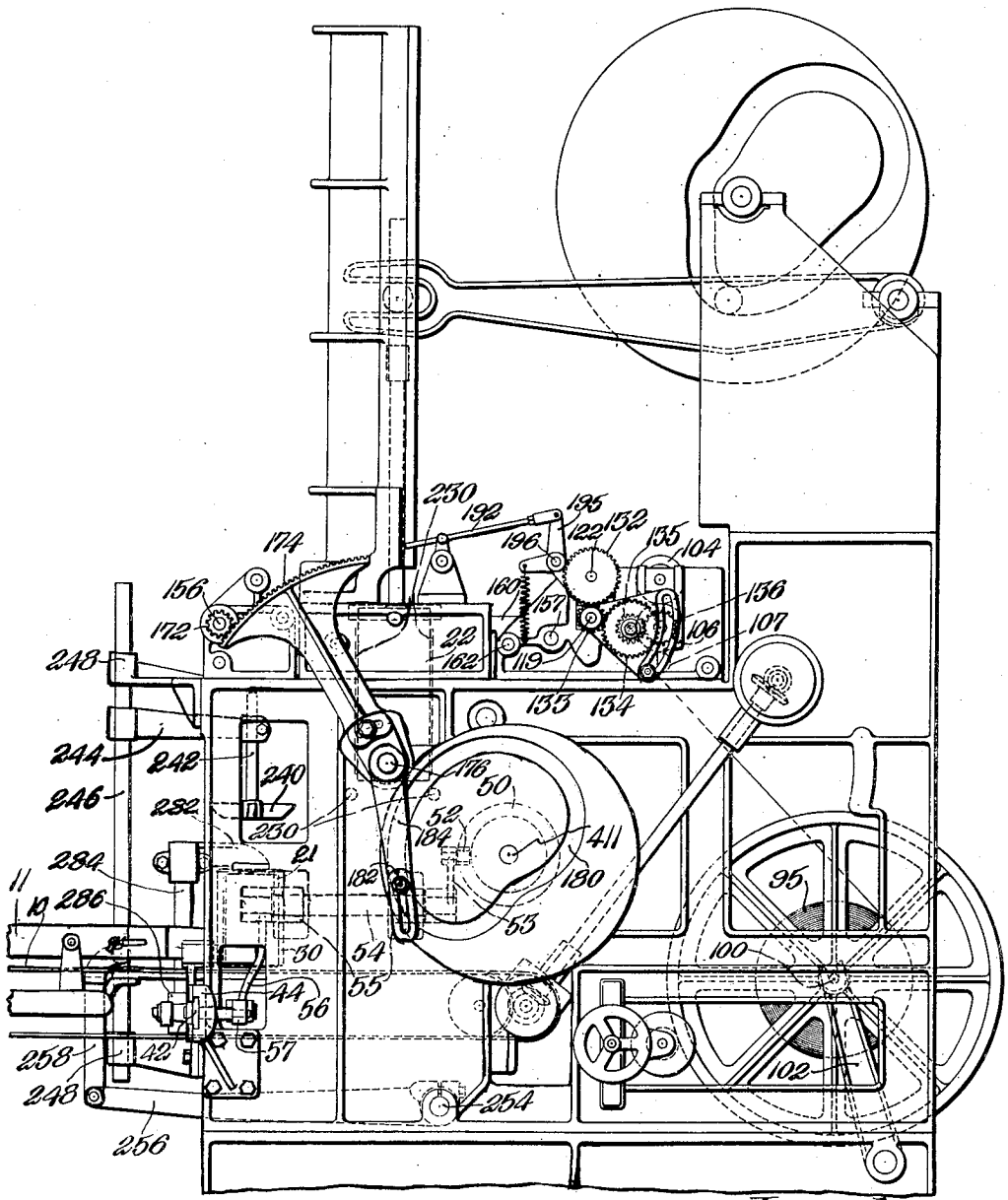
June 23, 1925. 1,543,374

A. C. EVERETT

PACKAGING MACHINE

Filed March 26, 1924 10 Sheets-Sheet 1

Fig. 1.



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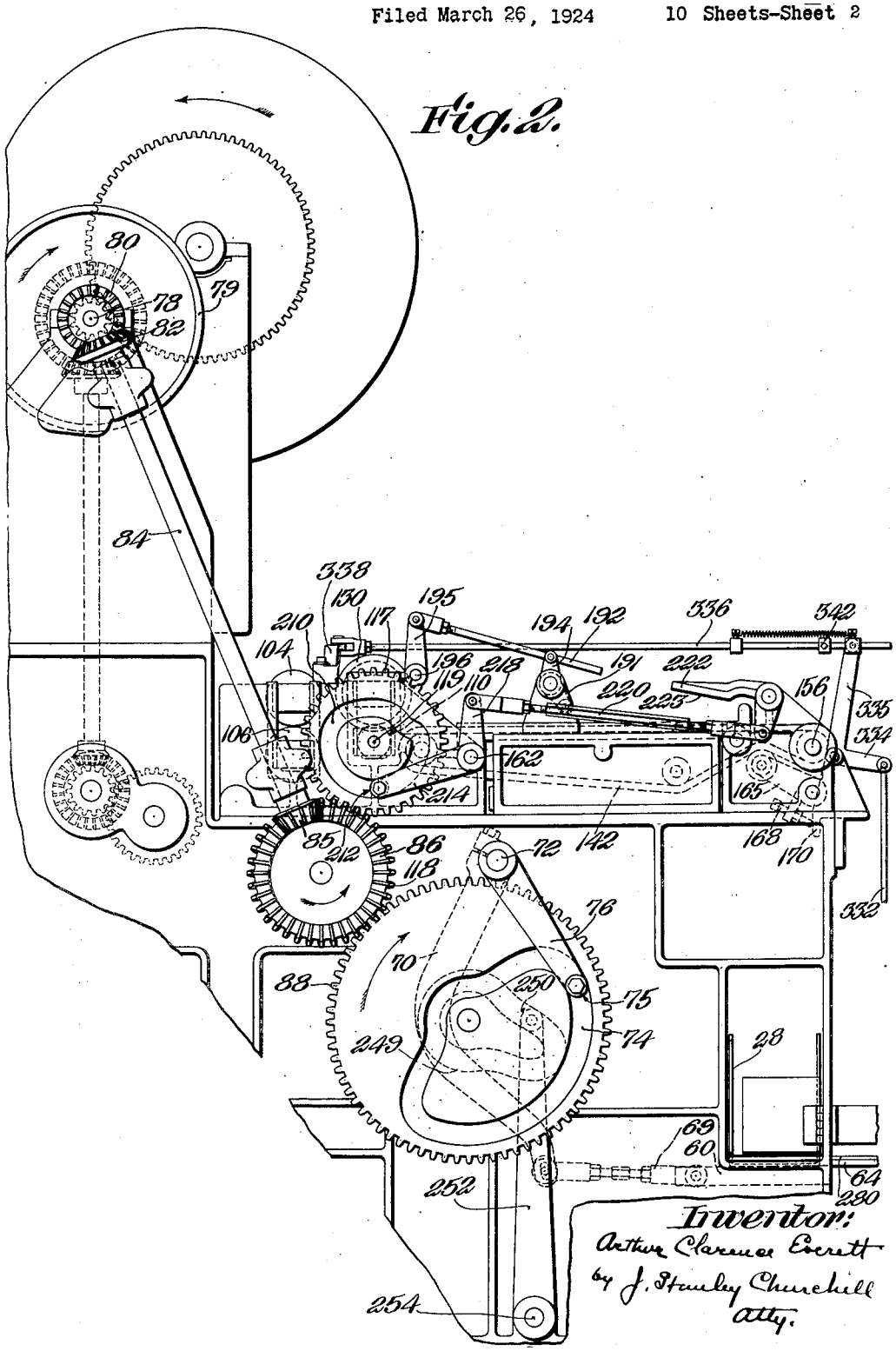
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PACKAGING MACHINE

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Fig. 2.



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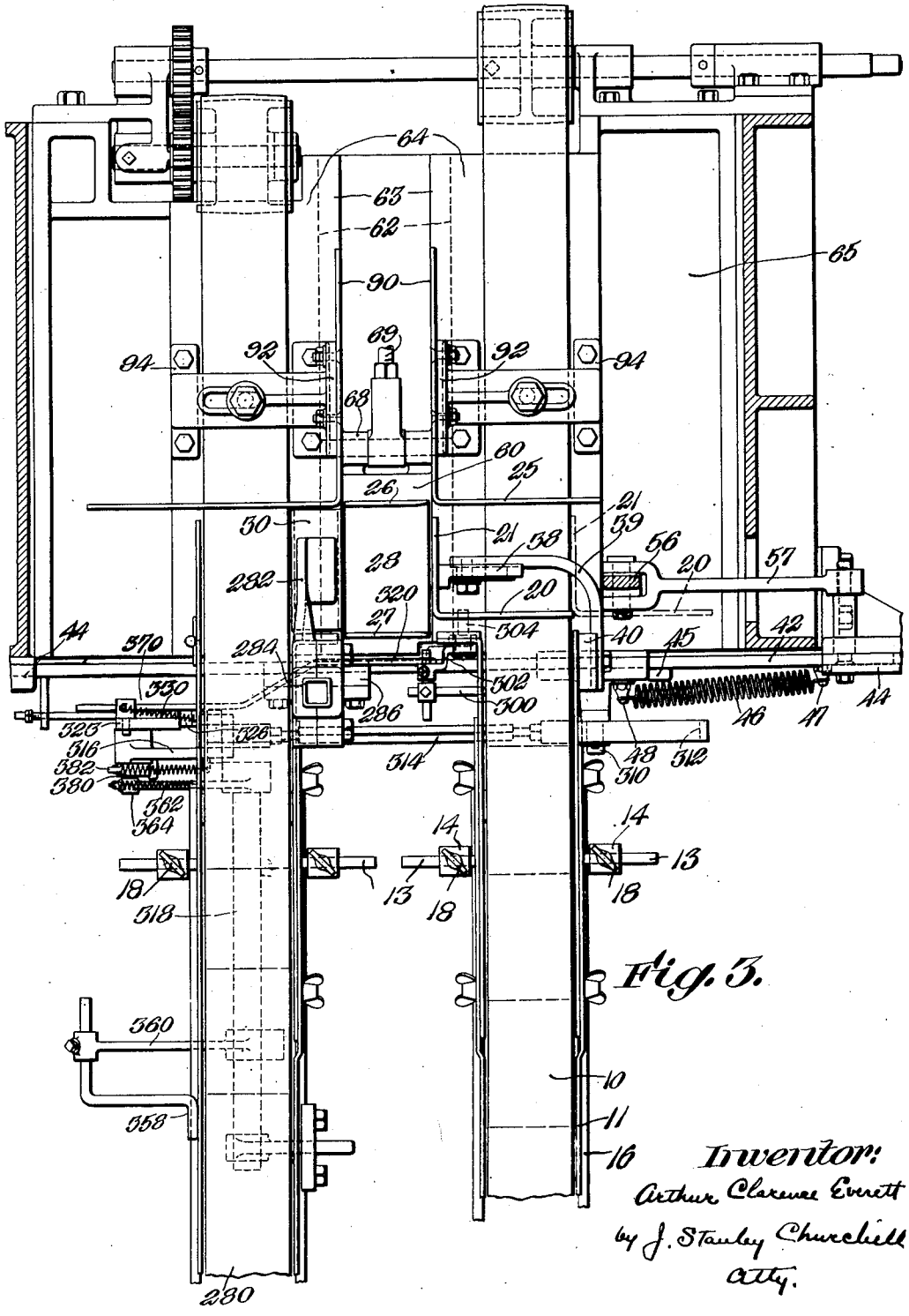


Fig. 3.

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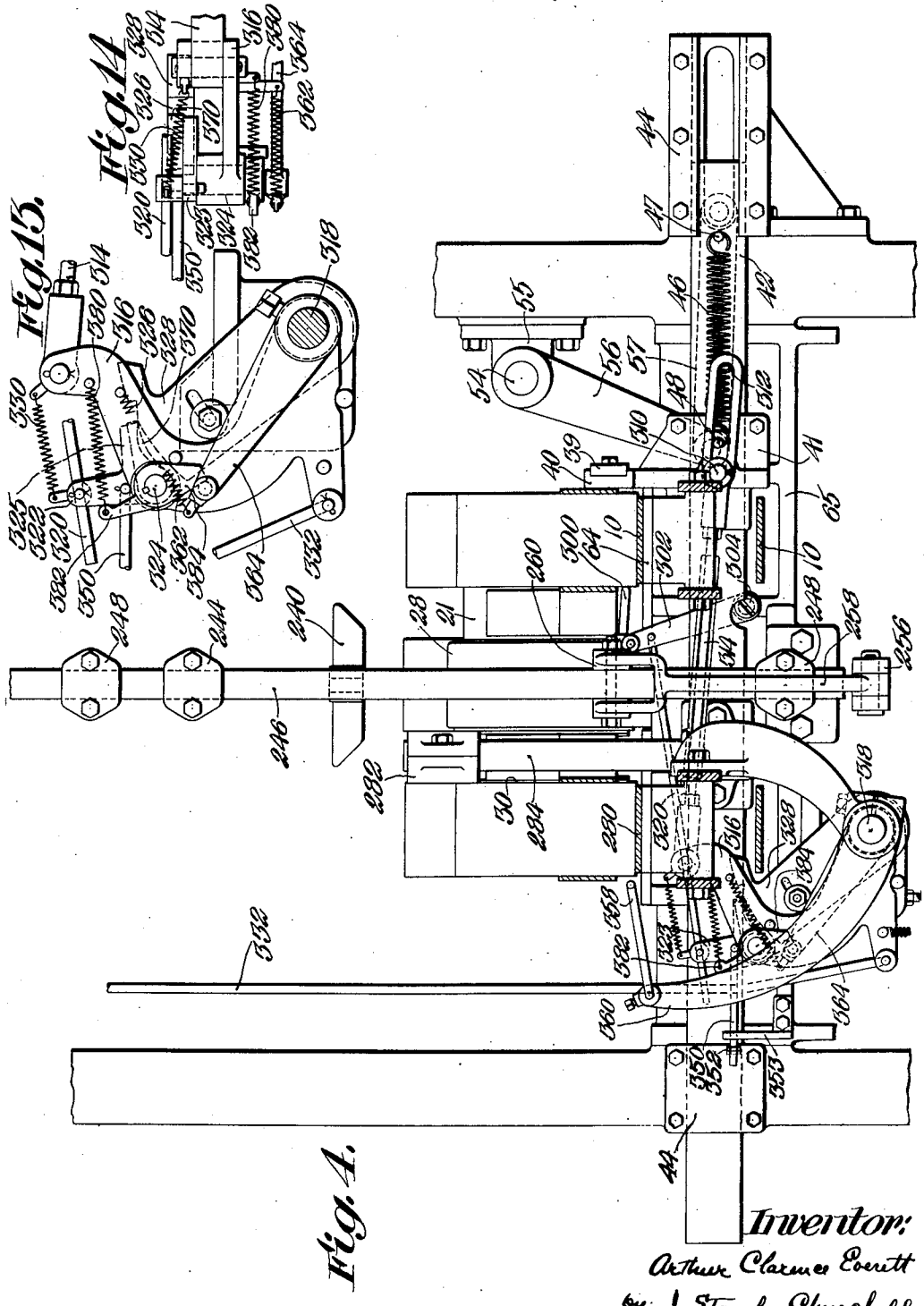


Fig. 4.

Fig. 14.

Fig. 15.

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PACKAGING MACHINE

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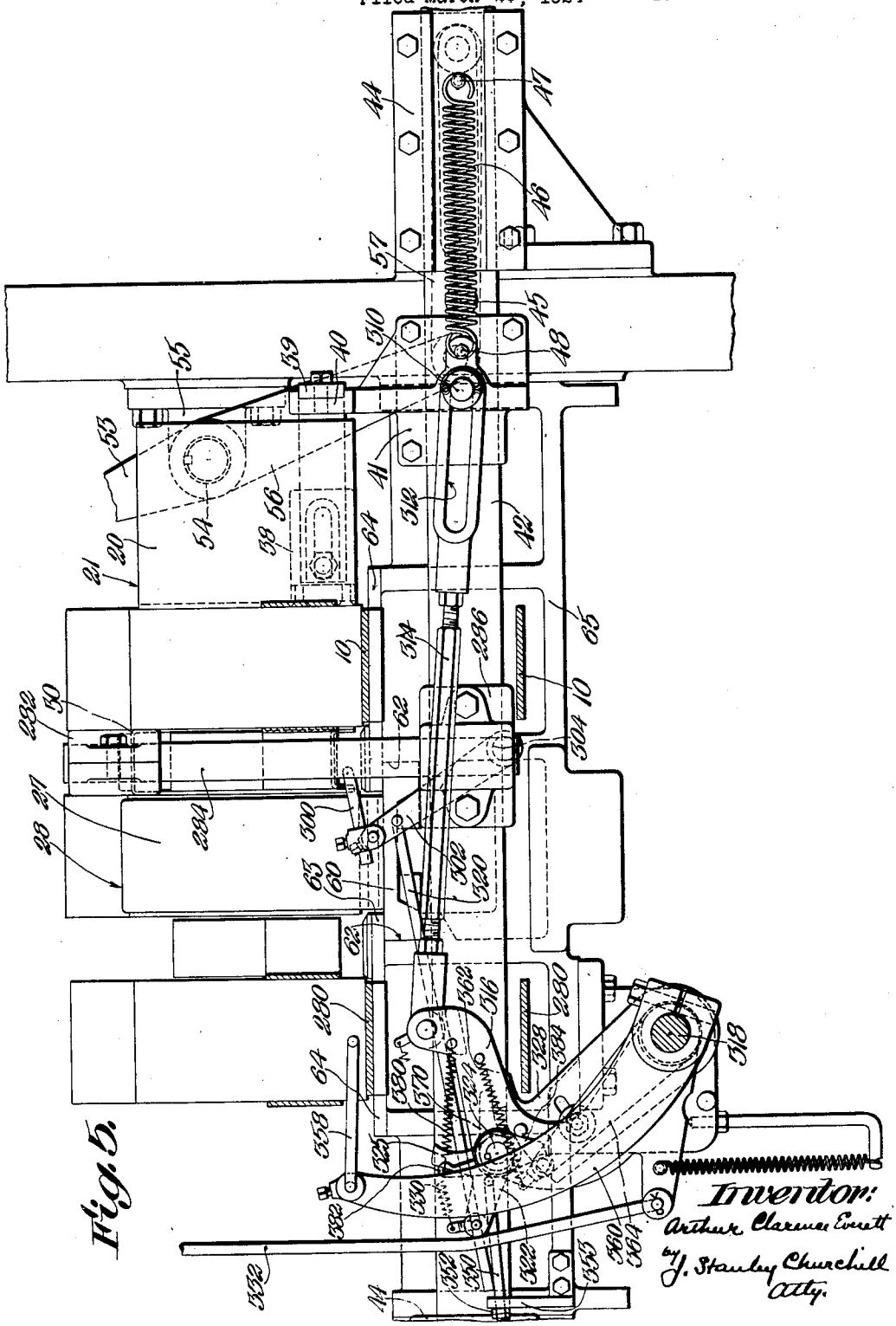


Fig. 5.

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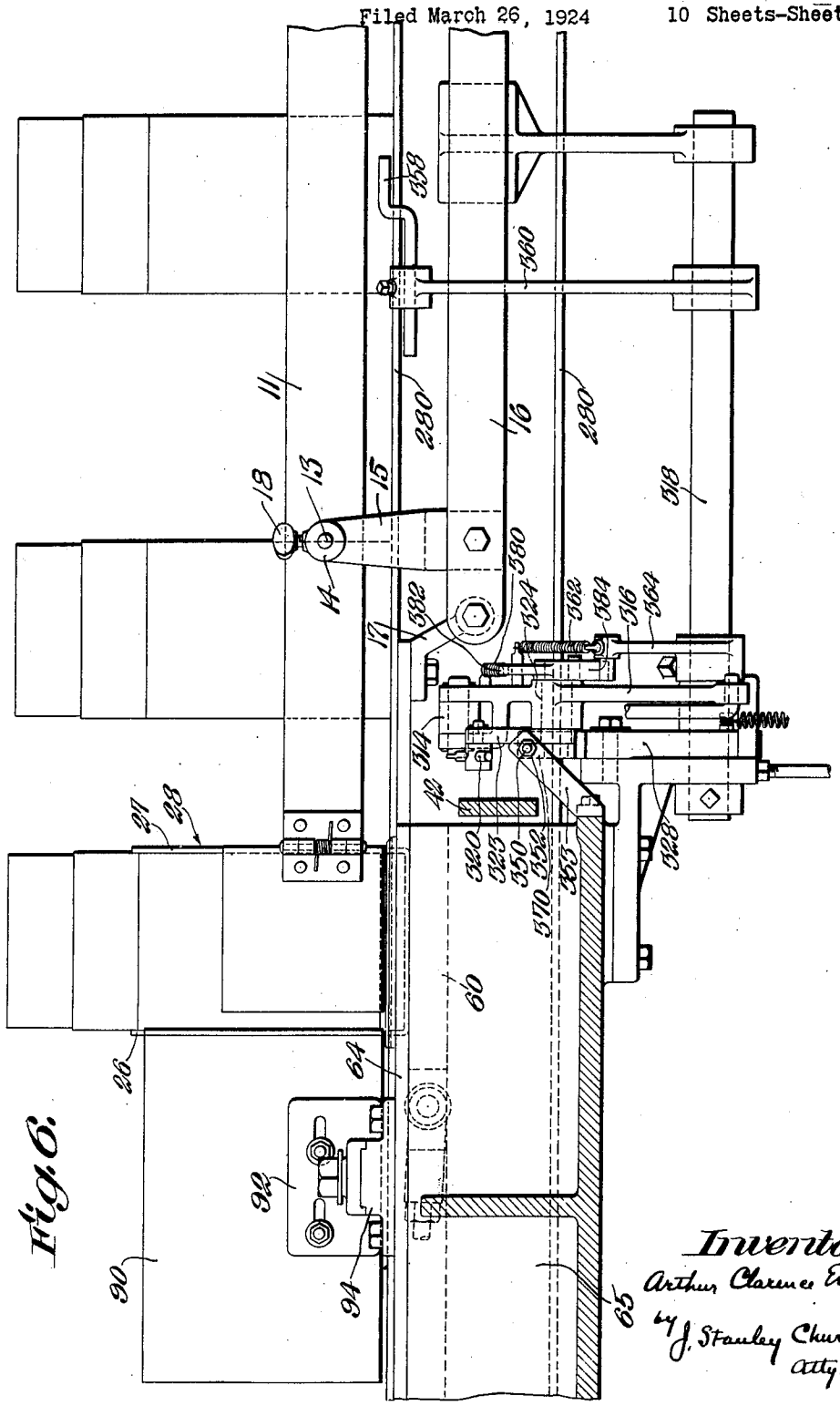


Fig. 6.

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Fig. 7.

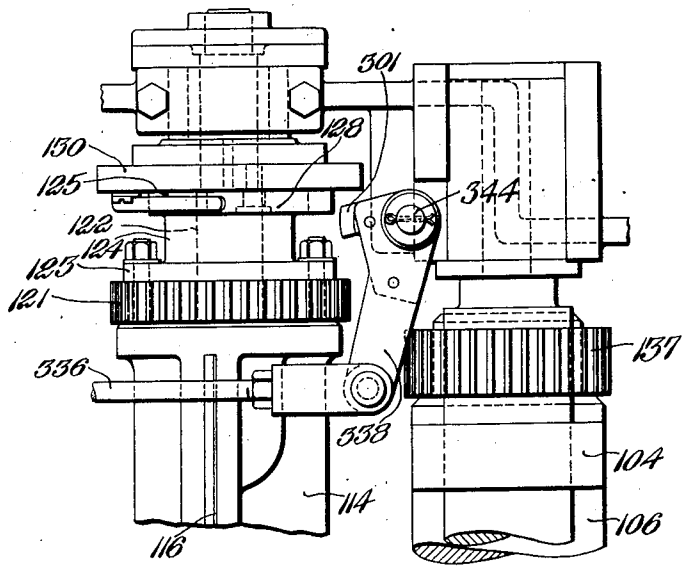
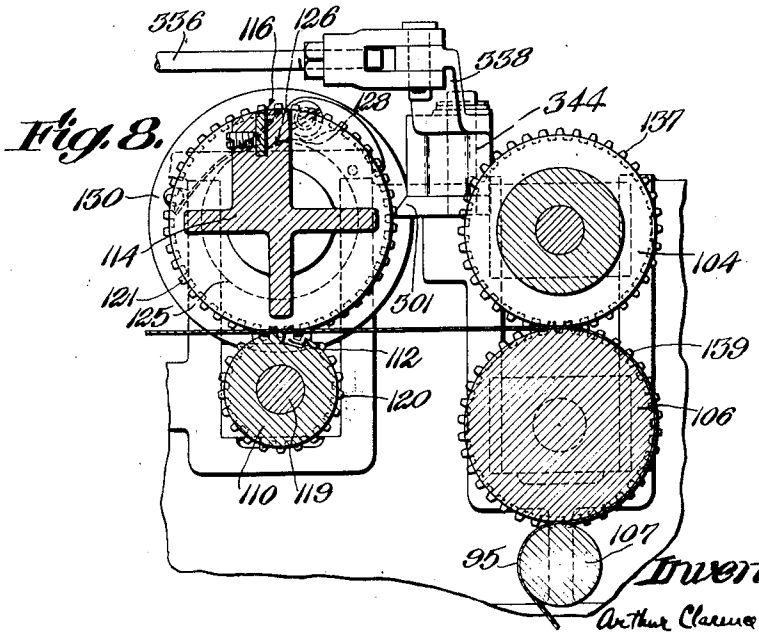


Fig. 8.



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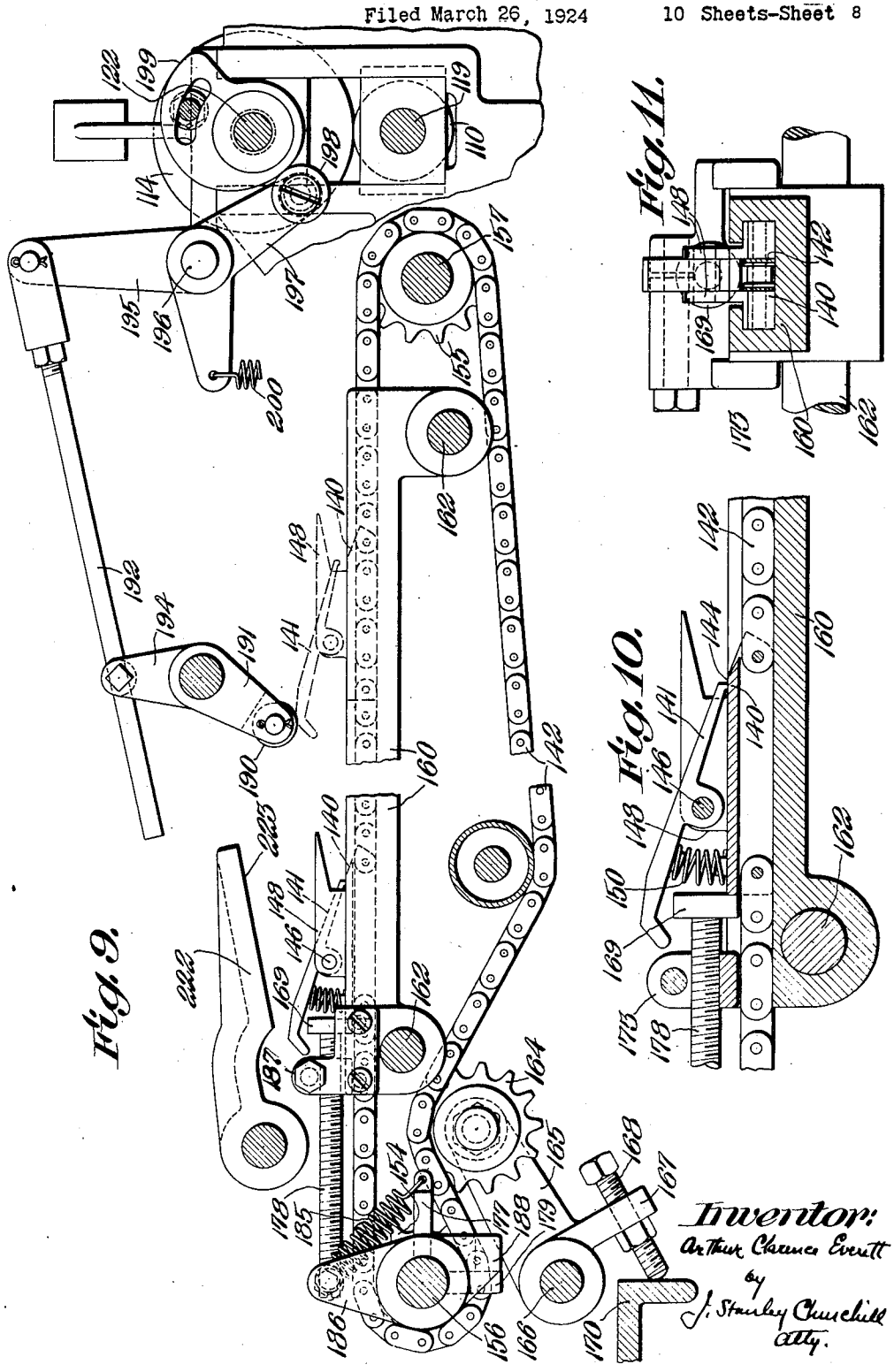


Fig. 9.

Fig. 11.

Fig. 10.

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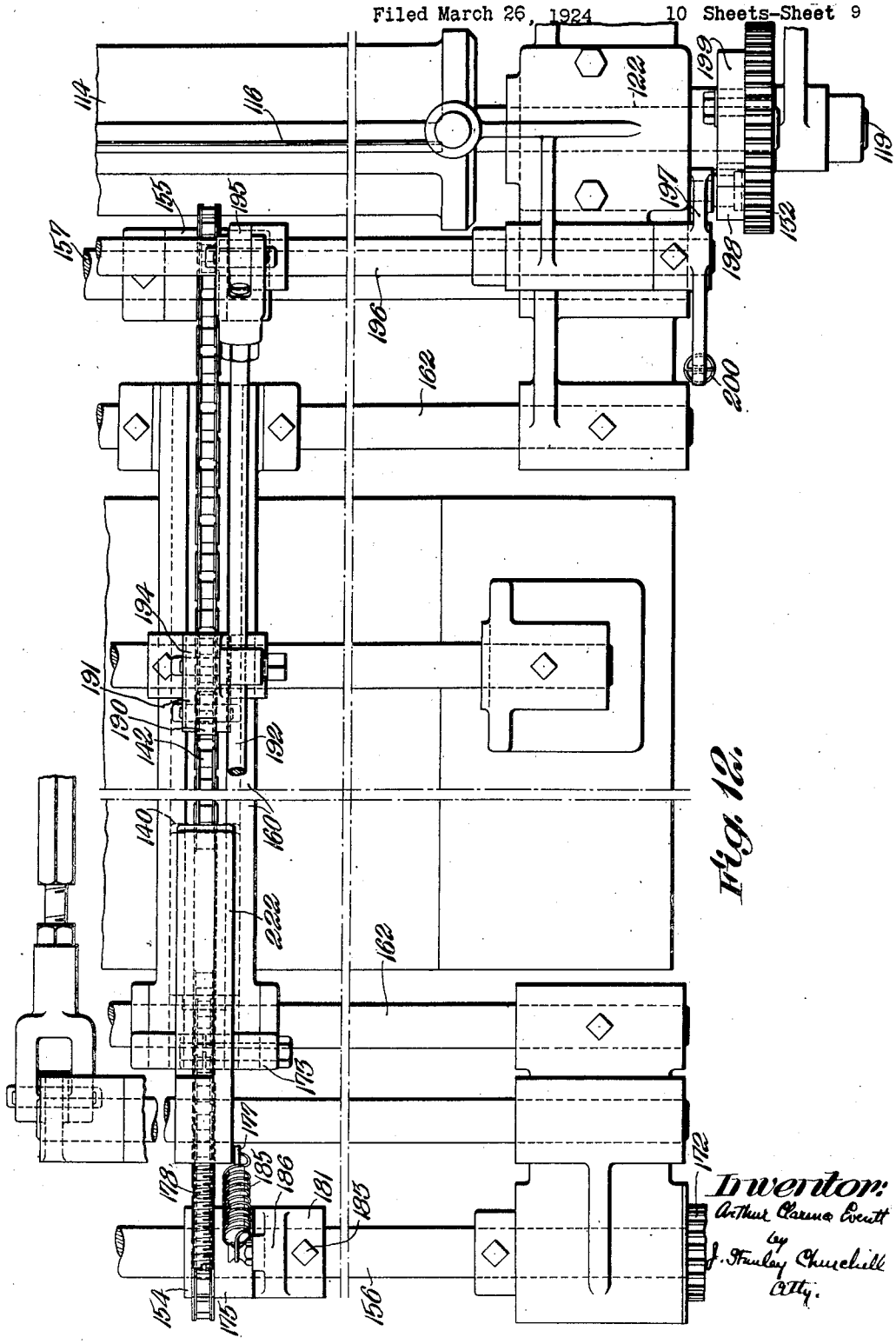


Fig. 12.

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PACKAGING MACHINE

Filed March 26, 1924 10 Sheets-Sheet 10

Fig. 15.

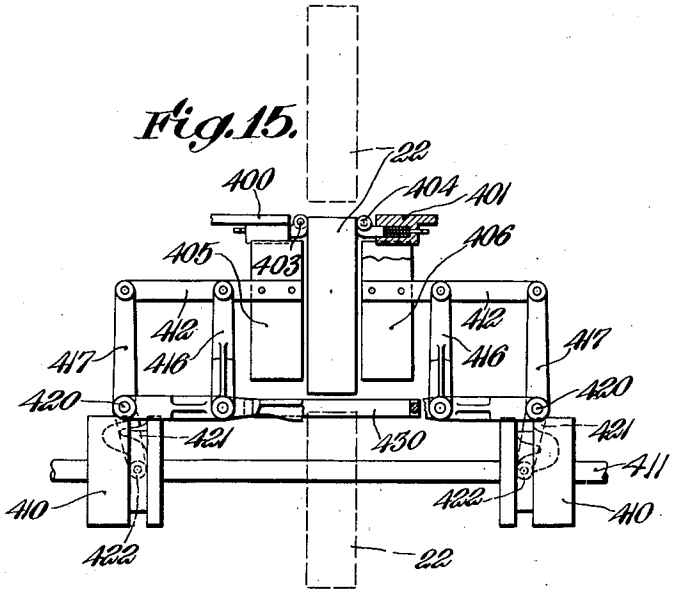
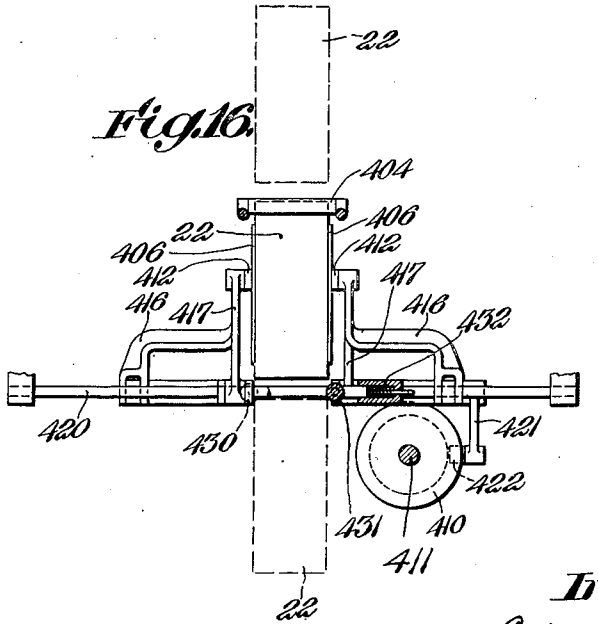


Fig. 16.



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Patented June 23, 1925. 1,543,374

UNITED STATES PATENT OFFICE.

ARTHUR CLARENCE EVERETT, OF BOSTON, MASSACHUSETTS, ASSIGNOR TO PNEUMATIC SCALE CORPORATION, LIMITED, OF QUINCY, MASSACHUSETTS, A CORPORATION OF MASSACHUSETTS.

PACKAGING MACHINE.

Application filed March 26, 1924. Serial No. 702,153.

To all whom it may concern:

Be it known that I, ARTHUR CLARENCE EVERETT, a citizen of the United States, residing at Boston, in the county of Suffolk and Commonwealth of Massachusetts, have invented certain new and useful Improvements in Packaging Machines; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

This invention relates to packaging machinery, and particularly to machines of this character having automatic article-conveying mechanism and web-feeding mechanism.

The invention has for its primary object to provide a machine of the character specified of novel and improved construction, capable of operating in a highly efficient manner requiring minimum attention of the part of the operator.

Another object of the present invention is to provide a lining machine of novel and improved construction in which provision is made for controlling the supply of linings in accordance with the discharge of packages from the machine, and also preferably in accordance with both the supply and discharge of the packages to and from the machine.

A still further object of the invention is to reorganize and improve the construction of package-lining machines, to simplify the same and render more positive in operation certain features of such machines as will be hereinafter pointed out.

With these objects in view and such other objects as may hereinafter appear, the invention consists in the machine construction, combinations and arrangements of parts hereinafter described, and particularly defined in the claims at the end of the specification.

In the drawings of the package-lining machine embodying the preferred form of the different features of the invention,

Fig. 1 is a side elevation of the machine viewed from the right.

Fig. 2 is a partial side elevation of the machine viewed from the left.

Fig. 3 is a plan of a portion of the machine illustrating the feeding and delivery mechanism and associated parts.

Fig. 4 is a front elevation illustrating a control mechanism to be referred to.

Fig. 5 is a similar view upon an enlarged scale showing the parts in a different position of operation.

Fig. 6 is a sectional side elevation of the control mechanism shown in Fig. 5 viewed from the left of the machine.

Figs. 7 and 8 are details in plan and section respectively of a portion of the mechanism for controlling the feed of the web from which the linings are formed.

Fig. 9 is a sectional detail illustrating the mechanism for positively feeding the lining web.

Figs. 10 and 11 are details upon an enlarged scale of portions of the mechanism illustrated in Fig. 9.

Fig. 12 is a plan of a portion of the web-feeding mechanism and the control therefor.

Fig. 13 and Fig. 14 are enlarged details in front elevation and plan of a portion of the mechanism shown in Fig. 4, and Figs. 15 and 16 are details of the folding mechanism for folding the lining about the plunger viewed from the side and front of the plunger respectively.

For purposes of illustration, the different features of the present invention are illustrated in the drawings as embodied in a machine for lining receptacles such as boxes or packages, although certain features of the invention may with advantage be embodied in other forms of package machinery in which the articles to be operated upon are automatically conveyed into and discharged from the machine.

In the illustrated machine, the preformed receptacles to be lined, and which for convenience of description will be hereinafter referred to as cartons, are automatically fed into the machine, where the lining is introduced therein, and thereafter the lined packages are automatically discharged from the machine. In the operation of the machine hereinshown, the cartons which may be of the type having flaps for closing their tops, are deposited by hand or otherwise with their open ends uppermost upon an incoming feed belt 10 preferably continu-

ously driven from a source of power (not shown) through a driving pulley 12 over which the belt runs. The cartons are guided in their movements upon the belt 10 by top guide rails 11, arranged along the sides of the belt, and having studs 13 projecting outwardly from opposite sides thereof which slidably extend through hubs 14 carried by brackets 15 affixed to bottom rails 16 (see Fig. 6), the latter being secured by brackets 17 to the machine frame. Set screws 18 serve to adjustably retain the top guide rails 11 in predetermined position with relation to the feed belt 10 and to permit lateral adjustment of the rails to conform to the size of the cartons to be lined.

During the operation of the machine the cartons thus deposited upon the feed belt 10 are conveyed by it forwardly into the machine in a line, until the first carton strikes an abutment or stop 20 preferably comprising one flange of a pusher member 21.

In the illustrated machine, the mechanism for introducing the lining into a carton includes a plunger 22, arranged to reciprocate vertically as will be described, and in order to transfer successive cartons from the line thereof being fed in by the incoming feed belt 10, into a position beneath the plunger 22, mechanism is provided, operating in timed relation to the movements of the plunger, and including the pusher member 21 arranged to be reciprocated transversely of the machine, from the dotted to the full line position illustrated in Fig. 3. When the pusher member 21 is in its retracted (dotted line) position, the feed belt is permitted to carry the first carton forwardly into the machine until it strikes against a transversely extending stop plate 25. Thereafter as the pusher member 21 starts its forward stroke, moving transversely of the machine and to the left, viewing Fig. 3, the face of the pusher member operates to push the carton into a position between the upright members 26, 27 of a U-shaped pocket member 28. The carton is centered within the pocket member 28 by the adjacent face of a spacer member 30 to be referred to, the latter being preferably of the shape illustrated in Fig. 5. During the forward movement of the pusher member 21, the side flange thereof comprising the stop member 20 serves to restrain the line of cartons from being moved by the feed belt 10 until the proper time in the next cycle of operation of the machine at which the pusher member 21 is again retracted into its dotted line position to the right of the feed belt 10 (see Fig. 3). At such time as above stated, the first carton in line is moved by the belt in front of the face of the pusher member. The movements of the pusher member 21 as stated are timed in relation to the reciprocation of the plunger 22 and as herein shown the pusher member is carried by a bracket 38 adjustably mounted upon the end portion of an angle bracket 39, the latter being bolted to an arm 40 and upstanding from another bracket 41 (see Fig. 5). The bracket 41 is slidably mounted upon and supported by a slide bar 42, arranged to slide transversely across the front of the machine frame, being slidably supported in guides 44 thereon. The bracket 41, and consequently the pusher member 21, are moved to the left or, in other words, to advance the pusher member, by the engagement of a lug 45 upon the slide bar 42 with the bracket 41 (see Fig. 3) and in the reverse direction, or to the right (viewing Fig. 3) through the heavy coil spring 46 connected to pins 47, 48 upon the slide bar 42 and bracket 41 respectively. During the normal operation of the machine the pusher member 21 reciprocates as a unit with the slide bar 42, the heavy coil spring 46 holding the bracket 41 up against the lug 45. Under certain conditions of operation however, as when the supply or discharge of cartons to and from the machine becomes interrupted or varies from normal, it is desirable that the supply of cartons into the machine be stopped and for this purpose provision is made for limiting the return movement of the pusher member 21 so that the flange 20 extends at least partially across the feed belt 10 to hold the stream of cartons thereon from being fed into the machine. At such times in the operation of the machine hereinshown the heavy coil spring 46 yields under the continuous reciprocations of the slide bar 42. The slide bar 42 is preferably positively reciprocated from a groove cam 50 (see Fig. 1), the connections between the slide bar and cam including a cam roller 52 upon a cam arm 53 secured upon one end of a countershaft 54 journalled in bearings 55 secured to an upright of the machine frame, and two arms 56, 57 pivotally connected together and connected to the countershaft 54 and slide bar 42 respectively.

After the carton has been conveyed into the pocket member 28, when the latter is in the position illustrated in Fig. 3, provision is made for conveying the carton into a position in alignment with and immediately beneath the reciprocating plunger 22 to the end that the plunger upon its descent may introduce a lining previously formed thereon into the carton. For this purpose, the U-shaped pocket member 28 is affixed to the upper surface of a pocket slide 60 (see Fig. 5). The pocket slide 60 is arranged to slide longitudinally of the machine, sliding in guideways 62 formed therein and being

restrained from upward movement by extended portions 63 of the top plate 64 of a platen 65. The platen 65 is extended transversely of the machine and is secured to the upright side members of the machine frame at the opposite sides thereof. The pocket slide 60 is arranged to be reciprocated to cause the pocket member 28 to move from the position illustrated in Fig. 3 to a position such as to align the carton beneath the plunger 22 by mechanism which operates in timed relation to the movements of the reciprocating plunger and which includes a yoke 68 formed on the lower portion of the pocket slide, a link 69 pivotally connected therewith, a curved arm 70 mounted upon and fixed to a rock shaft 72. The rock shaft 72 is oscillated from a grooved cam 74 through the cam roll 75 and cam arm 76 affixed to the rock shaft as illustrated in Fig. 2. The cam 74 is positively driven from a driving shaft 78 having thereon a driving pulley 79 driven from any convenient source of power (not shown), through cooperating bevelled gears 80, 82 upon the driving shaft 78 and an inclined countershaft 84 respectively and from the countershaft 84 through a bevelled pinion 85 and intermediate bevelled gear 86 cooperating therewith to a large gear 88. The grooved cam 74 is formed in the gear 88 as illustrated in Fig. 2.

Referring again to Fig. 3, as above stated the carton is conveyed into alignment with and beneath the plunger 22 by the forward movement of the pocket member 28 upon the pocket slide 60 as the latter is moved through the driving connections just described, and the carton is confined within the pocket member during such movement by lateral aligning or guideplates 90 secured to the face of brackets 92 secured to brackets 94 affixed to the machine frame and capable through the bolt and slot connection between the brackets 92, 94 of being adjusted to conform to cartons of different size. It will therefore be seen that in lining position beneath the plunger, the carton is positively confined between the uprights of the pocket member 28 and the lateral guide plates 90, thus insuring positive alignment of the carton and plunger.

After the carton has been, in the manner described, aligned beneath the plunger 22, the latter descends introducing a lining which has been previously formed thereon, as will be described, into the carton, after which the plunger is immediately withdrawn. The lining comprises preferably a paper carton of size sufficiently smaller than the carton to be lined to permit insertion thereof into the latter, and in the illustrated machine the linings are formed from a continuous web by mechanism which will be now described. Referring to Fig. 1, the web 95 in the form of a roll is mounted upon a suitable spindle 100 journalled in supports 102 to be capable of being unrolled, and from the roll the web 95 is drawn by feeding mechanism, cut off into the proper length and the severed sheet folded around the reciprocatory plunger to form the carton lining. The plunger with the lining formed thereon is then introduced into the carton which has been conveyed to a position immediately beneath the plunger 22. The web feeding mechanism (see Figs. 1, 7 and 8) includes a pair of positively driven feed rolls 104, 106, the web 95 leading from the supply roll being conducted around an idler roll 107 and around the lowermost of the feed rolls 106 as illustrated in Fig. 8. Thereafter the web is conducted over a cutter-supporting roll 110 having a recess 112 in the upper surface thereof and with which the cutter roll 114 carrying the cutter blade 116 cooperates to sever the web while the latter is supported by the cutter-supporting roll 110 immediately over the recess. Provision is made for positively driving the feed mechanism including the feed rolls 104, 106 and the cutter roll 114 and its supporting roll 110, and for this purpose the roll 110 is provided upon its left-hand end with a gear 117 which meshes with the spur gear 118 formed upon the periphery of the bevelled intermediate gear 86 (see Fig. 2), and the latter is positively driven, as has been described, from the main driving shaft 78 through the bevelled gears 80, 82 inclined countershaft 84 and bevelled pinion 85 on the end thereof. The cutter-supporting roll 110 is loose upon its shaft 119, being driven as will be described through gearing connections at the right-hand end of the machine. The cutter-supporting roll shaft 119 is provided with a second gear 120 fast thereon which cooperates with a spur gear 121 loose upon the cutter shaft 122. The spur gear 121 is bolted or otherwise secured to the flange 123 of a sleeve 124 loose upon the cutter shaft 122. The sleeve 124 is provided with a hub 125 having a notch 126 comprising a single tooth ratchet which normally cooperates with a pawl 128 pivotally secured to the side of a disc 130 keyed to the end of the cutter shaft 122. Provision is made as will be described for disengaging the pawl from the path of the ratchet to control the operation of the web feeding mechanism and consequently to control the operating of the lining-forming mechanism itself, but during the normal operation of the machine, the cutter roll 114 is driven through the connections and gearing just described, including the gear 116 upon the extended left-hand end of the cutter-supporting roll shaft 119, through the shaft to the gear 120 fast thereon, through the gear 121 meshing with the gear

120, through the ratchet 126 and pawl 128, through the disc 130 which is keyed to the cutter shaft 122. The cutter-supporting roll 110 itself, as has been stated, is loose upon its shaft 119 and is driven through the co-operating gears 132, 133 at the right-hand end thereof (see Fig. 1). The lower feed roll 106 over which the web 95 passes, is driven from the cutter shaft 122 through the gears 132, 133 just described and through the gear train including the gears 134, 135 and 136. The gears 134 and 135 are illustrated as carried by an adjustable bracket to permit variations to be made in the rate of feeding of the web. The upper feed roll 104 is driven from the lower feed roll 106, through gears 137, 139 upon the left hand ends of these rolls (see Figs. 7 and 8). From the description thus far of the web feeding mechanism, it will be understood that the web is withdrawn from the supply roll and severed by the cutter into the desired length to form the lining.

Provision is made for positively gripping the sheet severed from the continuous web 95 and for conveying it in a positive manner to a position beneath the plunger 22. For this purpose, mechanism of the construction illustrated in detail in Figs. 2, 9, 10 and 11 is preferably provided, including two or more pairs of gripping members 140, 141, each pair being mounted upon an endless chain 142. Provision is made for positively reciprocating the members 140, 141 and the chains 142 and for operating the same to grip the sheet and convey it into a definite position beneath the lining plunger 22, and for thereafter opening the gripping members to release the sheet to permit the plunger to descend and to carry the sheet through folding mechanism, as will be described, to form the lining. As hereinshown, each pair of gripping members comprise a stationary jaw 140 which is interposed between two adjacent links of the chain 142 as illustrated in Fig. 10. The stationary gripping jaw 140 is provided with a flat bearing surface 144 with which the end of the movable gripping member 141 cooperates to firmly grip the sheet therebetween. The movable gripping member 141 is pivoted upon a pin 146 journalled in upright guide members 148 (see Figs. 10 and 11). The rear ends of the upright guide members 148 are inclined to form tapering guides for leading the sheet down upon the flat bearing surface 144. A coil spring 150 is interposed between the forward portion of the movable gripping member 141 and the upper surface of the stationary jaw 140 and operates to yieldingly maintain the rear end of the gripping member 141 in contact with the flat bearing surface and to thereby grip the sheet between the same.

In order to reciprocate the gripping members 140, 141 to move them from a position in which they engage the sheet to a position in which the latter is delivered under the plunger 22, the chains 142 carrying the gripping members are arranged to run over sprockets 154, 155 upon countershafts 156, 157 (see Figs. 1, 9 and 10). The upper portion of the chain is operatively supported in a substantially horizontal position by guideways 160 mounted upon cross bars 162 secured to the machine frame, and the slack in the chain is taken up by an idler sprocket 164 mounted upon and carried by an arm 165 of a bell crank rotatably mounted upon a cross shaft 166 secured to the machine frame, and the second arm 167 of which is provided with an adjusting screw 168, which is adapted to rest against one flange of a cross piece 170 as illustrated in Fig. 9. By screwing down the adjusting screw 168 the bell crank may be swung upwardly, thus causing the sprocket 164 to raise the chain to take up the slack therein to the end that the upper portion of the chain may be maintained taut so as to insure a positive, uniform feed of the sheet.

The sprockets 154 are, in the operation of the machine, intermittently driven in one direction and then in the other by mechanism including a gear 172 cooperating with a reciprocating segment 174 fast upon a rock shaft 176. The rock shaft 176 is arranged to be rocked from a grooved cam 180 and cam roll 182 therein. The cam roll 182 is secured through a pin and slot connection upon the end of a cam arm 184 fast upon the rock shaft. With this construction the gripping members 140, 141 are reciprocated through a definite stroke thus insuring the proper positioning of the lining sheet with relation to the plunger 22, and in order to permit the length of movement of the gripping members to be adjusted, a yielding driving connection is provided between the rock shaft 156 and the sprockets 154. Accordingly, the sprockets 154 are formed upon sleeves 175 each having lugs 177, 179 projecting therefrom as illustrated in Fig. 9. The rock shaft 156 is provided with sleeves 181 secured thereon by a set screw 183. A coil spring 185 yieldingly connects lugs 186 upstanding from the sleeves 181 with the lugs 177 upon the sprocket sleeves 175. With this construction it will be apparent that as the rock shaft 156 is rocked counterclockwise Fig. 9, the coil spring operates to rock the sprocket sleeves 175 to the left to advance the chains 142 and gripping members. During the advance of the gripping members through their longest stroke, the coil spring 185 does not yield so that the parts move as a unit. When the rock shaft 156 is rocked in the reverse direction, the

sprocket sleeves 175 are actuated by the engagement of depending lugs 188 upon the sleeves 181 with the lugs 179 upon the sprocket sleeves. The extent of forward movement of the gripping members is adjustably determined by an abutment member 169 formed on the end of an adjusting screw 178 journalled in a block 173 bolted to the end of the guide members 160. In those instances where the forward movement of the gripping members 140, 141 is limited by the abutment member 169, the yielding coil spring 185 yields as the sleeves 181 advance with the rock shaft while the sprocket sleeves 175 remain stationary. A suitable clamp 187 serves to clamp the screw 178 after adjustment.

In order to open the movable gripping member 141 to permit the sheet to be fed between it and the stationary gripping jaw at the rearward position of the gripping members, a cam roll 190 mounted upon one arm 191 of a bell crank is adapted to be moved down against the extended forward end of the movable gripping member 141 to depress the same and consequently to open the rear end of the movable gripping member. The cam roll 190 is actuated through a link 192 secured at one end to the second arm 194 of the bell crank and having its other end connected to an arm 195 mounted to oscillate upon the rock shaft 196. One arm 197 of a bell crank secured on the rock shaft 196 is provided with a cam roller 198 which engages the cam 199 adjustably mounted upon the gear 132 upon the cutter shaft 122. A spring 200 serves to yieldingly maintain the cam roll 198 in engagement with the cam 199. With this construction the operation of the device is as follows. When the chains 142 are reciprocated, as has been described, in predetermined timed relation to the other operations of the machine, the movable and stationary gripping members 140, 141 are moved into their dotted line position (see Fig. 9). Before reaching such position the cam 199 operates through the cam roller 198 and linkage to position the cam roller 190 into the path of the tail of the movable gripping member 141 so that as the gripping members are moved into their dotted line position (see Fig. 9) the movable gripping member 141 is opened and held open while the sheet is being positively fed by the cutter roll 114 and the end thereof passes between the open movable gripping member 141 and comes to rest with its end upon the flat bearing surface 144 of the stationary gripping member 140. Thereafter the cam 199 sharply lifts the cam roll 190 from engagement with the tail of the movable gripping member 141 and permits the spring 200 to positively force the rear end of the gripping member against the bearing surface 144 and to thereby clamp the forward end of the sheet between these members. After the sheet has thus been positively gripped, the gripping members 140, 141 are moved by the chains 142 into their full line position in which the sheet is positioned in a proper position to be engaged by the descending plunger 22 and to be forced through the folding mechanism for the formation of the lining.

In order to release the gripping members 140, 141 from engagement with the sheet after the latter has been correctly positioned beneath the plunger 22, provision is made for positively opening the movable gripping member 141 at a time prior to the descent of the plunger 22. For this purpose a separate cam groove 210 formed in the surface of the gear 117 (see Fig. 2) is designed to operate through a cam roll 212 and cam arm 214 comprising one arm of a bell crank pivoted upon one of the shafts 162 and through a second arm 218 of the bell crank and link 220 to depress a gripper opening member 222 into engagement with the tail of the movable gripping member 141 to open the same. The gripper opening member 222 is provided with relatively long bearing surface 223 to insure its operation in the different positions assumed by the gripper members corresponding with different lengths of sheets for the formation of linings of different sizes.

As the plunger 22 descends, it engages the sheet thus positioned beneath it and carries it downwardly through folding mechanism indicated by the general reference 230 and by which the sheet is folded around the sides of the plunger and then the end flaps folded to form a paper carton. Any suitable folding mechanism may be utilized for this purpose and preferably that illustrated and described in the United States patent to Hiller and Joplin, Serial No. 1,037,005, August 27, 1912, to which reference is made.

The essential details of the folding mechanism illustrated in the Hiller and Joplin patent and embodied in the present machine, are illustrated in Figs. 15 and 16, and referring particularly to Figs. 15 and 16, the lining web is fed over supporting plates 400 and 401 which are spaced apart sufficiently to permit the plunger 22 to descend between them. The supporting plates 400, 401 are secured to the machine frame. As the plunger 22 descends in the operation of the machine, it carries down the lining web between yieldingly mounted presser rolls 403, 404, which operate to fold the web around and to hold it against the sides of the plunger. After the plunger has descended to an intermediate position, illustrated in full lines in Figs. 15 and 16, a dwell upon its actuating cam, operates to permit it to remain in this position until the

lateral projecting portions or side flaps of the lining are folded over the ends of the plunger. This folding of the side flaps is accomplished in the manner illustrated in Figs. 16 and 17 of the Hiller and Joplin Patent No. 1,037,005 above referred to, and as herein shown two sets of folder plates 405, 406, one set for each end of the plunger, are employed. The folder plates 405, 406 of each set are arranged to be swung toward each other and downwardly in vertical planes to engage the projecting side flaps and to fold them lightly against the ends of the plunger. The folder plates 405, 406 are each arranged to be actuated by an actuating cam 410 upon the main cam shaft 411. Each folder plate is carried by a link 412 pivotally connected to arms 416, 417. The arm 417 is pivoted upon a rock shaft 420. The rock shaft 420 has secured thereto a cam arm 421 having a cam roller 422, which is received within the groove of the actuating cam 410. With this construction, at each revolution of the cam, the arms 416, 417 are rocked, causing the folder plates 405, 406 to swing inwardly and downwardly, operating to crease the projecting side flaps over the side edges of the plunger and to fold them against the ends of the plunger in the manner illustrated in Figs. 16 and 17 of the Hiller and Joplin patent above referred to, and as more specifically described in the Hiller and Joplin patent.

After the side flaps have thus been folded, the plunger is caused to descend, and as it descends, the remaining projecting end tabs or bottom flaps of the lining are folded upwardly upon the ends of the plunger by folding rolls 430, 431, which are yieldingly supported in supporting members 432 secured to the frame of the machine.

The folding operations by which the lining carton is formed take place during the descent of the plunger 22 prior to the arrival of the latter to a position to enter the carton to be lined, and provision is made for spreading the open flaps of the carton prior to the time that the plunger and lining are introduced through the open end of the carton down into the same. As hereinshown the flap-spreading operation takes place upon the carton prior to its movement by the pocket slide into lining position, that is, the flap-spreading operation takes place upon one carton while the previous carton is being lined. Referring to Figs. 1 and 4, a flap spreader 240 is mounted upon the end of a rod 242 adjustably affixed in a bracket 244 itself adjustably secured upon a vertical rod 246 which is arranged to be reciprocated vertically, having bearings in brackets 248 secured to the front of the machine frame, and operating when moved downwardly to depress the flap spreader into engagement with the upstanding flaps at the mouth of the carton. The reciprocatory rod 246 is actuated from a grooved cam 249 cut upon the back of the gear 88 (see Fig. 2) through a cam roll 250 therein mounted upon the upper end of a rocker arm 252 affixed upon a rock shaft 254 which extends transversely across the machine having bearings in the side frames. The rock shaft 254 carries at its center a forwardly extended arm 256 (see Figs. 1 and 4) connected by a link 258 having a yoke 260 pivotally secured to the reciprocatory rod 246. The cam 249 is designed to cause the flap spreader to operate at a time immediately subsequent to the introduction of the carton by the pusher member into the pocket member and before the latter starts to convey the carton to lining position.

After the plunger 22 with the lining thereon has been introduced down into the carton, the plunger is withdrawn, leaving the lining in the carton. Provision is made for removing the lined carton from its position beneath the plunger 22 and for this purpose the movable pocket member 28 mounted upon the pocket slide 60 (see Fig. 3) again moves forward. During the interval of time in which the pocket member 28 with the carton therein has been in lining position beneath the plunger 22, a spacing member 300 hereinshown of the form illustrated in Fig. 5 is moved to the right of the path of movement of the pocket member 28, such position being illustrated in Fig. 5, so that when the pocket member and the lined carton again arrive at the end of the forward movement of the pocket slide, the spacing member 30 will occupy a position at the right of the carton to enable it, when reciprocated to the left, to push the carton onto the discharge belt 280 by which the carton is conveyed from the machine. As hereinshown, the spacing member 30 is connected by a bracket 282 to a vertical bar 284, carried by a bracket 286 bolted directly to the reciprocatory slide bar 42 (see Fig. 5) which reciprocates back and forth, being driven in timed relation to the movements of the plunger 22.

Machines of the character of the present machine may with advantage be used in connection with other units for operating upon the carton, such as the carton forming machine and also the machines for filling the lined carton and closing its open end so that it is desirable that provision be made for controlling the operation of the present machine in accordance with the cartons supplied to the machine and also with the cartons being discharged from the machine.

As hereinshown, mechanism is provided for preventing the supply of linings in the event of interruption in the normal discharge of packages from the machine, and

also in the event of interruption in the normal feeding of packages into the machine. Referring to Figs. 4 and 5, the mechanism for preventing the supply of linings in the event that the supply of packages into the machine becomes interrupted, comprises a feeler member 300 adapted to feel for the presence of a carton upon the incoming feed felt 10, and mechanism under the control of the feeler member 300 for causing a dog 301 to be positioned in the path of and engaged by the tail of the pawl 128 of the pawl and ratchet clutch controlling the web feeding mechanism, in the event of the failure of the feeler member 300 to engage a carton during its feeling movement to thereby stop the web feeding mechanism, and consequently stop the supply of linings. As hereinshown, the feeler member 300 is adjustably mounted upon the upper end of a feeler arm 302 pivoted upon a stud 304 in the machine frame. The feeler member 300 is arranged to be reciprocated from the reciprocating slide bar 42 and for this purpose the pusher member bracket 41 (which is connected with the slide bar 42 through the heavy coil spring 46) is provided with a pin 310 extended through a slot 312 in one end of a link 314. The link 314 is connected at its other end to the upper end of a curved arm 316 pivoted or loose upon a rock shaft 318. The feeler arm 302 is connected by a link 320 to one arm 322 of a bell crank 323 pivoted upon a stud 324 carried by and movable with said curved arm 316, so that as the curved arm 316 is oscillated back and forth by the reciprocations of the slide bar 42, the feeler 300 is moved to perform its feeling operation. The curved arm 316 is connected through suitable linkage to the dog 301 so that during the normal operation of the machine the curved arm 316 as it oscillates back and forth through its full stroke, causes the dog 301 at each cycle to be positioned in and then immediately withdrawn from the path of the tail of the pawl 128 thus permitting the web feeding mechanism to continue in operation. The mechanism hereinshown for this purpose includes a pawl 325 comprising the second arm of the bell crank 323, which is adapted to cooperate with a notch 326 comprising a ratchet in the surface of a stationary plate 328 bolted to the machine frame to stop the curved arm 316. The first arm 322 of the bell crank is connected by a spring 330 to the upper end of the curved arm 316. The curved arm 316 is connected through the vertically arranged link 332 (see Fig. 4) to one arm 334 of a bell crank pivoted on the front of the machine frame, the second arm 335 of which is arranged to slide upon a rod 336 connected at its second end with an arm 338 of the dog 301 as illustrated in Figs. 7 and 8. The rod 336 is provided with a stop collar 342 which is engaged by the second arm 335 of the bell crank when the latter is reciprocated, to move the rod 336 and thereby to swing the dog 301 upon its pivot 344 and to move the dog 301 into the path of the tail of the pawl 128 of the pawl and ratchet clutch controlling the drive of the web feeding mechanism (see Figs. 7 and 8).

The operation of the mechanism just described is as follows. When the slide bar 42 moves to the left from the position shown in Fig. 5 to the position shown in Fig. 4, the curved arm 316 is swung to the left operating to permit the spring 330 to swing the pawl 325 down onto the surface of the stationary plate 328. The relative oscillation of the pawl 325 with relation to the curved arm 316 operates through the link 320 to move the feeler 300 into the position illustrated in Fig. 4. Then as the slide bar 42 moves to the right, the curved arm 316 is swung to the right, carrying the pawl 325 along with it. As the pawl 325 rides upon the stationary plate 328, it is urged downwardly by the spring 330 so that when it arrives at the notch, it is forced down into the notch 326 unless held from doing so by contact of the feeler member 300 with the side of the carton. If the feeler 300 does engage the side of a carton, indicating that the supply of cartons into the machine is normal, then as the arm 316 continues to be moved by the slide bar 42 after the feeler engages the carton, then a link 350 connected with the first arm 322 of the bell crank 323 acts through the engagement of stop nuts 352 thereon with a bracket 353, to rock the bell crank 323 from the position illustrated in Fig. 4 to that illustrated in Fig. 5, and consequently to reset the feeler 300 into the position shown in Fig. 5. The movement of the feeler 300 in this manner by the engagement of the nuts 352 with the bracket 353, operates to release the feeler from engagement with the carton, to permit the latter to be freely moved forwardly by the feed belt 10.

In the event that a break has occurred in the supply of cartons, so that the feeler member 300 does not engage a carton when it is being swung to the right by movement of the curved arm 316 to the right, as above stated, then the feeler 300 continues to move to the right, thus permitting the pawl 325 to drop down into the notch 326 in the stationary plate 328 and to stop further movement of the curved arm 316. When this occurs, the dog 301 (see Fig. 7) will be positioned in the path of the tail of the clutch pawl 128 so that when the pawl comes round it will engage the dog 301 and the clutch will be thereby disengaged, rendering the web feeding mechanism inoperative in cutting off and feeding the further supply of the lining sheets. In this manner, when

the supply of cartons into the machine becomes interrupted, the accumulation of linings beneath the plunger 22 is avoided.

When the curved arm 316 is stopped from further movement to the right upon a break in the carton supply, the pusher member bracket 41 being directly connected with the curved arm 316 is also stopped from further movement in such position that the side flange 20 of the pusher member 21 extends at least partially across the incoming feed belt 10 operating to prevent additional cartons from being fed into the machine. The pusher member 21 having been stopped, no more cartons are fed by it until the carton supply is restored to normal. When the latter condition occurs, the different mechanisms of the machine are automatically restored to operation without further effort on the part of an operator, because at each cycle of operation of the machine the feeler 300 feels for a carton and until it engages one, the pawl 325 continues to drop into the notch 326 in the stationary plate 328 positioning the dog 301 in the path of the tail of the pawl 128 and preventing the restoration of the machine to normal operation.

In order to detect an abnormal condition of the discharge of the cartons from the machine, as when the cartons become jammed upon the discharge belt 280, a detector or feeler member 358, mounted upon the upper end of a feeler arm 360 fast upon the rock shaft 318, is arranged to be rocked back and forth across the discharge belt 280, at predetermined intervals. The timing of reciprocations of this feeler member 358 is such that it will normally pass between the successive cartons being discharged from the machine upon the discharge belt 280 so that during the normal operation of the machine, when everything is working satisfactorily, the feeler member does not engage a carton. When, however, a carton becomes jammed upon the discharge belt 280, and for this or any other reason the cartons become forced into closer position with relation to one another, the feeler member 358 in its forward stroke engages a carton, detecting this abnormal condition in the discharge of the cartons, and provision is made, as will be described, for rendering the lining-forming mechanism and preferably only the web feeding mechanism inoperative when this condition occurs. As hereinshown, the movements of the feeler member 358 back and forth across the discharge belt 280 are derived from the reciprocatory slide bar 42 through the pin 310 and slot 312 and the link 314 to the curved arm 316, causing the latter to normally oscillate in a definite path.

The curved arm 316 is, as has been described, loose upon the rock shaft and a yielding connection is provided between the curved arm 316 and the feeler member 358 through the spring 362 connected to the upper end of an arm 364 fast upon the rock shaft 318. With this construction, as the curved arm 316 is oscillated to the right, the spring urges the arm 364 to the right and consequently the rock shaft and the feeler, the feeler arm 360 being fast upon the rock shaft (see Figs. 4 and 5). When the feeler member 358 engages a carton, the movement of the feeler member and the feeler arm 360 is arrested. The curved arm 316 however continues to move, stretching the spring 362 and causing relative movement between the curved arm 316 and the arm 364. When this occurs, provision is made for throwing a stopping pawl 370 mounted upon the stud 324 carried by the curved arm 316 down into engagement with the stationary plate 328, so as to enable the pawl to drop in the notch 326 and arrest further movement of the curved arm 316 and parts connected therewith, exactly as above described in connection with the feeling operation upon the cartons being fed into the machine. As hereinshown, a spring 380 connected with a spring arm 382 formed integrally with the pawl 370 is permitted to operate to depress the pawl by the disengagement (produced upon the relative movement of arms 316 and 364) of a pin carried by the arm 364 with a lug 384 depending from the pawl 370. With this construction, as soon as relative movement occurs between the curved arm 316 and the arm 364, the pawl 370 is depressed into a position in which, as the arms continue to move, it drops into the notch 326 in the stationary plate 328 thus operating to arrest the movement of the curved arm 316. As the reciprocatory slide bar 46 continues to move to the right, the heavy coil spring stretches, permitting the flange 20 of the pusher member 21 to be positioned in the path of the incoming cartons, thus preventing further supply thereof in the machine. When the movement of the curved arm 316 is arrested upon the detection of an abnormal condition in the discharge of cartons from the machine, the web feeding mechanism by which the lining sheets are supplied to the plunger 22 is thrown out of operation in the manner above described in connection with the detection of an abnormal condition in the supply of cartons into the machine, and including the positioning of the dog 301 in the path of the tail of the pawl 128, through the linkage above described connecting the curved arm 316 and the dog 301.

In the illustrated machine, after the web feeding mechanism and consequently the lining-forming mechanism has been thus rendered inoperative, by the detection of an abnormal condition in either the supply of cartons into the machine or the discharge

of cartons from the machine, the same is automatically restored to operation upon the next cycle after the abnormal condition has been removed because at each cycle the feeler members are moved forwardly and in the event that either the incoming feeler member fails to engage a carton, or that the outgoing feeler member engages a carton, then the corresponding stopping pawl is permitted to drop into the notch 326 in the stationary plate and the forward movement of curved arm 316 arrested to cause the dog to be again positioned in the path of the tail of the pawl thus disengaging the pawl and ratchet clutch. These operations continue until both the supply and discharge of the cartons are restored to normal, in which event the stopping pawls will be prevented, as above described, from dropping into the notch, so that the curved arm 316 is permitted to complete its forward stroke, thus removing the dog 301 from the path of the tail of the pawl 128 and permitting the web feeding mechanism to continue in operation. While it is preferred to employ mechanism for detecting an abnormal condition in both the supply and discharge of cartons into and from the machine, and for controlling the operation of the machine in accordance therewith, either mechanism alone may with advantage be used. Furthermore, while in their preferred form certain features of the invention are particularly adapted for use upon lining machines, it is to be understood that they may if found desirable be utilized in connection with other forms of packaging machinery.

The term carton as herein used is intended to include any form of article to be operated upon by the machine, such as boxes, packages, cans or other articles.

Having thus described the invention, what is claimed is:—

1. In a machine of the character described, in combination, means for conveying successive articles into an operating position in the machine, means for operating upon the articles including web feeding mechanism, means for discharging the articles from the machine, means for controlling the operation of the machine, having provision for rendering it inoperative when an abnormal condition arises in the discharge of the articles from the machine, and for automatically rendering the machine operative again when such abnormal condition is removed.

2. In a machine of the character described, in combination, means for conveying successive articles into an operating position in the machine, means for operating upon the articles, including web feeding mechanism, means for discharging the articles from the machine, and means for rendering the web-feeding mechanism inoperative when an abnormal condition arises in the discharge of the articles, and for automatically rendering the web feeding mechanism operative again when such abnormal condition is removed.

3. In a lining machine, in combination, lining mechanism, means for conveying successive receptacles into the machine to a position to be operated upon by the lining mechanism, means for discharging the lined receptacles from the machine, and means for cutting off the supply of linings when an abnormal condition arises in the discharge of the lined receptacles, and for automatically restoring the supply of linings when such abnormal condition is removed.

4. In a lining machine, in combination, lining mechanism including web feeding mechanism, means for conveying successive receptacles into the machine, means for discharging the lined receptacles from the machine, and means for rendering the web feeding mechanism inoperative, to cut off the supply of linings when an abnormal condition arises in the discharge of the lined receptacles, and for rendering the web feeding mechanism again operative when such abnormal condition is removed.

5. In a machine of the character described, in combination, means for conveying successive articles into an operating position in the machine, means for operating upon the articles including web feeding mechanism, means for discharging the articles from the machine, and means for controlling the operation of the machine, having provision for rendering it inoperative when an abnormal condition arises in the supply or discharge of articles into or from the machine, and for thereafter automatically rendering the machine operative again when such abnormal condition is removed.

6. In a machine of the character described, in combination, means for conveying successive articles into an operating position in the machine, means for operating upon the articles, including web feeding mechanism, means for discharging the articles from the machine, and means for rendering the web feeding mechanism inoperative when an abnormal condition arises in the supply or discharge of the articles, and for automatically rendering the web feeding mechanism operative again when such abnormal condition is removed.

7. In a lining machine, in combination, lining mechanism, means for conveying successive receptacles into the machine to a position to be operated upon by the lining mechanism, means for discharging the lined receptacles from the machine, and means for cutting off the supply of linings when an abnormal condition arises in the supply or discharge of the articles, and for automatically restoring the supply of linings when such abnormal condition is removed.

8. In a lining machine, in combination, lin-

ing mechanism, including web feeding mechanism, means for conveying successive receptacles into the machine, means for discharging the lined receptacles from the machine, and means for rendering the web feeding mechanism inoperative to cut off the supply of linings when an abnormal condition arises in the supply or discharge of the articles, and for rendering the web feeding mechanism again operative when such abnormal condition is removed.

9. In a lining machine, in combination, lining mechanism including web feeding means, means for conveying receptacles into a position to be lined, means for discharging the lined receptacles from the machine, and means for rendering the web feeding means inoperative when an abnormal condition arises in the supply of receptacles into the machine.

10. In a machine of the character described, in combination, means for conveying successive articles into operating position within the machine, means for operating the articles while in such position, including web feeding means and folding mechanism, means for discharging the articles from operating position and means for rendering only the web feeding means inoperative in the event of interruption in the normal supply or discharge of receptacles to or from the machine.

11. In a lining machine, in combination, means for conveying receptacles into the machine, mechanism for lining the receptacles including web feeding mechanism and means for folding the web to form the lining, means for discharging the lined receptacles from the machine, and means for rendering only the web feeding means inoperative in the event of interruption in the normal discharge of receptacles from the machine.

12. In a lining machine, in combination, means for conveying receptacles into the machine, mechanism for lining the receptacles including web feeding mechanism and means for folding the web to form the lining, means for discharging the lined receptacles from the machine, and means for rendering only the web feeding means inoperative in the event of interruption in the normal supply or discharge of receptacles to and from the machine.

13. In a machine of the character described, in combination, means for conveying successive articles into operating position within the machine, means for operating upon the articles while in such position, including web feeding means, means for discharging the articles from the machine, and means responsive to the discharge of articles from the machine for controlling the operation thereof including feeler members adapted to cooperate with the articles being discharged from and supplied to the machine and controlling devices connected with the feeler members arranged to be actuated upon engagement by one feeler with an article being discharged from the machine or upon failure of engagement by the second feeler with an article being supplied to the machine.

14. In a machine of the character described, in combination, means for conveying successive articles into operating position within the machine, means for operating upon the articles while in such position, including web feeding means, means for discharging the articles from the machine, and means for rendering the web feeding means inoperative in the event of interruption in the normal discharge of the articles, including a feeler member adapted to normally reciprocate between successive articles discharged from the machine and connections between said feeler member and web feeding mechanism for rendering the latter inoperative upon engagement of the feeler member with an article.

15. In a lining machine, in combination, means for conveying receptacles into the machine, means for introducing a lining into the receptacle, and means for discharging the lined receptacles from the machine normally in predetermined relation to one another, a feeler member normally movable in the space between successive receptacles being discharged, and means actuated by the feeler member upon engagement with a receptacle for rendering said lining mechanism inoperative.

16. In a lining machine, in combination, means for conveying successive receptacles into the machine, a reciprocable plunger, means for positioning the receptacle beneath the plunger, web feeding mechanism for feeding a web between the plunger and receptacle, folding mechanism for forming a lining about the plunger, and means for discharging the lined receptacles from the machine, and mechanism controlled by the receptacles being discharged for rendering only the web feeding mechanism inoperative in the event of interruption in the normal discharge of the receptacles from the machine.

17. In a lining machine, in combination, means for conveying successive receptacles into the machine, a reciprocable plunger, means for positioning the receptacle beneath the plunger, web feeding mechanism for feeding a web between the plunger and receptacle, folding mechanism for forming a lining about the plunger, means for discharging the lined receptacles from the machine, and means for preventing the supply of lining web in the event of interruption in the normal discharge of receptacles from the machine, including a feeler member, a

reciprocating member connected therewith for moving the same, a clutch controlling the operation of the web feeding mechanism, and means including connections between the feeling member and clutch, rendered operative to disengage the clutch in the event that the feeler member is prevented from completing its movement by engagement with a receptacle.

18. In a machine of the character described, in combination, conveying means for conveying articles into an operative position within the machine, means for operating upon the articles, means for discharging the articles, a feeler member cooperating with the articles being discharged from the machine, a second feeler member cooperating with the articles being supplied into the machine, a single movable member connected with both feeler members, means arresting the movement of said movable member upon engagement of the first feeler member with an article being discharged from the machine or upon failure of the second feeler member to engage an article being supplied into the machine, and means actuated by the stopping of said movable member for controlling the operation of the machine.

19. In a machine of the character described, in combination, conveying means for conveying articles into an operative position within the machine, means for operating upon the articles, including web feeding mechanism, means for discharging the articles, a feeler member cooperating with the articles being discharged from the machine, a second feeler member cooperating with the articles being supplied into the machine, a single movable member connected with both feeler members, means arresting the movement of said movable member upon engagement of the first feeler member with an article being discharged from the machine or upon failure of the second feeler member to engage an article being supplied into the machine, and means actuated by the stopping of said movable member for rendering the web feeding mechanism inoperative.

20. In a machine of the character described, in combination, conveying means for conveying articles into an operative position within the machine, means for operating upon the articles in such position, conveying means for discharging the articles from the machine, a feeler member cooperating with the articles being discharged, a feeler arm upon which the feeler is mounted, a movable member, a yielding connection between the movable member and feeler arm, means actuated by relative movement between the movable member and feeler arm when the feeler arm engages an article for arresting movement of the movable member, and means actuated by the stopping of the movable member for controlling the operation of the machine.

21. In a machine of the character described, in combination, conveying means for conveying articles into an operative position within the machine, means for operating upon the articles in such position, including a web feeding mechanism, conveying means for discharging the articles from the machine, a feeler member cooperating with the articles being discharged, a feeler arm upon which the feeler is mounted, a movable member, a yielding connection between the movable member and feeler arm, means actuated by relative movement between the movable member and feeler arm when the feeler arm engages an article for arresting the movement of the movable member, and means actuated by the stopping of the movable member for rendering the web feeding mechanism inoperative.

22. In a lining machine, in combination, lining mechanism, means for conveying successive cartons into lining position, and flap spreading mechanism including a flap engaging member, a guide upon which the flap engaging member is slidably mounted, and means for reciprocating the flap engaging member.

23. In a machine of the character described, in combination, means for conveying the articles into the machine, means for operating upon the articles, means for discharging the articles from the machine in predetermined relation, and controlling means for rendering the machine inoperative and operative when the articles being discharged assume a different relation to one another.

24. In a machine of the character described, in combination, means for conveying articles into the machine, means for operating upon the articles, means for discharging the articles from the machine, and means responsive to the discharge of the articles from the machine for controlling the operation of the machine including a member capable of engagement with an article being discharged from the machine, and mechanical means actuated upon engagement of said member with an article for controlling the operation of the machine.

25. In a lining machine, in combination, means for conveying the receptacles to be lined into the machine, lining mechanism, means for discharging the lined receptacles from the machine, and means responsive to the discharge of the articles for controlling the operation of the machine including a member capable of engagement with an article being discharged, and mechanical

means actuated upon engagement of said member with an article for controlling the operation of the machine.

26. In a lining machine, in combination, means for conveying successive receptacles into lining position, lining mechanism including web feeding means, means for discharging the receptacles after they have been lined, and means for rendering the web feeding means inoperative when an abnormal condition arises in the supply or discharge of receptacles into or from the machine.

27. In a machine of the character described, in combination, means for feeding articles into the machine, means for operating upon the articles, including web feeding mechanism, means for discharging the articles from the machine, and means operative when an abnormal condition arises in the supply of articles into the machine, for rendering the machine inoperative and for cutting off the supply of articles therein.

28. In a machine of the character described, in combination, continuously operating means for feeding articles into the machine, means for operating upon the articles, including web feeding mechanism, means for discharging the articles from the machine, and means operative when an abnormal condition arises in the supply of articles into the machine, for rendering the machine inoperative and for cutting off the supply of articles therein.

29. In a machine of the character described, in combination, means for feeding articles into the machine, means for operating upon the articles, including web feeding mechanism, means for discharging the articles from the machine, and means operative when an abnormal condition arises in the discharge of articles from the machine for cutting off the supply of articles into the machine.

30. In a machine of the character described, in combination, continuously operating means for feeding articles into the machine, means for operating upon the articles, including web feeding mechanism, means for discharging the articles from the machine, and means operative when an abnormal condition arises in the discharge of articles from the machine for cutting off the supply of articles into the machine.

31. In a lining machine, in combination, means for feeding receptacles into the machine, means for operating upon the receptacles, including web feeding mechanism, means for discharging the receptacles from the machine, and means operative when an abnormal condition arises in the supply of receptacles into the machine, for rendering the machine inoperative and for cutting off the supply of receptacles therein.

32. In a lining machine, in combination, continuously operating means for feeding receptacles into the machine, means for operating upon the receptacles, including web feeding mechanism, means for discharging the receptacles from the machine, and means operative when an abnormal condition arises in the supply of receptacles into the machine, for rendering the machine inoperative and for cutting off the supply of receptacles therein.

33. In a lining machine, in combination, means for feeding receptacles into the machine, means for operating upon the receptacles, including web feeding mechanism, means for discharging the receptacles from the machine, and means operative when an abnormal condition arises in the discharge of receptacles from the machine for cutting off the supply of receptacles into the machine.

34. In a lining machine, in combination, continuously operating means for feeding articles into the machine, means for operating upon the articles, including web feeding mechanism, means for discharging the articles from the machine, and means operative when an abnormal condition arises in the discharge of articles from the machine for cutting off the supply of articles into the machine.

35. In a lining machine, in combination, lining mechanism, an incoming conveyor by which the receptacles are moved into the machine, a member for engaging the receptacles one at a time and transferring them to lining position and for holding the receptacles during the lining operation, and for discharging the successively lined receptacles from the machine.

36. In a lining machine, in combination, lining mechanism, an incoming and a discharge conveyor spaced apart, means for conveying receptacles from the incoming conveyer to a position intermediate the incoming and discharge conveyers, means for moving a receptacle from such intermediate position to lining position and for returning the lined receptacle to said intermediate position, and means operating in timed relation to the movements of the said last-named means for moving the lined receptacle from said intermediate position to the discharge conveyer.

37. In a lining machine, in combination, lining mechanism, and means for delivering the receptacles to be lined to lining position including a continuously operating conveyer, a pusher member operating transversely thereof for conveying a receptacle to within a U-shaped supporting member, means for reciprocating the U-shaped supporting member for moving the receptacle to lining position, and members cooperating

with the U-shaped supporting member for forming a rectangular supporting cage to support the receptacle while being lined.

38. In a lining machine, in combination, lining mechanism, including web feeding means, means for moving receptacles into and from lining position, and means for adjustably actuating the web feeding means including a grooved cam, a cam roll therein, and an arm pivoted upon a stationary member and having a slot in which the cam roll is adjustably secured, the cam being designed to permit adjustments of the cam roll in the slot to vary the oscillations of the arm.

39. In a lining machine, in combination, lining mechanism, including web feeding means, means for moving a receptacle into and from lining position, and means for adjusting the operation of the web feeding means to feed different lengths of web corresponding to different sizes of linings.

40. In a lining machine, in combination, conveying means for conveying successive receptacles into the machine, means for supplying and inserting linings in the successive receptacles, means for conveying away the lined receptacles in succession and in a definite normal relation from said lining means, and means for rendering only said lining, supplying and inserting means inoperative when the lined receptacles being thus conveyed away assume a different and abnormal relation.

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