March 1, 1955 H. K. SCHILLING 2,702,973

CARTON CLOSING APPARATUS

Filed May 21, 1951 6 Sheets-Sheet 1

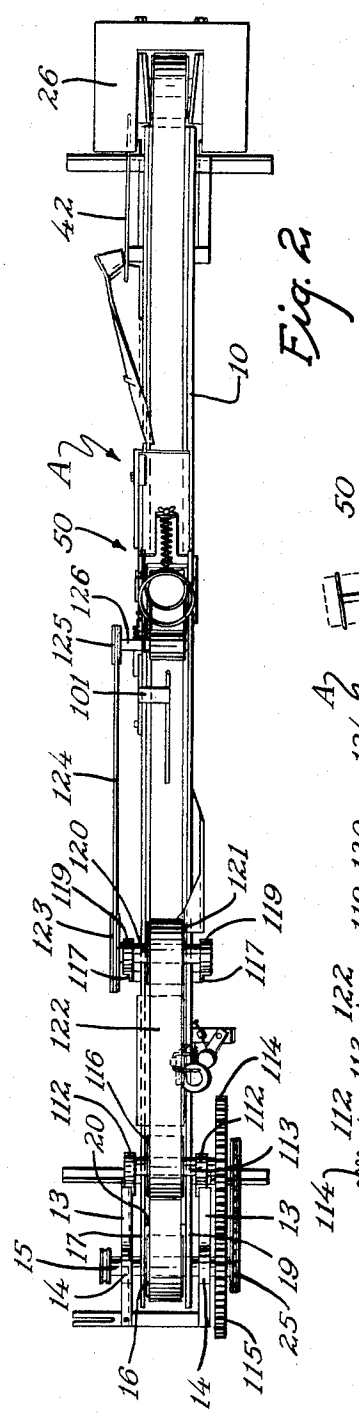


Fig. 2

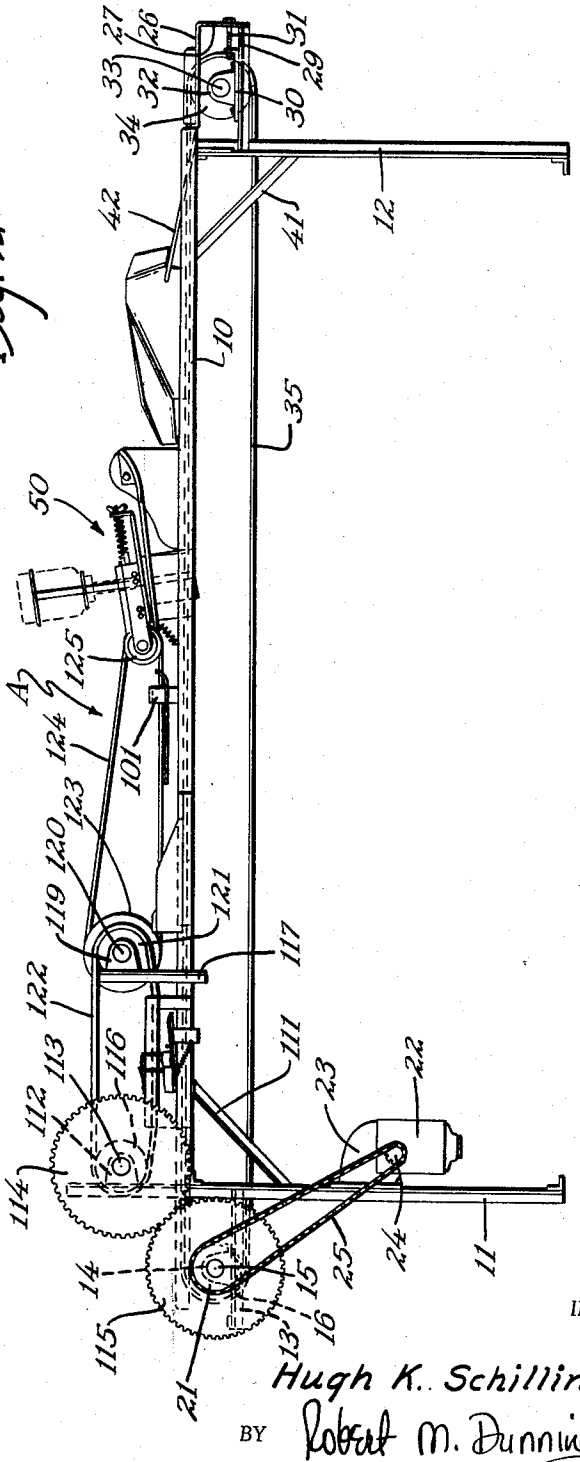


Fig. 1

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CARTON CLOSING APPARATUS

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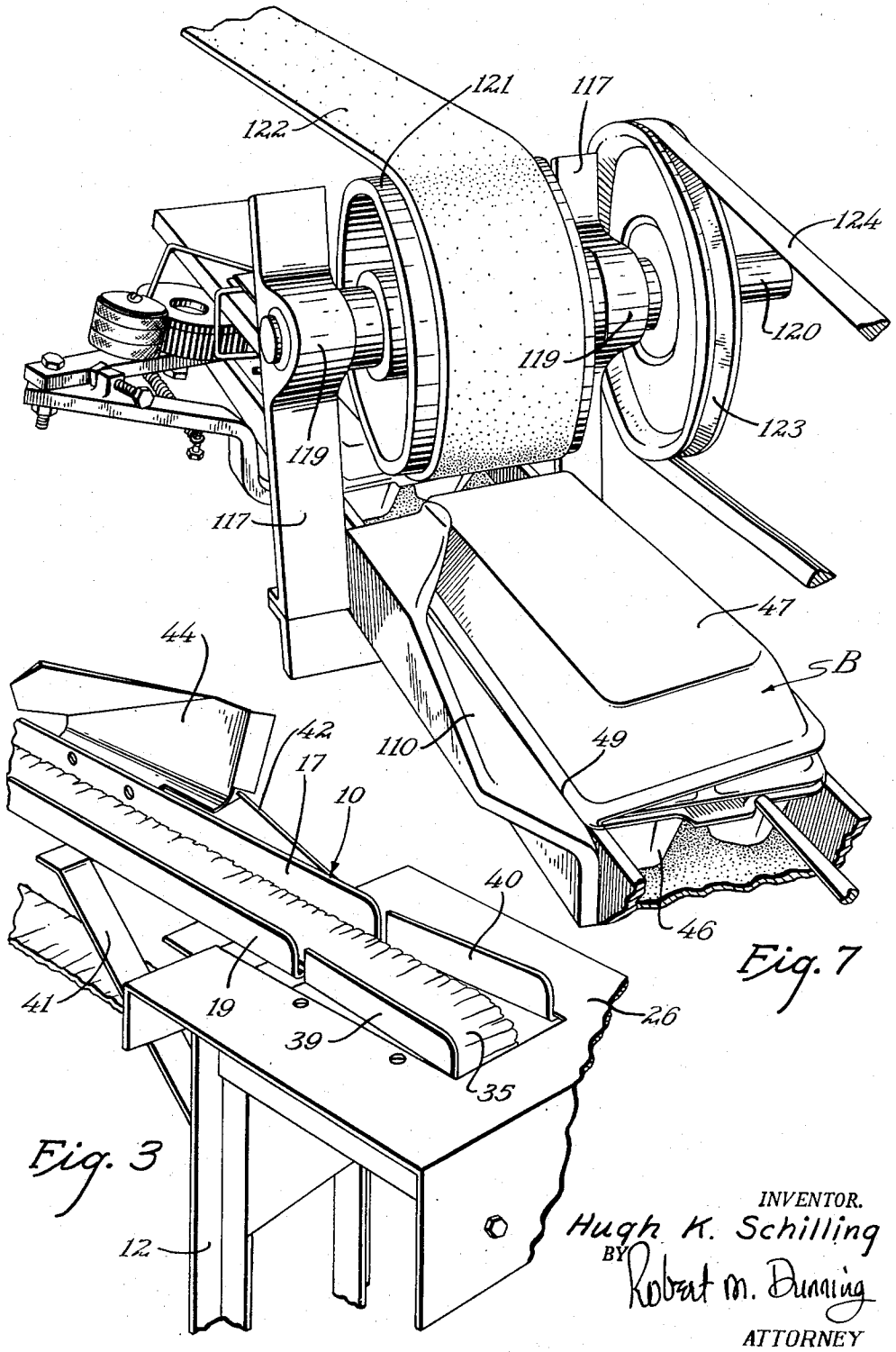


Fig. 7

Fig. 3

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CARTON CLOSING APPARATUS

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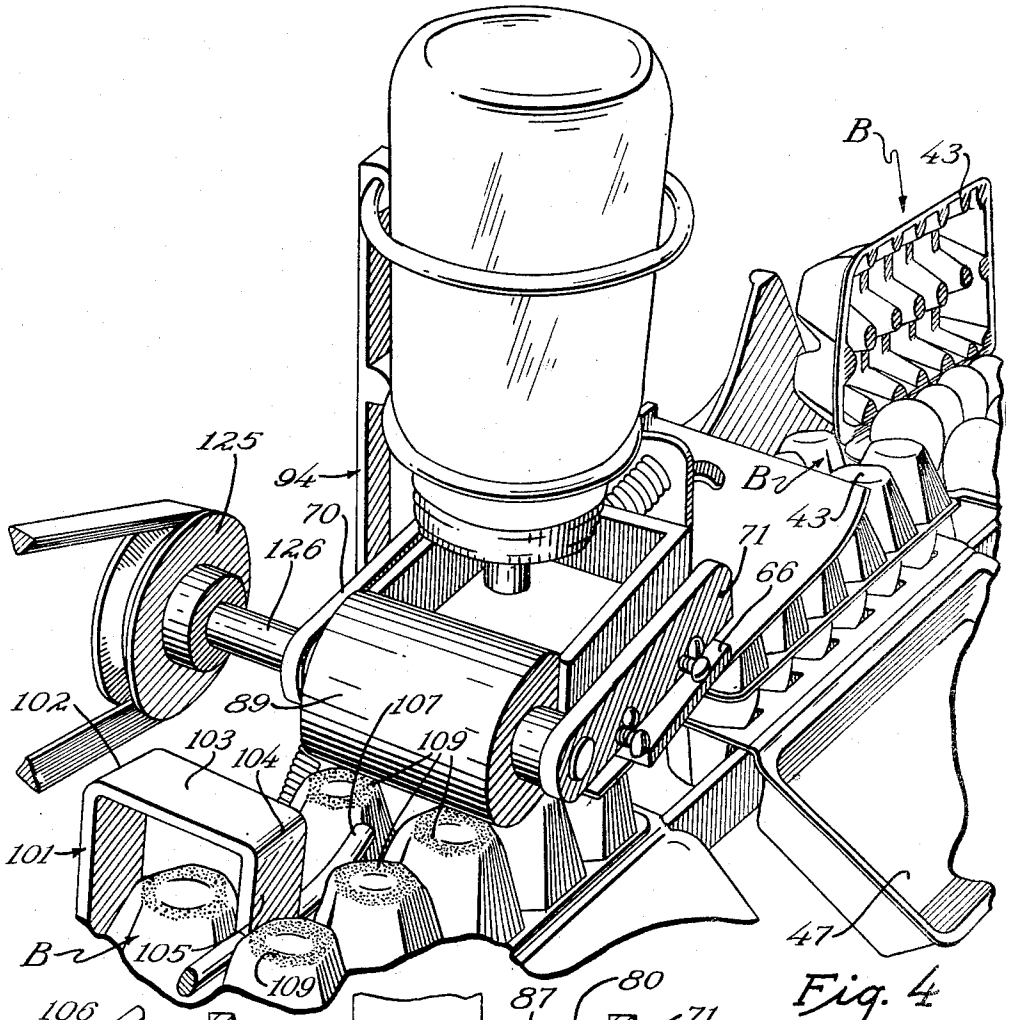


Fig. 4

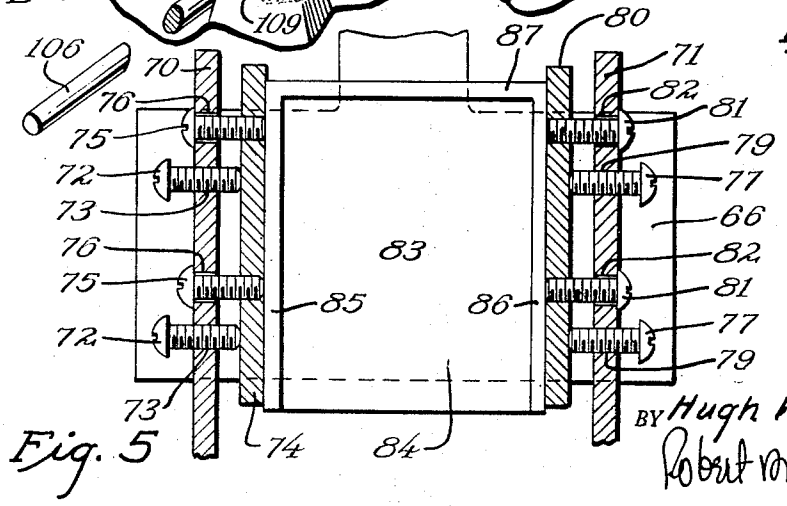


Fig. 5

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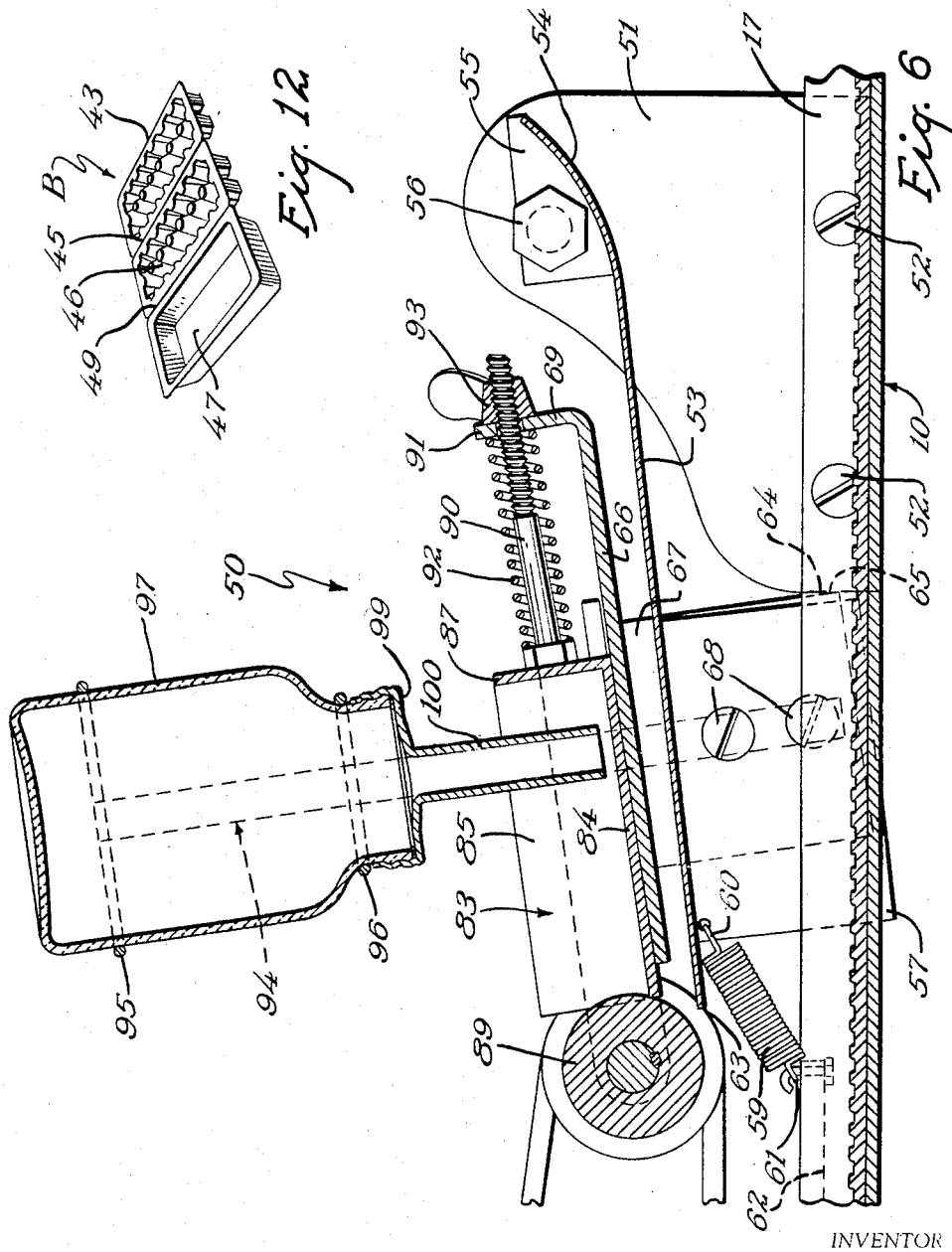
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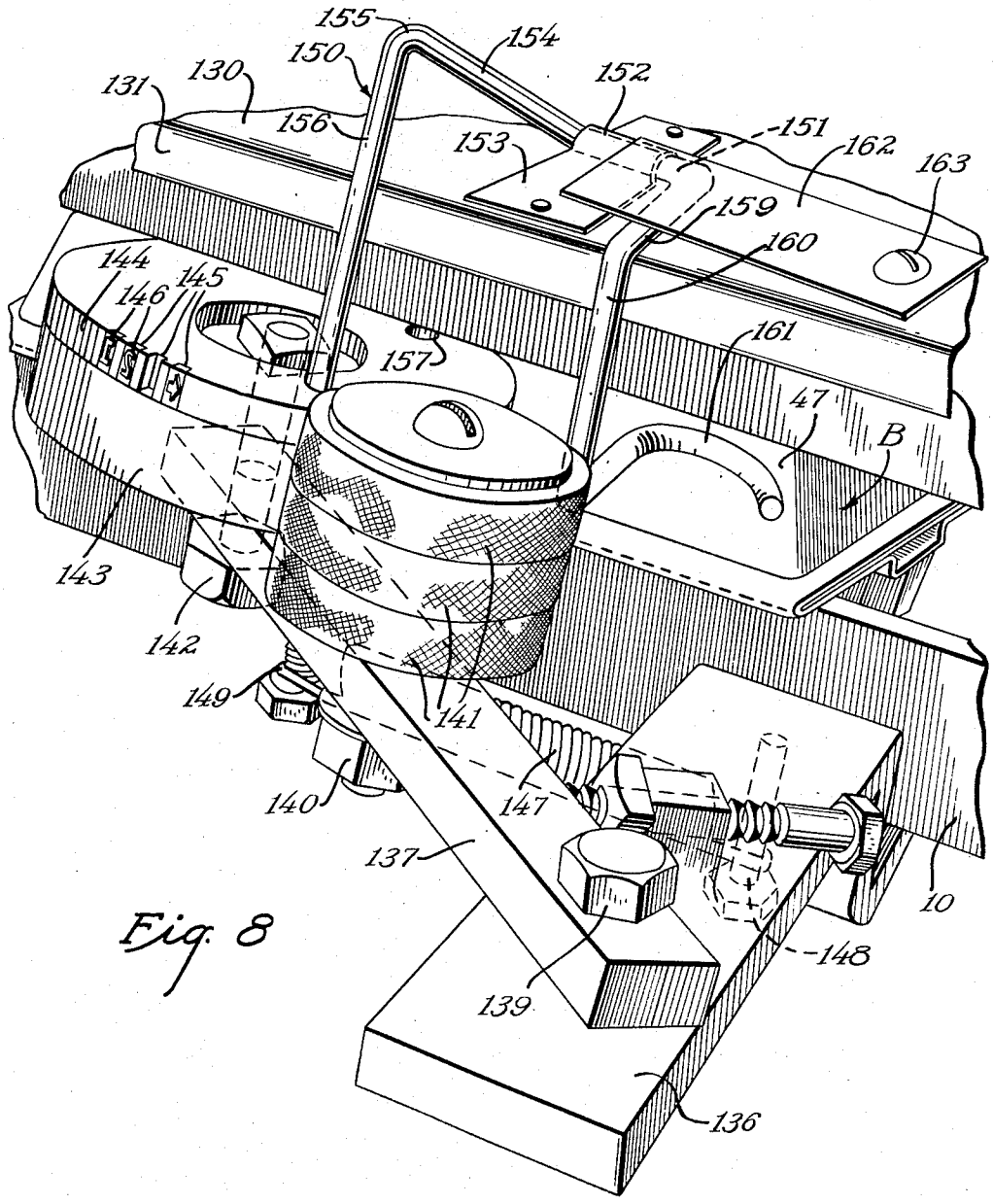


Fig. 8

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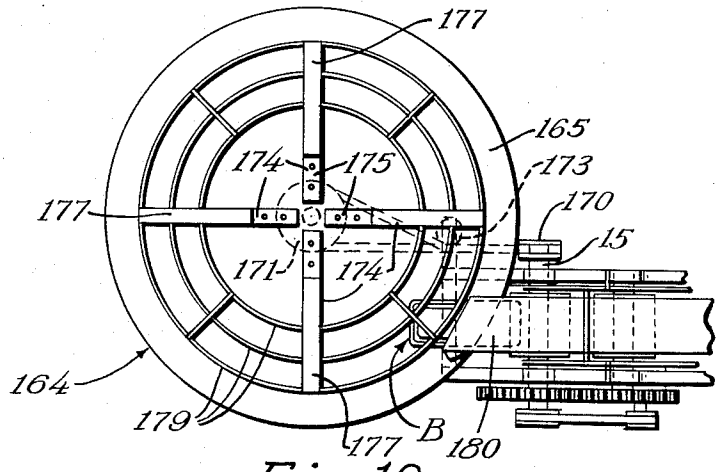


Fig. 10

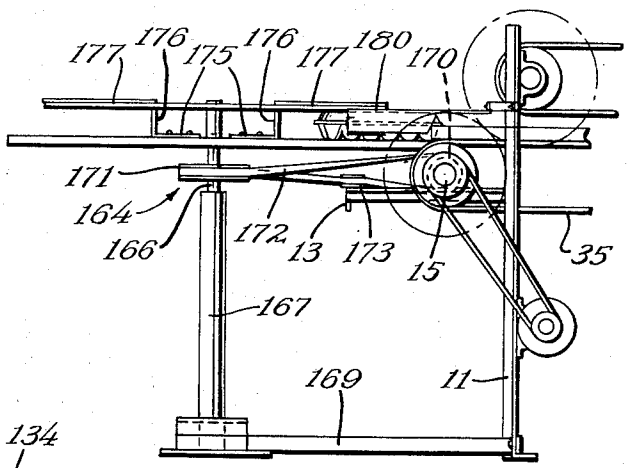


Fig. 11

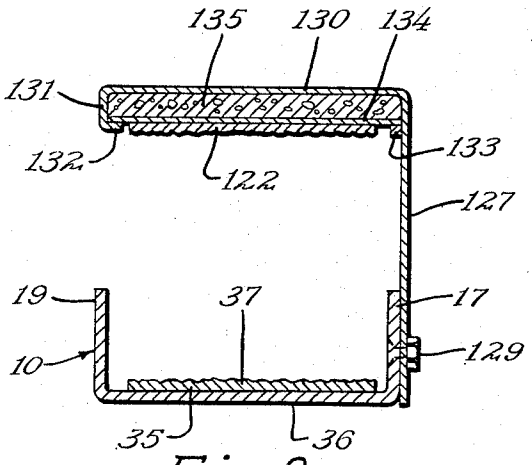


Fig. 9

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2,702,973

CARTON CLOSING APPARATUS

Hugh K. Schilling, Minneapolis, Minn., assignor to General Package Corporation, a corporation of Delaware

Application May 21, 1951, Serial No. 227,340

9 Claims. (Cl. 53—42)

This invention relates to an improvement in carton closing apparatus and deals particularly with an apparatus for closing egg cartons and the like.

Cartons have recently been produced which are formed of molded pulp and comprise three foldably connected sections. An intermediate section is provided with egg receiving pockets into which the eggs are placed. A second section foldably connected along one edge to the intermediate section is similarly cellular and is designed to fold over the eggs in the intermediate section and to enclose the same. The third section is connected along the opposite edge to the intermediate section and is foldable to overlie the second section. The third section preferably forms a cover and is provided with a flat continuous surface which may be printed if desired. In closing the cartons the cover section is adhered to the uppermost cellular section so that the eggs may be sealed in the carton.

An object of the present invention lies in the provision of a mechanism for closing cartons of the type described and to seal these cartons. The mechanism also serves to apply a date or code marking to the outer surface of the cartons so that the age and size of the eggs may be determined.

A feature of the present invention lies in the provision of a means of carrying the cartons along a conveyor and in folding the carton sections together into the proper relationship. Adhesive is applied to the cartons during the movement thereof this adhesive acting to seal the carton sections together.

A feature of the present invention lies in the provision of a conveyor belt which engages the intermediate section of the three connected sections forming the egg carton and in folding the two side sections in proper order to overlie the intermediate section. Adhesive is applied to the first folded section and the cover section is subsequently closed to overlie the top cellular section and to be adhered thereto by the adhesive.

A feature of the present invention resides in the provision of a means of marking the individual cartons as they move along the conveyor. This marking means is so arranged as to mark each carton and to remain inoperative when there is no carton passing the marking device. Thus the cartons may be fed into the apparatus either continuously or in spaced relation without effecting the usefulness of the marking or coding apparatus.

A feature of the present invention resides in the provision of a pressure plate for holding the cartons in closed position a sufficient time to permit the adhesive to set. This pressure plate is urged against the cartons by a resilient pad beneath which the cartons are moved by a conveyor. The pressure plate is yieldable to apply the necessary pressure even though the cartons may vary slightly in height.

A further feature of the present invention resides in the table which is employed for receiving the closed end sealed cartons. The cartons are fed onto a rotatable table which is capable of supporting a considerable number of filled egg cartons and which urges the egg cartons in a spiral path toward the center of the table. Thus the table automatically accommodates a considerable number of egg cartons if the cartons are not removed from the table as quickly as they are fed to it.

These and other objects and novel features of the present invention will be more clearly and fully set forth in the following specification and claims.

In the drawings forming a part of the specification:

Figure 1 is a side elevational view of the apparatus showing the general arrangement of parts.

Figure 2 is a top plan view of the apparatus with the egg carton receiving table omitted.

Figure 3 is a perspective view of the entrance end of the apparatus showing the end of the conveyor onto which the cartons are placed prior to the closing and sealing operation.

Figure 4 is a perspective view of the glue applying mechanism.

Figure 5 is a cross-sectional view through a portion of the gluing apparatus shown in Figure 4.

Figure 6 is a cross sectional view through the gluing mechanism shown in Figures 4 and 5.

Figure 7 is a perspective view of the apparatus for closing the cover section of the carton.

Figure 8 is a perspective view of the carton coding or dating apparatus.

Figure 9 is a cross-sectional view through the pressure plate showing the apparatus for applying sealing pressure to the cartons.

Figure 10 is a top plan view of the egg carton receiving table at the outlet end of the apparatus.

Figure 11 is an elevation view of the carton receiving table disclosed in Figure 10.

Figure 12 is a perspective view of the type of carton used in conjunction with the closing and sealing apparatus.

The carton closing and sealing apparatus is indicated in general by the letter A. The apparatus includes an elongated channel **10** which is supported at opposite ends by pairs of legs indicated at **11** and **12**. A pair of brackets **13** are secured to the leg section **11** to project outwardly therefrom. These brackets **13** support bearings **14** which support a pulley shaft **15**. A conveyor pulley **16** is supported on the shaft **15** between the spaced sides **17** and **19** of the channel **10**. The base of the channel is cut away as indicated at **20** between the extremities of the sides **17** and **19** to permit the pulley **16** to extend between these sides.

A sprocket **21** is mounted upon the shaft **15** for rotation therewith. A motor **22** is mounted upon the leg unit **11** by means of a suitable supporting bracket **23**. A motor sprocket **24** is connected by a chain **25** to the sprocket **21**, thus rotation of the motor **22** acts through the sprockets and the chain **25** to drive the conveyor pulley **16**.

A table **26** is provided at the inlet end of the apparatus extending rearwardly from the leg unit **12**. A vertically extending flange **27** is supported in parallel spaced relation to the leg unit **12** by suitable braces **29**. A bearing supporting plate **30** is slidably supported on the braces **29** and is connected to the flange **27** by an adjustment bolt **31**. By proper manipulation of the adjustment bolt **31**, the bearing supporting plate **30** may be moved toward or away from the leg unit **12**.

Spaced bearings **32** are mounted upon the bearing supporting plate **30**, these bearings acting to support a transverse shaft **33**. An idle conveyor pulley **34** is mounted upon the shaft **33**. A conveyor belt **35** is supported by the spaced conveyor pulleys **16** and **34**. The upper portion of the conveyor belt travels over the base **36** of the channel **10**. The conveyor belt **35** is provided with a roughened upper surface **37** which assists in obviating slippage between the cartons and the conveyor belt.

The feed table **26** at the inlet end of the conveyor supports a pair of right angular guides **39** and **40** which converge together at the outlet end thereof and which tend to guide the center section of the three section egg carton onto the channel **10**. The ends of the guide wings **39** and **40** are substantially aligned with the sides **17** and **19** of the channel **10** so that the carton is properly aligned. The egg cartons are usually filled with eggs prior to introduction onto the feed table **26**, the eggs being placed into the cells of the intermediate section.

In Figure 3 of the drawings, the entrance end of the conveyor is illustrated. Diagonally extending braces **41** are illustrated connecting the leg unit **12** to the channel **10** to strengthen the structure. A guide rod **42** extends

from the forward side of the table 26 which engages the undersurface of the top cellular section 43 of the carton B and tends to guide this top section 43 into proper relation with the folding horn 44. The folding horn 44 is attached to the side 17 of the channel 10 and acts to pivot the carton section 43 upwardly along the hinge line 45 which connects the top cellular section 43 with the intermediate or lower cellular section 46. As indicated in Figure 12, the carton B also includes a cover section 47 which is hingedly connected to the intermediate section 46 along a fold line 49.

The folding horn 44 acts to invert the top cellular section 43 and to guide it into opposed superimposed relation with the intermediate or bottom cellular section 46. This action takes place during movement of the conveyor belt 35. Figure 4 shows at the extreme right, one carton B having its cellular section 43 in partially folded condition and shows an adjacent carton B in which the top cellular section has been almost completely folded. During this time the cover section 47 remains unfolded as also indicated in Figure 4.

The cartons B are next subjected to a final closing and gluing operation. This operation is accomplished by the gluing mechanism indicated in general by the numeral 50. As best indicated in Figures 1 and 6 of the drawings, a bracket 51 extends upwardly from the side rail 17 of the channel 10 and is secured thereto by bolts 52 or other suitable means. A pressure plate 53 having an upwardly flared entrance end 54 is provided with a vertical flange 55 along one edge thereof which is pivotally attached to the bracket 51 by a pivot bolt 56. The pressure plate 53 is also provided with a downwardly projecting flange 57 along one edge thereof which is located closely adjacent the side rail 17 of the channel 10, but which is not attached thereto. A spring 59 is connected at one end 60 to the flange 57 and at its other end 61 to a laterally projecting lug or bracket 62 on the channel side rail 17. This spring 59 assists gravity in holding the free end 63 of the pressure plate 53 in lowered position and causes the pressure plate to be resiliently urged against the upper surface of the carton section 43. The flange 57 forms a shoulder at 64 which abuts against a shoulder 65 formed by an edge of the bracket 51 to limit the pivotal movement of the pressure plate in a downward direction.

A glue pot supporting platform 66 is provided with a downwardly projecting flange 67 which is arranged in overlapping surface contact with the flange 57. Bolts 68 secure the flanges 57 and 67 together to suspend the platform 66 above the pressure plate 53. The platform 66 is provided with an upwardly turned lug or projection 69 at one end for a purpose which will be presently described.

As indicated in Figure 5 of the drawings, the platform 66 is provided with a pair of spaced parallel strips or flanges 70 and 71 extending upwardly therefrom. A pair of spaced bolts 72 extend through threaded apertures 73 in the strip 70 and bear against a movable guide 74 slidable over the surface of the platform 66. A second pair of bolts or cap screws 75 extend through clearance holes 76 in the strip 70 and engage against the outer surface of the strip 74. By loosening the bolts 72 and tightening the bolts 75, the strip 74 may be moved toward the strip 70. By loosening the bolts 75 and tightening the bolts 72, the strip 74 may be moved away from the strip 70. The strip 71 is similarly provided with a pair of bolts 77 which extend through threaded apertures 79 in the strip 71 and abut against the outer surface of a movable guide 80 slidable on the surface of the platform 66. A second pair of bolts 81 extend through clearance holes 82 in the strip 71 and are threaded into the strip 80. By loosening one pair of bolts and tightening the other pair, the strip 80 may be adjusted in position on the platform 66.

The glue pot 83 is slidably supported on the platform 66 between the guides 74 and 80 and its position is adjusted by these guides. The glue pot 83 includes a bottom wall 84, spaced parallel side walls 85 and 86, and a rear wall 87. The front end of the glue pot is open, this end thereof being normally closed by a glue roller 89. The glue from the glue pot thus is in contact with the roller 89 and is carried by this roller onto the upper surface of the inner top cellular section.

A bolt 90 is threaded through an aperture 91 in the upturned flange 69 of the platform 66 and a spring 92 is interposed between the head of the bolt and the flange 69. A wing nut 93 is provided on the end of the bolt by means of which the movement of the bolt may be limited. The bolt acts to bear against the closed end 87 of the glue pot 93 and to hold this glue pot in close contact with the roller 89. The spring 92 holds the bolt against the glue pot within the operable limit of movement of the bolt which is adjusted by the wing nut 93. Thus the glue pot may retract somewhat if necessary, but is normally resiliently held against the glue roller.

A bracket 94 is fastened to the flanges 57 and 67 by the bolts 68. This bracket 94 extends upwardly and acts to support a pair of spaced axially aligned rings 95 and 96. The rings 95 and 96 support a receptacle 97 similar to a fruit jar in shape. The jar 97 is provided with a detachable closure 99 at its lower end which is fitted with an elongated tubular outlet 100. This outlet 100 extends down into the glue pot 83 to a point close to the bottom 84 thereof. This receptacle 94 acts to maintain a proper level of glue in the glue pot. When the level of glue is above the level of the lower end of the outlet tube 100, further draining of the glue is prevented. However, as soon as a part of the lower end of the outlet tube 100 is uncovered, air may enter the tube 100 and displace some of the glue contained.

As indicated in Figures 1, 2, and 4 of the drawings, a bracket 101 is bolted or otherwise secured to the side 17 of the channel 10. This bracket 101 extends upwardly to a point above the level of the cartons B and is bent at 102 to include a laterally extending portion 103 which in turn is bent at 104 to provide a downwardly extending extremity 105. An elongated rod 106 having an upturned inlet end 107 is supported by the down-turned end 105 of the bracket 101. This bar 106 acts to apply pressure upon the upper cellular section 43 of the egg cases B after the glue has been applied. The various cells accommodating the eggs present spaced upwardly directing projections 109 upon which the glue is spread as shown in Figure 4. The rod 106 engages the portion of the egg carton between the projections 109 so as to maintain the upper cellular section in egg enclosing condition while the cover section 47 of the cartons B are closed.

Figure 7 of the drawings illustrates a folding horn 110 which engages the cover section 47 of the egg case B and hinges it into closed position. The folding horn 110 is properly shaped to engage the cover and fold it along its hinge line 49. In Figure 7 an egg case is shown with its cover substantially closed and in the position assumed before entering the pressure applying section of the closing mechanism.

Figures 1, 2, 7, 8 and 9 all show portions of the sealing pressure action of the closing device. As shown in Figure 1, the leg unit 11 extends upwardly beyond the channel 10 and is held in proper relation to the channel 10 by braces 111. A pair of bearings 112 are supported by the leg unit 11 above the level of the channel 10, these bearings being aligned to support a transverse shaft 113. The shaft 113 supports a gear 114 which is in mesh with a cooperable gear 115 on the shaft 15. Thus when the motor 22 acts through the chain 25 to rotate the shaft 15, the gear 115 will drive the gear 114 and the shaft 113 upon which it is mounted.

A pulley 116 is mounted upon the shaft 113. A pair of uprights 117 are supported on opposite sides of the channel 10 and support bearings 119. The bearings 119 are aligned to support a transverse shaft 120. A pulley 121 is mounted upon the shaft 120 for rotation therewith. A conveyor belt 122 is supported between the pulleys 116 and 121. This conveyor belt is driven by the driven shaft 113 and acts to drive the pulley shaft 120 in unison therewith.

As indicated in Figures 1, 2, 4, and 7 of the drawings, a pulley 123 is mounted upon the shaft 120 and accommodates a drive belt 124. The drive belt 124 connects the pulley 123 with a cooperable pulley 125 mounted upon the shaft 126 of the glue roller 89. The shaft 126 is supported by the strips or flanges 70 and 71 on the platform 66. Thus the motor 22 also drives the glue wheel 89 continuously when the motor is in operation.

With reference now to Figure 9 of the drawings, it will be seen that the channel 10 is secured to an upright panel

127 by bolts 129 or other suitable means. The panel 127 supports a transverse panel 130 having a down-turned flange 131 which terminates in a rearwardly turned marginal edge 132 parallel to the panel 130. A bar 133 is secured to the panel 127 in opposed relation to the flanged edge 132. A bearing panel 134 is supported above the flanged edge 132 and the bar 133 and is held in place thereby. A compressible material such as sponge rubber forms a pad 135 filling the space between the pressure plate 134 and the panel 130. The lower portion of the belt 122 extends beneath the pressure plate 134.

As previously described the upper portion of the conveyor belt 37 travels over the channel 10 while the lower portion of the conveyor belt 122 slides beneath the pressure plate 134. As the egg cartons B travel along the conveyor 35, they extend between the belts 35 and 122 which travel at the same rate of speed. If the egg cartons are slightly oversize, the compressible bar 135 may compress sufficiently to apply pressure to the upper surface of the carton without placing undue compressive force against the carton. The cover section 47 of each successive carton is thus held in closed position between the belts 35 and 122 until the adhesive on the upper ends of the projections 109 has set. Thus the cover sections are adhered to the upper cellular sections of the cartons.

In order that each carton may be coded or dated as it is sealed, the apparatus best illustrated in Figures 7 and 8 of the drawings is employed. A bracket arm 136 extends laterally from the channel 10. A second arm 137 is pivotally connected to the bracket arm 136 by the pivot bolt 139. A vertical pivot 140 is provided on the arm 137. This vertical pivot supports ink rollers 141 which may have a surface of felt or similar material capable of becoming impregnated with ink. A second pivot bolt 142 is supported by the arm 136 near the free end of this arm. The pivot 142 pivotally supports a knurled roller 143 and a printing roller 144. The printing roller 144 is notched as indicated at 145 to support letters or numerals 146 which project slightly beyond the periphery of the rollers 143 and 144 and which act to print suitable indicia on the outer surface of the cover section 47 of the carton B as each carton moves past the printing mechanism. A spring 147 connects the arm 136 with the pivoted arm 137, one end of the spring 147 being secured at 149 to the arm 137 and the other end being connected to the anchor bolt or pin 148 on the fixed arm 136.

The ink rollers 141 apply ink to the letters or numerals 146 as the rollers 143 and 144 rotate and these letters in turn transfer the ink to the surface of the cover section 47 of the carton B. The knurled roller 144 engages the surface of the carton with sufficient friction to cause movement of the carton to rotate the rollers 143 and 144 as long as these rollers are not held from rotation.

A locking means is provided to hold the rollers 143 and 144 from rotation when no egg carton B is adjacent the printing mechanism and to properly locate the marking on the carton. The locking mechanism is illustrated in general by the numeral 150. It includes a pivot portion 151 which is supported in a bearing 152 formed by a strip 153 secured to the top panel 130 of the pressure applying section of the apparatus. One end of the pivot portion 151 is connected to an arm 154 which extends laterally relative to the direction of movement of the conveyors and this laterally extending portion 154 is bent at 155 to form a downwardly projecting end 156 which overlies the roller 144. An aperture 157 is provided in the roller 144 into which the downwardly extending end 156 of the lock 150 may engage in one rotative position of the roller 144.

The pivot portion 151 of the lock is connected at its upper end to a laterally extending arm 159 which supports a downwardly extending portion 160 depending downwardly alongside of cartons B travelling along the channel 10. An inwardly bent hook shaped element 161 is provided at the lower end of the lock portion 160. This hook shaped end 161 is designed to bear against the side walls of the cartons B as indicated in Figure 8 of the drawings. When no carton is properly located to engage the hook shaped member 161, this element swings downwardly into the path of movement of the cartons.

A flat spring 162 is secured to the panel 130 by a bolt 163 and bears against the lock portion 159. This spring 162 assists gravity in holding the lock 150 in position to be engaged by cartons B. As each carton moves along the channel 10, it engages the hook shaped element 161 and swings this element outwardly out of the path of movement of the carton. This action tends to pivot the locking member sufficiently to raise the lower extremity of the lock portion 156 out of the hole or recess 157 in the roller 144. The hole 157 is sufficiently large to permit some angularity of the lock. With the locking member 150 thus disengaged from the hole 157 frictional engagement between the roller 143 and the carton causes the roller to rotate until the lock 150 again engages in the hole 157. The roller 143 is properly proportioned so that each carton disengages the hook portion 160 before the aperture 157 registers with the lower end of the locked portion 156. Further rotation of the roller 143 by the carton thereupon brings the aperture 157 into registry with the lower end of the lock arm 156 which is resting upon the upper surface of the roller 144. The arm 156 drops into the aperture 157 slightly before the carton B completely passes the rollers holding the rollers 143 and 144 from further rotation until another carton B engages the element 161. During rotation of the rollers the ink is transferred from the letters or numerals 146 to the surface of the carton.

Figures 10 and 11 of the drawings disclose a rotary table at the outlet end of the channel 10 onto which the egg cartons are fed by the conveyor belt 35. The receiving table is indicated in general by the numeral 164 and is circular in form. The receiving mechanism includes the circular table top 165 which is rotatably supported by a rotary vertical shaft 166 supported in a suitable standard 167 having a socketed upper end. The standard 167 is preferably held in proper spaced relation to the leg unit 11 by suitable braces 169. A pulley 170 is provided on the drive shaft 15 and a cooperable pulley 171 is provided on the vertical shaft 166. A belt 172 connects the pulleys 170 and 171 to rotatably connect the shafts even though they are arranged on axes at right angles to one another. A guide pulley 173 mounted upon the bracket 13 of the leg unit 11 helps change the direction of the pulley and guides the belt in its movement.

The table top 165 is provided with four angularly spaced brackets 174. These brackets 174 are provided with an anchor end 175 which is bolted or otherwise secured to the table top. These arms 174 are provided with off-sets 176 so that the arm extremities 177 may extend parallel to the table top but spaced upwardly therefrom. The arm ends 177 act to support concentric guide rings 179 which are coaxial with the table top 175.

The guide rings 179 are spaced from the top of the table 165 a distance just sufficient to permit the cartons B to pass beneath the same. The cartons are forced through an inverted U-shaped guide 180 at the outlet end of the channel 10 by the conveyor 35. This inverted channel shaped guide 180 overlies the marginal portion of the table top 165 and guides the forward ends of the egg cartons beneath the rings 179. As the cartons slide onto the table top 165, the movement of the table top tends to swing the rear ends of the cartons beneath the rings 179 so that the cartons are carried in a substantially circular path and travel longitudinally about the circle. The table rotates in a clockwise direction as viewed in Figure 10. When the forward end of each carton reaches substantially the position of the carton B in Figure 10, rotation of the table causes the rear end of the carton to engage against the guide 180 so that the cartons assume a position generally tangent to the intermediate ring of the series.

The rings 179 serve the double purpose of holding the covers in closed position in the event the adhesive has not completely set and forming a support upon which the cartons may accumulate. When the space on the table between the outer pair of rings 179 is filled with cartons, additional cartons fed onto the table will push the previously delivered cartons inwardly toward the center of the table. The cartons may be removed from within the rings 179 when they have been forced this far by additional cartons. The table travels at a relatively slow rate of speed so that the cartons may be removed from between the arms 174 without difficulty.

The operation of my device is believed clearly obvious from the foregoing description. The egg cartons are filled by depositing the eggs in the center section 46 of the three section carton B. The filled cartons are then guided over the feed table 26 so that the intermediate section 46 is between the guides 39 and 40 and the in-

termediate section of the carton is resting upon the conveyor belt **35**. The cartons are then conveyed along the belt and the top cellular section **43** is folded upwardly and into superimposed position upon the intermediate section **46** by the folding horn **44**.

When the two cellular sections are in position one above the other, they pass beneath the pressure plate **53** which completes the closing operation. Glue is then spread upon the upward projections **109** of the top cellular section **43** by the glue wheel **89**. Further travel of the conveyor belt acts to fold the cover section **47** of each carton over the top cellular section thereof. This is accomplished by the folding horn **110**. Until the cover section **47** is folded into place the two cellular sections are held together by the pressure bar **106**. After the cover section **47** is substantially closed the carton passes beneath the pressure conveyor **122** which is urged resiliently against the top of the carton by a compressible bar **135** of sponge rubber or similar material.

As the cartons are conveyed through the pressure section of the apparatus the cartons are dated as described in detail. The dating mechanism operates in cycles and completes one revolution each time a carton moves past the same. When no carton is present the marking mechanism is locked from rotation by suitable locking means.

The filled and sealed cartons are fed onto a receiving table which acts to hold the covers in closed position until the cartons are removed from the table and packed in suitable packing cases. The table structure acts to move the cartons in a substantially spiral path toward the center of the circular table and the cartons are removable from the center of the table.

In accordance with the patent statutes, the principles of construction and operation of the carton closing apparatus have been described, and while it has been endeavored to set forth the best embodiment thereof, it is desired to have it understood that obvious changes may be made within the scope of the following claims without departing from the spirit of the present invention.

I claim:

1. A carton closing apparatus including a conveyor, a bracket projecting upwardly along one side of said conveyor, an elongated presser plate overlying said conveyor and hingedly secured adjacent one end to said bracket, a transverse horizontal pivot connecting said bracket and plate, the other end of said plate being movable toward and away from said conveyor, and a gluing apparatus secured to said plate and pivotal in unison therewith.

2. The structure defined in claim 1 and in which the gluing apparatus includes a glue roller longitudinally spaced from said other end of said plate with respect to the direction of travel of said conveyor.

3. The structure defined in claim 1 and in which said gluing apparatus includes a reservoir, a roller in communication with said reservoir, and means rotatably supporting said roller in longitudinally spaced relation to said other end of said plate with rsspect to the direction of travel of said conveyor.

4. A carton closing apparatus including a conveyor, folding horns supported adjacent said conveyor to engage foldable portions of the cartons conveyed thereby, a gluing device supported adjacent to said conveyor to apply glue to the cartons, and a pressure applying device supported adjacent to said conveyor, said pressure applying device including a pair of parallel pulleys supported above said conveyor, a second conveyor supported by said pulleys in spaced relation above said first conveyor, a pressure plate beneath which said conveyor may move, and a pad of resilient material for urging said pressure plate downwardly.

5. A carton sealing mechanism for cartons having foldable parts, including a conveyor, carton folding means supported adjacent to said conveyor to engage the foldable parts of cartons, and carton marking means to mark the folded cartons, the marking means including a wheel supported adjacent to said conveyor in the normal path of movement of the cartons to frictionally engage cartons thereon, means pivotally supporting said wheel, a marking member associated with said wheel and operable therewith, and locking means associated with said wheel for locking said wheel from rotation in the absence of an approaching carton on said conveyor.

6. The structure defined in claim 5 and in which the locking means includes a pivotally supported arm having a wheel engaging end and a trigger end, means supporting said arm with the trigger end thereof normally in the path of movement of cartons on said conveyor and the wheel engaging end engaged with said wheel, pivotal movement of the trigger end of said arm by a carton on said conveyor disengaging said wheel engaging end from said wheel.

7. A carton sealing apparatus for sealing cartons having foldable parts, the apparatus including a conveyor, folding horns supported adjacent to said conveyor for folding the foldable carton parts, a table positioned adjacent the end of said conveyor for receiving closed cartons, means rotatably supporting said table for rotation about a vertical axis, and concentric guide rings suspended in fixed relation above said table for holding the foldable carton parts in folded condition.

8. A carton closing apparatus including a conveyor, folding horns supported adjacent to said conveyor to engage foldable portions of the cartons conveyed thereby, a gluing device supported adjacent to said conveyor to apply glue to the cartons and a pressure applying device supported adjacent to the conveyor, said pressure applying device including a pair of pulleys supported above said conveyor, a second conveyor supported by the pulleys in spaced relation above said first conveyor, an inverted channel supported above the lower portion of the upper conveyor, a pressure applying plate within said channel above the lower portion of the upper conveyor, means on said channel retaining said pressure plate engaged therein, and a pad of resilient material between said pressure plate and the base of said inverted channel.

9. A carton closing apparatus including a conveyor, an elongated pressure plate overlying said conveyor, frame means supporting said pressure plate, a transverse horizontal pivot connecting said plate and said frame near one end of said plate, the other end of the plate being movable toward and away from said conveyor, and a gluing apparatus secured to said plate and pivotal in unison therewith.

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