Sept. 23, 1969 C. W. VOGT 3,468,095

METHOD OF AND APPARATUS FOR FILLING PREFORMED CARTONS WITH PREDETERMINED PORTIONS OF MATERIALS

Filed Oct. 18, 1966 3 Sheets-Sheet 1

FIG. 1

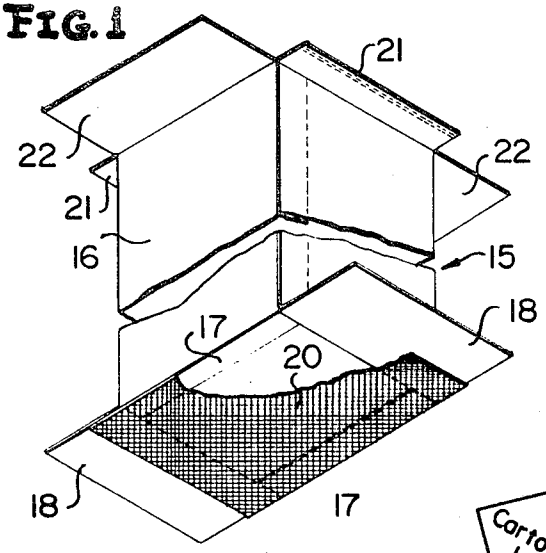


FIG. 12

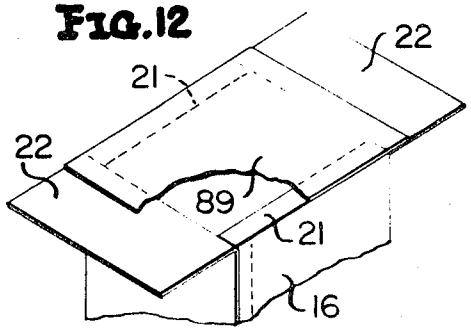


FIG. 2

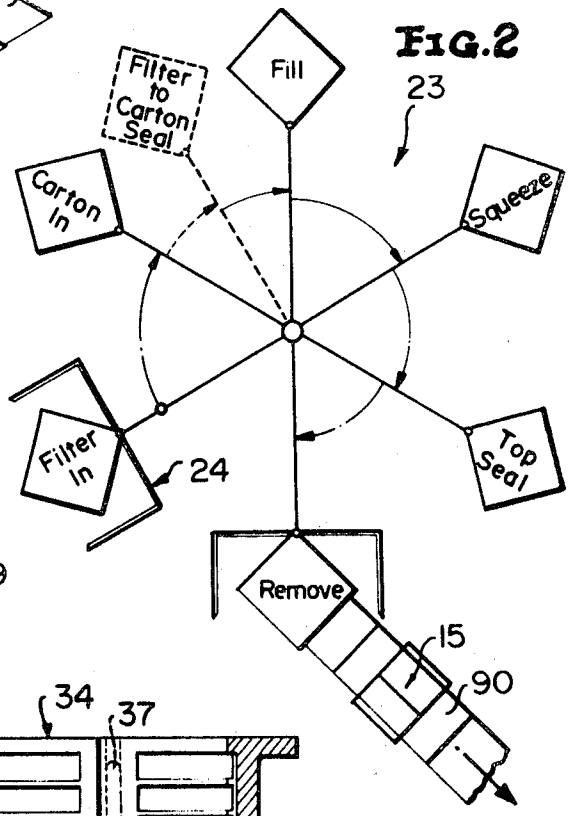
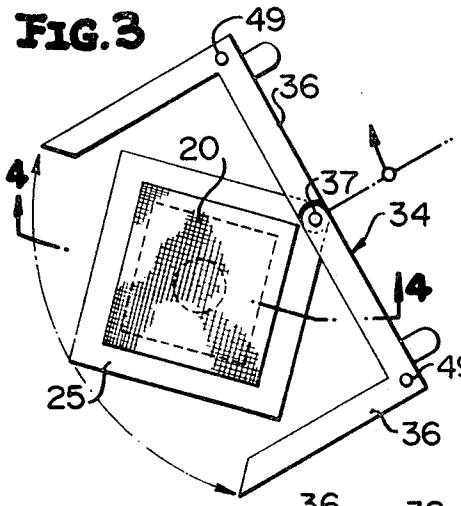


FIG. 3



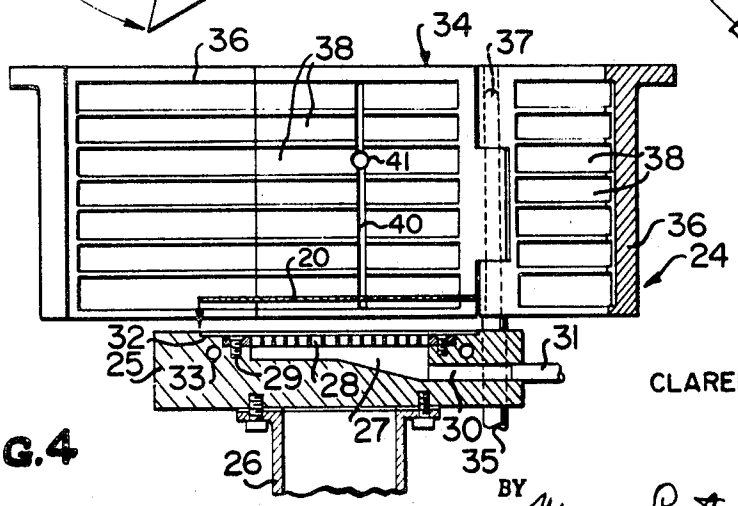


FIG. 4

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METHOD OF AND APPARATUS FOR FILLING PREFORMED CARTONS WITH PREDETERMINED PORTIONS OF MATERIALS

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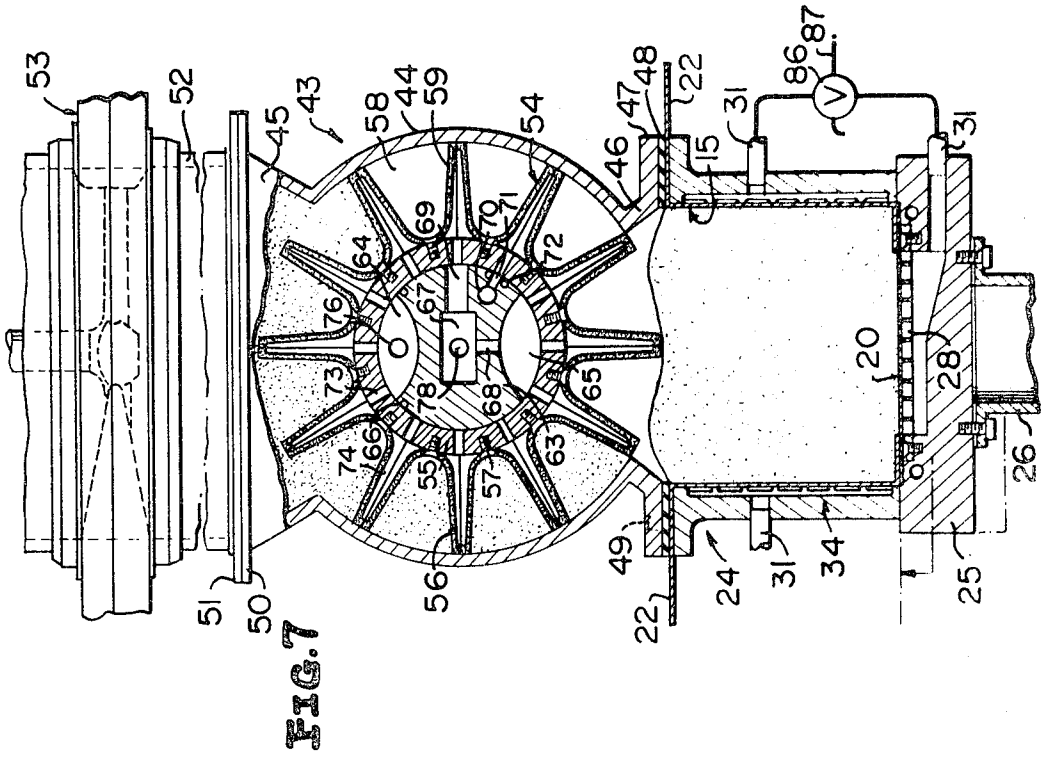


FIG. 7

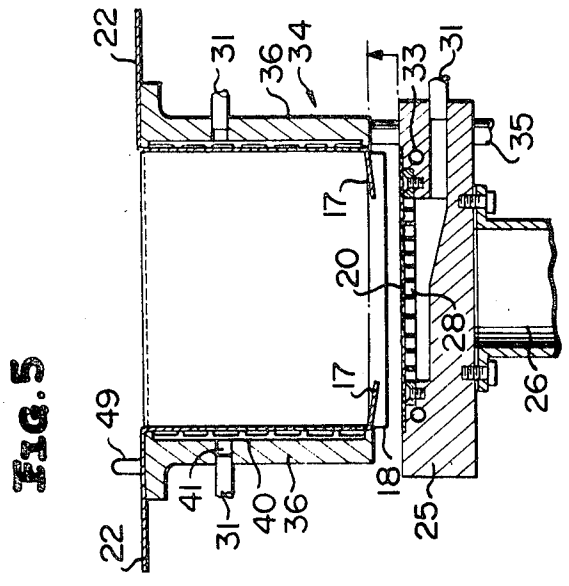


FIG. 5

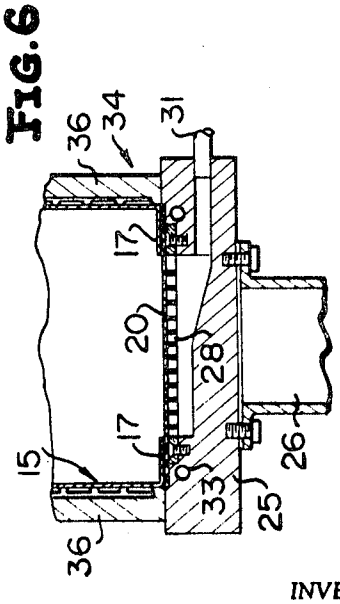


FIG. 6

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METHOD OF AND APPARATUS FOR FILLING PREFORMED CARTONS WITH PREDETERMINED PORTIONS OF MATERIALS

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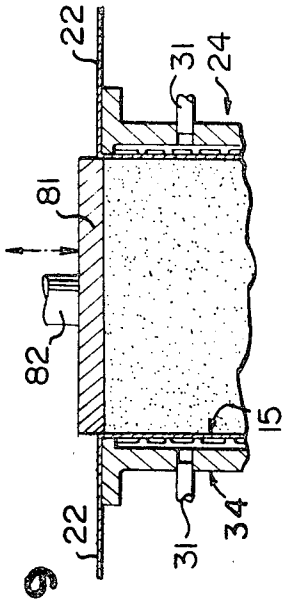


FIG. 9

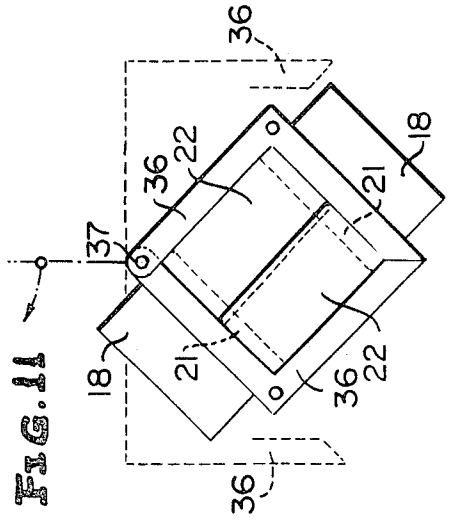


FIG. 11

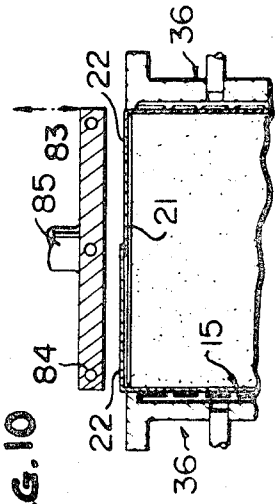


FIG. 10

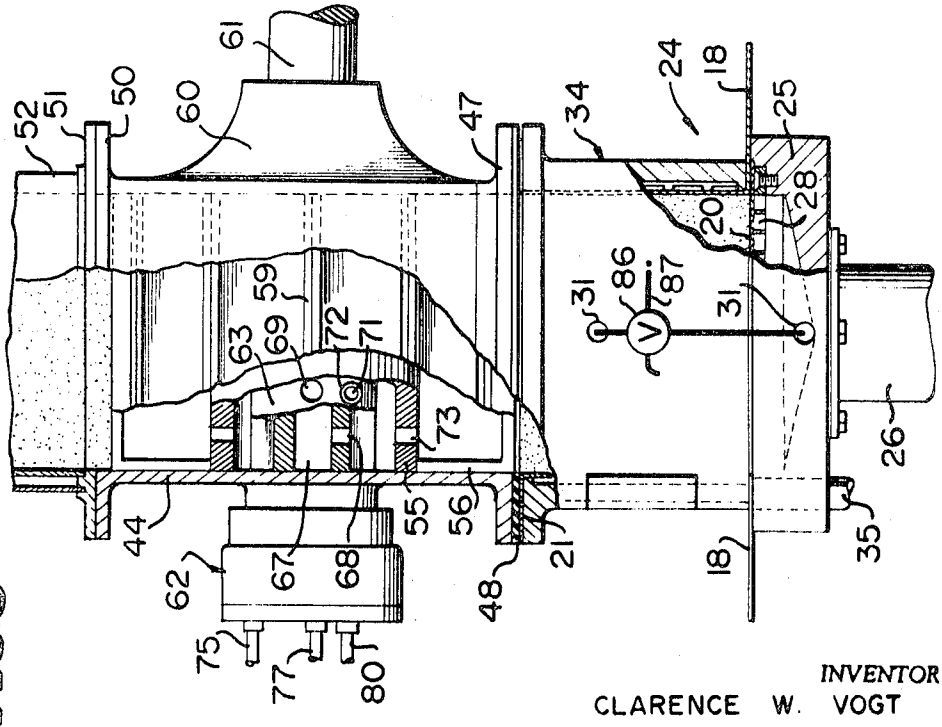


FIG. 8

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3,468,095

METHOD OF AND APPARATUS FOR FILLING PREFORMED CARTONS WITH PREDETERMINED PORTIONS OF MATERIALS

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Filed Oct. 18, 1966, Ser. No. 587,541
Int. Cl. B65b 63/02, 1/20, 13/20
U.S. Cl. 53—24 15 Claims

ABSTRACT OF THE DISCLOSURE

This disclosure relates to an apparatus and method for filling cartons with a finely divided pulverulent material. A somewhat conventional carton is placed within a shroud in overlying relation to a filter after which the filter is bonded to the carton and a vacuum drawn down through the carton through the filter. The upper part of the carton is presented to an outlet of a filler in sealed relation thereto. The filler includes a plurality of pockets mounted for rotation and for sequential presentation to an inlet having associated therewith a supply of the material, and the outlet. The material is drawn into the pockets by drawing a vacuum therein when the pockets are aligned with the inlet. When the pockets are aligned with the outlet, the pockets are vented and the vacuum drawn within the carton effects the discharge of the product from the pocket into the carton.

This invention relates in general to new and useful improvements in a method of and apparatus for filling cartons and more particularly to the filling of cartons with a flowable solid under controlled conditions whereby uniform weights of the flowable solids may be placed in cartons without weighing.

This invention particularly has to do with the filling of a carton having at least one wall portion thereof formed of a porous material through which gases may freely pass and which will prevent the flow of these solids therethrough. Such a carton is generally disclosed in my prior U.S. Patent No. 3,227,351.

In accordance with this invention, the carton and the layer of porous material are assembled within a shroud, after which the open end of the carton is sealed relative to a filler, and predetermined amounts of flowable solids are placed in the carton, after which the carton is delivered to a suitable mechanical squeezing mechanism to mechanically compact the material within the carton. The squeezing operation is followed by the closing of the open end of the carton.

A principal feature of the invention resides in the manner in which the carton is filled. In accordance with this invention, a vacuum is drawn within a pocket while it is in communication with a source of a flowable solid so as to fill the pocket with the flowable solid and wherein there is a minimum of gas entrapped, and placing the pocket in sealed communication with the carton, and while venting the pocket, drawing an additional vacuum in the carton so as to draw the flowable solid from the pocket into the carton and to further remove gases therefrom.

Another object of this invention is to perform the above carton filling operation wherein there is a plurality of the pockets and the pockets are constantly rotated during the filling of a carton.

Still another feature of this invention is to provide a novel carton support in the form of a shroud having a base and a separate body which is of a split construction, the base being constructed for the reception of a porous sheet and a shroud being constructed to receive a carton open at both ends and being capable of aligning the carton with the porous sheet, and the base having

suitable heating means for effecting the heat sealing of the porous sheet to the lower open end of the carton to effect the closing thereof by the porous sheet.

A still further object of this invention is to provide a novel sift-proof carton which is particularly adapted to being automatically filled with a flowable solid.

A further object of this invention is to provide a novel filling apparatus which is automatic in operation and which is readily adaptable to either a straight line or turret operation.

With the above and other objects in view that will hereinafter appear, the nature of the invention will be more clearly understood by reference to the following detailed description, the appended claimed subject matter, and the several views illustrated in the accompanying drawings.

In the drawings:

FIGURE 1 is a bottom perspective view of a carton to be filled in accordance with this invention, an intermediate portion of the carton being broken away.

FIGURE 2 is a diagrammatic plan view showing the general steps in filling and closing a carton in accordance with this invention.

FIGURE 3 is a plan view of the packaging apparatus at the station where the filter may be applied to the shroud.

FIGURE 4 is an enlarged fragmentary vertical sectional view taken along the line 4—4 of FIGURE 3 and shows the specific details of the shroud construction.

FIGURE 5 is a transverse vertical sectional view taken through one of the shrouds after a carton has been positioned therein and prior to the clamping of the lower flaps of the carton against the filter sheet.

FIGURE 6 is a fragmentary vertical sectional view similar to FIGURE 5 and shows the carton flaps clamped to and heat-sealed to the filter sheet.

FIGURE 7 is an enlarged fragmentary vertical sectional view taken through one of the shrouds at the carton filling station and shows the specific details of the filler and the relationship thereof with respect to the carton and the shroud.

FIGURE 8 is a side elevational view of the filler and shroud of FIGURE 7 with portions broken away and shown in section.

FIGURE 9 is a fragmentary sectional view taken through the filled carton at the mechanical squeezing station.

FIGURE 10 is a fragmentary vertical sectional view taken through a filled carton in the process of having the upper closure flaps thereof heat-sealed together.

FIGURE 11 is a plan view of a filled and top-sealed carton and its associated shroud.

FIGURE 12 is a fragmentary top perspective view of a partially sealed carton formed in accordance with this invention.

Referring now to the drawings in detail, reference is first made to FIGURE 1 wherein there is illustrated a carton which is filled in accordance with this invention, the carton being generally referred to by numeral 15. The carton 15 includes a body 16 which is initially open at both ends. At the bottom of the carton 15, there are two relatively narrow, inwardly directed closure flaps 17 and two relatively wide, outwardly directed closure flaps 18. When the carton 15 is ready for filling, the bottom thereof is closed by means of a porous sheet or filter sheet 20 which is secured to the flaps 17 and 18 while they are in the above-described arrangement. It is preferred that the filter sheet 20 be secured to the flaps 17 and 18 by means of a suitable hot melt adhesive which may be readily heated to a flowable temperature.

At the upper end of the body 16 there are a pair of relatively narrow closure flaps 21 and a pair of relatively

wide closure flaps 22. The narrow closure flaps 21 are on the same sides of the body 16 as the wide closure flaps 18. Thus adjacent cartons may be cut from a continuous web with no waste.

In accordance with this invention, cartons 15 are filled in a packaging apparatus which is schematically illustrated in FIGURE 2 and is generally referred to by the numeral 23. The packaging apparatus 23 is of a turret type and is provided with a plurality of shrouds which are generally referred to by the numeral 24. It is to be noted that the packaging apparatus 23 is a six station machine and accordingly there are six shrouds 24.

Each shroud 24 includes a base 25 which is carried by a support 26 for vertical reciprocatory movement in timed relation to the rotation of the shroud 24. It is to be understood that the support 26 is vertically reciprocated automatically by any conventional mechanism (not shown) including a fixed cam track and follower assembly. The upper central portion of the base 25 is provided with a recess 27 over which is positioned a suitable grating or screen 28 which is removably secured in place by means of fasteners 29. A vacuum passage 30 opens from one side of the base 25 into the recess 27. A vacuum line 31 is coupled to the vacuum passage 30. Thus a vacuum may be drawn through the grate or screen 28.

It is also to be noted that the upper surface of the base 25 above the screen 28 is formed with a recessed seat 32. The seat 32 is of a dimension to have received therein a filter panel 20. It is to be understood that the seat 32 is very shallow and only of a depth sufficient to receive the filter panel 20.

In order to effect the automatic heat-sealing of a filter panel 20 to the bottom carton panels 17 and 18, the base 25 is provided with a suitable heating element 33. The heating element 33 is embedded in the base 25 in underlying relation to the periphery of the seat 32. It is preferred that the heating element be an electrical element although other heating means, including steam, may be utilized.

The shroud 24 also includes a body which is generally referred to by the numeral 34. The shroud body 34 is carried by a vertical shaft 35 and is formed in two halves 36, 36 which are generally L-shaped in plan, as is best shown in FIGURE 3. The shroud body halves 36 are pivotally mounted on a pivot pin 37 which constitutes an extension of the shaft 35. It is to be noted that the shroud body 34 is of a size commensurate with the size of the body 16 of the carton 15 and is adapted to snugly engage the same.

Each of the shroud body halves 36 has formed on the internal surface thereof a suitable pattern of recesses 38 for the purpose of drawing a vacuum about the carton so as to support the same during the filling thereof under a vacuum. The recesses 38 are interconnected by a main vacuum passage 40 into which there opens a port 41. The port 41, in turn, has connected thereto a branch of the vacuum line 31. At this time it is pointed out that the pattern of grooves 38 may be formed directly in the walls of the shroud body halves 36, or the walls may be faced with suitable insert plates.

Reference is now made to FIGURE 7 wherein there are illustrated the details of the filler, which is of the air lock type and is generally referred to by the numeral 43. The filler 43 includes a generally cylindrical housing 44 which is provided at the upper end thereof with an inlet portion 45 and at the lower end thereof with an outlet portion 46. The outlet portion 46 terminates in a flange 47 which carries on the underside thereof a suitable gasket 48 which is engageable with the flaps 21 and 22 of the carton 15 to form a seal with the carton. Alignment of the housing 44 with each of the shrouds 24 is assured by means of pins 49 carried by the shroud body 34 and projecting into suitable openings in the flange 47.

The inlet 45 of the filler body 44 terminates at the upper end thereof in a mounting flange 50. In FIGURE 7 the mounting flange 50 is illustrated in face-to-face connected engagement with a flange 51 of a magazine 52. If desired, the magaizne 52 may have associated therewith a further filler 53 which can be of a construction which will permit the simultaneous filling and mixing of a product, such as cake mixes, etc.

The filler 43 also includes an impeller which is rotatably journalled within the housing 44, the impeller being generally referred to by the numberal 54. The impeller 54 includes a central tubular shaft 55 to which there is secured a plurality of axially extending and circumferentially spaced pocket-forming members 56. The pocket-forming members 56 are formed of a suitable rigid porous material, such as sintered stainless steel or polyethylene. Each of the pocket-forming members 56 is secured to the tubular shaft 55 by means of fasteners 57 and flange portions of the adjacent pocket-forming members 56 are suitably sealed relative to one another. The arrangement of the pocket-forming members 56 is such so as to provide a plurality of pockets 58 separated by vanes 59 which are substantially in rubbing contact with the interior of the housing 44 so that the pockets 58 are distinct from one another.

Referring now to FIGURE 8 in particular, it will be seen that one end of the housing 44 is provided with a hub 60 from which a drive shaft 61 extends. The drive shaft 61 is suitably connected to the tubular shaft 55 at one end and to a power source (not shown) at the other end for effecting the rotation of the impeller 54 within the housing 44. At the opposite end of the housing 44 there is a valve assembly which is generally referred to by the numeral 62. The valve assembly 62 includes a valve member 63 which extends into the tubular shaft 55 and runs substantially the full length thereof. The cross section of the valve member 63 is such so as to provide an upper passage 64 which is generally in line with the inlet 45 and a lower passage 65 which is generally aligned with the outlet 46. The valve member 63 is sealed relative to the shaft 55 about the periphery of the passage 64 by suitable sealing members 66.

The valve member 63 is provided with a central passage 67 which is communicated with the passage 65 by means of suitable ports 68. Other ports 69 extend from the passage 67 at axially spaced intervals and open to the interior surface of the shaft 55.

The valve member 63 is also provided with a passage 70 which has in communication therewith ports 71 which open to the interior surface of the shaft 55. The ports 71 are spaced axially of the valve member 63 at the same spacing as the ports 69. The ports 71 are sealed relative to the shaft 55 by means of openings 72.

It is to be noted that the shaft 55 is provided with a plurality of ports 73. The ports 73 extend radially through the shaft 55 and are spaced axially thereof at the same spacing as the ports 69 and 71. Each row of ports 73 opens into a space 74 between adjacent pocket-forming members 56.

The valve assembly 62, as is best shown in FIGURE 8, includes a vacuum line 75 which opens into the passage 64 through a port 76 (FIGURE 7). A vent line 77, which is centrally located, opens into the passage 67 through a port 78. The valve assembly 62 also includes a pressure line 80 which opens into the passage 70.

At this time it is pointed out that the filler 43 is supported in a fixed position at the position indicated there by the word "FILL" of FIGURE 2. Suitable means will be provided for rotating the impeller 54 when a shroud is positioned therebeneath. It is to be understood that suitable control means may be provided for preventing the operation of the filler 43 when there is no carton within the shroud. Also, suitable control means may be provided for rotating the impeller 54 a predetermined number of turns or partial turns so as to deliver a predetermined amount of a product to a carton.

It will be noted from FIGURE 2 that the station of the packaging apparatus 23 which follows the filling station is labelled with the word "SQUEEZE." In FIG-

URE 9 there is schematically illustrated the manner in which the product placed within a carton **15** is mechanically squeezed or compacted. The squeezing is accomplished by means of a presser foot **81** which is vertically reciprocated by means of a shaft **82** in timed relation to the positioning of a shroud **24** therebeneath. It is to be noted from FIGURE 7 that there is a slight overfilling of the carton **15** by the filler **43**. This overfilled material is pressed down into the carton **15** by means of the presser foot **81** so as to provide for a maximum quantity of material within the carton **15**.

Reference is now made to FIGURE 10 which corresponds to the "Top Seal" position of the packaging machine **23**. At the "Top Seal" position of the packaging machine, the flaps **21** of the carton **15** are first folded inwardly, followed by the inward folding of the flaps **22**. These flaps carry a suitable heat-activated adhesive, such as a hot melt adhesive. After the flaps **21** and **22** have been folded to their proper positions, a heating plate **83** is brought down into contact therewith in the manner shown in FIGURE 10. The heating plate **83** may be heated in any desired manner although electrical heating is preferred. To this end, the heating plate **83** is illustrated as containing heating elements **84**. The heating plate **83** is carried by a vertically reciprocating shaft or support rod **85** which is operated in timed relation to the operation of the packaging machine **23** by a mechanism not shown. However, it is to be understood that the shafts **82** and **85** may be suitably automatically reciprocated by means of a rotating overhead cam and follower assembly.

Reference is now made to FIGURE 11 which corresponds with the "REMOVE" station of the packaging machine. After the top sealing of the carton **15** has been completed, the filled carton is ready for removal from the packaging machine **23**. At the "REMOVE" station, the shroud body halves **36** are pivoted about the pivot pin **37** to their phantom line positions of FIGURE 11 and the filled carton may be removed from the shroud base **25**.

Operation

It is to be understood that the packaging machine **23** is automatically operated except for the placing of the filter panels **20** and cartons **15** therein and the removal of the filled cartons. In the illustrated form of the packaging machine **23**, there is a circular indexing action which takes place automatically.

When an open shroud **24** reaches the "FILTER IN" station, a filter panel **20** is positioned on the base **25** with the position of the filter panel **20** being determined by the seat **32**. The open shroud then moves to the "CARTON IN" station where an erected carton **15** is positioned in overlying relation to the base **25** and generally in alignment with the filter **20**. The shroud body **34** now automatically closes about the carton **15** so as to align the carton **15** with the filter panel **20**. After the shroud body **34** closes, the base **25** is moved upwardly to clamp the filter panel **20** against the flaps **17** and **18** of the carton.

At this time it is pointed out that although the filter panel is inserted in a shroud at one station and the carton is inserted therein at the next staiton, if desired for convenience purposes, both the filter and the carton could be applied to the shroud at one station. Furthermore, it is feasible to provide the knocked down carton **15** with the filter panel **20** bonded to one of the flaps **17** to facilitate handling.

After the carton **15** has been placed within the shroud **24** and clamped therein against the filter panel **20**, the shroud moves to the "FILL" station. As the shroud is moving from the "CARTON IN" station to the "FILL" station, the preapplied adhesive on the flaps **17** and **18** of the carton is softened and the filter panel **20** is softened and the filter panel **20** is adhesively bonded to the flaps **17** and **18**. Thus when the carton **15** reaches the "FILL" station, it has a porous bottom.

Referring now to FIGURE 7 in particular, it will be seen that as the impeller **54** rotates, the pockets **58** thereof are sequentially presented to the inlet **45** of the housing **44**. When the pockets **58** are aligned with the inlet, a vacuum is drawn therein through the porous pocket forming members **56**. This drawing of a vacuum within the pockets **58** serves two purposes. First, it facilitates the filling of the pockets **58** in that the vacuum definitely supplements the gravity flow of a product thereinto. Secondly, it effects the removal of a large portion of the air and other gases which are normally entrained with the flowable solids.

As the impeller **54** rotates, the filled pockets move out of communication with the vacuum passage **64**, but remain sealed relative to one another by the engagement of the lobes **59** with the interior surface of the housing **44**.

When the filled pockets **58** reach the outlet **46**, the pockets are vented to the atmosphere through the vent passage **65** so as to permit the flowable solids carried by the pockets **58** to drop therefrom. However, the filling of the carton **15** is not by gravity alone. When the shroud **24** reaches the "FILL" station, a valve **86** controlling the drawing of a vacuum in the vacuum lines **31** is opened and communicates the vacuum lines **31** with a vacuum source through a vacuum line **87**. As a result, the walls of the carton body **16** are tightly drawn against the shroud body **34** and a vacuum is drawn in the interior of the carton **15** through the filter panel **20**. Thus a vacuum is continuously drawn within the carton **15** during the filling thereof. This drawing of the vacuum within a carton during the filling thereof not only facilitates the flow of the flowable solids out of the pockets **58** aligned with the outlets **46**, but also serves to remove additional air or other entrained gases carried by the flowable solids from the flowable solids. As a result, the product received within the carton **15** at the "FILL" station is compacted and is of a uniform density.

It is further pointed out at this time that while the principal filter surface of the carton **15** is formed by the filter panel **20** at the bottom thereof, the carton itself may be formed of a paper or like product which has sufficient porosity to permit the drawing of air and other gases therethrough by the application of a relatively high vacuum through the shroud body **34**. Such an arrangement would provide a uniform removal of air and other entrained gases from the product as the product begins to build up within the carton.

It is to be understood that inasmuch as all of the pockets **58** are of a predetermined size and since the flowable solids are drawn into the pockets under the influence of a vacum, which produces a uniform consistency, each of the pockets will receive a predetermined weight of the flowable solid. The impelled **54** in a filling operation is turned sufficiently to present a predetermined number of the pockets **58** to the carton being filled. Thus, an accurate amount of the flowable solid, by weight, may be automatically delivered to the carton **15** without weighing. It is also pointed out at this time that if it is so desired, further control may be obtained by providing the filler **43** with a suitable scoop mechanism which is adjustable and which is operable to remove a portion of the flowable solid from each pocket **58** so that the weight of flowable solid delivered by each pocket may be accurately controlled.

After the product has been discharged from a pocket **58**, the pocket surface is cleansed by back blowing as the respective ports **73** are aligned with the ports **71**. The pressure within each pocket **58** is then vented as the respective ports **73** become aligned with the ports **69**.

It is to be noted that the carton **15** is filled to slight overflowing in FIGURE 7. When the carton **15** with the product therein reaches the "SQUEEZE" station, the presser foot **81** will both level off the excess material

and squeeze the same down into the carton. At this time it is pointed out that the actual squeezing of the product into the carton will not always be required, but will vary with the product. Accordingly, in many instances the filler **43** will deliver to the carton **15** only sufficient material to fill the same to the top without a mechanical squeezing of the material. In such event, the presser foot **11** will function only as a leveler.

After the product has been leveled or squeezed with respect to the carton **15**, the top of the carton is closed in the manner shown in FIGURE 10 by merely folding the flaps **21** and **22** inwardly and securing the flaps **22** to the flaps **21** with there being a slight overlapping of the flaps **22**.

If desired, a different type of seal may be provided for the then upper end of the carton. The flaps **22** may be of an extent so that they merely touch one another. The flaps **21** are first folded inwardly, after which a cover sheet **89** is positioned in overlying relation to the flaps **21** and **22** in the manner shown in FIGURE 12. Then the flaps **22** are folded into overlying relation with respect to the cover sheet **89** and the flaps **21**. The cover sheet **89** will be bonded to the flaps **21** and **22** and the flaps **22** will be further bonded to the cover sheet **89**.

It is to be understood that when the flaps **22** merely meet, a suitable sealing tape may be applied to the exterior of the carton in overlying relation to the line of juncture between the flaps **22**. Such a sealing tape may be used with or without the cover sheet.

After the then upper end of the carton **15** has been closed, the carton moves to the "REMOVE" station where it is removed from the shroud. The carton is then inverted and placed on a suitable conveyer **90**, after which the flaps **18** are folded inwardly and are bonded to the filter panel **20** to complete the sealing of the carton. It is to be understood that when the cover flaps **22** are of a dimension to merely meet, the flaps **18** will also merely meet. In such event, a strip of tape may be applied across the line of juncture of these flaps. It will be readily apparent that the resultant sealed carton will be of a sift-proof construction due to the complete seals provided by the filter panel **20** and the cover sheet **89**.

Although the packaging machine arrangement shown in FIGURE 2 provides for the separate placing of a filter panel and the carton, as pointed out above, it is to be understood that it is feasible to initially adhere the filter panel **20** to one of the flaps **17**. The carton **15** would come to the packager in a knocked-down condition with the filter panel **20** secured to that short flap **17**. Then when the operator of the packaging machine inserts the cartons **15** into the shrouds **24**, the cartons and the filter panels may be inserted as a unit. The filter panel **20** would then be heat-sealed to the other of the flaps **17** and the two flaps **18** in the manner previously described. It is also feasible to provide the knocked down carton **15** with the cover sheet **89** bonded to one of the flaps **21**.

The provision of the carton **15** with the filter panel **20** attached thereto would have a further advantage. This would eliminate the necessity for two separate stations for the insertion of the filter and the carton and would provide more time for the cooling of the hot melt adhesive. For example, the diagrammatic arrangement of stations shown in FIGURE 2 may be mdoified to permit the "REMOVE" station to remain at the 6 o'clock position and "FILL" station to remain at the 12 o'clock position. The loading position could be moved to approximately the 7 o'clock position with the heat-sealing of the filter to the carton flaps occurring somewhere between the 8 and 9 o'clock positions and cooling of the heat seal occurring between the 10 and 11 o'clock positions. The "SQUEEZE" position could be moved to the 1 o'clock position with the cover sheet, when used, being applied at the 2 o'clock position and the "Top Seal" station being moved to the 3 o'clock position. This would permit the cooling of the top seal in the 4 and 5 o'clock positions prior to the removal of the carton at the 6 o'clock position.

Although only a preferred embodiment of the invention has been specifically illustrated and described herein, it is to be understood that minor variations may be made in the packaging apparatus and method without departing from the spirit and scope of the invention as defined in the appended claims.

I claim:

1. An apparatus for filling a container of the type having at least one wall portion capable of permitting free gaseous flow therethrough while preventing the flow of a flowable solid product, said apparatus comprising a filler including an inlet, an outlet and a pocket, means for sealing a carton to said outlet in communication therewith, means for sequentially placing said pocket in communication with said inlet for communication with a product supply source and with said outlet for communication with a container, first flow means for producing a differential pressure between said inlet and said pocket in communication with said inlet to fill said pocket with a product, and second flow means for producing a differential pressure between said pocket and said outlet when said pocket is in communication with said outlet to effect product flow from said pocket into a carton.

2. The apparatus of claim **1** wherein said second flow means includes means for drawing a vacuum within a container being filled.

3. The apparatus of claim **1** wherein said first flow means includes means for drawing a vacuum in said pocket, and said second flow means includes means for drawing a vacuum within a container being filled.

4. The apparatus of claim **1** wherein said second flow means includes means for drawing a vacuum within a container being filled and means for venting said pocket.

5. The apparatus of claim **1** wherein there is associated with said filler at said outlet, a container supporting shroud including a base and said second flow means being carried by said shroud base.

6. The apparatus of claim **1** wherein there is associated with said filler at said outlet, a container supporting shroud including a separate base and a split body, said base having means for positioning a porous wall portion and means for effecting the heat sealing of a porous wall portion to a container.

7. The apparatus of claim **1** wherein the path of movement of said pocket relative to said outlet is spaced from said means for sealing a carton to said outlet whereby a carton may be filled to limited overflowing in accordance with the capacity of the space within said outlet between said pocket and a carton.

8. The apparatus of claim **1** wherein there is associated with said filler at said outlet, a container supporting shroud including a separate base and a split body, said base having means for positioning a porous wall portion.

9. The apparatus of claim **1** wherein said second flow means includes means for drawing a vacuum within a container being filled through the bottom of the container.

10. A packaging apparatus comprising a filler, a plurality of container receiving shrouds mounted for step-by-step movement along an endless path and for sequential presentation to said filler, each shroud being particularly constructed for receiving a carton having open upper and lower ends, said shroud including separable base and body members, said base having means for positioning a filter panel for closing the lower end of a carton, and said body having means for positioning a carton in alignment with a filter panel.

11. The packaging apparatus of claim **10** wherein said base has heater means for effecting the heat sealing of a filter panel to a carton.

12. The packaging apparatus of claim **10** wherein said filler is of the type normally operable to overfill a carton

and said packaging apparatus includes means for mechanically squeezing an overflowing product completely down into a carton carried by said shroud after the filling of the carton by use of said filler.

13. A method of filling cartons comprising the steps of providing a filler having a pocket, producing a vacuum in the pocket and drawing flowable solids into the pocket with a reduction of their gaseous content, and placing the filled pocket in sealed communication with a carton, and producing a vacuum within the carton while venting the pocket to draw the flowable solids into the carton while removing gases therefrom.

14. The method of claim **13** wherein cartons are sequentially applied to said filter within shrouds.

15. The method of claim **13** wherein cartons are sequentially applied to said filler within shrouds.
cartons are filled to overflowing and thereafter the flowable solids are mechanically squeezed into the cartons while the cartons remain supported within the shrouds.

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