June 21, 1927. 1,633,247

H. L. EVANS ET AL

MECHANISM FOR LINING CARTONS

Original Filed July 10, 1924 2 Sheets-Sheet 1

Fig. 8

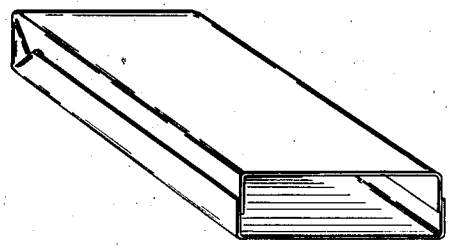


Fig. 9

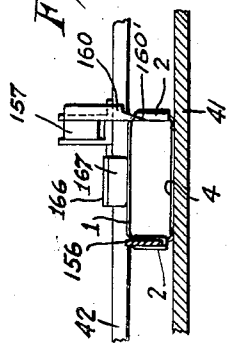
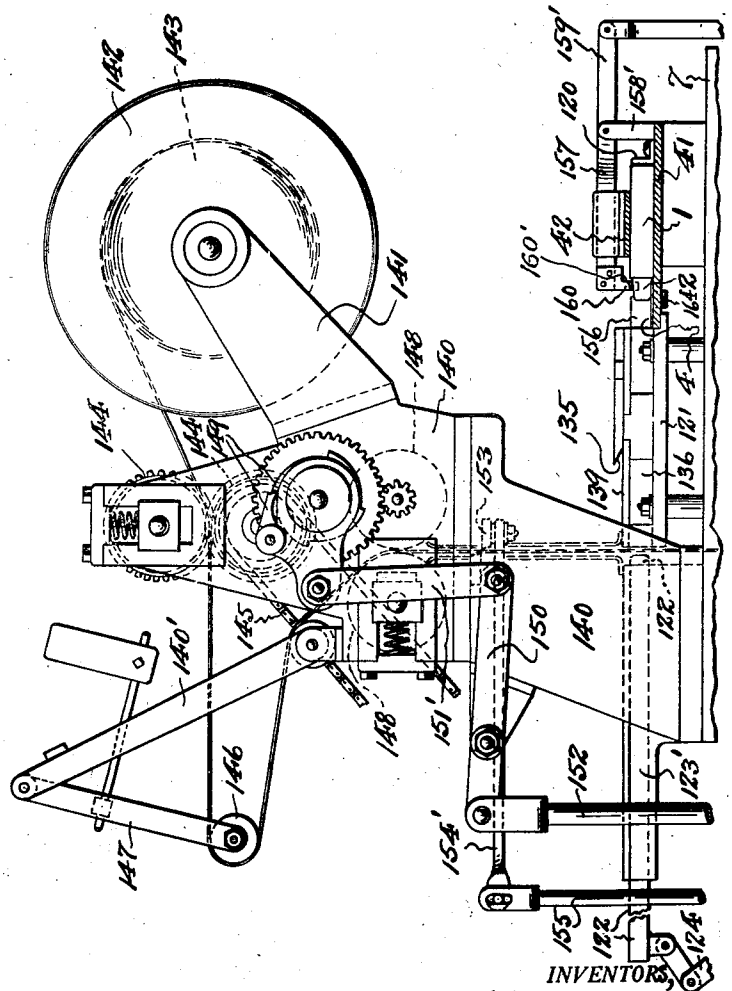


Fig. 1



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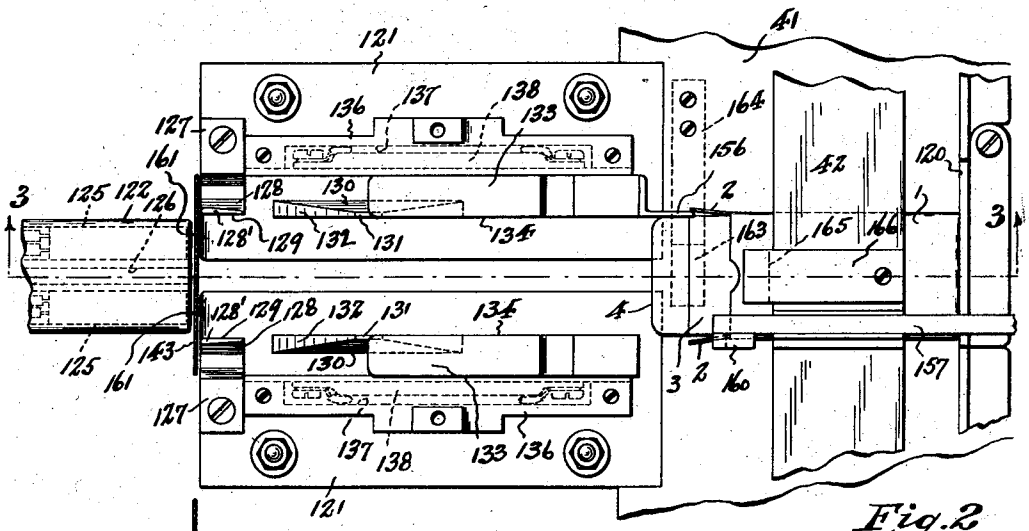


Fig. 2

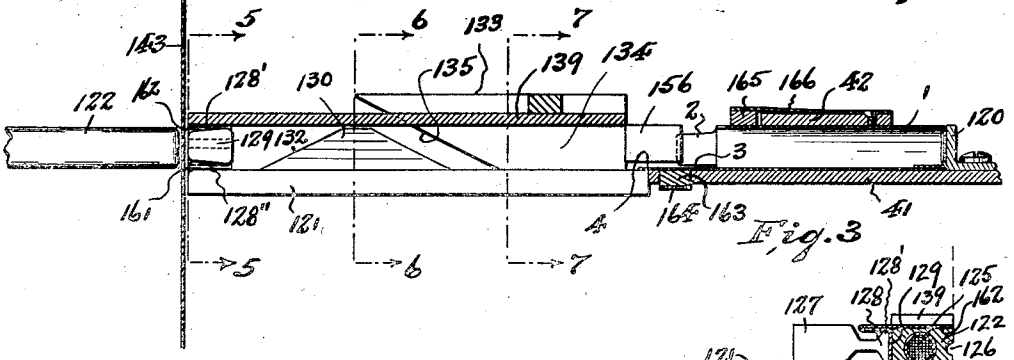


Fig. 3

Fig. 5

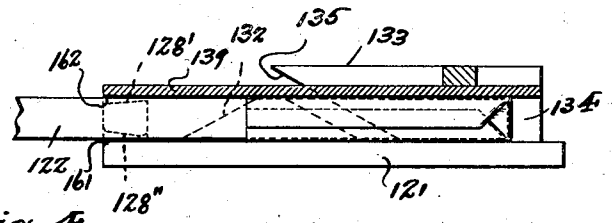


Fig. 4

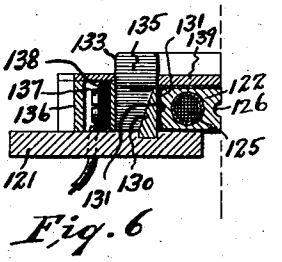


Fig. 6

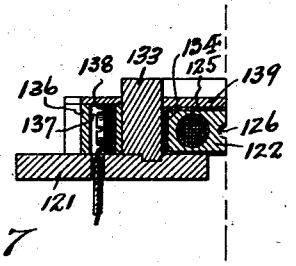


Fig. 7

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Patented June 21, 1927. 1,633,247

UNITED STATES PATENT OFFICE.

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MECHANISM FOR LINING CARTONS.

Original application filed July 10, 1924, Serial No. 725,177. Divided and this application filed January 28, 1926. Serial No. 84,308.

This invention relates, generally, to improvements in cartoning machines; and the same has reference, more particularly, to mechanism for lining cartons preparatory to filling the same; this application being a division of our co-pending application, Serial No. 725,177, filed July 10th, 1924 for cartoning machines.

The present invention has for its principal object to provide a novel means for pre-forming a sealed lining having an open outer end and inserting the same in a carton preparatory to filling the latter. To this end the invention comprises a means to supply wax or paraffine paper in combination with a forming mechanism adapted to preform a paper lining, closed at one or its inner end and open at its other or outer end, while at the same time heating the wax or paraffine which impregnates the lining paper to cause the laps and folds thereof to adhere together, to thus seal the lining, whereupon the mechanism operates to insert the preformed and sealed lining into a carton presented for its reception.

Other objects of this invention, not at this time more particularly enumerated, will be clearly understood from the following detailed description of the same.

The invention is clearly illustrated in the accompanying drawings, in which:—

Figure 1 is a side elevation of the paper lining forming and inserting mechanism together with the means for supplying paper thereto; Figure 2 is an enlarged detail plan view (with cover plate removed) of the wax paper lining forming and inserting mechanism; Figure 3 is a longitudinal vertical section through the same, taken on line 3—3 in said Figure 2; Figure 4 is a fragmentary longitudinal vertical section, similar to that shown in Figure 3, but showing the manner of forming the wax paper lining on the plunger or mandrel; Figures 5, 6 and 7 are respectively fragmentary cross sections taken on the section lines 5—5, 6—6, and 7—7 in said Figure 3, but with the plunger shown as advancing the wax paper through the lining forming devices; and Figure 8 is a perspective view of a preformed or completed lining. Fig. 9 is an open end view of a carton as positioned to receive a lining, said view showing the operation of the device for spreading the side tabs of said carton.

Similar characters of reference are employed in all of the hereinabove described views, to indicate corresponding parts.

Referring now to said drawings, the reference character 41 indicates a carton slideway upon which squared cartons closed at one end are moved into lining receiving position. Cooperating with said carton slideway 41 is a keeper plate 42 for retaining the cartons against upward displacement, and arranged on the outer longitudinal marginal portion of said carton slideway 41 is a stop flange 120, against which the closed end of the carton is engaged, when the same is deposited upon said slideway and moved to lining receiving position. The carton is positioned to lie transversely of the slideway 41, with its open end inwardly directed.

The reference character 7 indicates a deck-plate or platform upon which the carton slideway and lining mechanism is mounted. Supported from said platform 7, so as to lie flush with and extend transversely toward the inner longitudinal margin of said carton slideway 41, are supporting plates 121 upon which are mounted the lining forming devices, spaced apart to provide a mandrel passage in which moves a transversely reciprocable plunger or mandrel 122, which moves in a guide 123′, being suitably actuated by an oscillating lever 124, to the free end of which is suitably interconnected the rear end of said plunger or mandrel, the oscillations of which produce properly timed forward and retractive movements of said plunger or mandrel. The forward operative end of said plunger or mandrel is heated by means of electrical heating elements 125, which are embedded therein to respectively lie adjacent to the sides of said plunger or mandrel. Said plunger or mandrel is provided with a central longitudinal air conduit or passage 126 open at its rearward end to the atmosphere, and terminating at the forward extremity of said plunger or mandrel. The lining forming devices comprise a pair of tucking blocks 127 mounted upon the supporting plates 121 one on each side of the entrance end of said mandrel

passage. Said tucking blocks are provided at their inwardly directed ends with substantially T-shaped tucking members 128, the vertical end faces 129 of which are spaced from the sides of the plunger or mandrel 122 (when the latter is passed between the tucking blocks) for a distance substantially equivalent to the thickness of the lining paper to be employed in the formation of the carton lining. Mounted upon the supporting plates 121 beyond said tucking blocks 127 are bottom folders or up-turning folder members 130, the inner vertical faces 131 of which are alined respectively with the faces 129 of said tucking members 128. Said up-turning folder members 130 are provided with upwardly and forwardly inclined edges 132 which form fold-turning guides faced toward the leading end of the plunger or mandrel 122. Also mounted upon the supporting plates 121 beyond said up-turning folder members 130 are top folders or down-turning folder members 133, the inner vertical faces 134 of which are alined respectively with the vertical faces 129 of said up-turning folder members 130 and the vertical faces 129 of said tucking members 128. Said down-turning folder members 133 are of greater width than the up-turning folder members 130, and are provided with downwardly and forwardly inclined end portions 135 which form fold-turning guides faced toward the leading end of the plunger or mandrel 122. Supported upon said supporting plates 121, and in contact with the outer side faces of said down-turning folder members 133, are heater housing members 136, which are provided with internal chambers 137, in which are housed electric heating elements 138, which serve to generate and transmit heat to said down-turning folder members 133. Suitably supported, so as to bridge the plunger or mandrel passage intermediate the respective laterally opposed tucking and folding devices above described, is a cover plate 139.

A suitable means for supplying wax lining paper for manipulation by the plunger or mandrel 122 and the tucking and folding devices is provided. This means may be of any desired construction, which will serve to introduce a sheet of wax lining paper intermediate the retracted plunger or mandrel 122 and the tucking and folding devices. It is preferable to supply the wax lining paper, of a predetermined proper width, from a roll, from which the paper is automatically withdrawn and fed into place in front of the plunger or mandrel 122, and then severed to produce a separate sheet of desired length. The mechanism, as shown in the drawings, for thus feeding the wax lining paper comprises, a suitable frame-work 140 mounted upon the platform 7 above the plunger or mandrel and the tucking and folding devices. The frame-work 140 is provided with a forwardly projecting bracket 141 for supporting the spindle on which is mounted, for free rotation, the reel 142 upon which a supply of wax lining paper 143 is wound. Mounted in the upper end of said frame-work 140 are continuously running inter-geared feed rollers 144 which draw the paper off of the supply roll. Said rollers 144 are continuously driven by a chain and sprocket drive 145. The paper passes from said continuously running rollers 144 to a counter-poised take up roller 146 carried by a swinging frame 147, which is pivoted by supporting arms 140′ connected with said frame-work 140. This arrangement forms a loop of the paper intermediate said continuously running rollers 144 and a pair of intergeared intermittently actuated feed rollers 148 which feed the paper, in timed relation to the reciprocal movements of the plunger or mandrel, so that the same passes downwardly in front of the leading end of said plunger or mandrel 122, when the latter is retracted. Said feed rollers 148 are actuated by a pawl and ratchet transmission 149, the operations of which are produced by pivoted lever 150, which is interconnected therewith by a link 151′. Suitable power transmission means actuates a vertically reciprocable connecting rod 152, the latter being pivotally connected with the outer free end of said lever 150, whereby the latter is oscillated to produce the properly timed actuation of said pawl and ratchet transmission 149 to in turn produce the desired intermittent rotation of the feed rollers 148. When a proper length of paper 143 has been fed down to desired position in front of the plunger or mandrel 122, and as the forward operative movement of the latter is initiated, the desired predetermined length of paper is severed from the main run thereof by a horizontally oscillated shear blade 153, the timed operation of which is produced by suitable power transmission means which oscillates a lever 155 suitably interconnected by a link 154′ with the shear blade 153.

As the carton moves into position to receive the lining, the longitudinally projecting side tab 2, at the forward or left-hand side of the carton body, springs past a stationary tab spreader lug or finger 156, which is secured to and projects from the outer end of the right-hand down-turning folder member 133, but the side tab 2 at the rearward or right-hand side of the carton body is arrested by engagement with said stationary tab spreader or finger 156, so as to be bent or sprung outward whereby the same is slightly deflected from the path of the plunger or mandrel 122 as it carries forward and enters into the carton interior the preformed lining for insertion within the latter

(see Figure 2). A means is also provided for deflecting the forward or left-hand side tab 2 after the carton is alined with the paper lining forming and inserting mechanism.

This latter means comprises a vertically oscillatable lever 157, which is fulcrumed on a post 158′ mounted on the outer margin of said carton slideway 41. Suitable means (not shown) for producing properly timed oscillations of said lever 157 may be connected with the outer end 159′ of said lever. Fixed on the inner free end of said lever 157 is a downwardly projecting spreader lug or finger 160, which possesses a chamfered free end 160′. When the carton is alined in lining receiving position, and as the plunger or mandrel 122 with the preformed lining thereon approaches the open end of the carton to insert the lining thereinto, the lever 157 is oscillated, by its timed actuating means, to swing downwardly the spreader lug or finger 160 into engagement with the left-hand or forward side tab 2, to thereby spread or deflect or wedge the same outwardly or away from the approaching plunger or mandrel and the lining carried thereby. (See Figs. 1 and 9).

In operation, while the plunger or mandrel 122 is in retracted position, the paper feed mechanism delivers intermediate the plunger or mandrel and the tucking and folding devices a properly sized portion of the wax paper 143 (see Figures 2 and 3). The paper having been thus delivered, the advancing movement of the plunger or mandrel 122 is initiated by its timed actuating means, while at the same time the portion of paper delivered is sheared or cut away from the main run thereof. The advancing movement of the plunger or mandrel 122 carries the several paper sheets against the lower lip 161 formed by the adjacent end margins of the supporting plates 121 and against the upper lip 162 formed by the adjacent end margin of the cover plate 139, whereby, as the plunger or mandrel enters the passage, bounded on the sides by the tucking and folding devices, and respectively at the bottom and top by the supporting plates 121 and cover plate 139, the upwardly and downwardly extending portions of the papers are folded or doubled back upon the plunger or mandrel, so as to lie respectively flat against the top and bottom surfaces of said plunger or mandrel. Since the width of the paper is greater than the width of the plunger or mandrel, longitudinal marginal and foldable portions of the same will be left projecting from each side of the plunger or mandrel, at the top and bottom thereof. As the plunger or mandrel carries the paper inwardly between the tucking blocks 127, the opposing ends of the T-shaped tucking members 128 will engage the laterally projecting portions of the fold of paper which is turned around the leading end of the plunger or mandrel, and will force or tuck such portions backwardly against the sides of the plunger or mandrel. As such portions of the paper are turned and passed between the vertical end faces 129 of said T-shaped tucking members 128 and the sides of the plunger or mandrel, while the longitudinal marginal and foldable portions projecting from each side of the plunger or mandrel, at the top and bottom thereof, will be substantially undisturbed and will respectively pass between top edges 128′ of the T-shaped tucking members 128 and the cover plate 139, and between the bottom edges 128″ of the T-shaped tucking member 128 and the supporting plates 121 (see Figure 5). It is preferable that the respective top and bottom edges 128′ and 128″ of the T-shaped tucking members 128, shall slightly converge in a direction opposed to the entering plunger or mandrel, so that no undue strains are exerted upon the paper when producing the tucking folds. As the plunger or mandrel continues to advance the longitudinal marginal or foldable portions of the paper projecting beyond the bottom surface of the plunger or mandrel are carried into engagement with the up-turning folder members 130, the upwardly and forwardly inclined edges 132 of which engage and turn upwardly said foldable portions of the paper, so that the same pass between the sides of the plunger or mandrel and the vertical face 131 of said up-turning folder members 130 (see Figure 6). As the plunger or mandrel further advances, the longitudinal marginal or foldable portions of the paper projecting beyond the top surface of the plunger or mandrel are carried into engagement with the down-turning folder members 133, the downwardly and forwardly inclined end portions 135 of which engage and turn downwardly said latter foldable portions, so that the same pass between the sides of the plunger or mandrel and the vertical faces 134 of said down-turning folder members 133, while at the same time causing the down-turned folds to overlap the previously formed up-turned folds of the paper (see Figures 4 and 7), thus completing the formation of a lining ready for insertion within the carton alined to receive the same.

It is desirable in many instances, especially when the lined cartons are to contain a product, the keeping qualities of which are enhanced if protected from the atmosphere, to hermetically seal the lining. To this end a wax or paraffin paper is provided for the formation of the lining, the wax or paraffin saturating the paper being readily fusible at comparatively low temperatures. When, therefore, a lining is formed by the movement of the plunger or mandrel

through the tucking and folding devices, a proper application of heat will fuse the wax or paraffin and will cause overlapping and interfolded parts of the lining to adhere together, and will thus hermetically seal the joints formed at such overlapping and interfolded parts. It has, heretofore, been quite the common practice in forming such sealed linings to heat the plunger or mandrel, but when the latter is the only source of or means for applying the heat, the sealing results are not always uniform or certain, especially in a comparatively high speed machine, such as the present invention seeks to provide. We have in the instant invention provided in addition to the heated mandrel, a means for heating the down-turning folder members 133, so that as the overlapped longitudinal folds of the lining are brought together, the wax or paraffin in each fold is independently supplied with fusing heat, so that immediately on contact one with the other the softened or melted wax or paraffin of one fold will at once fuse with the softened or melted wax or paraffin of the other fold, whereby a uniform union throughout their areas of mutual contact is effected, and the adjacency of a cold surface to one fold tending to non-uniform fusion of the contacting folds is avoided. This feature of our lining forming mechanism is deemed of considerable importance both as to novelty and utility.

The lining having been preformed and hermetically sealed in the manner above indicated, the plunger or mandrel, as it continues to advance, carries the lining onward and through the opposed open end of the awaiting carton, so as to insert the same into the interior of the latter. The lining having thus been entered in the carton, the retractive movement of the plunger or mandrel withdraws the latter leaving the lining in place within the carton. In order to prevent the withdrawing plunger or mandrel from effecting a suction tending to displace the lining from its operative inserted position, the plunger or mandrel is provided with an air passage 126, as above mentioned, so that air may enter the interior of the lined carton as the plunger or mandrel is displaced. Another factor which operates to prevent displacement of the lining from the carton as the plunger or mandrel withdraws, comprises a pair of carton pressure blocks which respectively engage the under side of the carton and the upper side of the carton, whereby the comparatively cold walls of the carton are pressed against the hot wax paper of the inserted lining to thereby cause the wax to congeal and adhere to said carton walls, thus holding the inserted lining against outward displacement. The said carton pressure blocks comprise, a lower pressure block 163 which is mounted upon a leaf spring 164 adapted to press the same upwardly through an opening in the carton slide-way 41 into engagement with the underside of the carton, and an upper pressure block 165, which is mounted upon a leaf-spring 166, secured to said keeper plate 42, and adapted to press the same downwardly against the upper side of the carton (see Figures 2 and 3).

After the sealed lining has been inserted in the carton, the forward movement of a succeeding carton, upon the carton slide-way, into position to in turn receive its lining, engages and pushes onward the former carton, whereby the lining mechanism functions in connection with a succession of cartons fed to the same.

Of course, we are aware, that our invention is capable of some changes in the general arrangements and combinations of the various devices and parts as set forth in the foregoing specification, and as defined in the clauses of the claims which are appended thereto. Hence, we do not limit our present invention to the exact arrangements and combinations of the various devices and parts, as described in the said specification, nor do we confine ourselves to the exact details of the construction of the said parts, as illustrated in the accompanying drawings.

We claim:—

1. A mechanism for pre-forming and inserting linings into cartons, comprising a reciprocable mandrel, tucking and folding elements intermediate which said mandrel reciprocates, means for supplying lining material intermediate said mandrel and said tucking and folding elements, means for holding the cartons with their open ends directed toward said mandrel, a stationary spreader finger for engaging and deflecting one side tab of the open carton end out of the path of the mandrel, a movable spreader means for engaging and deflecting the opposite side tab of the open carton and out of the path of the mandrel after the carton is disposed in lining receiving position.

2. A mechanism for pre-forming and inserting linings into cartons, comprising a reciprocable mandrel, supporting means over which said mandrel reciprocates, a pair of opposed stationary tucking-blocks on said supporting means provided at their opposed ends with substantially T-shaped tucking members, a pair of opposed stationary up-turning folding members on said supporting means beyond said tucking-blocks, a pair of opposed stationary down-turning folder members on said supporting means beyond said up-turning folder members, said mandrel being adapted to be reciprocated intermediate said opposed tucking-blocks and folder members, a cover-plate bridging said opposed tucking-blocks and folder members, said mandrel being adapted to reciprocate

beneath said cover-plate, and means for supplying lining material intermediate the leading end of said mandrel and said tucking blocks.

3. A mechanism for pre-forming and inserting linings into cartons, comprising a reciprocable mandrel, supporting means over which said mandrel reciprocates, a pair of opposed stationary tucking-blocks on said supporting means provided at their opposed ends with substantially T-shaped tucking members, a pair of opposed stationary up-turning folder members on said supporting means beyond said tucking-blocks, a pair of opposed stationary down-turning folder members on said supporting means beyond said up-turning folder members, said mandrel being adapted to be reciprocated intermediate said opposed tucking-blocks and folder members, a cover-plate bridging said opposed tucking-blocks and folder members, said mandrel being adapted to reciprocate beneath said cover-plate, means for supplying lining material intermediate the leading end of said mandrel and said tucking blocks, means for holding the cartons with their open ends directed toward said mandrel, a stationary spreader finger for engaging and deflecting one side tab of the open carton end out of the path of the mandrel, a movable spreader means for engaging and deflecting the opposite side tab of the open carton end out of the path of the mandrel after the carton is disposed in lining receiving position.

4. A mechanism for pre-forming and inserting a sealed lining wax paper into cartons, comprising a reciprocable mandrel, means for heating said mandrel, tucking and folding elements intermediate which said mandrel reciprocates, means for heating certain of said folding elements, means for supplying wax lining paper intermediate said mandrel and said tucking and folding elements, and means for holding the cartons with their open ends directed toward said mandrel.

5. A mechanism for pre-forming and inserting a sealed lining of wax paper into cartons, comprising a reciprocable mandrel, means for heating said mandrel, tucking and folding elements intermediate which said mandrel reciprocates, means for heating certain of said folding elements, means for supplying wax lining paper intermediate said mandrel and said tucking and folding elements, means for holding the cartons with their open ends directed toward said mandrel, a stationary spreader finger for engaging and deflecting one side tab of the open carton end out of the path of the mandrel, a movable spreader means for engaging and deflecting the opposite side tab of the open carton end out of the path of the mandrel after the carton is disposed in lining receiving position.

6. A mechanism for pre-forming and inserting a sealed lining of wax paper into cartons, comprising a reciprocable mandrel, means for heating said mandrel, tucking and folding elements intermediate which said mandrel reciprocates, means for heating certain of said folding elements, means for supplying wax lining paper intermediate said mandrel and said tucking and folding elements, means for holding the cartons with their open ends directed toward said mandrel, and pressure exerting means for pressing the carton body against the lining inserted therein by said mandrel.

7. A mechanism for pre-forming and inserting a sealed lining of wax paper into cartons, comprising a reciprocable mandrel, means for heating said mandrel, tucking and folding elements intermediate which said mandrel reciprocates, means for heating certain of said folding elements, means for supplying wax lining paper intermediate said mandrel and said tucking and folding elements, means for holding the cartons with their open ends directed toward said mandrel, pressure exerting means for pressing the carton body against the lining inserted therein by said mandrel, a stationary spreader finger for engaging and deflecting one side tab of the open carton end out of the path of the mandrel, a movable spreader means for engaging and deflecting the opposite side tab of the open carton end out of the path of the mandrel after the carton is disposed in lining receiving position.

8. A mechanism for pre-forming and inserting a sealed lining of wax paper into cartons, comprising a reciprocable mandrel, means for heating said mandrel, tucking and folding elements intermediate which said mandrel reciprocates, means for heating certain of said folding elements, means for supplying wax lining paper intermediate said mandrel and said tucking and folding elements, means for holding the cartons with their open ends directed toward said mandrel, a lower pressure block under tension to engage and press the under side of the carton body against the lining inserted therein by said mandrel, and an upper pressure block under tension to similarly press the upper side of the carton body against the inserted lining.

9. A mechanism for pre-forming and inserting a sealed lining of wax paper into cartons, comprising a reciprocable mandrel, means for heating said mandrel, tucking and folding elements intermediate which said mandrel reciprocates, means for heating certain of said folding elements, means for supplying wax lining paper intermediate said mandrel and said tucking and folding

elements, means for holding the cartons with their open ends directed toward said mandrel, a lower pressure block under tension to engage and press the under side of the carton body against the lining inserted therein by said mandrel, and an upper pressure block under tension to similarly press the upper side of the carton body against the inserted lining, a stationary spreader finger for engaging and deflecting one side tab of the open carton end out of the path of the mandrel, a movable spreader means for engaging and deflecting the opposite side tab of the open carton end out of the path of the mandrel after the carton is disposed in lining receiving position.

10. A mechanism for pre-forming and inserting a sealed lining of wax paper into cartons, comprising a reciprocable mandrel, means for heating said mandrel, supporting means over which said mandrel reciprocates, a pair of opposed stationary tucking blocks on said supporting means provided at their opposed ends with substantially T-shaped tucking members, a pair of opposed stationary up-turning folder members on said supporting means beyond said tucking blocks, a pair of opposed stationary down-turning folder members on said supporting means beyond said up-turning folder members, means for heating said down-turning folder members, said mandrel being adapted to be reciprocated intermediate said opposed tucking-blocks and folder members, a cover-plate bridging said opposed tucking-blocks and folder members, said mandrel being adapted to reciprocate beneath said cover-plate, means for supplying wax lining paper intermediate the leading end of said mandrel and said tucking blocks, and means for holding the cartons with their open ends directed toward said mandrel.

11. A mechanism for pre-forming and inserting a sealed lining of wax paper into cartons, comprising a reciprocable mandrel, means for heating said mandrel, supporting means over which said mandrel reciprocates, a pair of opposed stationary tucking blocks on said supporting means provided at their opposed ends with substantially T-shaped tucking members, a pair of opposed stationary up-turning folder members on said supporting means beyond said tucking blocks, a pair of opposed stationary down-turning folder members on said supporting means beyond said up-turning folder members, means for heating said down-turning folder members, said mandrel being adapted to be reciprocated intermediate said opposed tucking-blocks and folder members, a cover-plate bridging said opposed tucking-blocks and folder members, said mandrel being adapted to reciprocate beneath said cover-plate, means for supplying wax lining paper intermediate the leading end of said mandrel and said tucking blocks, means for holding the cartons with their open ends directed toward said mandrel, a stationary spreader finger for engaging and deflecting one side tab of the open carton end out of the path of the mandrel, a movable spreader means for engaging and deflecting the opposite side tab of the open carton end out of the path of the mandrel after the carton is disposed in lining receiving position.

12. A mechanism for pre-forming and inserting a sealed lining of wax paper into cartons, comprising a reciprocable mandrel, means for heating said mandrel, supporting means over which said mandrel reciprocates, a pair of opposed stationary tucking blocks on said supporting means provided at their opposed ends with substantially T-shaped tucking means, a pair of opposed stationary up-turning folder members on said supporting means beyond said tucking blocks, a pair of opposed stationary down-turning folder members on said supporting means beyond said up-turning folder members, means for heating said down-turning folder members, said mandrel being adapted to be reciprocated intermediate said opposed tucking-blocks and folder members, a cover-plate bridging said opposed tucking-blocks and folder members, said mandrel being adapted to reciprocate beneath said cover-plate, means for supplying wax lining paper intermediate the leading end of said mandrel and said tucking blocks, means for holding the cartons with their open ends directed toward said mandrel, and pressure exerting means for pressing the carton body against the lining inserted therein by said mandrel.

13. A mechanism for pre-forming and inserting a sealed lining of wax paper into cartons, comprising a reciprocable mandrel, means for heating said mandrel, supporting means over which said mandrel reciprocates, a pair of opposed stationary tucking-blocks on said supporting means provided at their opposed ends with substantially T-shaped tucking members, a pair of opposed stationary up-turning folder members on said supporting means beyond said tucking blocks, a pair of opposed stationary down-turning folder members on said supporting means beyond said up-turning folder members, means for heating said down-turning folder members, said mandrel being adapted to be reciprocated intermediate said opposed tucking-blocks, and folder members, a cover-plate bridging said opposed tucking-blocks and folder members, said mandrel being adapted to reciprocate beneath said cover-plate, means for supplying wax lining paper intermediate the leading end of said mandrel and said tucking blocks, means for holding the cartons with their open ends directed toward said mandrel, pressure exerting means for pressing the carton body

against the lining inserted therein by said mandrel, a stationary spreader finger for engaging and deflecting one side tab of the open carton end out of the path of the mandrel, a movable spreader means for engaging and deflecting the opposite side tab of the open carton end out of the path of the mandrel after the carton is disposed in lining receiving position.

14. A mechanism for pre-forming and inserting a sealed lining wax paper into cartons, comprising a reciprocable mandrel, means for heating said mandrel, supporting means over which said mandrel reciprocates, a pair of opposed stationary tucking blocks on said supporting means provided at their opposed ends with substantially T-shaped tucking members, a pair of opposed stationary up-turning folder members on said supporting means beyond said tucking blocks, a pair of opposed stationary down-turning folder members on said supporting means beyond said up-turning folder members, means for heating said down-turning folder members, said mandrel being adapted to be reciprocated intermediate said opposed tucking-blocks and folder members, a cover-plate bridging said opposed tucking-blocks and folder members, said mandrel being adapted to reciprocate beneath said cover-plate, means for supplying wax lining paper intermediate the leading end of said mandrel and said tucking blocks, means for holding the cartons with their open ends directed toward said mandrel, a lower pressure block under tension to engage and press the under side of the carton body against the lining inserted therein by said mandrel, and an upper pressure block under tension to similarly press the upper side of the carton body against the inserted lining.

15. A mechanism for pre-forming and inserting a sealed lining of wax paper into cartons, comprising a reciprocable mandrel, means for heating said mandrel, supporting means over which said mandrel reciprocates, a pair of opposed stationary tucking-blocks on said supporting means provided at their opposed ends with substantially T-shaped tucking members, a pair of opposed stationary up-turning folder members on said supporting means beyond said tucking blocks, a pair of opposed stationary down-turning folder members on said supporting means beyond said up-turning folder members, means for heating said down-turning folder members, said mandrel being adapted to be reciprocated intermediate said opposed tucking-blocks and folder members, a cover-plate bridging said opposed tucking-blocks and folder members, said mandrel being adapted to reciprocate beneath said cover-plate, means for supplying wax lining paper intermediate the leading end of said mandrel and said tucking blocks, means for holding the cartons with their open ends directed toward said mandrel, a lower pressure block under tension to engage and press the under side of the carton body against the lining inserted therein by said mandrel, an upper pressure block under tension to similarly press the upper side of the carton body against the inserted lining, a stationary spreader finger for engaging and deflecting one side tab of the open carton end out of the path of the mandrel, a movable spreader means for engaging and deflecting the opposite side tab of the open carton end out of the path of the mandrel after the carton is disposed in lining receiving position.

In testimony, that we claim the invention set forth above we have hereunto set our hands this twenty first day of January, 1926.

HARRY L. EVANS.
GEORGE I. HOHL.