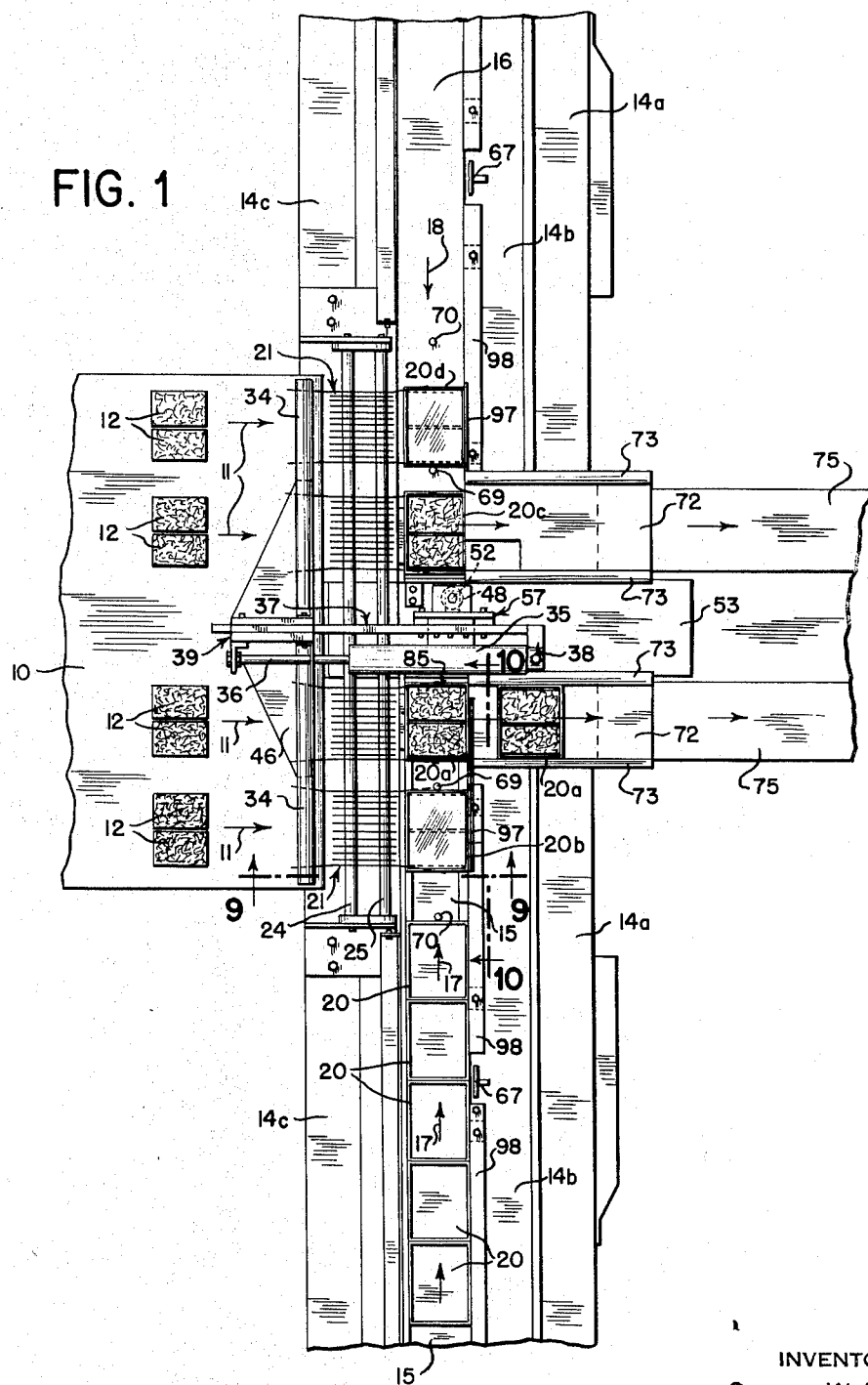


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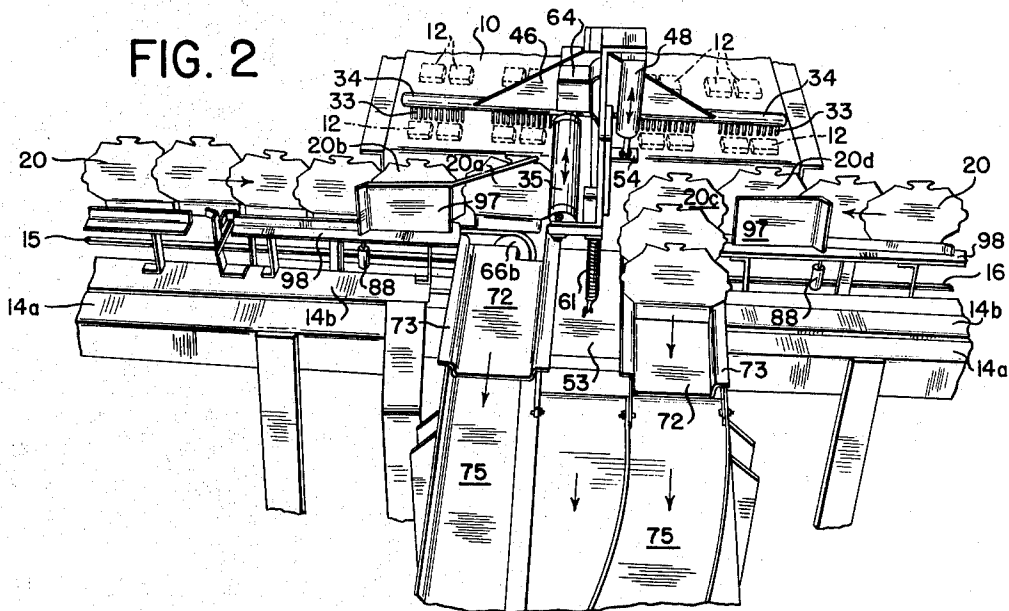
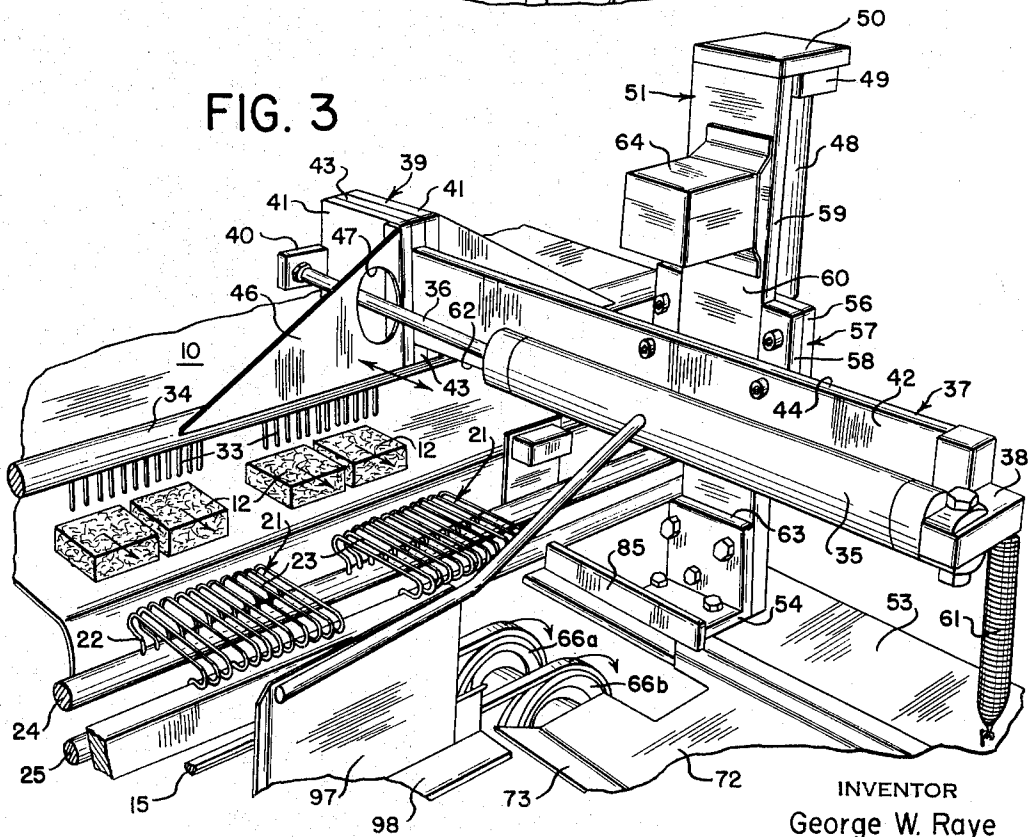
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3,226,912

APPARATUS FOR PACKAGING ARTICLES OF SOFT CONSISTENCY

Filed Nov. 14, 1960

5 Sheets-Sheet 2



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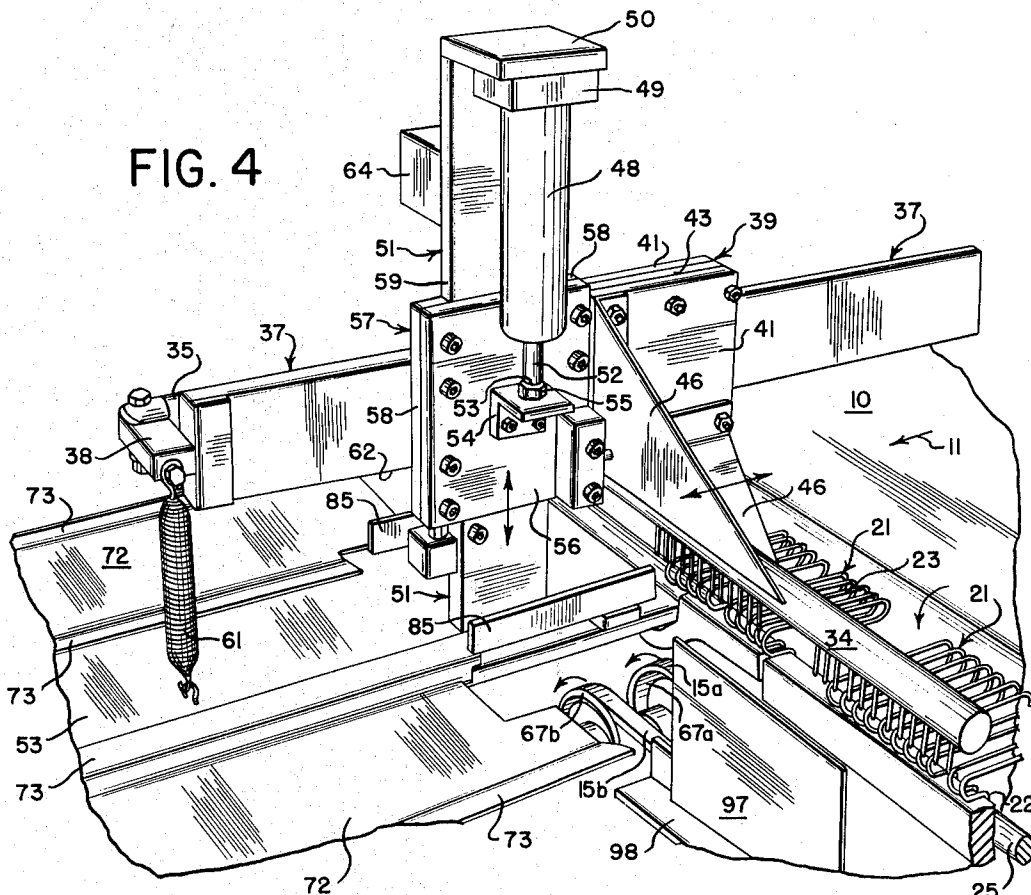
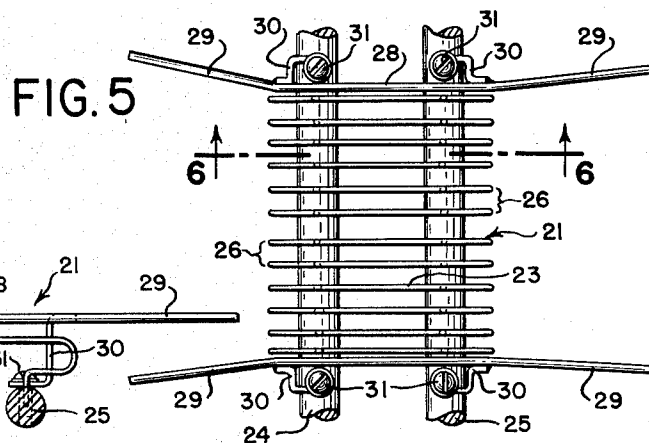
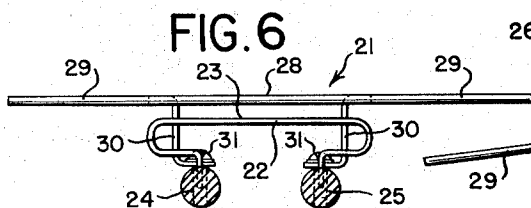
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APPARATUS FOR PACKAGING ARTICLES OF SOFT CONSISTENCY

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5 Sheets-Sheet 3



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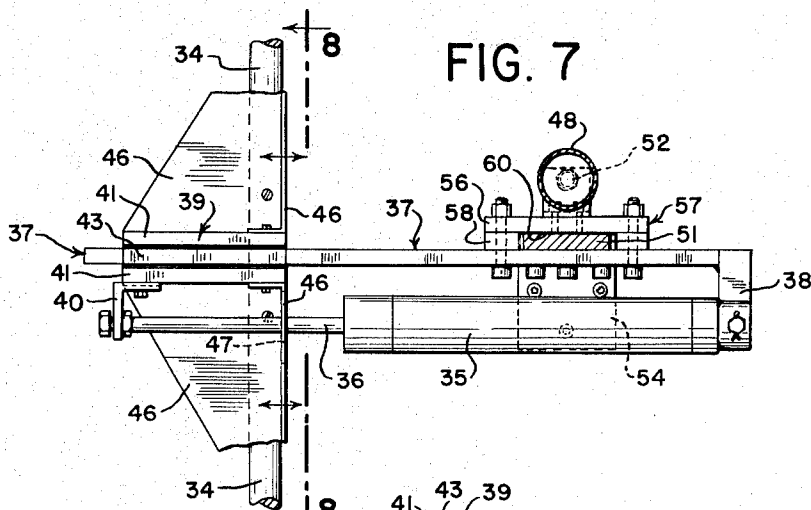


FIG. 7

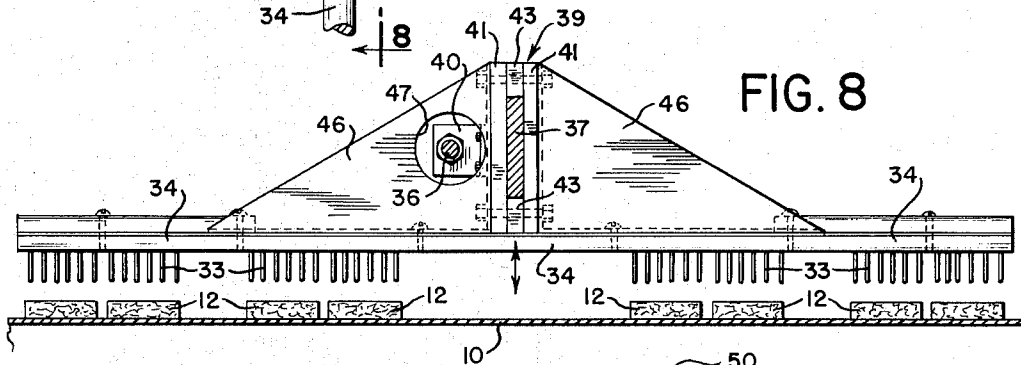


FIG. 8

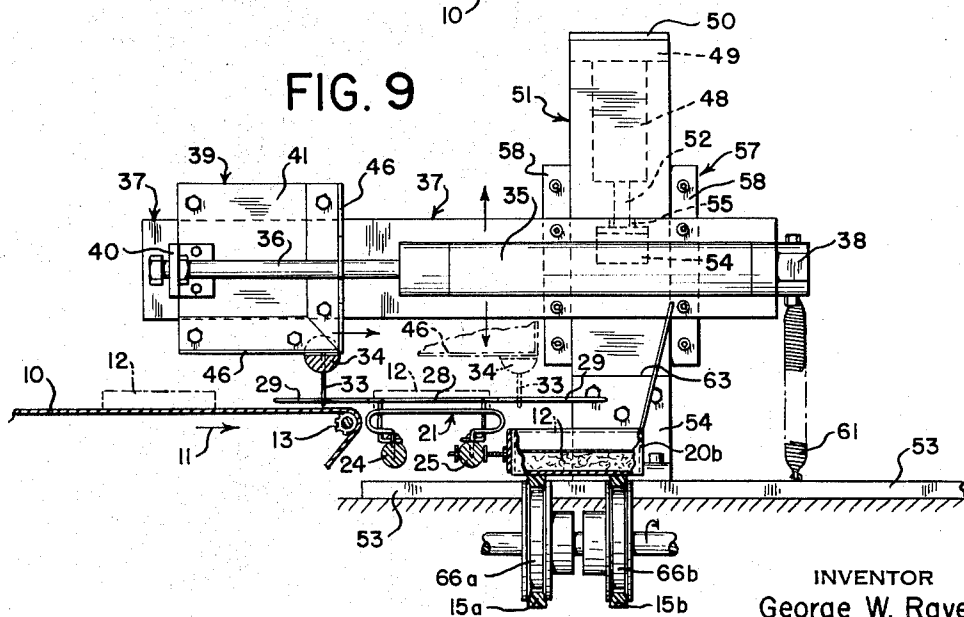


FIG. 9

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APPARATUS FOR PACKAGING ARTICLES OF SOFT CONSISTENCY

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5 Sheets-Sheet 5

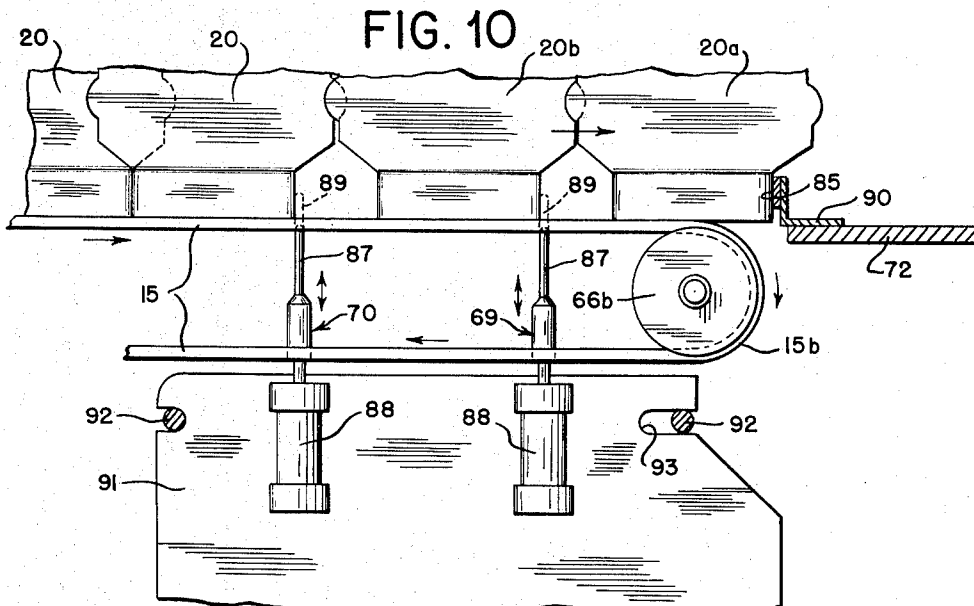


FIG. 11

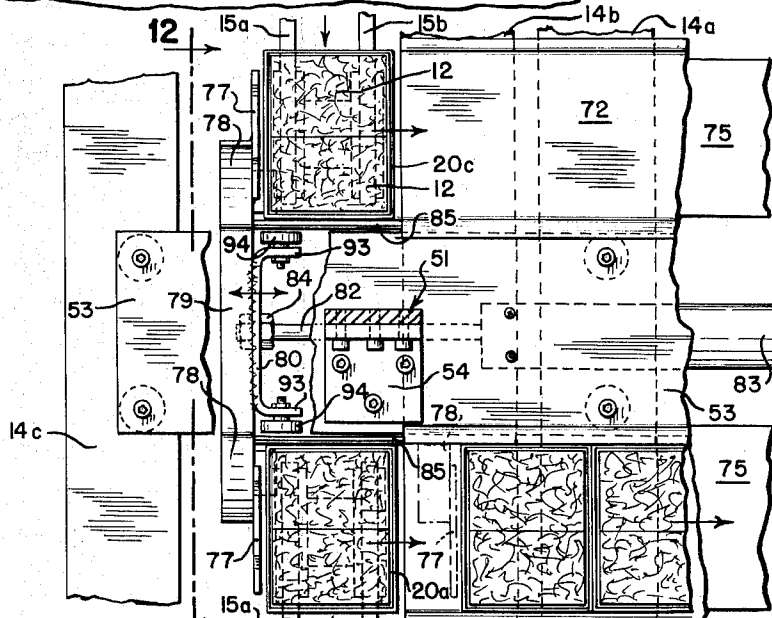
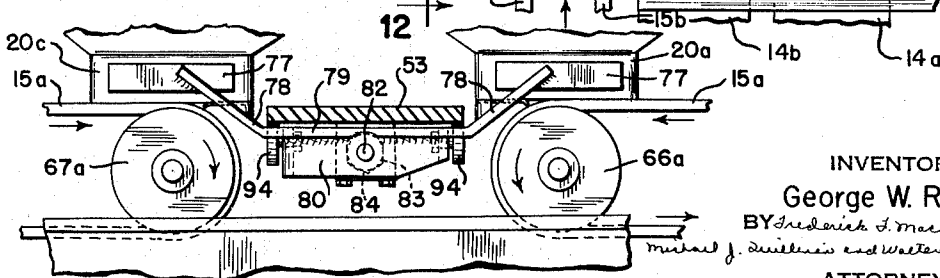


FIG. 12



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13 Claims. (Cl. 53—240)

This invention relates to a method and apparatus for depositing articles in containers. More particularly, the invention concerns apparatus particularly adapted to deposit in cartons articles which do not have a firm consistency.

A potato patty is one such article. At room temperature a potato patty which issues from a patty-forming machine is somewhat sticky to the touch. It is not firm, and so it can easily be deformed from its molded shapes. It will adhere to most surfaces on which it is placed. If force is exerted against it by means such as a pusher bar, it will not slide easily over a conventional surface, and it will tend to stick both to the surface and the pusher bar when that bar is withdrawn from contact with the patty.

Thus, it is apparent that the handling of bodies and articles of soft, sticky, tacky consistency presents problems which are not encountered in the packaging of more firm, compacted materials. These difficulties are accentuated in high speed packaging practices where, for example, production rates of up to 120 cartons per minute must be achieved. In such packaging methods, the adherence of patties to the surface over which they are being pushed or to the pushing means may cause imperfect patties to be deposited in the cartons and may, in fact, completely prevent the deposition of whole, perfectly formed patties in their cartons. Where the patties or other tacky bodies are arranged in layers in their cartons, imperfections in the patties are further emphasized by the irregular stacking of the patties. The result of such imperfections is a package which is not marketable on a first-line basis.

It is therefore, a principal object of the present invention to provide an apparatus for depositing potato patties and like articles in containers with substantially no patty imperfections due to adherence of the patties to parts of the apparatus.

It is another object of this invention to provide an apparatus by means of which potato patties and like articles may be deposited in containers at speeds greater than those presently possible but without undesirable adherence of the patties.

It is another object of this invention to provide a continuous method through the practice of which a plurality of layers of patties and like articles may be deposited in cartons and the filled carton discharged from the apparatus.

Potato patties are generally made from cooked potatoes having appropriate seasonings, such as salt and onions, intermingled therewith. The patties have a relatively high moisture content, which results in their glutinous character and ease of dissociation. Articles or bodies having a constituency of the same general character as potato patties, i.e., of such a nature that they tend to come apart when pushed from location to location over a flat surface by means of another flat surface, will be referred to hereinafter in the specification and claims as semi-solid bodies.

An apparatus according to the present invention includes means for positioning a semi-solid body at a predetermined location and means for positioning a container near and to one side of that location. A plurality of

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fingers are disposed in fixed, spaced relation to each other at one side of the location. Suitable means urge these fingers simultaneously against the semi-solid body in the direction of the container and then decelerates to propel the body for free fall into the container.

The arrangement of the fingers which move the body and the means for moving those fingers constitute important features of the present invention. For example, the fingers are spaced apart so that they do not present a continuous surface to the body or article they push. Instead, the several fingers which contact a body form a discontinuous surface to which the body will not tend to adhere.

The means for urging the fingers against the semi-solid body preferably is also adapted to move the fingers in a path which returns the fingers to their location prior to urging the body toward the container. In this original position the fingers are disposed at that side of the support opposed to the container. In one mode of operation, the means for urging the fingers moves the fingers in a substantially rectangular path; first horizontally in the direction of the container, then upwardly to a position in which is above any patty on the support, then horizontally away from the container, and finally downwardly to its initial position behind another patty positioned on the support. Such movement can be accomplished by means of two, fluid pressure-actuated assemblies, one of which moves the fingers in horizontal directions and the other of which moves the fingers in vertical directions.

A novel method is also disclosed in the operation of the apparatus of the present invention as described hereinafter and illustrated in the drawings. In the disclosed method of depositing a plurality of layers of matter, in this case potato patties, in a container, a first container is moved to one location and a layer deposited therein. The first container is then moved to another location and a second container moved to the one location. Then a layer is simultaneously deposited in each of the containers, and the first container is discharged from its other location. Advantageously, the second container is then moved to the other location and a third container brought to the one location. In order to increase the capacity of the equipment used to practice the inventive process, steps of the method may be performed simultaneously. Thus, movement of a container from one location to the other location is desirably carried out at the same time a further container is brought to the one location and a container is discharged from the other location.

These and other objects, features and advantages of the present invention will become more apparent when considered in connection with the illustration of a preferred embodiment of the invention in the accompanying drawings, which form a part hereof, and in which:

FIG. 1 is a top plan view of the apparatus of the invention showing the elements thereof in assembled positions;

FIG. 2 is a perspective view of the apparatus as seen from a central location at the rear thereof;

FIG. 3 is a perspective view as seen from the rear and to one side of the apparatus;

FIG. 4 is a perspective view as seen from the rear and to the other side of the apparatus;

FIG. 5 is a top plan view of a modified support as utilized in the present apparatus;

FIG. 6 is a vertical sectional view along line 6—6 of FIG. 5;

FIG. 7 is an enlarged, fragmentary view showing details of the fluid pressure-actuated assemblies of the apparatus;

FIG. 8 is an enlarged, vertical sectional view along line 8—8 of FIG. 7;

FIG. 9 is an enlarged, vertical sectional view along line 9—9 of FIG. 1;

FIG. 10 is an enlarged vertical sectional view along line

10—10 of FIG. 1 with portions of the apparatus removed;

FIG. 11 is an enlarged, top plan view, partly cut away, of the ejector mechanism of the apparatus, and

FIG. 12 is a vertical sectional view along line 12—12 of FIG. 11.

Referring now to the drawings, a view of the entire apparatus is illustrated in FIG. 1. Shown generally in that figure is an endless belt 10 propelled in the direction of the arrows 11 to move and support semi-solid bodies 12 positioned thereon. In the illustrated embodiment the semi-solid bodies or potato patties 12 are arranged on endless belt 10 in pairs, there being a total of four pairs of patties located on endless belt 10 and extending at spaced locations across the width of that belt. It will be understood, of course, that such an arrangement of semi-solid bodies has been illustrated merely for the purpose of convenience, and that many different arrangements of bodies with regard to their spacing, grouping and number may be used in place of the illustrated arrangement. Endless belt 10 is propelled by means of sprockets 13 (FIG. 9) which cooperate with edge portions of the belt.

Positioned to one side of the endless belt 10 is the apparatus of the present invention, which utilizes a supporting frame including horizontal frame parts 14a, 14b and 14c. The frame serves to maintain the elements of the apparatus in operative position. Conveyor belts 15 and 16 move in the directions of arrows 17 and 18, respectively, to bring the empty cartons 20 carried thereby into positions at which they may receive semi-solid bodies 12 deposited therein. As shown in FIG. 1, each of endless belts 15 and 16 transports containers 20 thereon successively into two patty-receiving locations. In this figure endless belt 15 has moved container 20a to an inner receiving position and container 20b into an outer receiving position. Likewise, endless belt 16 has brought container 20c to the inner receiving station and container 20d to the outer receiving station.

Each of the containers 20a—20c at their respective locations is adjacent and to one side of a support indicated generally by reference number 21. The construction of the supports at 21 are identical and are best illustrated in FIGS. 3 and 4, and, in a modified form in FIGS. 5 and 6. In these figures it will be seen that each support 21 is formed from a plurality of identical supporting members 22, which are so arranged that their upper surfaces 23 lie in the same horizontal plane and thus form a receiving surface for the semi-solid bodies 12 which are deposited on the supports, also known as "dead plates," by endless belt 10. It will be noted that the horizontal plane of surfaces 23 is somewhat elevated relative to the bottom of an adjacent container 20 thereby permitting a limited drop for the body 12 in its transfer from the support 21 into the container. Supporting members 22 are bent inwardly at their ends away from and downwardly of their horizontal surfaces 23, and at their ends are fixed relative to the apparatus. Supporting members 22 are fixed to supporting bars 24 and 25, which in turn are supported by frame parts 14c. Supporting members 22 are spaced from each other by a distance indicated by reference numeral 26. Supporting members 22 are thus immovably fixed relative to each other by the distance 26, which is uniform between adjacent ones of supporting members 22.

Guides 28 may be provided at either side of and above a dead plate 21 (FIGS. 5 and 6). Each guide 28 has ends 29 which flare away from its associated dead plate 21. The guides are held in position by means of angle irons 30 attached by bolts 31 to supporting bars 24 and 25. In their fixed position the guides 28 serve to direct patties which are transversely out of their proper location on endless belt 10 toward their intended dead plate 21. For this reason the distance between the plane of the guides 28 and plane in which upper surfaces 23 of supporting members 22 lie is less than the height of the substantially uniform patties 12.

A plurality of fingers 33 are used to push patties 12

from dead plates 21 with sufficient velocity to cause them to fall freely into their adjacent containers 20a—20d. Fingers 33 are illustrated in FIGS. 2 to 4, 8 and 9. In FIGS. 2, 3 and 8 fingers 33 have been illustrated in a raised position in which they are out of contact with patties 12, whether those patties are on the belt 10 or dead plates 21. Fingers 33 are mounted in groups corresponding generally to the width of the layers of patties to be deposited in a container 20. Fingers 33 are fixed to a crosshead 34, which extends almost the entire width of endless belt 10, and depend therefrom to a point at which they just clear the belt 10.

Horizontal movement of the crosshead 34 and fingers 33 is accomplished by means of a fluid pressure-actuated assembly which includes horizontal double-acting air cylinder 35 and its cooperating piston 36. That assembly is illustrated in FIGS. 1 to 3, 7 and 9 of the drawings. As best seen in FIG. 3, air cylinder 35 extends substantially parallel to the direction of elongation of bearing member 37 and is fixed to a block 38 on one end of bearing member 37. At its end away from the cylinder 35, the piston 36 is rigidly attached to a pillow block 40, which is in turn fixed to a bearing assembly 39 which consists of two side members 41 which straddle side bearing surfaces 42 of bearing member 37 and upper and lower bearing members 43, which straddle upper and lower bearing surfaces 44 and 62 of bearing member 37. It will thus be apparent that the bearing assembly defined by bearing blocks 41 and 43 is adapted to slide against and move relative to bearing member 37. Proper lubrication of bearing surfaces 42 and 44 enables the bearing assembly of blocks 41 and 43 to slide easily with respect to bearing member 37.

Crosshead 34 is fixed to the under side of the bearing assembly 39, and is also supported against the bearing assembly 39 by means of a web 46, which extends a considerable distance along the length of crosshead 34 on either side of the bearing assembly. Web 46 is fixed to side bearing blocks 41 and to the crosshead 34. On that side along bearing member 37 at which the air cylinder 35 is disposed, the web 46 is provided with a circular aperture 47 which is of such dimensions that it will allow piston 36 and air cylinder 35 to pass therewithin upon movement of the bearing assembly 39 in the direction of cylinder 35. Consequently, actuation of double-acting air cylinder 35 to bring piston 36 toward its innermost limit with respect to cylinder 35 moves the bearing assembly and crosshead 34 and fingers 33 carried thereby horizontally toward cylinder 35. By that motion fingers 33 are moved against patties 12 on dead plates 21, the fingers being initially accelerated and then rapidly decelerated to a final horizontal position indicated generally in FIG. 4. Pressure within the air cylinder 35 to move the piston 36 outwardly from the cylinder results in movement of bearing assembly 39, crosshead 34 and fingers 33 horizontally away from cylinder 35.

The means for moving the fingers 33 vertically is illustrated in FIGS. 1 to 4 and 7. As best seen in FIG. 4 a vertically mounted air cylinder 48 is fixed at one end to a pillow block 49 fixed to end part 50 of a further bearing member 51 having its longitudinal axis vertically disposed. Piston 52 extends downwardly from cylinder 48 and is fixed at its outward end 53 to angle iron 54 by means of a collar 55. In turn, angle iron 54 is attached to side block 56 which forms one part of a further bearing assembly 57 adapted to move vertically with respect to bearing member 51. Bearing assembly 57 is further composed of side blocks 58, which bear against surface 59 of bearing member 51. Bearing member 37, itself, acts as a bearing block and slides against surface 60 of vertical bearing member 51 (FIG. 3).

It will thus be apparent that actuation of vertical air cylinder 48 to move the piston 52 in the direction of the air cylinder 48 will move the bearing assembly 57 and horizontal bearing member 47, which forms a part of bear-

ing assembly 57, in an upward direction. Since bearing assembly 39 is carried by bearing member 37 when the bearing member 37 is moved upwardly, crosshead 34 and fingers 33 will likewise be moved upwardly with the piston 52. While air cylinder 48 may be made double acting in a manner similar to that of horizontal air cylinder 35, downward vertical motion of cylinder 48, and consequently fingers 33, is illustrated as accomplished by means of a coil spring 61 fixed at one end to block 38 and at its other end to frame part 53. Tension in spring 61 provides a force constantly urging horizontal bearing member 37 and, therefore, vertical piston 52, in a downward direction against the fluid within air cylinder 48. Release of fluid within cylinder 48 will thus permit spring 61 to move the crosshead 34 and fingers 33 downwardly until the lower surface 62 of bearing member 37 contacts the upper surface 63 of angle bar 54, when downward movement is arrested. Also shown in FIG. 3 is a control box 64 which is fixed to surface 60 of vertical bearing member 51 and houses terminals of the electrical circuit which controls movement of the crosshead 34 and fingers 33.

As best illustrated in FIG. 9, the endless belt 15 is formed from two parallel V belts 15a and 15b which cooperate with peripheral grooves in spaced pulleys 66a and 67a, and 66b and 67b, respectively (FIGS. 4 and 7), moving containers 20 which rest on the upper surface thereof in the direction of the center of the apparatus, which may be defined as the location of bearing member 37. Endless belt 16 is constructed in the same manner as endless belt 15, the central pulleys being designated by numerals 66a and 66b (FIG. 4).

Endless belts 15 and 16 move continuously about their respective pulleys when the apparatus is in operation. Movement of the containers carried by these belts, however, is not continuous, such movement being controlled by squeeze bars 67, and trigger assemblies 70 in accordance with a predetermined sequence of operation of the apparatus (FIG. 1). Conventional squeeze bars 67 are operable to slow or halt the movement of those containers 20 against which the squeeze bars press. Trigger assemblies 69 and 70 are also operable to hold the containers against movement.

The construction of the trigger assemblies 69 and 70 is illustrated in FIG. 10. Each trigger assembly includes a piston 87 mounted for vertical movement on a co-operating double-acting cylinder 88. In an upwardly extended position indicated by broken lines 89, each piston 87 projects beyond the plane of the conveyor belts 15 and 16. When moved upwardly at predetermined intervals, pistons 87, by virtue of their projection, block movement of a carton past them. Thus, in FIG. 10, piston 87 of trigger assembly 69 is adapted to block movement of container 20b while piston 87 of trigger assembly 70 is adapted to block movement of containers 20 being carried by conveyor belt 15 in the direction of movement thereof. Container 20a is held by guide bar 85 fixed to chute 72 by bracket 90. Each of cylinders 88 is fixed to and supported by a vertically disposed plate 91, which is adjustable in the direction of the path of movement of belt 15 by means of bars 92 held in slots 93.

The means by which filled cartons are ejected from their position on conveyor belts 15 and 16 is best illustrated in FIGS. 1, 4, 11 and 12. In the plan view of FIG. 1 these cartons are designated by reference numerals 20a or 20c. Directly to the rear of any container 20a or 20c in its discharge position is a discharge chute 72 having longitudinal flanges 73 at either side thereof to keep the containers sliding down the chutes in position thereon. To ensure such sliding the chutes 72 slope downwardly in the direction of their ends away from conveyor belts 15 and 16 and have smooth bottom surfaces. Chutes 72 discharge containers sliding therealong onto belts 75, which are propelled away from conveyor belts 15 and 16 and merge at a location (not shown) to

form a single belt carrying cartons to a packing station.

Means illustrated in FIGS. 11 and 12 are provided to impel filled cartons 20a and 20c from conveyor belts 15 and 16, respectively, onto discharge chutes 72. Impeller plates 77 are fixed to wings 78 integral with and extending from both ends of a cross bar 79. Cross bar 79 is rigidly mounted on a back-up plate 80, and cross bar 79 and back-up plate 80 are fixed to the free end of a piston 82, which cooperates with a fluid pressure-actuated cylinder 83, by means of nuts 84. When cylinder 83 is actuated to move piston 82 axially in the direction of the cylinder 83, impeller plates 77 are brought into contact with cartons 20a and 20c. As shown in FIGS. 3 and 4, fixed guide bars 85 are provided at the inner terminals of conveyor belts 15 and 16 adjacent to and somewhat above pulleys 66a, 66b, 67a and 67b. In these positions guide bars 85 act as stop members to hold cartons 20a and 20c at one location of the apparatus during the continuous movement of belts 15 and 16 until these cartons are forced into chutes 72 by means of impeller plates 77.

Back-up plate 80 is U-shaped, being provided with side portions 93 which lie in a plane substantially normal to the plane of the main portion of the back-up plate. Rotatably held in apertures in side portions 93 are rollers 94, which are positioned so that they contact the lower surface of center plate 53 and roll therealong. Center plate 53 is stationary, being bolted to frame part 14a. It thus provides a surface which limits upward movement of rollers 94, and, consequently, such movement of impeller assembly including impeller plates 77.

Other structural parts of the apparatus are seen in the view of FIG. 2, where guide brackets 97 are shown mounted on the upper surfaces of elongated plates 98 which are in turn fixed to and above frame part 14b.

OPERATION

The method by means of which the present apparatus is operated is as follows:

An endless belt 10 is set in motion and a patty-forming device (not shown) is actuated to deposit potato patties 12 on that belt. Since the belt 10 moves at a uniform speed in the direction of the arrows 11, the patties are moved on belt 10 toward the central portion of the packaging apparatus. In the illustrated embodiment the patties 12 are deposited on the supports or dead plates 21 and, because the supports 21 are stationary, rest on the horizontal surfaces 23 of the supports. In that position the patties 12 are contacted by fingers 33 depending from crosshead 34 and pushed through a finite pushing stroke of the fingers from supports 21 with sufficient velocity so as to fall freely in substantially the same attitude into cartons 20 which, in innermost position, are then discharged into chutes 72 by means of an assembly including impeller plates 77. The propelling of the patties for free dropping or fall in substantially the same horizontal attitude into a container prevents deformation and possible disintegration thereof which would likely result if the patties were instead dropped endwise off the support to be slid over the bottom surface of a container into proper packed position therein.

In order that the fingers 33 function properly, it is necessary that an upward movement of these fingers be effected so that they will not contact a succeeding row of patties as the fingers are returned to patty-pushing position after they have been moved forward to push patties from dead plates 21 into the respective cartons. The cycle of movement of the fingers 33 is generally rectangular, the fingers being moved horizontally forward from the position shown in FIG. 1, then upward, then rearward and finally downward to their initial position. While this cycle of movement has taken place, the belt 10 has deposited another layer of patties on each dead plate 21 in position to be pushed into adjacent cartons. Horizontal movement of the fingers 33 is accomplished

by means previously described and including the cylinder 35; vertical movement is accomplished by means previously described and including cylinder 48.

Movement of the cartons 20 to the several positions at which they can receive patties is accomplished by means of squeeze bars 67 and trigger assemblies 69 and 70. By means which will be familiar to those skilled in the art timing means are employed so that movement of the fingers 33, trigger assemblies 69 and 70, squeeze bars 67, endless belt 10, conveyor belts 15 and 16, and impeller plates 77 are coordinated and the entire sequence of operations accomplished rapidly and without unnecessary time delays. For this purpose electrically operated timers may be employed.

The general method described above is carried out in the operation of the apparatus. Additionally, the sequence of operations is carried out in a novel manner. On each side of the apparatus a layer of patties is simultaneously deposited in each of two containers. One of said containers is at an outer or first location while the other is an inner or second location. In FIG. 1 containers 20a and 20c have been illustrated at the inner location and containers 20b and 20d at the outer location. After the layers have been deposited, the cartons at the inner locations are discharged from the apparatus and the cartons at the outer locations are moved to the inner locations. Simultaneously with these movements further containers are brought into the outer or first position.

It will thus be seen that, by virtue of the method employed, two layers of patties will be deposited in each carton. For convenience each layer has been illustrated as consisting of two patties. Each layer of patties is separated from another layer of patties by waxed or other non-adherent paper, which may be laid over the patty layers by hand or by a further apparatus. As each carton receives a layer of patties at each of two locations, it should be noted that, when the present apparatus is first actuated, a layer of patties will have to be deposited by hand in the containers at the inner or second locations so that they will not be discharged with only one layer of patties therein.

It will be apparent that additions, modifications and alterations may be made in the preferred embodiment described and illustrated herein. Thus, in another embodiment of the apparatus, the patties 12 on endless belt 10 may be discharged directly into the cartons 20 without being first deposited on supports 21. By means of the novel method described, three or more layers of patties can be placed in cartons by increasing the number of groups of fingers 33 and providing three cartons at patty-receiving stations at both sides of the apparatus.

Thus, while the present invention has been described with particular reference to a specific embodiment thereof, it will be understood that the invention is not to be limited by that embodiment, but its scope is to be defined only by reference to the following, appended claims.

What is claimed is:

1. Apparatus for depositing a semi-solid body in a container, comprising means for positioning said body in a predetermined attitude at a predetermined location, means for positioning a container near and to one side of said location, a plurality of fingers disposed in fixed spaced relation to each other, and means for urging said fingers simultaneously against said body in the direction of said container to propel said body for free fall in the same predetermined attitude from said location into said container.

2. Apparatus for depositing a semi-solid body in a container, comprising a support for said body, said support including a multiplicity of spaced supporting members of substantially lesser width than said body, means for positioning said body in a predetermined attitude on said supporting members, means for positioning a container near and to one side of said support, a plurality of

fingers disposed in fixed spaced relation to each other, and means for urging said fingers simultaneously against said body in the direction of said container to propel said body for free fall in the same predetermined attitude from said support into said container.

3. Apparatus for depositing a semi-solid body in a container, comprising a support for said body, said support including a multiplicity of spaced supporting members of substantially lesser width than said body, adjacent ones of said supporting members being uniformly spaced apart in a direction longitudinal of said support, means for positioning said body in a predetermined attitude on said supporting members, means for positioning a container near and to one side of said support, a plurality of fingers disposed in fixed spaced relation to each other, adjacent ones of said fingers being uniformly spaced apart by a distance greater than the width of one of said supporting members, and means for urging said fingers simultaneously against said body in the direction of said container to propel said body for free fall in the same predetermined attitude from said support into said container.

4. Apparatus for depositing a semi-solid body in a container, comprising a support for said body, means for positioning said body in a predetermined attitude on said support, means for positioning a container near and to one side of said support, a plurality of upright fingers disposed in fixed spaced relation to each other and positionable at the opposed side of said support, and means for urging (a) said fingers simultaneously against said body in the direction of said container along a first plane to propel said body for free fall in the same predetermined attitude from said support into said container and (b) then returning said fingers in a continuing upright attitude and along a second plane to said opposed side of said support.

5. Apparatus for depositing a semi-solid body in a container, comprising a support for said body, said support including a multiplicity of spaced supporting members of substantially lesser width than said body and having their upper surfaces lying in a substantially horizontal plane, means conveying a plurality of said bodies in succession for positioning said body on at least two of said upper surfaces, means for positioning a container near and to one side of said support, a plurality of upright fingers disposed in fixed spaced relation to each other and positionable at an opposed side of said support, and means for simultaneously urging said fingers in a continuing upright attitude (a) horizontally against said body to propel said body from said support for free fall into said container, (b) upwardly to a position above a successive body positioned on said supporting members, (c) horizontally to said opposed side of said support, and (d) downwardly to a position from which they can be urged horizontally against said successive body on said supporting members.

6. Apparatus as claimed in claim 5, said last-named means comprising mounting means for said fingers, an elongated bearing member, means holding said mounting means for movement thereof relative to said bearing member in the direction of elongation of the latter and for movement with said bearing member in a direction substantially normal to said direction of elongation, and means for moving said mounting means in the direction of elongation of said bearing member and said bearing member in a direction substantially normal to said direction of elongation.

7. Apparatus as claimed in claim 5, said last-named means comprising mounting means for said fingers, an elongated bearing member, means holding said mounting means for movement thereof relative to said bearing member in the direction of elongation of the latter and for movement with said bearing member in a direction substantially normal to said direction of elongation, a fluid pressure-actuated assembly attached to said bearing mem-

ber and said mounting means, and another fluid pressure-actuated assembly attached to said bearing member and a stationary part of said apparatus.

8. Apparatus for depositing a semi-solid body in a container, comprising means for positioning said body in a predetermined attitude at a predetermined location, means for positioning a container at one side of said location, a plurality of fingers disposed in fixed spaced relation to each other, means for urging said fingers simultaneously against said body in the direction of said container to propel said body for free fall in the same predetermined attitude from said location into said container, and means for moving said container from its position at one side of said location after said body has been deposited in said container.

9. Apparatus for depositing a semi-solid body in a container, comprising a support for said body, said support including a multiplicity of spaced supporting members of substantially lesser width than said body and having their upper surfaces lying in a substantially horizontal plane, means conveying a plurality of said bodies in succession for positioning said body on at least two of said upper surfaces, means for positioning a container near and at one side of said support, a plurality of upright fingers disposed in fixed spaced relation to each other at an opposed side of said support, means for simultaneously urging said fingers in a continuing upright attitude (a) horizontally against said body to propel said body for free fall from said support into said container (b) upwardly to a position above a successive body positioned on said supporting members, (c) horizontally toward said opposed side of said support, and (d) downwardly to a position from which they can be urged horizontally against said successive body on said supporting members, and means for moving said container from its position at one side of said support as said fingers are urged horizontally toward said opposed side of said support.

10. Apparatus for depositing semi-solid bodies in a plurality of layers within containers comprising, a plurality of supports for said bodies, a first conveyor means for simultaneously delivering a body in a predetermined attitude to each of said supports, a second conveyor means running in a direction transverse to that of said first conveyor means for advancing containers to one side of each of said supports in succession, a plurality of fingers disposed in fixed spaced relation to each other and positionable at the opposed side of each of said supports, said pluralities of fingers being aligned transversely to the direction of travel of said first conveyor, and means for urging said fingers simultaneously against the bodies on said supports in the direction of said containers at said one side of said supports to propel said bodies for free fall in the same predetermined attitude from said supports into said containers, the bodies propelled from each succeeding support relative to the direction of movement

of said second conveyor means being deposited on top of the bodies propelled from the preceding support to thereby arrange said bodies in successive layers within said containers.

11. The invention according to claim 10 wherein each said support comprises a plurality of parallel spaced apart supporting members lying in a common plane to provide a discontinuous supporting surface for said semi-solid bodies preventing adherence of said bodies to said support.

12. The invention according to claim 10 wherein said means for urging said fingers includes a fluid pressure-actuated member.

13. Apparatus for depositing semi-solid bodies in a plurality of layers within a container comprising, a plurality of supports for said bodies, each support including a multiplicity of parallel spaced apart support members lying in a common plane to provide a discontinuous supporting surface, a first conveyor means for simultaneously delivering a body to each of said supports, a second conveyor means running in a direction transverse to that of said first conveyor means for delivering containers into positions at one side of each of said supports in succession, a plurality of fingers associated with each support and disposed in fixed spaced relation to each other along a common plane to provide a discontinuous pushing surface, said fingers being positionable at the opposed sides of said supports, and fluid pressure-actuated means for urging said fingers simultaneously against the bodies on said supports in the direction of said containers positioned at said one side of said supports to propel said bodies for free fall from said supports into said containers, the bodies propelled from a succeeding support in relation to the direction of travel of said second conveyor means being deposited on top of the bodies propelled from a preceding support to thereby cause said bodies to be arranged in successive layers within said containers.

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