Feb. 20, 1962 J. P. CHADIMA ETAL 3,021,655

MACHINE AND METHOD FOR PACKING ARTICLES

Filed Feb. 10, 1959

5 Sheets-Sheet 1

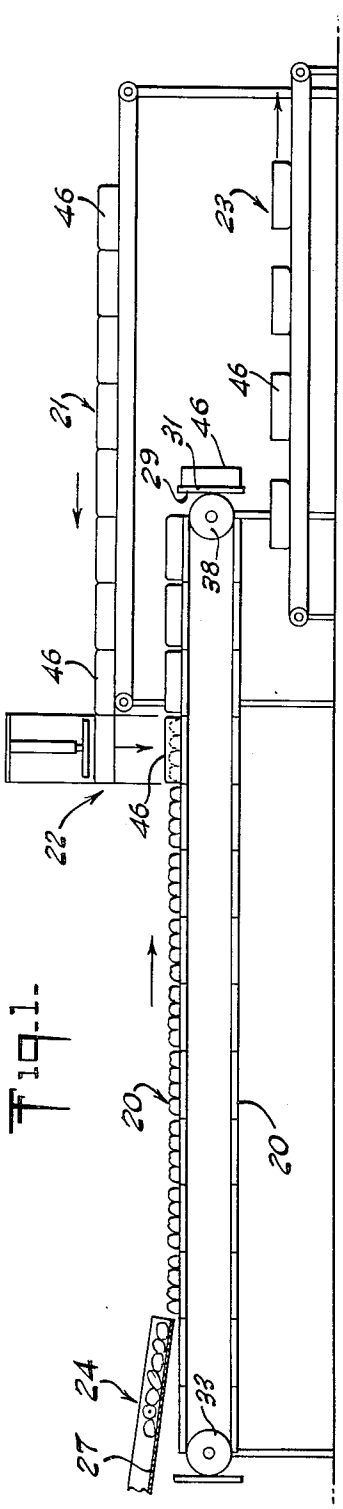


Fig. 1.

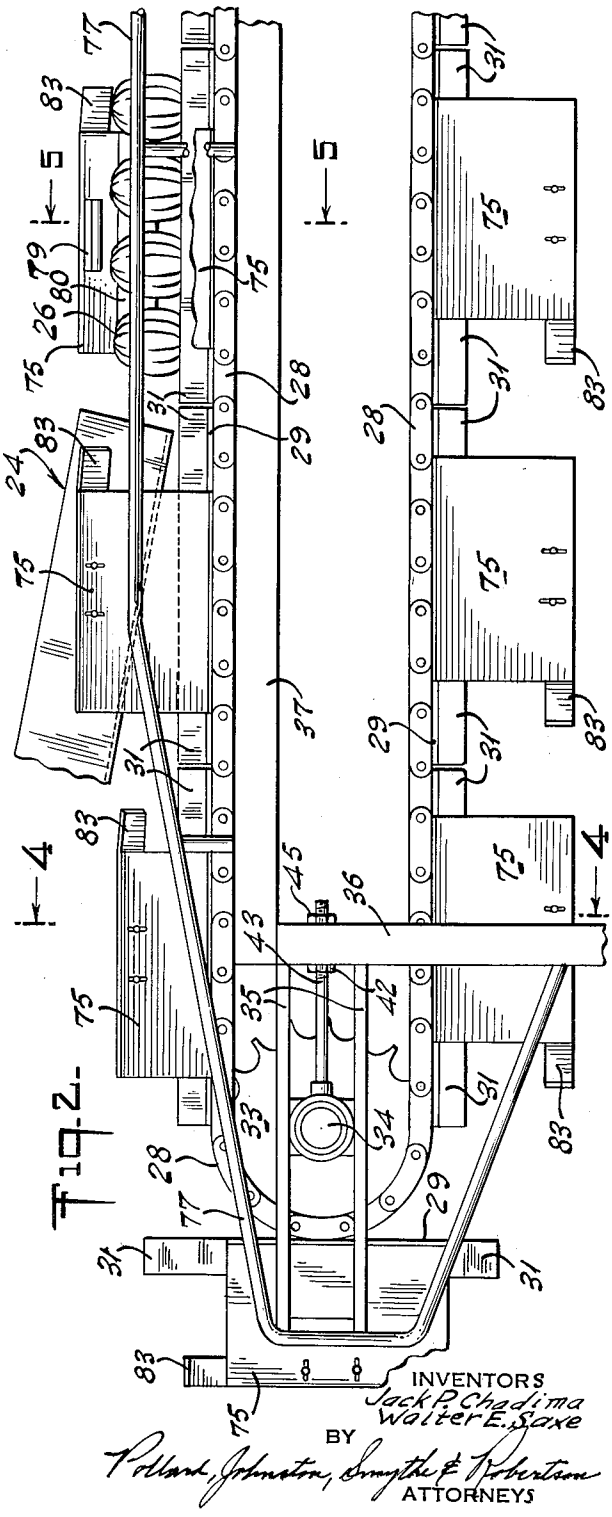


Fig. 2.

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MACHINE AND METHOD FOR PACKING ARTICLES

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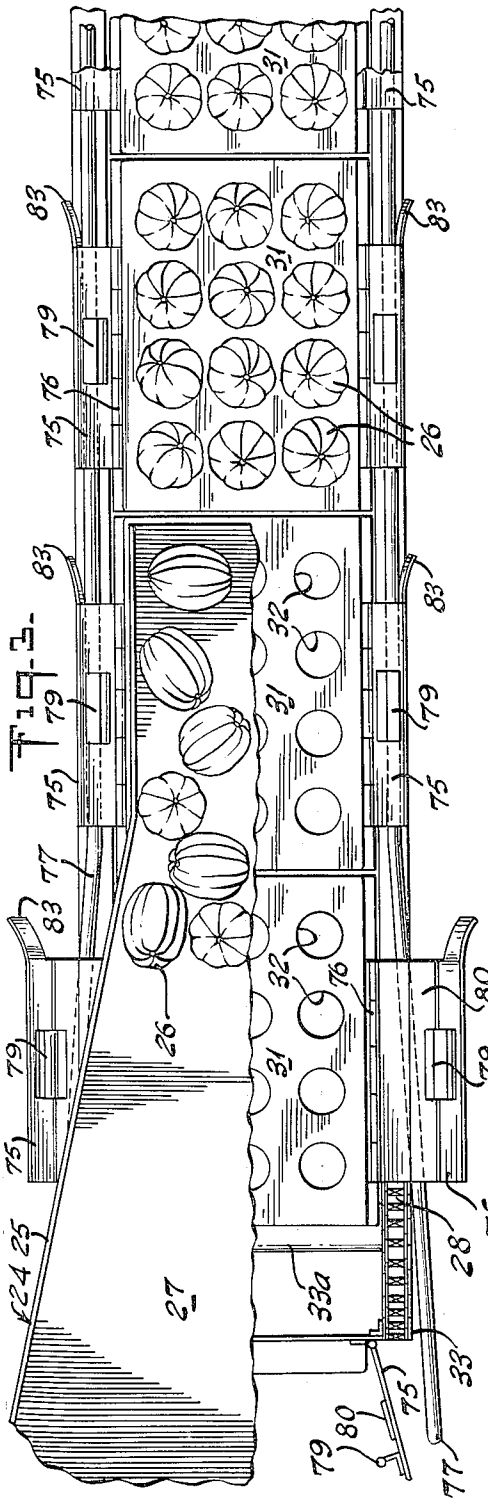


Fig. 3.

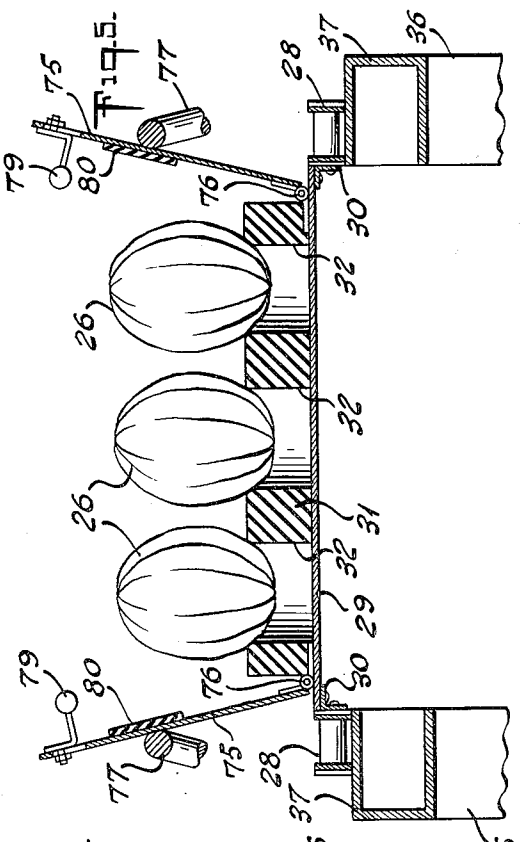


Fig. 5.

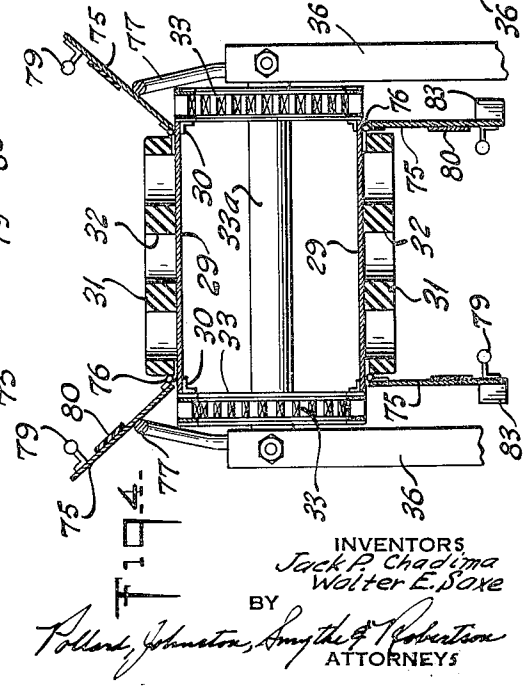


Fig. 4.

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Fig. 6.

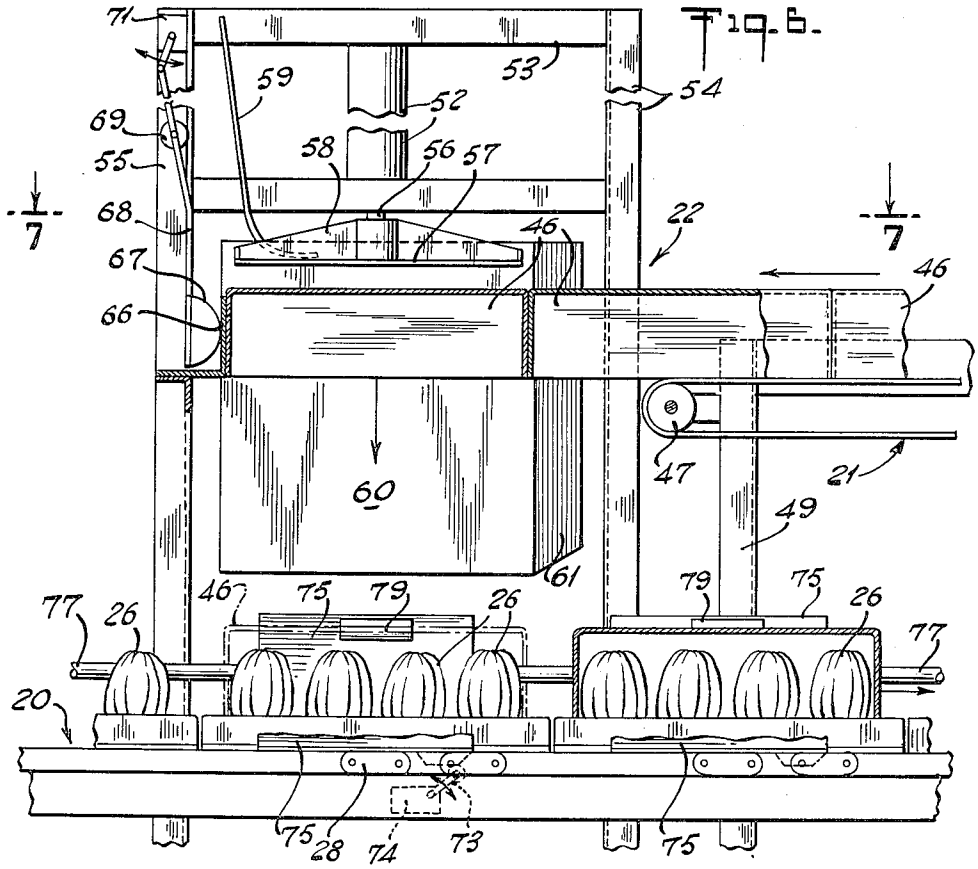
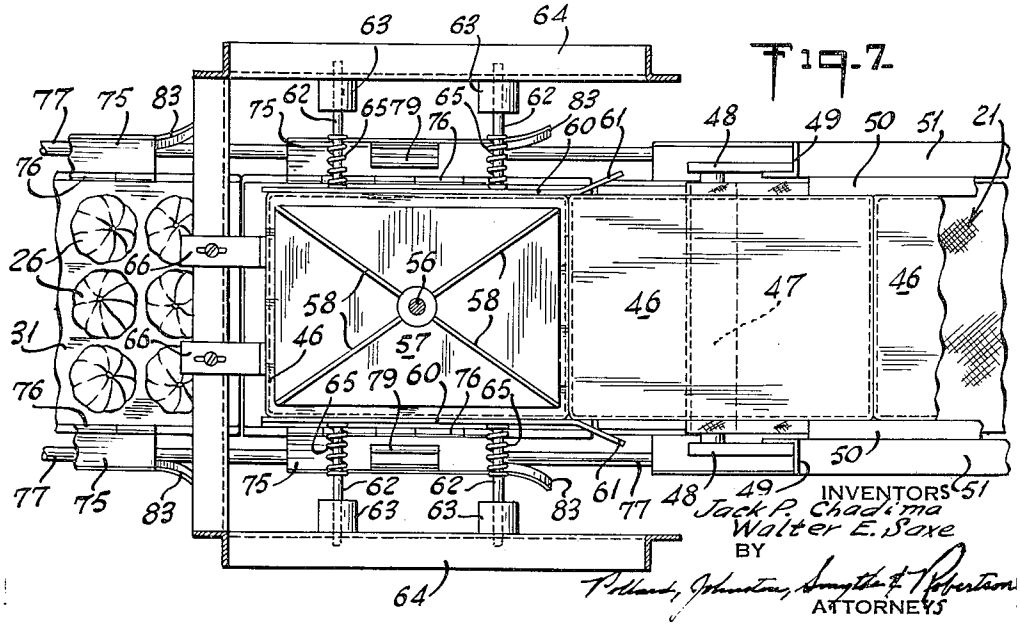


Fig. 7.



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MACHINE AND METHOD FOR PACKING ARTICLES

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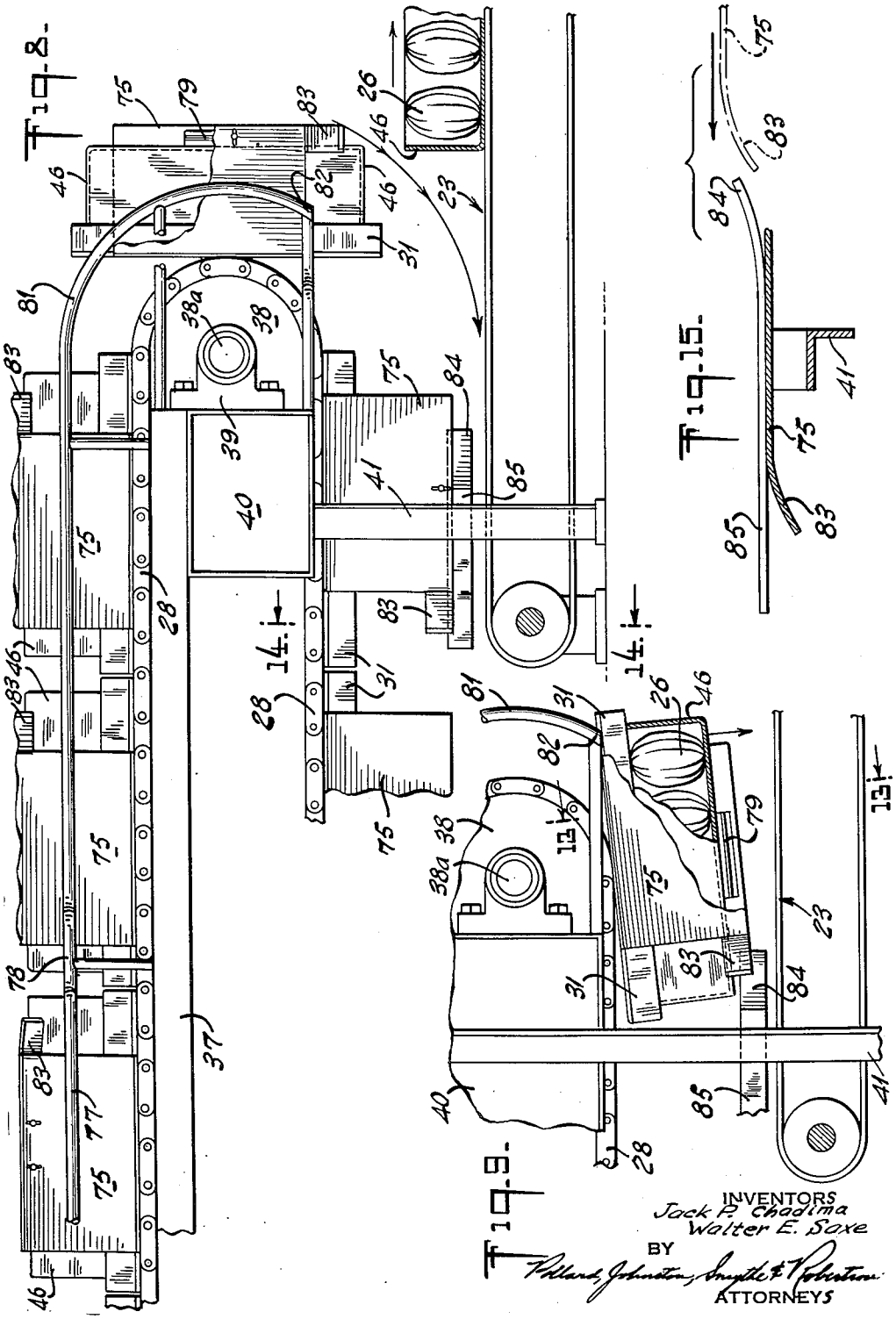


Fig. 8.

Fig. 15.

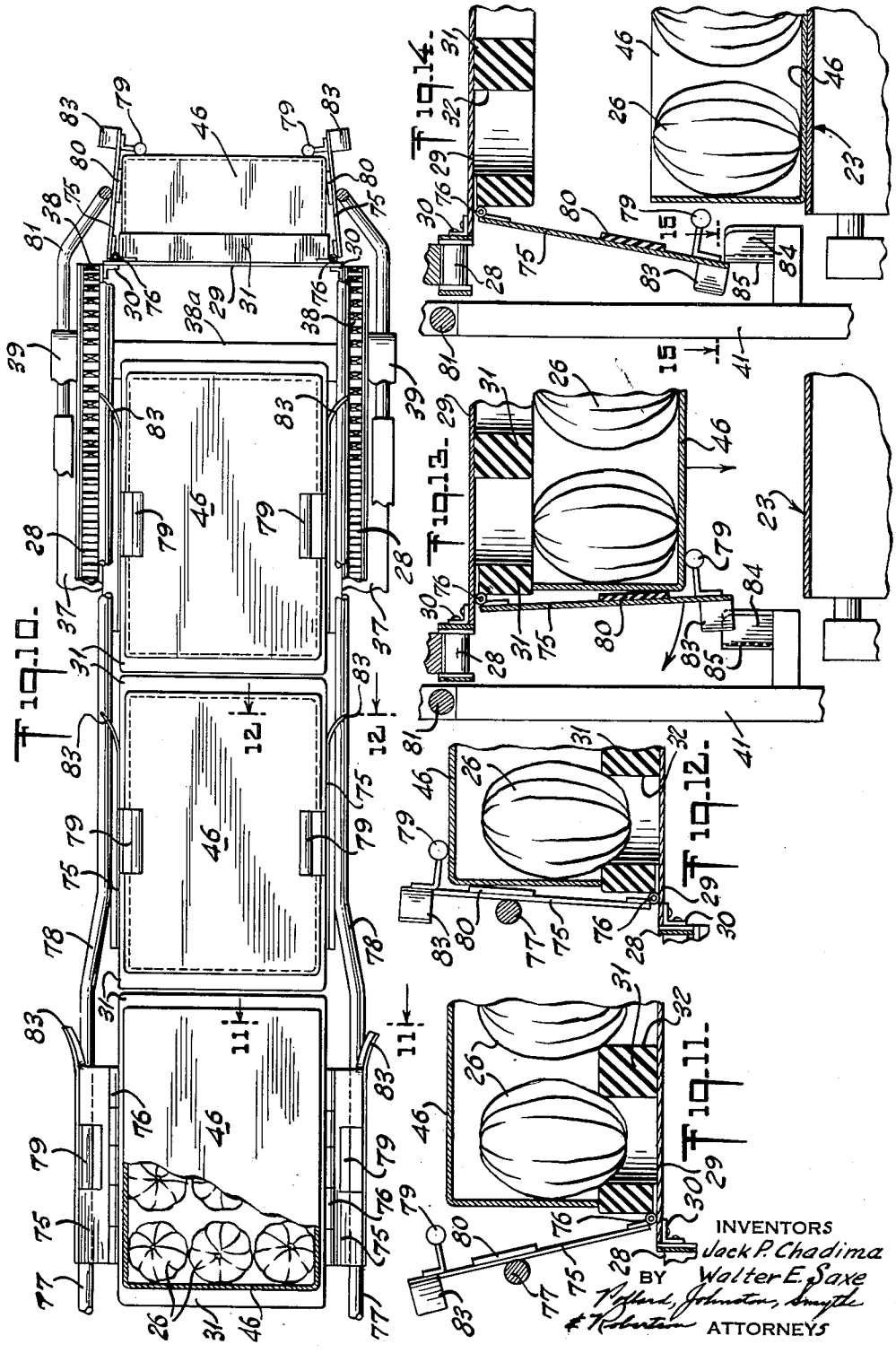
Fig. 9.

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3,021,655

MACHINE AND METHOD FOR PACKING ARTICLES

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28 Claims. (Cl. 53—243)

The invention relates to the packaging of articles into cartons and the like.

Our invention has special application to the packing of articles which, due to their fragileness, size and shape, must be carefully handled and specifically arranged during a packing operation. In the case of packing articles such as melons, manual methods involve various limitations. The human operator must place each melon within the carton while at the same time positioning the long axis of the melon upright so as to utilize the least space for each melon. Since the melons are prone to bruising and are of a clumsy form, the care which must be taken effects a great loss of time. Attempts to speed up manual packing often result in injury to the product and improper packing, both of which result in deterioration which adversely effects the ultimate retail value of the product. The subject machine provides for the arrangement of the articles to be packed with a minimum of manual supervision, the automatic placement of carton over the arranged articles and the inverting of the carton and articles so as to prepare them for the final steps in the packing operation.

Summary

In accordance with our invention, the articles to be packed, which may be melons, are collected in a bin proximate to a conveyor. The conveyor which has upper and lower reaches carries a plurality of supporting members or pallets which may be resilient material. The pallets may be provided with a plurality of openings or pockets to position and support the melons during the packing operation.

Melons of a selected size in the storage bin drop onto the pallets and enter the openings or pockets therein. An operator proximate to this location supervises the proper entry of the melons on to the pallet. The melons arranged on the pallets proceed along the conveyor to the next operation of the machine.

Empty cartons with their open top side resting on a second conveyor are delivered to a device for placing the inverted cartons upon the melons supported on pallets. The inverted empty cartons are advanced by the second conveyor beneath a pusher device which forces the carton down upon the melons positioned on a pallet below.

After the conveyor passes beyond the carton placing device, pallet side flaps hinged to the supports on the conveyor are swung upwardly so as to contact opposite sides of the carton placed over the melons. The side flaps may be provided with brackets which overlie and contact the carton bottom when the plate members are urged against the sides of the carton.

The conveyor advances the cartons and melons being held by the side flaps and brackets until they pass from the upper reach to the lower reach of the conveyor. At this point, the cartons and melons have been inverted. The side flaps are then swung away from the carton so that the carton drops from the underlying brackets and comes to rest upon a discharge conveyor. In this manner, the melons are arranged and positioned, packed within a carton, placed in a condition for final packing operation such as the application of a cover and sealing.

Other features and advantages of our invention will appear as the description proceeds.

Description

In the drawings, we have illustrated a machine to show the best mode contemplated by us of carrying out our invention as applied to the packaging of articles in an open carton or the like.

FIG. 1 is a side elevational view of the machine.

FIG. 2 is an enlarged side elevational view illustrating the entry of the melons on to the conveyor pallets.

FIG. 3 is an enlarged plan view of the storage bin and conveyor pallets.

FIG. 4 is an enlarged sectional view taken along the lines indicated in FIG. 2, illustrating the initial elevation of the plate members.

FIG. 5 is an enlarged sectional view taken along the lines indicated in FIG. 2 illustrating the placement of the melons upon the conveyor pallets.

FIG. 6 is an enlarged sectional side elevational view of the means for placing the empty cartons.

FIG. 7 is an enlarged sectional view taken along the lines indicated in FIG. 6 illustrating the entry of empty cartons into the carton placing device.

FIG. 8 is an enlarged side elevational view of the discharge end of the conveyor illustrating the inversion of the cartons.

FIG. 9 is an enlarged fragmentary side elevational view of the conveyor showing the placement of the inverted carton upon the discharge conveyor.

FIG. 10 is an enlarged plan view of the conveyor showing the positioning of the pallet side flaps with respect to the carton.

FIG. 11 is an enlarged fragmentary sectional view taken along the lines indicated in FIG. 10 illustrating the upward swinging of the pallet side flaps.

FIG. 12 is an enlarged sectional view taken along the lines indicated in FIG. 10 illustrating the engagement of the pallet side flaps and brackets with the carton.

FIG. 13 is an enlarged sectional view taken along the lines indicated in FIG. 9, illustrating the inverted carton suported by the pallet side flaps and brackets.

FIG. 14 is an enlarged sectional view taken along the lines indicated in FIG. 8 illustrating the final release of the carton from the pallet side flaps and brackets.

FIG. 15 is an enlarged sectional view taken along the lines indicated in FIG. 14 illustrating the cam action for removing the plate member and bracket from beneath the carton.

The packing machine (FIG. 1) includes a pallet conveyor 20, an empty carton conveyor 21, a carton placing device 22, and a discharge conveyor 23. In the case where the machine would be used to pack melons, the melons would be first sized and all melons of a given size would be delivered into storage bin 24 (FIG. 3) overlying one end of pallet conveyor 20. Walls 25 of storage bin 24 converge as they near pallet conveyor 20 so that melons 26 rolling down the inclined floor 27 of storage bin 24 are directed onto pallet conveyor 20.

Pallet conveyor 20 having upper and lower reaches (FIG. 1) includes roller chains 28 to which are attached pallet base plates 29, by means of angles 30. Pallets 31 having openings 32 are mounted on pallet base plates 29. Pallets 31 may be of soft resilient material such as foam rubber so that the melons or other articles being packed are not bruised or damaged upon dropping from storage bin 24 onto pallet conveyor 20 (FIGS. 3, 4 and 5).

Openings 32 are of sufficient size and are properly spaced so that melons 25 of a specific size may be held with their long axis erect after dropping from storage bin 24 (FIG. 2). Once placed in openings 32 on pallet 31, the melons occupy the arrangement that they will be in after being packed into a carton. A human operator may be stationed at the point along pallet conveyor 20

where the melons drop from storage bin 24 so as to insure that every opening 32 receives a melon and that all melons are substantially erect.

Roller chains 28 of pallet conveyor pass over idler sprockets 33 at one end of the conveyor (FIG. 2). Take up bearings 34 supporting idler sprocket shaft 33a are slideably mounted within tracks 35 overhung from support leg 36. Roller chains 28 on the upper reach of pallet conveyor 20 are supported by side rails 37 (FIG. 5). At the other end of pallet conveyor 20 (FIG. 8) roller chain 28 passes over drive sprockets 38 attached to shaft 38a and driven by a variable speed motor (not shown). Drive sprocket shaft 38a is supported by pillow blocks 39 attached to mounts 40 on support legs 41. Mounts 40 also support side rails 37. Roller chain is adjusted for the proper amount of slack by setting take up bearing 34 by the operation of adjusting nuts 42 of jacking bolts 43 which passes through an opening in support legs 36 and are pivotally mounted in sockets 44 on take up bearing 34. Lock nuts 45 secure jacking bolts 43 once the adjustment has been made.

Once filled with melons, pallets 31 are carried by roller chains 28 along the upper reach of pallet conveyor 20 until they pass beneath carton placing device 22 (FIG. 6). The upper reach of empty carton conveyor 21 carries cartons 46 with their open top sides resting on the conveyor towards carton placing device 22. Empty carton conveyor 22 passes over drive roller 47 which is driven by a variable speed motor (not shown). Drive roller 47 is supported by pillow blocks 48 attached to support legs 49. Cartons 46 are maintained in alignment with conveyor 21 by means of guide plates 50 which are attached to side rails 51 resting on support legs 49.

Carton placing device 22 includes an air actuating cylinder 52 mounted in a substantially vertical manner on cylinder mounting plate 53 supported by uprights 54 and 55. Piston rod 56 of air actuating cylinder 52 is attached to pusher plate 57 having stiffening ribs 58 and actuating arm 59.

Carton placing device 22 (FIG. 7) includes a pair of side plates 60 arranged in substantially vertical planes parallel to the line of travel of empty carton conveyor 21. Side plates 60 are provided with diverging sections 61 facing empty carton conveyor 21. Side plates 60 are each supported by a pair of studs 62 attached to side plates 60 and passing within bearing blocks 63 mounted upon frame member 64 which is supported by uprights 54 and 55. Springs 65 urge side plates 60 toward one another. Cartons 46 upon being carried beyond the end of empty carton conveyor 21 project between diverging section 61 and pass between side plates 60. Due to the urging of spring 65, side plates 60 apply a lateral force to carton 46 and thereby hold it substantially level beneath pusher plate 57.

The travel of carton 46 between side plates 60 due to the pushing action of the adjacent carton on empty carton conveyor 21 advances carton 46 between side plates 60 until it comes to rest against carton stops 66. As carton 46 approaches carton stops 66, carton 46 comes into contact with cam 67 attached to arm 68 which is pivotally mounted in bearing 69 supported by uprights 55. Arm 68 is pin connected to switch arm 70 of switch 71. Switch 71 when actuated by the motion of arm 68 due to the entrance of carton 46 against cam 67, serves to deactivate the variable speed motor (not shown) which drives empty carton conveyor 21. In this manner, upon the advancement of carton 46 against carton stops 66, the motion of empty carton conveyor 21 is terminated. Upon operation of pusher plate 57 in a downward direction carton 46 held between side plates 60 passes from contact with cam 67. As this occurs, actuating arm 59 attached to pusher plate 57 contacts cam 66 thereby maintaining the cam in its deflected position. Thus, switch 71 is actuated during the descent of pusher plate 57 to maintain empty carton conveyor 21 in a stopped condition.

Cam members 72 are attached to the surface of pallet base plates 29 (FIGS. 3 and 6). Switch arm 73 of switch 74 is actuated by contact with cam member 72. The actuation occurs whenever pallet 31 is aligned beneath the line of travel of pusher plate 57. Thus, the actuation of switch arm 73 by cam member 72 senses the presence of pallet 31 beneath pusher plate 57. Switch 74 energizes the controls to air cylinder 52 so that the piston (not shown) attached to piston rod 56 forces pusher plate 57 and consequently carton 46 down upon the melons resting on pallet 41. Switch 74 establishes the proper synchronization of pallet conveyor 20 and pusher plate 57. Switch 74 may also be used to deactivate the variable speed motor (not shown) driving pallet conveyor 20 in order that the carton 46 freely passes over the melons held by pallet 31.

Pallet side flaps 75 (FIGS. 2, 3 and 4) are attached by hinges 76 to opposite sides of pallet base plate 29. Proximate to the storage bin end of pallet conveyor 20, pallet side flaps 25 swing outwardly and rest upon guide rails 77 (FIG. 3). As pallet conveyor 20 advances to the point where melons 26 are delivered from storage bin 24, guide rails 77 converge inwardly toward pallet conveyor 20 and elevate pallet side flaps 75 to a near vertical position. At this point, the elevated pallet side flaps 75 form side barriers which assist the entry of melons 26 from storage bin 24 into openings 32 and pallets 31 (FIG. 5). During the travel of pallet conveyor 20 through and beyond carton placing device 22, pallet side flaps 75 are maintained at a substantially constant angle by guide rails 77 (FIG. 11).

The inward deflection 78 of guide rails 77 swings pallet side flaps 75 into a substantially vertical position so that they contact the sides of carton 46. Pallet side flaps 75 may be provided with brackets 79 having rounded edges to insure the holding of carton 46 on to pallet 31 (FIG. 12). Pallet side flaps 75 may additionally be provided with a friction surface 80 to insure a firm grip between pallet side flaps 75 and carton 46. Further travel of pallet conveyor 20 carries the assembly of carton 46 and pallet 31 from the upper reach to the lower reach of pallet conveyor 20 (FIG. 8). The lateral clamping force of pallet side flaps 75, the shear force due to friction surface 80 and the clamping action of brackets 79 together serve to hold the carton with respect to pallet 31 as the assembly passes through the vertical position. The curved section 81 of guide rails 77 maintains pallet side flaps 75 in contact with the sides of carton 46 during the inverting operation.

As carton 46 is inverted (FIG. 9) pallet side flaps 75 pass beyond ends 82 up guide rails 77 thereby relieving the lateral pressure of pallet side flaps 75 on the sides of carton 46. At this point, carton 46 remains resting upon brackets 79. Tab 83 projecting from pallet side flaps 75 comes into contact with cam 84 which is formed to react with tab 83 (FIG. 15) so as to swing pallet side flaps 75 outwardly thereby releasing carton 46 from contact with bracket 79 (FIG. 14). During the return travel along the lower reach of pallet conveyor 20, pallet side flaps 75 rest in a substantially vertical plane against lower guide rail 85 (FIG. 8).

Carton 46 is deposited by the releasing action of side flap 75 onto discharge conveyor 23. The gradual withdrawal of brackets 79 from beneath carton 46, cushion the drop of carton 46 onto discharge conveyor 23.

Operation

As a further aid to the understanding of our invention, the preferred sequence of operating steps shall now be described.

Melons 25 pass from storage bin 24 onto pallets 31 and are positioned in openings 32. A human operator may assist in the final positioning of the melons on the

pallet. Pallet 31 is then conveyed to a point beneath carton placing device 22.

Empty carton conveyor 21 delivers cartons 46 with their open tops down to a point beneath pusher plate 57. The positioning of carton 46 beneath pusher plate 57 actuates switch 71 to deactivate empty carton conveyor 21. With pallet conveyor 20 properly positioned beneath pusher plate 57, switch 74 is actuated by cam 72 so as to activate air cylinder 52 and cause the downward placing of inverted carton 46 upon pallet 31. Switch 74 may also serve to stop pallet conveyor 20 so that a smooth application of carton 46 over melons 25 may be accomplished.

Upon the return stroke of air actuating cylinder 52, actuating arm 59 releases switch 71 so that empty carton conveyor 21 may advance the next carton 46 beneath pusher plate 57. In the case where switch 74 stops pallet conveyor 20 during the placement of carton 46 switch 74 may be reactivated by the release of switch 71.

Pallet conveyor 20 carries melons 26 and carton 46 forward until inward deflection 78 of guide rails 77 elevates pallet side flaps 75 into contact with the sides of carton 46. Brackets 79, attached to pallet side flaps 75, additionally hold carton 46 in place on pallet 31. Passage of pallet 31 from the upper to the lower reach of pallet conveyor 20 serves to invert carton 46. Curved section 81 of guide rails 77 maintains the clamping action of pallet side flaps 75 upon carton 46 during the inversion operation.

By passing beyond end 82 of guide rails 77, the clamping of pallet side flaps 75 upon carton 46 ceases but carton 46 remains supported by brackets 79. Further travel along the lower reach of pallet conveyor 20 causes the engagement of tab 83 of pallet side flaps 75 with cam 84. Cam 84 initiates an outward swinging of pallet side flaps 75 thereby removing brackets 79 from beneath carton 46 and permitting the carton to descend upon discharge conveyor 86.

In this manner, the articles or melons have been positioned and arranged for packing, have been enclosed within a carton, and have been inverted into an upright position for subsequent packing operations such as the installation of a carton cover and final sealing.

The terms and expressions which I have employed are used in a descriptive and not a limiting sense and there is no intention of excluding such equivalents of the invention described or of portions thereof as fall within the purview of the claims.

What is claimed is:

1. A machine for packing articles in cartons including conveyor means having upper and lower reaches, a plurality of supporting means attached to said conveyor means, means for delivering said articles onto each of said supporting means on the upper reach of said conveyor means, means for placing cartons down over said articles on each of said supporting means, plate members hingeably attached to said supporting means and having an axis of rotation substantially parallel to the path of travel of said conveyor means, and means for urging said plate members against the sides of said carton placed over said articles on said supporting means, said means for urging said plate members extending from the upper to the lower reach of said conveyor means, whereby said carton being held with respect to said supporting means is inverted before release from said machine.

2. A machine in accordance with claim 1 in which said plurality of supporting means attached to said conveyor means include substantially flat pallet members.

3. A machine in accordance with claim 1 in which said plurality of supporting means include substantially flat pallet members having openings to locate and hold said articles.

4. A machine in accordance with claim 1 in which said plurality of supporting means include base members attached to said conveyor means and substantially flat pallet members of resilient material mounted on said base members, said pallet members having openings to locate and hold said articles.

5. A machine in accordance with claim 1 in which said means for delivering articles onto each of said supporting members on the upper reach of said conveyor means includes a storage bin having a floor sloping towards said conveyor means and opposite side walls converging at the termination of said floor, said termination overlying said conveyor means, whereby articles within said storage bin drop from said termination onto said conveyor means.

6. A machine in accordance with claim 1 in which said means for placing said cartons down over said articles on said supporting means includes additional conveyor means delivering said cartons with their open top facing said additional conveyor means, substantially vertical guide means spaced apart from one another and substantially parallel to the line of travel of said additional conveyor means, one of said cartons, upon being positioned between said guide means by the urging of the adjacent carton on said additional conveyor means, being held by said guide means contacting opposite sides of said carton, pusher means moving said carton down over said articles on said supporting means, means for deactivating said additional conveyor means during the operation of said pusher means, and means for synchronizing the operation of said pusher means with the arrival of said supporting means beneath said pusher means.

7. A machine in accordance with claim 6 in which said guide means are supported by resilient means urging said guide means against said opposite sides of said cartons.

8. A machine in accordance with claim 6 in which said means for deactivating said additional conveyor means during the operation of said pusher means includes switch means actuated by said carton positioned and held between said guide means beneath said pusher means, and actuated by said pusher means being in operation, said switch means deactivating said additional conveyor means.

9. A machine in accordance with claim 6 in which said means for synchronizing the operation of said pusher means with the arrival of said supporting means beneath said pusher means includes additional switch means and means attached to said supporting means for actuating said additional switch means, said additional switch means upon being actuated, deactivating said conveyor means and activating said pusher means.

10. A machine in accordance with claim 6 in which said means for synchronizing the operation of said pusher means with the arrival of said supporting means beneath said pusher means includes additional switch means and means attached to said supporting means for actuating said additional switch means, said additional switch means upon being actuated, activating said pusher means.

11. A machine in accordance with claim 1 in which said means for urging said plate members hingeably attached to said supporting means includes a pair of rail means spaced apart and extending along said upper reach of said conveyor means in contact with and supporting said plate members, said rail means being converged toward one another and extending to said lower reach of said conveyor means, said converged rail means urging said plate members against the sides of said cartons whereby said carton is held with respect to said supporting means during passage from said upper to said lower reach of said conveyor means.

12. A machine for packing articles in cartons including conveyor means having upper and lower reaches, a plurality of supporting means attached to said conveyor means, means for delivering said articles onto each of said supporting means on the upper reach of said conveyor means, means for placing cartons down over said articles on each of said supporting means, plate mem-

bers hingeably attached to said supporting means and having an axis of rotation substantially parallel to the path of travel of said conveyor means, means for urging said plate members against the sides of said carton placed over said articles on said supporting means to hold said carton with respect to said supporting means during the inversion of said carton during passage from said upper to said lower reach of said conveyor means, said means for urging said plate members extending from the upper to the lower reach of said conveyor means, bracket means extending at substantially right angles from said plate members and extending over and in contact with said carton, and means for removing said plate members and said bracket means on the lower reach of said conveyor means from in contact with said carton whereby said carton is released from said machine.

13. A machine in accordance with claim 12 in which said plurality of supporting means attached to said conveyor means includes substantially flat pallet members.

14. A machine in accordance with claim 12 in which said plurality of supporting means include substantially flat pallet members having openings to locate and hold said articles.

15. A machine in accordance with claim 12 in which said plurality of supporting means include base members attached to said conveyor means and substantially flat pallet members of resilient material mounted on said base members, said pallet member having openings to locate and hold said articles.

16. A machine in accordance with claim 12 in which said means for delivering articles onto each of said supporting members on the upper reach of said conveyor means includes a storage bin having a floor sloping towards said conveyor means and opposite side walls converging at the termination of said floor, said termination overlying said conveyor means, whereby articles within said storage bin drop from said termination onto said conveyor means.

17. A machine in accordance with claim 12 in which said means for placing said cartons down over said articles on said supporting means includes additional conveyor means delivering said cartons with their open top facing said additional conveyor means, substantially vertical guide means spaced apart from one another and substantially parallel to the line of travel of said additional conveyor means, one of said cartons, upon being positioned between said guide means by the urging of the adjacent carton on said additional conveyor means, being held by said guide means contacting opposite sides of said carton, pusher means moving said carton down over said articles on said supporting means, means for deactivating said additional conveyor means during the operation of said pusher means, and means for synchronizing the operation of said pusher means with the arrival of said supporting means beneath said pusher means.

18. A machine in accordance with claim 17 in which said guide means are supported by resilient means urging said guide means against said opposite sides of said cartons.

19. A machine in accordance with claim 17 in which said means for deactivating said additional conveyor means during the operation of said pusher means includes switch means actuated by said carton positioned and held between said guide means beneath said pusher means, and actuated by said pusher means being in operation, said switch means deactivating said additional conveyor means.

20. A machine in accordance with claim 17 in which said means for synchronizing the operation of said pusher means with the arrival of said supporting means beneath said pusher means includes additional switch means and means attached to said supporting means for actuating said additional switch means, said additional switch means upon being actuated, deactivating said conveyor means and activating said pusher means.

21. A machine in accordance with claim 17 in which said means for synchronizing the operation of said pusher means with the arrival of said supporting means beneath said pusher means includes additional switch means and means attached to said supporting means for actuating said additional switch means, said additional switch means upon being actuated, activating said pusher means.

22. A machine in accordance with claim 12 in which said means for urging said plate members hingeably attached to said supporting means includes a pair of rail means spaced apart and extending along said upper reach of said conveyor means in contact with and supporting said plate members, said rail means being converged toward one another and extending to said lower reach of said conveyor means, said converged rail means urging said plate members against the sides of said cartons whereby said carton is held with respect to said supporting means during passage from said upper to said lower reach of said conveyor means.

23. A machine in accordance with claim 12 in which said means for removing said plate members and said bracket means from in contact with said carton includes tab means attached to said plate members and cam means engaging said tab means on the lower reach of said conveyor means whereby said plate members are moved from in contact with said carton.

24. A machine for packing articles in cartons including conveyor means having upper and lower reaches, a plurality of supporting means attached to said conveyor means, means for delivering said articles onto each of said supporting means on the upper reach of said conveyor means, means for placing cartons down over said articles on each of said supporting means, arm members moveably attached to said supporting means and having an axis of rotation susbtantially parallel to the path of travel of said conveyor means, bracket members extending inwardly from said arm members, and means for urging said arm members toward the sides of said carton placed over said articles on said supporting means in order to position said bracket members against the upper surface of said carton, said means for urging said arm members extending from the upper to the lower reach of said conveyor means, whereby said carton being held with respect to said supporting means is inverted before release from said machine.

25. A machine for packing articles in cartons including conveyor means having upper and lower reaches, a plurality of supporting means attached to said conveyor means, means for delivering said articles onto each of said supporting means on the upper reach of said conveyor means, means for placing cartons down over said articles on each of said supporting means, pressure members, means for conveying said pressure members along a path of travel parallel to the path of travel of said conveyor means from the upper to the lower reaches, and means for urging said pressure members against the sides of said carton adjacent the upper side of said carton placed over said articles on said supporting means, said means for urging said pressure members extending from the upper to the lower reach of said conveyor means, whereby said carton being held with respect to said supporting means is inverted before release from said machine.

26. A machine for packing articles in cartons including conveyor means having upper and lower reaches, a plurality of supporting means attached to said conveyor means, means for delivering said articles onto each of said supporting means on the upper reach of said conveyor means, means for placing cartons down over said articles on each of said supporting means on the upper reach of said conveyor means, pressure members adapted to hold said carton over said articles on said supporting means, and means for urging said pressure members against the upper side of said carton placed over said articles on said supporting means, said means for urging

said pressure members extending from the upper to a predetermined location along the lower reach of said conveyor means, whereby said carton being held with respect to said supporting means is carried from the upper to the lower reaches of said conveyor means and inverted before release from said machine.

27. In a machine for packing articles in cartons, conveyor means having upper and lower reaches, means for delivering said articles onto the upper reach of said conveyor means, means for placing cartons down over said articles on said conveyor means, pressure members, means for conveying said pressure members along a path of travel substantially parallel to the path of travel of said conveyor means from the upper to the lower reaches, means for urging said pressure members against said carton placed over said articles on said conveyor means as said carton and articles travel from the upper to the lower reaches of said conveyor means, and means for receiving said carton and articles therein from the lower reach of said conveyor means, whereby said carton and articles therein are inverted.

28. A machine for inverting cartons traveling on the upper reaches of a conveyor means having upper and lower reaches including pressure members adapted to hold said carton against said conveyor means, means for

conveying said pressure members along a path of travel substantially parallel to the path of travel of said conveyor means from the upper to the lower reaches, means for urging said pressure member against the carton on said conveyor means, said means for urging the pressure means extending from the upper to the lower reach of said conveyor means, whereby said carton being held against said conveyor means is inverted while traveling from said upper to said lower reach.

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