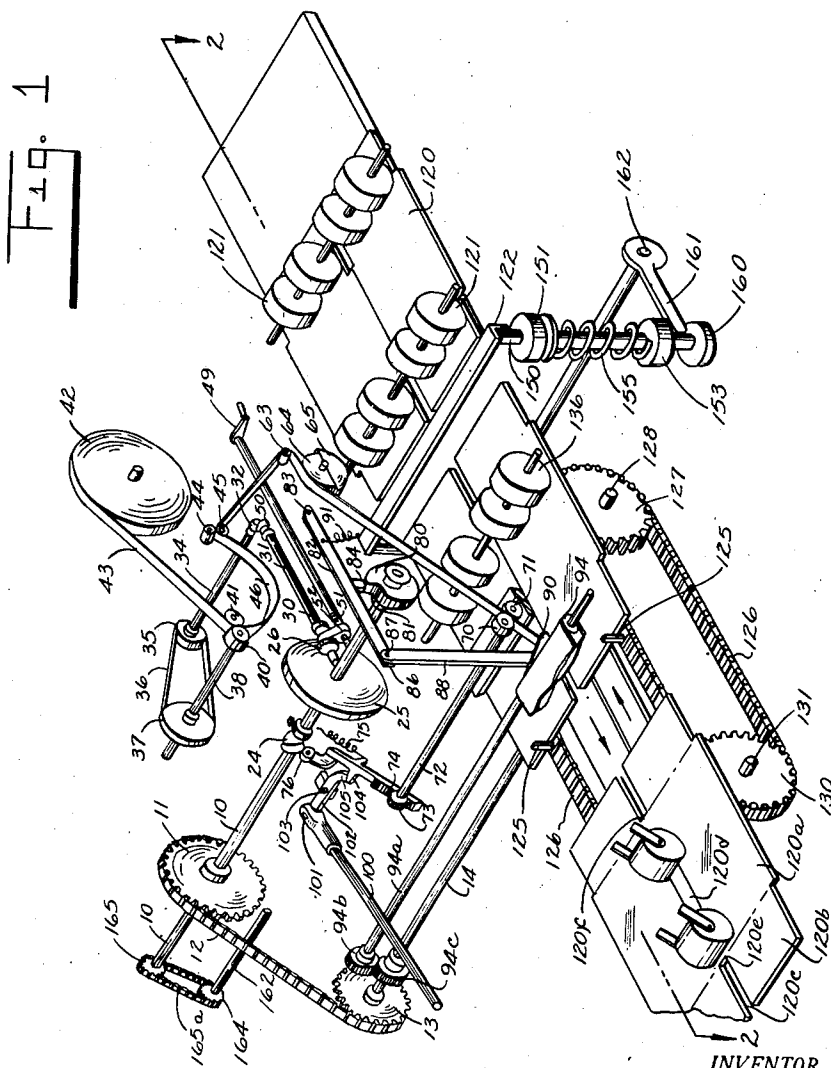
A. F. SHIELDS

2,467,275

TAPING MACHINE

Filed Dec. 5, 1945

2 Sheets-Sheet 1



April 12, 1949.

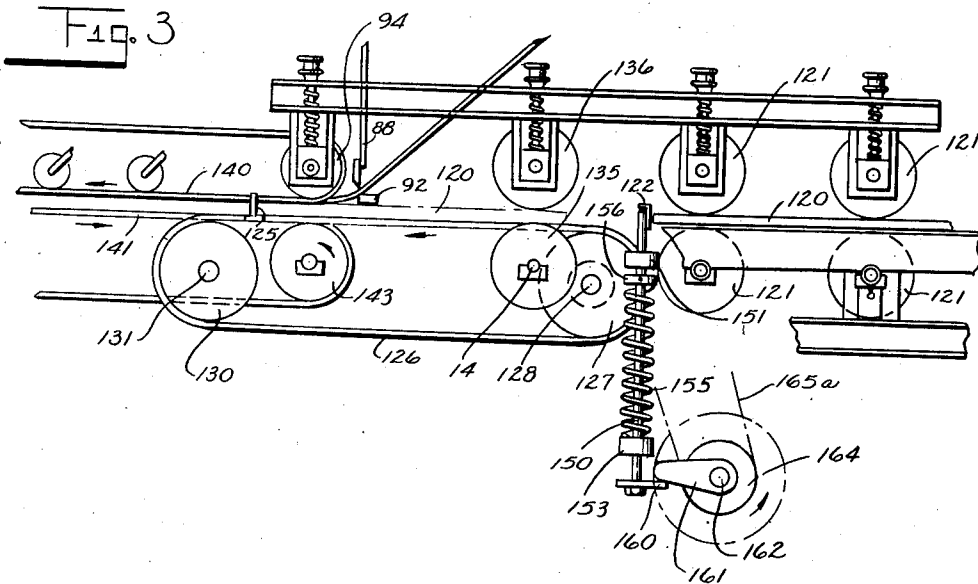
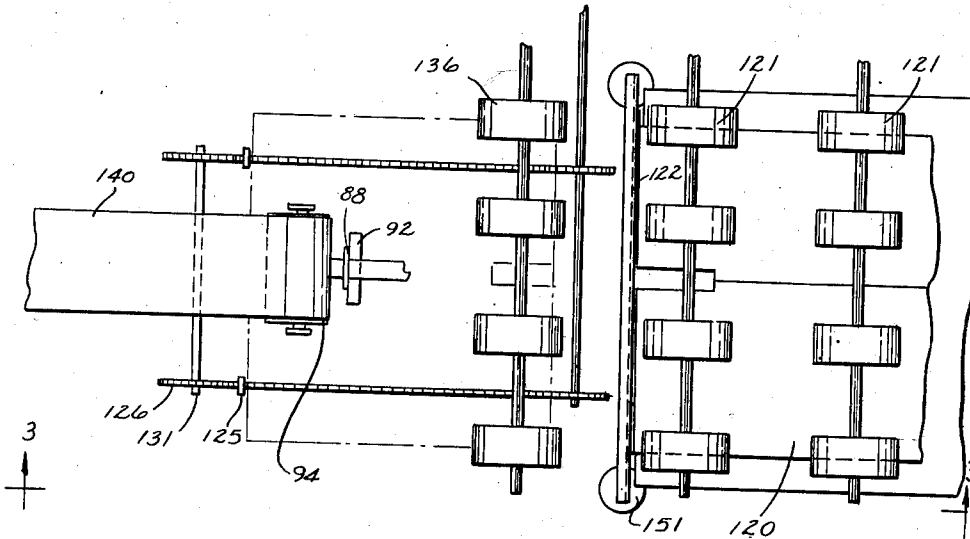
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2 Sheets-Sheet 2

Fig. 2



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2,467,275

TAPING MACHINE

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Application December 5, 1945, Serial No. 633,008

13 Claims. (Cl. 93—56)

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My present invention relates to taping machines, and more particularly to devices for automatically taping the seams of paper boxes, cartons, or the like, and is particularly directed to mechanism which will operate on a folded box or carton moving the same into appropriate juxtaposition with the taping mechanism which applies the tape to the seam.

My novel device will, after applying the tape, cut the tape to the proper length.

My novel taping mechanism is especially arranged so that cartons or boxes of any width may be taped thereby. For this purpose, the elements of my novel taping machine are so constructed that at least one side thereof is completely open forming an open throat taper so arranged that extremely wide cartons or boxes may protrude from one side of the taping machine while the taping operation is being performed.

My invention also contemplates novel method and means for feeding the folded cartons or boxes to the taping device and for maintaining exact registry between the seam and the tape throughout the entire operation.

My novel device also contemplates positive interlock mechanical controls for achieving the foregoing operations.

My novel taping machine is also so arranged that folded boxes and cartons may be taped at extremely high speed.

A primary object of my invention therefore is the provision of novel taping means for folded boxes or cartons.

Another object of my invention is the arrangement of the taping mechanism so that one side of the taping area is completely free of apparatus, thereby permitting extremely wide cartons or boxes to protrude from that side and thus making it possible for the taping machine to operate on a wide range of sizes.

Another object of my invention is the provision of high speed and positive feeding means for the cartons or boxes integrated with the operating means for the tape.

Another object of my invention is the provision of positive mechanical interlock means between the various elements of the device to ensure that the tape and the seam of the folded box are in accurate registry. One object is to straighten the box by means of feed rollers which push the panels against a fixed gate and thus bring the edges even.

Another object is to take the box away from the area in which the operator is doing the folding so that he won't be hampered by the folded box.

Another object is to allow the operator to feed a new box into the machine just as soon as he has folded the box so that he does not have to

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synchronize his feeding exactly with the cyclic motion of the machine.

The foregoing and many other objects of my invention will become apparent in the following description and drawings in which

Figure 1 is a view in perspective of my novel taping device.

Figure 2 is a top plan view taken from line 2—2 of Figure 1, looking in the direction of the arrows, with the cartons removed showing the general arrangement of the various elements of the folded box feeding and guiding means.

Figure 3 is a side view taken from line 3—3 of Figure 2 looking in the direction of the arrows.

In machines of the class described, it is preferable to deliver the tape to the carton seam in strips of a definite length and to allow sufficient time between delivery of each successive strip to permit successive cartons to be brought into position to receive the tape. Heretofore, in taping machines, the usual practice has been to feed the cartons continuously past the tape feeding and applying mechanism and to cause the cartons to trip appropriate electrical or mechanical devices to initiate the taping operation.

While these devices have gone into commercial use, their distinguishing feature is a rather irregular aperiodic operation of a taping device, successive operations being spaced at irregular intervals owing to the fact that the spacing between successive cartons is substantially irregular.

My invention is so arranged that the cartons are fed past the taping elements of the device at regular intervals, the spacing between intervals being exactly accurate and equal for all cartons in the complete run. This will ensure that the tape will not be too long in contact with the adhesive applying or wetting roller during some intervals and will also ensure that the tape will not be fed to the carton when the tape is too wet, and that it will not be fed to a carton after so long an interval that it may have begun to dry.

These various steps will ensure completely accurate taping and completely regular production.

Again it must be emphasized that all of the elements of my novel taping machine are so constructed that cartons of any width, even cartons wider than the machine itself, may be taped thereby with extremely wide cartons protruding from one side.

Referring now to Figure 1, a control shaft 10 is rotated by sprocket 11 and chain 12 from sprocket 13 on driving shaft 14. Chain 12 is a continuous chain connected and wound around sprockets for all other operating elements of the machine. This makes complex gearing unnecessary and ensures preservation of predetermined driving ratios.

Control shaft 10 carries cam 24 which operates in a manner hereinafter described.

Friction disc 25 is also mounted on control shaft 10 and rotates friction roller 26 slidably mounted on shaft 31 by means of key 30 carried by shaft 31.

Shaft 31 is fitted with bevel gear 50 which engages with bevel gear 32 of shaft 34. Through pulley 35 and belt 36, shaft 34 turns pulley 37 and shaft 38.

Rotation of shaft 38 causes the rotation of feed roller 40 and idler roller 41 at a rate predetermined by the distance of the friction roller 26 from the center of the friction disc 25; the greater the distance, the greater the speed.

Thus the strip of tape 43 is fed from the roll of tape 42 at a constant rate. This rate of speed may be adjusted to suit the length of strips to be used by means of the handle 49 which is held longitudinally stationary but may rotate and having threaded end 51 engaging with the nut 52. Nut 52 alters the position of roller 26 on the shaft 31 and simultaneously varies the position of said roller relative to the axis of rotation of disc 25.

After being unwound from roll 42 by the feed rollers 40 and 41, tape 43 passes between rollers 44 and 45 which permit it to form a loop 46 since roller 40 is driven preferably at a slightly faster speed than is necessary strictly to feed the tape. Tape 43 then passes around guide roller 63 and moistening roller 64 which rotates in a liquid container 65 and finally to the feed rollers 70 and 71.

Tape 43 is of a type well known in the art, usually a paper strip having adhesive material on one side thereof.

Moistener 64—65 serves to wet the adhesive to permit the seam-joining action of the tape 43 in a manner well known.

Rollers 70 and 71 perform two functions, namely that of guiding the end of the tape to its proper position at the beginning of the seam to be taped, as well as that of feeding a predetermined length of tape to the seam prior to its being cut off by the cutting apparatus hereinafter described.

Roller 70 is an idler roller. Roller 71 on shaft 72 is rotated by pinion 73 which engages with rack 74. Rack 74 is moved down once each revolution of the shaft 10 by means of cam 24 which is brought to bear against the cam follower 76. Spring 75 acts in a direction to oppose the rack motion due to cam 24. Shaft 72 is thus activated to move in an intermittent reciprocating manner to feed the tape under the feed belt.

Roller 71 has an internal ratchet to permit the tape to run past rollers 71 and 72 when it is pulled by the box. This type of ratchet and pinion arrangement is shown in Patent No. 2,372,780.

The point of initiation of the tape feeding operation for any length of tape, which is to be fed for any box-sealing operation, may be predetermined by angular adjustment of cam 24 on shaft 10. Once this adjustment is made, any fine or vernier adjustment thereafter required may be made by handle 100.

The handle or member 100 may be moved in any suitable manner in order to cause the link 102 to rotate about the pin 103. For this purpose, the handle 100 and the link 102 are interconnected by a pin 101.

The end 105 of the link member 102 bears against the extension 104 of the rack 74. The position of the end 105 of the link 102 determines the extent to which the rack 74 will return under the influence of the spring 75.

When the handle member 100 is so adjusted

that the rack 74 may return to its full extent, then the cam 24 will engage the cam follower 76 during its entire period of rotation and hence will serve to feed the longest possible length of tape which may be fed by the device.

Shaft 10 also carries at its outer end cam 80 having the recess 81. A lever 82 is pivotally mounted at 83 above the cam 80 and is biased for counterclockwise movement about pivot 83 by the tension spring 91. The downward movement of lever 82 is resisted by cam follower 84 which rides on the surface of the cam 80.

When the shaft 10 is rotated so that the recess 81 of cam surface 80 is opposite the follower 84, then the lever 82 may drop down in response to the pull of tension spring 91.

The end 86 of lever 82 opposite its pivot 83 is pivotally connected at 87 to the link 88 which in turn is operatively connected to the knife bar 90. When lever 82 is pulled down by tension spring 91 at the time that the follower 84 is opposite the recess 81 of cam 80, it drives the link 88 down, thus driving the cutting knife 90 down to shear the tape against the straight edge 92 (Figure 3). This will occur at the end of the seam in the blank as determined by the adjustment of the knife cam.

Cam 80 may be angularly adjusted on shaft 10 to provide an adjustment for the cut-off point.

The purpose of handle 100 is to allow only a slight adjustment while running in order to position the front edge of the tape properly on the box.

The prefeeding cam 24 causes the tape to be moved forward just far enough for it to be caught between the box and the delivery roll 94. After the tape is so gripped, it is pulled through by the box itself until it is cut off by the knife.

The prefeeder moves the tape a maximum of about $3\frac{1}{2}$ inches, which is somewhat greater than the distance from the knife to where roll 94 contacts the box. The machine as shown is so arranged that a box 98 inches long can be handled which means that 98" of tape can be applied before the cut off operates.

This type of tape cutting mechanism is shown in Patent No. 2,248,744.

The tape itself in the initial set-up of the machine is threaded past the rollers 70 and 71 up to the knife 90 registering with its cutting edge 92. As the tape is fed downwardly by the rollers 70 and 71, it moves beneath the pressure roller 94 which presses the tape down on the carton seam.

Pressure roller 94 which carries one end of delivery belt 140 is mounted on shaft 94a which is driven by pinions 94b and 94c from the driving shaft 14.

The cartons or boxes 120 are fed at relatively high speed by the high speed feed rollers 121, 121 driven from any suitable power source against the stop 122 (see Figures 1, 2 and 3). The carton 120 which is to be taped is held against the stop 122 by the feed rollers 121 until the stop is lowered. When the stop 122 is lowered in the manner hereinafter described, the carton is fed forward very rapidly to the front guide stop members 125 carried on the parallel chains 126.

Chains 126 are mounted, at the feed end, on sprockets 127 on the driven shaft 128.

The delivery ends of chains 126 are mounted on the idling sprockets 130 which rotate on their shaft 131. The chains 126 do not support the cartons 120 but simply are a means for supporting and moving the moving front guide stops 125,

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The cartons or boxes 120, after they pass the stop 122, are fed over the high speed feed rolls 135 driven by shaft 14 and are held against the feed roll 135 by the driven pressure rolls 136. These rolls ensure that the blank 120 will be fed right up to the front guide stops 125.

As the boxes are fed forward, they pass between the belts 140 and 141, the blank receiving ends of which are mounted on rollers 94 and 143 respectively, and the delivery ends of which are mounted on appropriate rollers, not shown.

Either the leading or trailing supporting rollers of the belts 140, 141 may be driven in any appropriate manner. Belts 140 and 141 engage both surfaces of the boxes 120 and move them away at appropriate speed. The rolls 143 and feed rollers 135 and 136 are spaced from each other by a distance less than the shortest length of box which is to be fed and taped therebetween, and the box or carton thus to be taped is actually supported between these rolls with the upper surface of chains 126 slightly below the level of the upper surface of roll 135 and slightly below the level of belt 141.

Thus the chain 126 serves only to support and move the pair of front guide stops 125.

The stop 122 is supported on a pair of rods 150, one on each side, passing through an opening in an appropriate stationary guide bracket 151 on the frame of the machine at the upper end thereof, and also through an appropriate stationary guide bracket 153 at the lower end of each thereof.

A compression spring 155 is captured between the lower stationary bracket 153 on each side and a collar 156 on the rod 150 on each side thereby biasing the links 150 upwardly and biasing the stop 122 to the upper stopping position shown in Figure 3.

Rod 150 on each side is provided at its lower end with an extension 160 engageable by the crank arm 161, once during each revolution of crank arm 161. Crank arm 161 is mounted on the shaft 162 driven from shaft 10 with a one-to-one speed ratio as shown in Figure 1 by chain 165a connecting sprockets 165 and 164.

The reason shaft 162 is driven from shaft 10 with a one-to-one ratio is because it is necessary to have one taping cycle for one gate opening at all times. The machine is arranged so that the ratio between sprocket 13 and sprocket 11 can be doubled by replacement of one of the sprockets by another of appropriate diameter when another stop is added to the chain 126 so as to give equal chain distances between the stops 125. This is done to handle small boxes more rapidly. By running the machine at the same speed we can take twice as many boxes with two stops as with one.

If the gate or stop 122 is driven as I have shown in Figure 1, then no adjustment of the gate speed will be required when changing from one to two stops. To accomplish this, I may use two chain drives between 13 and 11, one having twice the ratio of the other. Then I may clutch in either one as desired and remove or replace stop 125a as the case may be.

As the crank arm 161 rotates in the direction indicated by the arrow, past the extension 160 of rod 150, it engages the same and pushes it down thereby driving rods 150 down and pulling down the stop 122.

The length of crank arm 161 is so related to the length of extension 160 that the stop 122 will be held down a sufficient length of time to

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permit the blank 120 to pass the same. Crank arm 161 in its continued rotation will then release the extension 160 thereby permitting spring 155 to drive the rod 150 and the stop up. The same construction is embodied on both sides of the mechanism.

All of the elements of my novel device are integrated mechanically so that the correct feeding of the blank is matched with the correct feeding of the tape and so that the tape is cut off at exactly the right position.

Most boxes and cartons are slotted and arranged as shown at carton 120a of Figure 1, so that flaps 120b and slots 120c are provided, the slots registering with the seam 120d at which the tape is to be applied.

Accordingly the taping operation cannot begin at the exact leading edge of the carton 120, but rather at the line 120e at which the seam begins.

Likewise, the tape cutting operation should be performed at just the time the trailing end 120f and the seam 120d passes beneath the knife edge 90, so that the tape will terminate at the trailing end 120f of the seam.

The stop 122 and the stop 125 are fixed at all times and require no adjustment. The stop merely retracts when 125 comes around enabling the front edge of the box to engage 125.

The stop 125 in turn times the box correctly for the taping head, i. e. it insures the same front edge position for all boxes. The prefeed is set a certain distance behind the front edge of the box blank. The cut off is set another (greater by at least $3\frac{1}{4}$ "') distance behind the leading edge or front edge; that is, the forward end of the box blank as it moves through the machine.

Accordingly, appropriate markings may be placed on the cam 24 and knife cam 80 as a guide for angular adjustment thereof so that the leading edge of the seam of the blank at the base of the flap coincides with the beginning of the tape feed and the trailing edge of the seam of the blank at the base of the flap coincides with the tape cut-off.

The speed of rolls 121 is somewhat over that of the chain 126 to insure that the box will catch up to stops 125 and stay against it. My apparatus drops the stop 122 as soon as possible after stops 125 pass so that the box will catch up to stops 125 before stops 125 passes the delivery roll 94.

It will be obvious that the gear ratios between the sprockets 127 which drive the chains 126 and the shaft 162 which drives the crank arms 161 should be so adjusted that the crank arms 161 will rotate once for each complete cycle of the stops 125, so that the crank arms 161 will pull down the stop 122 whenever the front guide stops 125 have reached the exactly proper position.

The box itself then pulls the tape out. The feed rollers 136 and 135 rotate at slightly over the chain speed, but as long as the leading edge of the blank is held by the front guide stops 125, all that these feed rollers do is hold the blank steady against the front guide stops 125.

The belts 140 and 141 move at the speed of the blank 120 until the front guide stops 125 on chains 126 have rotated part-way around the sprockets 130 at which time the blank is released from these front guide stops 125 and permitted to move out.

Summarizing, therefore, the blanks are successively fed up to the taping device at high speed where they are stopped at the stop 122. On the release of the stop 122, they are fed at high

speed against the front guide stops 125 where they are held steady and in accurate relation by the high speed feed rolls 136 and 135. The movement of stops 125 in the direction indicated by the arrow is at a speed exactly equal to the speed of the delivery belts, so that the blanks during application of the tape are moved at the exactly appropriate speed for such operation.

By this means, therefore, a combination of speeds is obtained whereby the blanks are fed in at high speed but are held at the appropriate speed for taping during the taping operation.

Side guides, not shown, are provided to align the blank so that its seam will pass under the tape application.

From time to time, adjustment of handle 49 may be necessary to ensure that a proper tape loop 46 is provided. This adjustment need be made, however, only infrequently, whenever a new length of tape is to be applied and sometimes to readjust the tape length slightly during a run.

The distance from stop 122 to blade 90 does not limit the size of the box because stop 122 will be held down by the box as it passes over. This is so because only a spring force moves the gate up. The top of stop 122 has been made flat so that it won't mar the underside of the box when the box rubs over the gate.

Also, the distance from blade 90 to where chain 126 ends off does not limit the box because when the box has gone in between the delivery belts for that distance, i. e. to about over the center of 130, the box is sufficiently well held by the delivery belt to progress further without any leading edge guide.

It will also be clear from an inspection of Figure 1 that the rear side of the apparatus (opposite the side thereof which contains the driving elements and tape feeding elements) is completely clear and that accordingly, blanks of any width may be passed through the taping device.

Also, on the driving side of the apparatus, shaft 14, as well as all the other operating shafts, extend below the blank feeding area and all of the other elements extend above the blank feeding area.

The only limitation on the width of the blank which may be fed is that the distance from the seam in the carton to the folded edge on one side cannot exceed the distance from the center of the delivery roller 94 to the pinions 94b and 94c.

The other side of the carton on the opposite side of the seam may project for any distance outside the apparatus. Accordingly, by this means, an open throat taping machine is provided in which the machine elements may occupy substantially limited floor space while the cartons which are to be taped may extend far outside from one side of the machine when extremely wide cartons are to be taped.

The device is so arranged that folded cartons of a width more than double the entire width of the mechanism may be folded thereby. This is so because in any carton except an exactly square carton the tape seam is nearer one edge than the other.

Thus it will be seen that my invention contemplates a novel means for feeding blanks at high speed to the taping device, taping the blanks at appropriate taping speed, and removing the blanks from the taping device. Accurate registry is obtained by the gate which aligns the front edge and by moving front guides which hold the blanks in proper angular relation with respect to the taping device.

All of the elements are integrated mechanically so that no mechanical or electrical relays or tripping devices are required.

Only two minor adjustments need be made when changing from runs of one blank to another blank, and these adjustments may be readily calibrated to be made instantaneously.

In the foregoing, I have described my invention solely in connection with a preferred illustrative commercial embodiment thereof. Since many variations and modifications of my invention should now be obvious to those skilled in the art, I prefer to be bound not by the specific disclosure herein contained but only by the appended claims.

I claim:

1. A taping machine for applying a tape to the seams of folded blanks passed therethrough, said machine comprising a tape supply; tape supplying means for drawing tape from the tape supply and for supplying an end of the tape to the leading end of a seam in the folded blank; means for moving a blank into registry with said tape supplying means so that the leading end of the seam thereof is in registry with the end of the tape at the initiation of the operation of said tape supplying means; means for thereafter drawing said blank past said tape supplying means and means for applying the end of the tape to the leading edge of the seam, the movement of the blank cooperating with said tape applying means to draw off additional tape from said tape supply and apply the same to said seam; and means for cutting said tape at a point registering with the trailing end of the seam; a member operable on the leading edge of the blank to regulate its movement with respect to the tape applying means.

2. A taping machine for applying a tape to the seams of folded blanks passed therethrough, said machine comprising a tape supply; tape supplying means for drawing tape from the tape supply and for applying an end of the tape to the leading end of a seam in the folded blank; means for moving a blank into registry with said tape supplying means so that the leading end of the seam thereof is in registry with the end of the tape at the initiation of the operation of said tape supplying means; said blank registering means comprising blank feeding members frictionally engaging and moving the blank, a stop interposed in the path of movement of the blank and halting the blank before it reaches the point of registry with tape applying means; means operated in synchronism with said tape supplying means for removing said stop from the path of movement of the blank to permit said blank to reach the tape supplying means with the leading end of its seam in appropriate registry with the leading end of the tape.

3. A taping machine for applying a tape to the seams of folded blanks passed therethrough, said machine comprising a tape supply; tape supplying means for drawing tape from the tape supply and for applying an end of the tape to the leading end of a seam in the folded blank; means for moving a blank into registry with said tape supplying means so that the leading end of the seam thereof is in registry with the end of the tape at the initiation of the operation of said tape supplying means; said blank registering means comprising blank feeding members frictionally engaging and moving the blank; a stop interposed in the path of movement of the blank and halting the blank before it reaches the point

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of registry with tape applying means; means operated in synchronism with said tape supplying means for removing said stop from the path of movement of the blank to permit said blank to reach the tape supplying means with the leading end of its seam in appropriate registry with the leading end of the tape; and means for re-setting said stop to intercept the next succeeding blank after said first mentioned blank has passed said stop position.

4. A taping machine for applying a tape to the seams of folded blanks passed therethrough, said machine comprising a tape supply; tape supplying means for drawing tape from the tape supply and for supplying an end of the tape to the leading end of a seam in the folded blank; means for moving a blank into registry with said tape supplying means so that the leading end of the seam thereof is in registry with the end of the tape at the initiation of the operation of said tape supplying means; means for thereafter drawing said blank past said tape supplying means and means for applying the end of the tape to the leading edge of the seam, the movement of the blank cooperating with said tape applying means to draw off additional tape from said tape supply and apply the same to said seam; and means for regulating the movement of said folded blank with respect to said tape applying means.

5. A taping machine for applying a tape to the seams of folded blanks passed therethrough, said machine comprising a tape supply; tape supplying means for drawing tape from the tape supply and for supplying an end of the tape to the leading end of a seam in the folded blank; means for moving a blank into registry with said tape supplying means so that the leading end of the seam thereof is in registry with the end of the tape at the initiation of the operation of said tape supplying means; means for thereafter drawing said blank past said tape supplying means and means for applying the end of the tape to the leading edge of the seam, the movement of the blank cooperating with said tape applying means to draw off additional tape from said tape supply and apply the same to said seam; and means for regulating the movement of said folded blank with respect to said tape supplying means; and means for cutting said tape at a point registering with the trailing end of the seam.

6. A taping machine for applying a tape to the seams of folded blanks passed therethrough, said machine comprising a tape supply; tape supplying means for drawing tape from the tape supply and for supplying an end of the tape to the leading end of a seam in the folded blank; means for moving a blank into registry with said tape supplying means so that the leading end of the seam thereof is in registry with the end of the tape at the initiation of the operation of said tape supplying means; means for thereafter drawing said blank past said tape supplying means and means for applying the end of the tape to the leading edge of the seam, the movement of the blank cooperating with said tape applying means to draw off additional tape from said tape supply and apply the same to said seam; and means for regulating the movement of said folded blank with respect to said tape supplying means; said regulating means comprising a movable front stop, movable along the path of movement of the blank in synchronism with the operation of the tape applying means and holding the

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blank to accurate speed in registry with the tape applying means.

7. A taping machine for applying a tape to the seams of folded blanks passed therethrough, said machine comprising a tape supply; tape supplying means for drawing tape from the tape supply and for supplying an end of the tape to the leading end of a seam in the folded blank; means for moving a blank into registry with said tape supplying means so that the leading end of the seam thereof is in registry with the end of the tape at the initiation of the operation of said tape supplying means; means for thereafter drawing said blank past said tape supplying means and means for applying the end of the tape to the leading edge of the seam, the movement of the blank cooperating with said tape applying means to draw off additional tape from said tape supply and apply the same to said seam; and means for regulating the movement of said folded blank with respect to said tape supplying means; said regulating means comprising a movable front stop; said front stop being normal to the path of movement of the blank and maintaining the leading end of the blank in accurate registry normal to the path of movement thereof, said front stop being movable along the path of movement of the blank in synchronism with the operation of the tape supplying means and holding the blank to accurate speed in registry with the tape supplying means.

8. A taping machine for applying a tape to the seams of folded blanks passed therethrough, said machine comprising a tape supply; tape supplying means for drawing tape from the tape supply and for supplying an end of the tape to the leading end of a seam in the folded blank; means for moving a blank into registry with said tape supplying means so that the leading end of the seam thereof is in registry with the end of the tape at the initiation of the operation of said tape supplying means; means for thereafter drawing said blank past said tape supplying means and means for applying the end of the tape to the leading edge of the seam, the movement of the blank cooperating with said tape applying means to draw off additional tape from said tape supply and apply the same to said seam; and means for regulating the movement of said folded blank with respect to said tape supplying means; said regulating means comprising a movable front stop, movable along the path of movement of the blank in synchronism with the operation of the tape applying means and holding the blank to accurate speed in registry with the tape supplying means during at least a portion of the tape applying operation; said front stop being removed from the path of movement of the blank after the initiation of the tape supplying operation.

9. A taping machine for applying a tape to the seams of folded blanks passed therethrough, said machine comprising a tape supply; tape supplying means for drawing tape from the tape supply and for supplying an end of the tape to the leading end of a seam in the folded blank; means for moving a blank into registry with said tape supplying means so that the leading end of the seam thereof is in registry with the end of the tape at the initiation of the operation of said tape supplying means; means for thereafter drawing said blank past said tape supplying means and means for applying the end of the tape to the leading edge of the seam, the movement of the blank cooperating with said

tape applying means to draw off additional tape from said tape supply and apply the same to said seam; and means for regulating the movement of said folded blank with respect to said tape supplying means; said regulating means comprising a movable front stop, movable along the path of movement of the blank in synchronism with the operation of the tape supplying means and holding the blank to accurate speed in registry with the tape supplying means during at least a portion of the tape supplying operation; said front stop being removed from the path of movement of the blank after the initiation of the tape supplying operation; said front stop being mounted on a moving chain operated in synchronism with said tape supplying means.

10. A taping machine for applying a tape to the seams of folded blanks passed therethrough, said machine comprising a tape supply; tape supplying means for drawing tape from the tape supply and for supplying an end of the tape to the leading end of a seam in the folded blank; means for moving a blank into registry with said tape supplying means so that the leading end of the seam thereof is in registry with the end of the tape at the initiation of the operation of said tape supplying means; means for thereafter drawing said blank past said tape supplying means and means for applying the end of the tape to the leading edge of the seam, the movement of the blank cooperating with said tape applying means to draw off additional tape from said tape supply and apply the same to said seam; and means for regulating the movement of said folded blank with respect to said tape supplying means; said regulating means comprising a movable front stop, movable along the path of movement of the blank in synchronism with the operation of the tape supplying means and holding the blank to accurate speed in registry with the tape supplying means during at least a portion of the tape supplying operation; said front stop being removed from the path of movement of the blank after the initiation of the tape supplying operation; said front stop comprising a pair of stop members mounted on a pair of moving chains operated in synchronism with said tape supplying means.

11. A taping machine for applying a tape to the seams of folded blanks passed therethrough, said machine comprising a tape supply; tape supplying means for drawing tape from the tape supply and for applying an end of the tape to the leading end of a seam in the folded blank; means for moving a blank into registry with said tape supplying means so that the leading end of the seam thereof is in registry with the end of the tape at the initiation of the operation of said tape supplying means; said blank registering means comprising blank feeding members frictionally engaging and moving the blank, a stop interposed in the path of movement of the blank and halting the blank before it reaches the point of registry with tape supplying means; means operated in synchronism with said tape supplying means for removing said stop from the path of movement of the blank to permit said blank to reach the tape supplying means with the leading end of its seam in appropriate registry with the leading end of the tape; means for thereafter drawing said blank past said tape supplying means drawing off additional tape from said tape supply and applying the same to said seam; and means for regulating the movement of said folded blank with respect to said tape supplying means.

12. A taping machine for applying a tape to the seams of folded blanks passed therethrough, said machine comprising a tape supply; tape supplying means for drawing tape from the tape supply and for applying an end of the tape to the leading end of a seam in the folded blank; means for moving a blank into registry with said tape supplying means so that the leading end of the seam thereof is in registry with the end of the tape at the initiation of the operation of said tape supplying means; said blank registering means comprising blank feeding members frictionally engaging and moving the blank, a stop interposed in the path of movement of the blank and halting the blank before it reaches the point of registry with tape supplying means; means operated in synchronism with said tape supplying means for removing said stop from the path of movement of the blank to permit said blank to reach the tape supplying means with the leading end of its seam in appropriate registry with the leading end of the tape; means for thereafter drawing said blank past said tape supplying means drawing off additional tape from said tape supply and applying the same to said seam; and means for regulating the movement of said folded blank with respect to said tape supplying means; and means for cutting said tape at a point registering with the trailing end of the seam.

13. A taping machine for applying a tape to the seams of folded blanks passed therethrough, said machine comprising a tape supply; tape supplying means for drawing tape from the tape supply and for applying an end of the tape to the leading end of a seam in the folded blank; means for moving a blank into registry with said tape supplying means so that the leading end of the seam thereof is in registry with the end of the tape at the initiation of the operation of said tape supplying means; said blank registering means comprising blank feeding members frictionally engaging and moving the blank, a stop interposed in the path of movement of the blank and halting the blank before it reaches the point of registry with tape supplying means; means operated in synchronism with said tape supplying means for removing said stop from the path of movement of the blank to permit said blank to reach the tape supplying means with the leading end of its seam in appropriate registry with the leading end of the tape; means for thereafter drawing said blank past said tape supplying means drawing off additional tape from said tape supply and applying the same to said seam; and means for regulating the movement of said folded blank with respect to said tape supplying means; said regulating means comprising a movable front stop, movable along the path of movement of the blank in synchronism with the operation of the tape supplying means and holding the blank to accurate speed in registry with the tape supplying means.

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