Jan. 12, 1960 J. J. REJSA 2,920,429

CASE PACKER

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FIG. 2

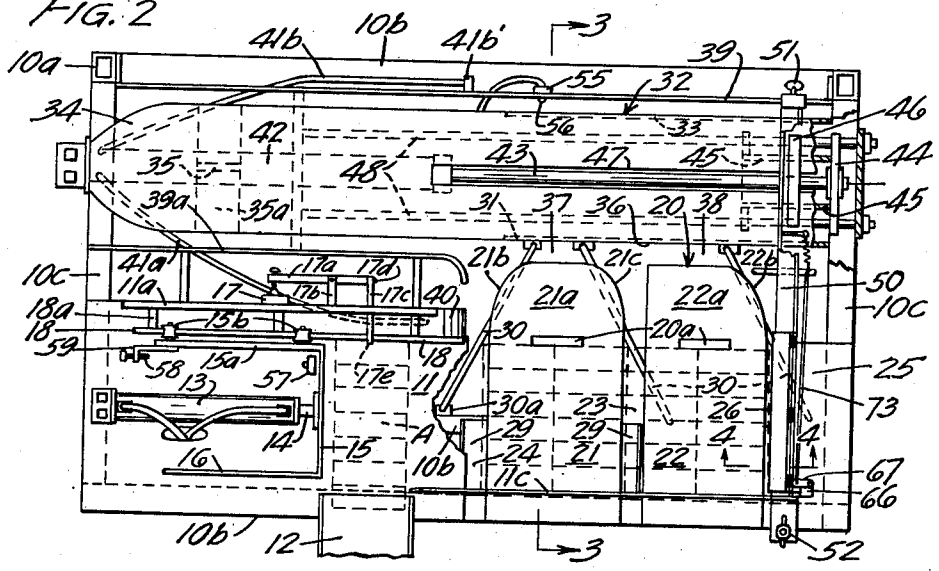
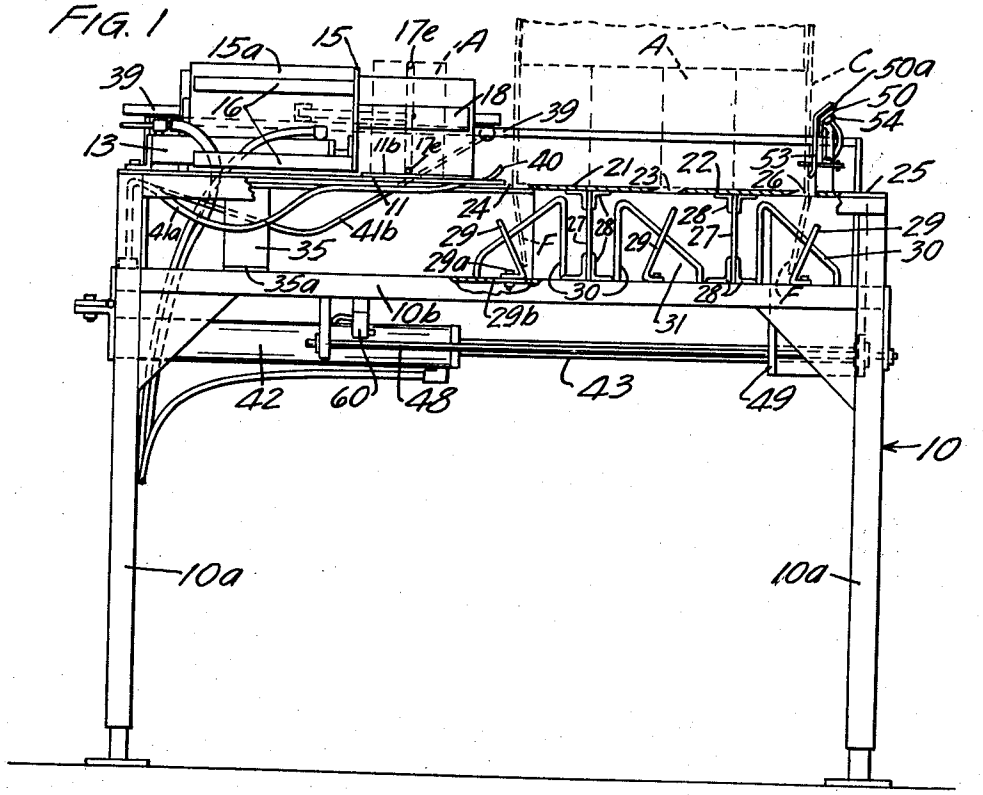


FIG. 1



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FIG. 3

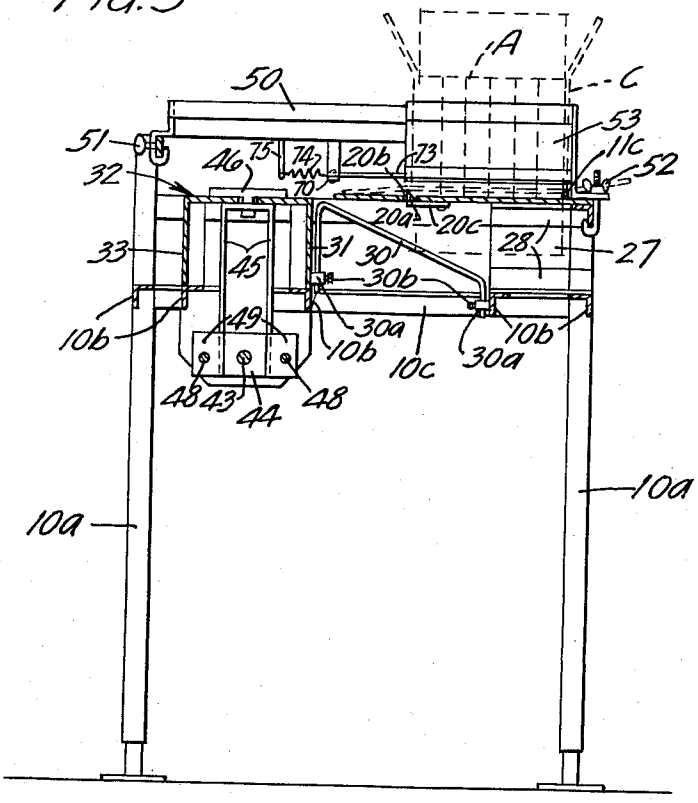


FIG. 5

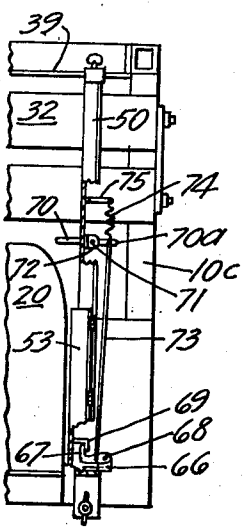
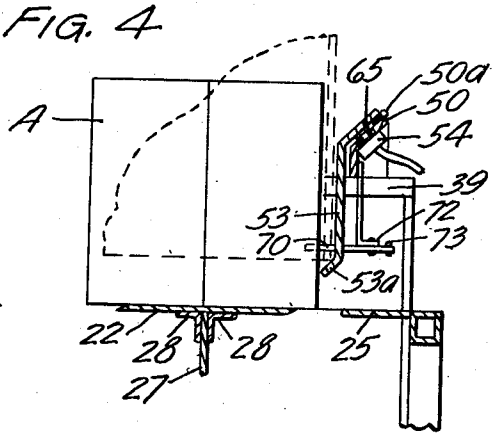


FIG. 4



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2,920,429

CASE PACKER

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Application March 8, 1957, Serial No. 644,946

5 Claims. (Cl. 53—61)

This invention relates to apparatus for packing a number of package units in a case and more specifically relates to apparatus for enclosing a carton blank in supporting relation around a number of package units.

Packing of articles such as boxes, bags, cans and bottles into shipping cartons or cases has always been an expensive step in the production of material contained in such package units. Some packing machines require that preformed and partially closed cartons be employed. Some such machines require the cases to be tilted and turned to facilitate packing and then subsequent handling of the packed cases. Such steps in the packing of cases unnecessarily increase the cost of the operation and materially contribute to the likelihood of damaging the package units during packing thereof.

An object of my invention is to provide a new and improved case packing machine of relatively simple and inexpensive construction and operation.

Another object of my invention is to provide and improved case packing machine facilitating utilization of open ended carton blanks which are slipped into enclosing relation with an accumulation of package units and which are subsequently closed at their lower ends to support the package units therein.

A further object of my invention is the provision of an improved case packer wherein the package units are accumulated and then moved substantially in a plane as a carton blank is applied thereto and at least partially closed to support and confine the package units.

A still further object of my invention is to provide a new and novel case packer wherein the package units are in a predetermined arrangement and are maintained the same orientation, as the package units and a carton blank applied thereto are moved substantially in a plane for closing the flaps at one end of the carton blank for supporting and confining the package units therein.

These and other objects and advantages of my invention will more fully appear from the following description made in connection with the accompanying drawings wherein like reference characters refer to the same parts throughout the several views and in which:

Fig. 1 is a front elevation view, partly broken away, of the invention and showing accumulated articles with a carton applied thereto in dotted lines;

Fig. 2 is a top plan view, partly broken away, of the invention and showing a number of articles accumulated thereon;

Fig. 3 is a section view taken substantially on a vertical plane as indicated at 3—3 in Fig. 2 and showing a carton applied to articles accumulated thereon;

Fig. 4 is a detail section view taken substantially at 4—4 in Fig. 2, and showing a carton in dotted lines being applied to articles on the machine; and

Fig. 5 is a detailed top plan view, partly broken away, of one end of the machine comprising the present invention.

One form of the present invention is shown in the drawings and is described herein. The machine includes

a supporting structure indicated in general by numeral **10** and having a number of support legs **10***a*, a number of longitudinally extending frame members **10***b*, and a number of transverse frame members **10***c*. The machine is provided with an article-receiving surface **11** which is in the plane of a delivery plate **12** and which has mounted thereon an air cylinder **13**, the piston rod **14** of which is connected to an article pushing plate **15** for delivering the articles transversely across the receiving plate **11**. A pair of article-retaining elements **16** are secured to the front upright edge of pusher plate **15** and extend rearwardly therefrom to hold the articles adjacent the outer edge of plate **11** as the pusher **15** is moved forwardly. Plate **15** has a mounting plate **15***a* affixed to the other upright edge thereof and extending rearwardly therefrom for supporting the pusher **15**. Mounting plate **15***a* has a plurality of grooved rollers **15***b* journalled thereon and arranged in vertically spaced and opposed pairs for engaging the upper and lower edges of a rigid track or bar **18** which is connected by horizontal posts **18***a* to an upright frame plate **11***a* which is affixed to and is stationary with article-supporting plate **11**. An air valve **17** is mounted on the rear side of upright plate **11***a* and is operated by a lever arm **17***a* pivotally mounted on post **17***b* for movement in a horizontal plane and having an actuating element **17***c* swingably secured thereto as by pivot **17***d* for movement in a vertical plane. The actuating element **17***c* has a pair of vertically spaced upper and lower forwardly extending article-detecting fingers **17***e*, one of which extends over the top of plate **11***a* and the other of which extends through an aperture in the lower portion of plate **11***a* for engaging the upper and lower portions of the articles A supplied onto supporting table **11**. It will be noted that the articles must be upright in order to properly simultaneously engage both the fingers **17***e* and if the first article is tipped over, only the lower finger **17***e* is engaged thereby which causes swinging of actuating element **17***c* in a vertical plane and about pivot **17***d* and will not cause operation of the air cylinder actuating valve **17**. However, when six of the articles A in upright position are moved onto plate **11**, both of the fingers **17***e* of actuating element **17***c* are engaged to cause operation of the air valve **17** and thereby cause operation of air cylinder **13**.

It should be noted that the track **18** serves the dual purposes of supporting the pusher plate **15** and operating as a stop against which the articles A move from the supply plate **12**. In addition, another stop bar **11***b* is provided on the surface **11** and immediately below the rail **18**.

An elongated article-guiding bar **11***c* is affixed on supporting surface **11** in substantial alignment with the front upright edge of pusher plate **15** and the article-retaining element **16**, and the guide bar **11**c extends longitudinally across the machine for guiding the articles as they are pushed by pusher **15**.

The machine is provided with table means to support articles thereon as a carton blank is applied thereto and has the bottom flaps thereof folded upwardly and inwardly into enclosing relation. Such table means include an article-collecting table which is indicated in general by numeral **20** and which has a pair of side-by-side elongated sections **21** and **22**, which are spaced from each other to define a flap-receiving slot **23** therebetween. The table **20** is also spaced from the article-receiving plate **11** to define a flap-receiving slot **24** therebetween and the table **20** is also disposed slightly below the surface **11** to facilitate ready and easy sliding of the articles from plate **11** onto the table **20**. The other side of table **20** is also spaced from plate **25** to define a flap-receiving slot **26** therebetween. The areas below the sides of the table and below the slots **23**, **24**, and **26** are unobstructed so as to facilitate downward passage of the bottom side

flaps F therealong. Table 20 is supported on the adjacent cross members 10*b* and on a pair of upright plates 27 which are secured to the longitudinal cross members and portions 21 and 22 of the table by clip angles 28. The forward cantilever end portions 21*a* and 22*a* of each of the table sections have unobstructed areas therebelow and are only supported from the plates 27.

Means are provided in table 20 for cooperating with the article-guiding bars 11*c* in retaining the articles A pushed thereonto in closely spaced relation to each other. In the form shown, such means includes a pair of elongated guide blocks 20*a* having beveled top surfaces and disposed in elongated slots 20*b* extending transversely of the sections 21 and 22 of the table. The guide blocks 20*a* are affixed to leaf springs 20*c* which are secured as by rivets to the bottom sides of table sections 21 and 22. The upper beveled surfaces of blocks 20*a* slope downwardly toward the articles A on the surface and are maintained above the top of table 20 to retain the articles A in accumulated relation. Springs 20*c* permit downward shifting of guide block 20*a* when the accumulated articles encompassed by a carton C are pushed toward the forward end portion of the table 20.

Means are provided to facilitate folding of the bottom side flaps F of the carton as the carton is applied downwardly onto table 20 and in encompassing relation with the articles on the table and is subsequently moved forwardly of the table with the articles therein. In the form shown, such means include a plurality of generally upright but inclined guide members 29 adjustably secured by bolts 29*a* through elongated slots 29*b* in the longitudinal cross members 10*b*. The guide members 29 are disposed adjacent the table-supporting plates 27 and beneath the slots 24, 23 and 26 respectively. The guide members 29 are positioned to engage the flaps F as the same are moved downwardly and to slightly bend the flaps inwardly so as to initially break the flaps along the score lines at the juncture between the flaps and the carton body. Such folding means also include a plurality of flap-folding plows or bars 30 each disposed below a respective slot 24, 23 and 26 and adjacent the forward portion of the table. The bars 30 extend upwardly and convergingly toward the forward end portion of the table 20 and are vertically adjustably secured in mounting blocks 30*a* by set screws 30*b*. In this connection it will be noted that the side edges 21*b* and 21*c* and 22*b* are tapered convergingly inwardly at the forward end portions 21*a* and 22*a*. It should also be noted that the side edges of the plates forming table 20, as best seen in Fig. 1 are beveled on their lower sides. The beveled edges and the inwardly converging forward portions of these edges facilitate the inward folding of the carton flaps as the carton is moved forwardly over the cantilever end portions of the table.

The table means also includes a carton-supporting table portion which is indicated in general by numeral 32, the upper surface of which is disposed slightly below the plane of table 20 and is supported by plate 31 and plate 33 which are at the opposite sides of table 32 and which extend only through a portion of the length thereof. The table 32 has a cantilever forward or outer end portion 34 which is supported primarily by the upright plates 31 and 33 and is also supported at the longitudinal center thereof and inwardly from the outer edge thereof by an upright plate 35 which is affixed as by welding to the longitudinal frame members 10*b* by means of cross plate 35*a*. The side edge portion 36 of table 32 is spaced from the forward edges of sections 21 and 22 of table 20 to define flap-receiving slot openings 37 and 38 therebetween. The slot openings 37 and 38 receive the inwardly folded bottom side flaps of the carton therethrough as the carton is manually pushed from table 20 onto table 32.

A stop and guide rod 39 is affixed at its opposite ends to the supporting structure and extends along table 32 in spaced relation to the outer side thereof for abutting the cartons pushed onto the table 32. A second guide bar 39*a* is supported on plate 11*a* for engaging the other side of the cartons on the table 32. The areas adjacent the opposite side edges of table 32 are unobstructed, particularly adjacent the cantilever forward portion thereof. The fore-and-aft flaps of the carton are disposed flat upon table 20 when the carton is applied in encompassing relation with the articles. The fore-and-aft flaps remain in this outwardly spread substantially flat condition as the carton moves onto table 32. One of the flaps moves below the guide rod 39 and swings downwardly and an upwardly curved flap-guiding lip 40 adjacent the other side of the table 32 directs the other flap downwardly as the carton is moved along table 32 toward the cantilever forward portion thereof.

Means are provided beneath the unobstructed forward end portion 34 of table 32 for folding the depending fore-and-aft carton flaps into carton-enclosing relation. In the form shown, such means include a pair of elongated flap-folding plows or bars 41*a* and 41*b* disposed below the cantilever portion 34 of table 32 and arranged to produce one hundred and eighty degrees swinging of the fore-and-aft carton flaps. The outer ends of the rods 41*a* and 41*b* are inclined upwardly and are convergent to fold the flaps inwardly around the cantilever forward portion of the plate so that the carton is substantially closed at its lower side as the carton is moved off table 32. The inner or rear ends of flap-plowing rods 41*a* and 41*b* extend outwardly from, and generally longitudinally along, the carton-supporting table 32. The rear end of rod 41*a* is affixed as by welding to the bottom surface of plate 11 immediately adjacent the flap-guiding lip 40. The rear end of rod 41*b* extends upwardly to guide rod 39 and is secured thereto by means of a mounting post 41*b'*. The forward ends of rods 41*a* and 41*b* are secured to the transverse frame element 10*c* below the forward cantilever portion of the table 32.

Means are provided for sliding the carton, and articles therein, along table 32, and in the form shown, such means include an air cylinder 42 having a piston rod 43 affixed at its outer end to a cross plate 44 which is affixed as by welding to a substantially inverted U-shaped carrier 45 which has a push bar 46 secured thereto by means of a diminished neck portion which extends through an elongated slot 47 in the table. Carrier 45 is supported on a pair of guide rods 48 which extend through bearing apertures in mounting ears 49 of carrier 45.

Means are also provided for controlling the operation of air cylinder 13 and air cylinder 42 in relation to the position of the articles and carton on the tables. In the the form shown, such means include an adjustable abutment bar 50, Fig. 4, which is secured at its opposite ends by thumb screws 51 and wing nut 52 to the guide rod 39 and the front cross frame member 10*b* respectively. A swingable actuating element or plate 53 is hinged at 50*a* to the abutment bar 50 and has a lower edge portion 53*a* inclined downwardly and forwardly to be engaged by the articles as the push plate 15 moves the articles onto table 20. Actuating element 53 operates an air valve 54 on bar 50 which causes air cylinder 13 to cease operation until the articles have been cleared from table 20. A suitable spring, such as coil spring 65, is provided for bearing against the actuating plate 53 and urging the same outwardly from the bar 50 into its normal stationary position. In the form shown, the compression spring 65 encircles the operating button of the air valve 54 and bears against the plate 53.

It has been experienced that after the articles A initially engage the lower edge portion 53*a* of the actuating plate 53 for moving the same inwardly and operating the air valve 54, the actuating plate 53 may spring outwardly again. This is particularly so after the machine has been used for a period of time, and the article supporting surfaces of the table 20 have been polished so as to be relatively slippery. In order to prevent the air

valve 54 from being released when the plate 53 springs outwardly, latching mechanism is provided to restrain the outward springing of the actuating plate 53 until a carton C has been applied to the articles A on the table 20 and the carton is pushed over table 20 toward the table 32. In the form shown, such latching mechanism includes, as best seen in Fig. 5, a mounting ear 66 affixed as by welding to the forward end portion of the abutment bar 50. A keeper element 67 is swingably mounted for movement in a substantially horizontal plane by means of pivot 68 to the ear 66. A cooperating latch member 69 is secured to the lower portion of the actuating plate 53. It will be noted that the latching element 69 has an obliquely disposed camming surface on the outer side thereof to engage and shift the keeper 67 as the actuating plate 53 is swung for operating the air valve. A release lever 70 projects transversely outwardly from the abutment bar 50 adjacent the forward portion of the table 20, and is swingably connected by means of pivot 71 to a mounting ear 72 which is affixed as by welding to the rear side of the abutment bar 50. A push bar 73 is swingably connected at its opposite ends to the inner end portion 70*a* of the release lever 70 and to the keeper element 67 respectively. A return spring 74 is connected at its opposite ends to the inner 70*a* of the release lever 70 and to a stationary lug 75 which is affixed as by welding to the abutment bar 50.

When a carton C having a multiplicity of articles A therein is pushed across the table 20 toward the table 32, the carton will engage and operate the release lever 70, causing the keeper 67 to release the latch member 69 and thereby permit the actuating plate to swing outwardly again away from the abutment bar 50, which results in the release of air valve 54 and thereby permit the cylinder 13 to resume operation. It should be noted that the abutment bar 50 may be adjusted on the machine by loosening the thumb screw 51 in the wing nut 52 at its opposite ends, and by then sliding the bar 50 to the left as seen in Figs. 1 and 2.

It should be understood that the position of abutment bar 50 shown in the drawings adapts the machine for packing twenty-four articles A in a carton. If only twelve articles are to be packed in the carton, the abutment bar 50 will be moved into a position substantially directly above the slot 23 between the table sections 21 and 22 of the table 20. When the abutment bar 50 has been shifted in this manner, the operation of the machine will be substantially identical to the operation herein specifically described, with the exception that only twelve articles are received onto the table section 21 before the air valve 54 is operated before the carton C is applied to the collected articles.

An air valve 55 is secured to guide rod 39 and has an actuating element 56 in abutting relation with the carton as the latter is moved from table 20 onto table 32. Air valve 55 causes actuation of air cylinder 42 to move the carton along table 32 and to the outer end thereof.

An air valve 57 is affixed on plate 11 and is disposed adjacent the pusher mounting plate 15*a*. An actuating element 58 is adjustable on bracket 59 which is affixed to plate 15*a* for operating the air valve 57 when the pusher plate 15 is projected forwardly. Air valve 57 is arranged to reverse the operation of air cylinder 13 and retract the pusher plate 15.

An air valve 60 is secured on one of the guide rods 48 to be engaged and operated by one of the mounting ears 49 of the carrier 45. Air valve 60 is arranged to reverse the operation of air cylinder 42 when the piston rod thereof has been retracted so as to cause the piston rod to be projected again to place the pusher 46 in the position shown in Fig. 2.

In operation, the pusher plate 15 is normally in the retracted position shown in Fig. 2 and the carton-pushing bar 46 is normally in the position shown. Articles

A, such as boxes or packages of flour or the like, are continuously supplied across plate 12 and onto receiving plate 11. When a number of articles A have been collected on the receiving plate 11, said number comprising six in the form shown, the leading article will engage the upper and lower fingers 17*e* of actuating element 17*c*, causing the air valve 17 to be operated permitting air to be supplied to cylinder 13. The pusher plate 15 engages the six articles and moves the same onto the table 20 adjacent slot 24. Because the table 20 is disposed slightly below the plane of surface 11, the articles easily slide across the slot 20. When the pusher plate 15 is projected forwardly, the retaining bars 16 restrain further delivery of articles A onto plate 11. As the piston rod 14 is fully extended, the actuating element 58 operates air valve 57 causing the supply of air to be reversed to cylinder 13 which results in retraction of the piston rod 14 and pusher plate 15. When the pusher plate 15 has been retracted, an additional number of articles A are moved toward the abutment bar or track 18 to again operate the valve 17. In the manner set forth, the articles are automatically supplied onto receiving plate 11 and moved onto the collecting table 20, and each succeeding row of six articles pushed the preceding row toward the abutment rod 50. As the last, or fourth, row of articles is moved onto collecting plate 20, the leading row of articles engages the lower edge portion 53*a* of plate 53 and causes limited swinging thereof about the hinge to operate air valve 54 which causes temporary termination of operation of air cylinder 13 until the valve 54 is again released.

It will be noted that the edges of the accumulation of articles on the collecting table 20 overlie the slots 24 and 26 adjacent the opposite sides of the table. A carton C having an open bottom and downwardly extending flaps, the fore-and-aft flaps of which have been bent outwardly along the score lines to thereby form a funnel may then be moved downwardly into encompassing relation with the accumulated articles on the collecting table 20 in such a manner as to cause the depending side flaps F to pass downwardly through the slot openings 24 and 26 and into engagement with the inclined flap guides 29 which bend the side flaps inwardly slightly to initially break the cardboard along the score line. The carton C is pushed downwardly until the fore-and-aft flaps lie substantially flat upon the table.

When the carton has been emplaced in encompassing relation with the articles, the carton with the articles therein is manually pushed along the collecting table 20, over the forward end portion thereof and onto the carton-supporting table 32. As the carton is moved forwardly along table 20, the depending side flaps engage the upwardly inclined and convergent bars 30 and are folded thereby inwardly and upwardly against the unobstructed forward end portion of table 20. As best seen in Fig. 3, the bars 30 initially engage the depending flaps adjacent their outermost portion so as to utilize as much leverage as possible in folding the flaps inwardly and upwardly. As the side flaps are effectively wrapped around the forward portion of table 20, binding between the flaps and the table is substantially prevented because the edge portions 21*b* and 22*b* of the table are tapered inwardly and also because these side edges are beveled. As the carton is pushed over the forward edge portion of table 20, the inwardly folded side flaps pass through the openings 37 and 38 between table 20 and table 32 and the inwardly folded side flaps pass easily onto the table 32 in overlying engagement therewith because the table 32 is disposed slightly below the plane of table 20.

As the carton passes onto table 32, the leading fore-and-aft flap passes beneath the bar 39 and into the unobstructed area immediately therebelow and adjacent the side of table 32. This flap is free to swing downwardly and ordinarily swings downwardly to a position of approximately thirty to sixty degrees with the hori-

zontal. The other fore-and-aft flap remains in substantially horizontal and overlying engagement with the forward end portion of table 20. It should also be noted that as the carton moves onto table 32, the actuating element 53 is released and air valve 54 is again operated to permit further operation of air cylinder 13. A short time delay may be provided between the release of air valve 54 and the commencing of operation of air cylinder 13 to assure that the carton is out of the way of additional articles supplied by pusher 15 onto table 20.

As the carton progresses across table 32, the air valve 55 will be operated to cause cyinder 42 to retract its piston rod 43. As the piston rod 43 retracts, the carton is engaged and then pushed longitudinally of table 32 by the pusher bar 46. When the cylinder has fully retracted the piston rod thereof, the air valve 60 will be operated causing reversal of the operation of the air cylinder 13 and subsequent projection of the rod 43 to move the push bar 46 back to the position shown in Fig. 2.

As the carton moves longitudinally along table 32, one of the fore-and-aft flaps, which is still in over-lying engagement with table 20, engages the upturned lip 40 and is guided thereby below the plate 11 and into engagement with the flap-folding rod 41*a*. As this flap moves along the rod 41*a*, it is progressively swung downwardly and then inwardly as it approaches the outer end of the table. Likewise the other fore-and-aft flap engages the rod 41*b* and is swung thereby downwardly and then inwardly into carton-closing position as the carton approaches the outer end of the table. It will be noted that the inwardly folded fore-and-aft flaps may engage the upright table-supporting plate 35, but it should be understood that the carton sidewalls have sufficient resiliency to permit limited outward shifting of the flaps to temporarily compensate for the engagement by the edges of the inwardly folded flaps with the table-supporting plate 35. When the fore-and-aft flaps have been folded inwardly the carton may be slid off the end of table 32 and onto an adjacent supporting media wherein additional processing steps may be accomplished for preparing the cartoned articles for shipment or storage.

It will be seen that I have provided a new and improved apparatus facilitating application of open-bottomed carton blanks into encompassing relation with an accumulation of articles and also facilitating progressive closure of the adjacent bottom flaps of the carton so that the bottom flaps provide support for the articles encompassed by the carton.

It will, of course, be understood that various changes may be made in the form, detail, arrangement and proportion of the parts without departing from the scope of my invention which consists of the matter described herein and set forth in the appended claims.

What I claim is:

1. For use in loading a number of articles into a carton of the type having an open lower end with closable bottom flaps, the combination of a supporting structure, an article-delivery means on the structure and including a supporting surface having an edge portion over which the articles are discharged, a stationary article-collecting table on the supporting structure and having a forward portion and also having an article-receiving rear portion with one side being disposed adjacent the article-delivery means and below the plane of the supporting surface thereof, said table also having side edges, one disposed in spaced and edge-to-edge relation with the supporting surface edge portion and both of said table side edges having unobstructed areas adjacent thereto to facilitate passage therealong of the depending side flaps of such a carton in encompassing relation to the articles on the table, said forward portion of the table having an unobstructed area therebelow to facilitate inward and upward folding of the carton side flaps as the carton is moved thereover, and a carton-supporting surface on the support structure and spaced from the forward portion of the table and receiving and supporting the inwardly folded side flaps of the carton in article-supporting relation as the carton and articles are moved over the forward portion of the table.

2. For use in loading a number of articles into a carton of the type having an open lower end with closable bottom flaps, the combination of a supporting structure, an article-supporting table on the supporting structure and having a forward portion and an article-receiving rear portion and also having opposite side portions, article delivery means including a supporting surface in spaced edge-to-edge relation with one of the side portions of the table, an article-engaging abutment above the other side portion of the table and adjustable transversely of the table, the opposite side portions of the table having unobstructed areas adjacent thereto to facilitate passage therealong of the depending side flaps of a first carton applied in encompassing relation to the articles on the table, said table having an elongated slot extending longitudinally therethrough and through the forward portion and defining an unobstructed area to facilitate passage therethrough of a depending flap of a differently sized second sized second carton, said abutment being adjustable to said slot to provide selectivity of the number of articles collected on the table, the forward portion of the table having an unobstructed area therebelow to facilitate inward and upward swinging of the carton side flaps into closed relation, flap-folding means on the support structure and beneath the opposite sides of the table and beneath said slot for folding the carton side flaps inwardly and upwardly, and a carton-supporting surface in spaced and edge-to-edge relation with the said forward portion of the table and cooperatively defining therewith, flap-receiving slot means to facilitate passage of inwardly folded flaps therethrough and into engagement with the carton-supporting surface for supporting the articles in the carton.

3. For use in loading a number of articles into a carton of the type having an open lower end and depending closable flaps, the combination of a support structure, an article delivering means including an article supporting surface over which the articles are moved and also including a motor means for moving the articles over said surface, a table means including an article-collecting table portion adjacent said article supporting surface to receive the articles therefrom, an article abutment adjacent the table portion and opposite the supporting surface of the delivering means to limit a number of articles collected on the table portion, control mechanism for said motor means and including a control device arranged to stop the motor means to thereby prevent further delivery of articles, and an article-engaging actuating element for said control device and movably mounted on said abutment for engaging the articles stopped thereby to stop the motor means when the limit of the number of articles on the table portion is reached, latching mechanism associated with said actuating element for retaining the same in shifted position, said article collecting table portion being constructed and arranged to facilitate application of a carton in encompassing relation onto articles collected thereon, and release mechanism for said latching mechanism and including an operating lever disposed adjacent one end of the article collecting table portion for engaging the carton as the same is moved over the table portion, whereby to release the actuating element and permit further operation of the motor means for delivering additional articles onto the article-collecting table portion.

4. For use in loading a number of articles into a carton of the type having an open lower end with closable bottom flaps, the combination of a supporting structure, an article-supporting table on the supporting structure and having a forward portion and an article-receiving rear portion and also having side edges, the side edges of the table having unobstructed areas adjacent

thereto to facilitate passage therealong of the depending side flaps of a first carton applied in encompassing relation to the articles on the table, said table having an elongated slot extending longitudinally therethrough and through the forward portion and defining an unobstructed area to facilitate passage therethrough of a depending flap of a differently sized second carton, the slot in the table defining opposite side portions, one of which is of corresponding width to the dimensions of such a second carton, the forward portion of the table having an unobstructed area therebelow to facilitate inward and upward swinging of the carton side flaps into closed relation, flap-folding means on the support structure and beneath the opposite side edges of the table and also beneath said slot and one side portion of the table for folding the carton side flaps inwardly and upwardly, and a carton-supporting surface in spaced and edge-to-edge relation with said forward portion of the table and cooperatively defining therewith, flap-receiving slot means to facilitate passage of inwardly folded flaps therethrough and into engagement with the carton-supporting surface for supporting the articles in the carton, whereby to provide selectivity between said first and second cartons which may be applied over articles on the table and may have the bottom flaps thereof closed.

5. For use in loading a number of articles into a flat-sided carton of the type having a lower end with closable flaps below the several sides of the carton, the combination of a supporting structure, a table means including an article-supporting table portion having a forward end and opposite sides, at least one of said sides having an unobstructed area adjacent thereto to facilitate passage therealong of a first depending flap of the article-encompassing carton, the forward end having an unobstructed area therebelow facilitating inward and upward swinging of said first depending side flap, and said table means also including a carton-supporting table portion and having an inner carton-receiving end in spaced and edge-to-edge relation with the forward end of the article-supporting table portion and defining a slot opening therebetween extending transversely of the article-supporting table portion and inwardly from said unobstructed side a distance sufficient to receive said first flap therethrough, said carton-supporting table portion extending transversely of the article-supporting table portion and also having a side portion with an unobstructed area adjacent thereto to facilitate downward swinging of a second carton flap and also having an outer end unobstructed therebelow and defining a front edge to facilitate passage thereover of said second flap when the same has been folded upwardly and inwardly, the inner end of the carton-supporting table portion having an elongate, longitudinally oriented slot therein, a carton pusher above the carton-supporting table portion, and means for moving said pusher and including a connecting member extending upwardly through said slot for moving the pusher longitudinally of the carton-supporting table and moving the carton toward the outer end of the table portion.

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