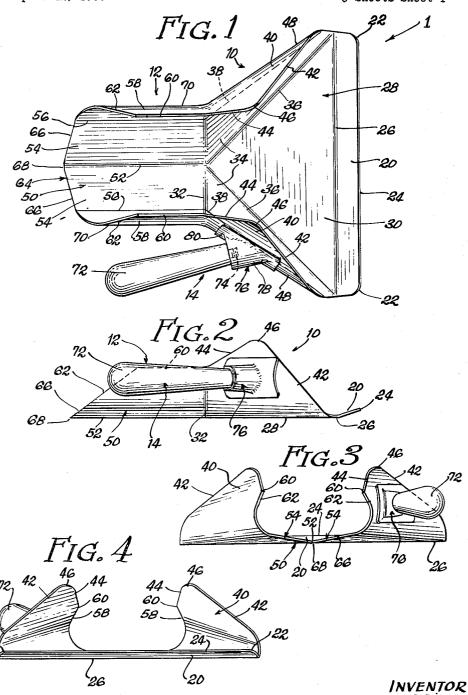
MEANS FOR FILLING CONTAINERS

Filed April 12, 1965

3 Sheets-Sheet 1



INVENTOR Ralph E. Weimer by Horton Davis Brewer & Brugman Cltiys MEANS FOR FILLING CONTAINERS

Filed April 12, 1965

3 Sheets-Sheet 2

Fig. 5

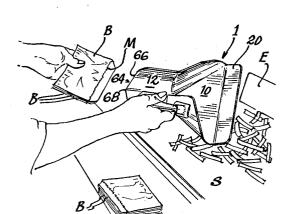


Fig.6

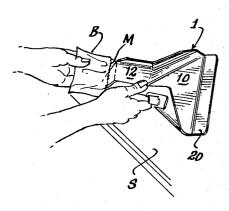


Fig. 7

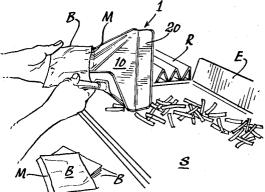


FIG. 8

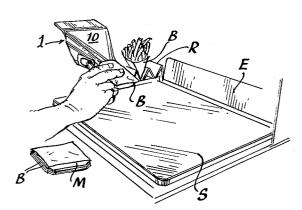


Fig.13

INVENTOR Ralph E. Weimer by Horton, Davis, Brewer & Brugman Attys

MEANS FOR FILLING CONTAINERS

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3 Sheets-Sheet 3

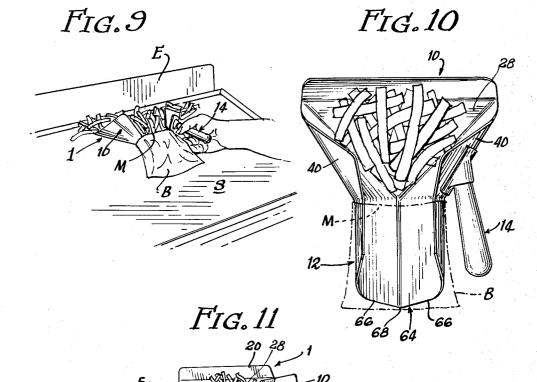
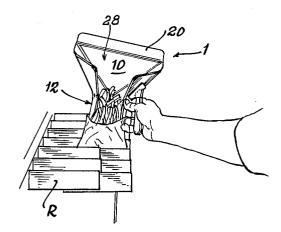


FIG. 12



INVENTOR Ralph E. Weimer by Horton, Davis, Bruver & Brugman Ottys 1

3,255,570 MEANS FOR FILLING CONTAINERS Ralph E. Weimer, Lombard, Ill., assignor to McDonald's System, Inc., Chicago, Ill., a corporation of Illinois Filed Apr. 12, 1965, Ser. No. 447,315 5 Claims. (Cl. 53—390)

This invention relates to a method and to means for filling containers such as bags.

Manual methods and means such as tongs and scoops are frequently used for filling containers such as bags with segmental products. Such is frequently done in connection with the filling of bags with segmental food products such as popcorn, candy, french fried potatoes and the like. In filling containers with products such as elongated 15 french-fried potatoes at carry-away or carry-out food operations, the most commonly used method and means comprises the utilization of tongs to grasp a quantity of elongated french-fried potato segments which are then thrust into the open end of the container. Where that is 20 done it is often necessary to grasp two or more batches of segments to be inserted into the container to fill it. In so doing, segments are often crushed and deformed, particularly where the container filled is a bag with a limited is also awkward. Particularly is that so when line-bottom bags having openable mouths are used. In using tongs it is also difficult to dispense generally uniform predetermined quantities of segments such as elongated frenchfried potatoes without weighing each filled container.

The method and means of this invention obviate a number of the disadvantages encountered in filling containers, such as bags, with segmental products such as elongated french-fried potatoes. The method and means of this invention provide unique advantages and results not readily obtainable with prior art container filling methods and means for rapidly, easily and controllably filling such containers.

It is therefore a principal object of this invention to provide a novel method for filling containers with a segmental 40 product.

It is a further principal object of this invention to provide a novel means for filling containers with a segmental

Yet another object of this invention is to provide a novel method for filling containers such as bags with a quantity of discrete segments of a food product such as french-fried potatoes.

Further an object of this invention is the provision of novel means for filling containers such as bags with quantities of discrete segments of a food product such as french-fried potatoes.

Still another object of this invention is the provision of a novel method for bagging elongated segmental food products such as french fried potatoes by securing an openable bag to the bagging portion of a bagger, by collecting a quantity of elongated segmental food product on a bagger, and by discharging said quantity of said food product into said bag from a collector portion of said

A further object contemplated by this invention is a novel method for bagging french-fried potatoes in which the steps comprise positioning a bag to surround a portion of a bagger, collecting a quantity of french-fried potatoes on a remote portion of a bagger, and discharging into the bag said quantity of said french-fried potatoes while orienting at least some of said quantity so that they enter said bag generally perpendicularly of the mouth

Yet another object of this invention is the provision of novel means for filling containers such as a bag in which

said means comprise a collector segment and an intercommunicating bagging segment, said collector segment including a platform for collecting segmental product and for channelling said segmental product into said bagging segment, said bagging portion being proportioned to be inserted into a container and for maintaining a container in contact therewith when said segmental product is channeled into said bagging segment and discharged therethrough into said container.

In accordance with the objects of this invention a container filler or bagger is provided. The bagger includes intercommunicating collector and bagging segments operatively connected to each other and having spaced apart collector and bagging ends, respectively. The collector segment comprises a leading collecting end, a platform intermediate its collecting end and the bagging portion, and side walls extending upwardly from said platform adjacent the sides of said platform. The collector segment converges towards said bagging segment. bagging segment includes a bagging end, a floor communicating with said bagging end and said collector segment, and side segments extending upwardly from said floor adjacent the sides of said floor. The bagging end is guidable into and receivable within a container to be opening or mouth. The use of tongs for filling containers 25 filled, such as a bag, and is easily manually maintained in contact and engagement with a container during a filling operation.

In accordance with the objects of this invention the novel method of this invention for filling containers with a segmental product comprises the steps of inserting a bagger into and maintaining an end of a bagger within the mouth of a container, collecting a batch of segmental product on a remote portion of the bagger while maintaining said bagger in a generally horizontal orientation, then including said bagger to a generally vertical orientation with the mouth of the container to be filled facing generally upwardly to channel said batch of segmental product into said container through the mouth of the container and then removing said container filled with said batch of segmental product from said bagger.

The method and means of this invention is particularly useful for filling bags with french-fried potato segments. However they are not so limited and they may be used in connection with the filling of containers other than bags as well as in connection with other segmental products.

Further objects and advantages of this invention will become apparent from the following description and drawings of which:

FIGURE 1 is a top plan view of a bagger of this invention:

FIG. 2 is a side elevational view of the bagger of FIG. 1; FIG. 3 is an end view of the bagger of FIG. 1 viewed from the left of FIG. 1;

FIG. 4 is an end view of the bagger of FIG. 1 viewed from the right of FIG. 1;

FIGS. 5 to 12 illustrate sequential steps in carrying out an illustrative method of this invention, FIG. 5 showing a manner of holding a bagger of this invention for inser-60 tion into the openable mouth of a straight-line bottom

FIG. 6 illustrates the initial insertion of the bagger into the openable mouth;

FIG. 7 illustrates the full entry of the bagger into the

FIG. 8 illustrates the manner of holding and maintaining a bag in contact with the bagger;

FIG. 9 illustrates a manner of collecting a batch of segmental product on the bagger;

FIG. 10 illustrates a batch of segmental product collected upon a bagger;

FIG. 11 illustrates the inclination of the segmental product of FIG. 10 to the vertical to channel the product through the bag mouth;

FIG. 12 illustrates the release of a bag of FIG. 5 from the bagger and the gradual removal of the bagger from 5 the bag; and

FIG. 13 illustrates a convenient holder for a plurality of bags for use in supplying bags to the bagger in the manner shown in FIGS. 5 to 7 inclusive.

First referring to FIGS. 1 to 4, an exemplary illustrative embodiment of a bagger 1 of this invention is there shown. Bagger 1 includes cooperable intercommunicating collector and bagging segments 10 and 12, respectively. As illustrated, segments 10 and 12 include a common longitudinal base portion and elongated side walls to be 15 described. A handle means 14 is secured to bagger 1 in a manner to be described.

Collector segment 10 comprises a slightly upwardly and forwardly inclined leading scraper 20, as best seen in FIG. 2 Scraper 20 is generally rectangular in shape. 20 It has rounded forward corners 22, a forward edge 24 and a rear edge 26. Scraper 20 terminates rearwardly, at rear edge 26, in a platform portion 28 with which it is integral and of which it is a continuation. As best seen in FIG. 1 platform portion 28 includes a generally 25 triangular segment 30 with the apex thereof terminating generally adjacent the intersection 32 of the collector and bagging segments 10 and 12. In this embodiment platform portion 28 also includes side platform segments Segments 30 and 34 adjoin each other along fold lines 36, the angle between segments 30 and 34 at fold lines 36 being in the order of several degrees. Side segments 34 also terminate along intersection 32. Side segments 34 include converging edges 38 which merge with upwardly extending converging collector walls 40. Collector walls 40 are curved upwardly and outwardly with respect to platform portion 28 adjacent side segment edges 38 and recurve upwardly and inwardly toward the vertical projection of platform portion 28 at their uppermost 40 edges. As best seen in FIG. 1 the degree of curvature of collector walls 40 is somewhat greater closely adjacent rear edge 26 than it is adjacent intersection 32. In side view, as best seen in FIG. 2, the upper perimeter of the collector walls comprises upwardly converging inclined edge portions 42 and 44 respectively, intersecting in rounded apex 46. As viewed in FIG. 1, collector walls 49 define outer side limits 48 which converge toward bagging segment 12. Collector segment 10 converges generally toward bagging segment 12. While collector 50 walls 40 have been described generally as being curved and recurved, they may comprise upstanding walls of a variety of configurations.

Bagging segment 12 intercommunicates with collector segment 10. It is connected thereto in the embodiment illustrated along intersection 32 as by welding, brazing or by integral formation depending upon the materials used and the fabricator's wishes. Bagging segment 12 includes a floor 50 which, as shown, is a continuation of by a centrally located crease line 52 into two floor segments 54 inclined at an angle of several degrees to each other as best seen in FIG. 3. Floor segments 54 terminate along intersection 32 and adjoin side platform segments 34. At their side edges 56 floor segments 54 merge with upwardly extending bagging walls 58. Like collector walls 40, bagging walls 58 curve upwardly and outwardly adjacent the side edges 56 of floor segments 54 and recurve upwardly and inwardly, terminating in opposing bag seats 60. Bag seats 60 merge with edge portions 44 adjacent intersection 32 of the collector and bagging segments. Bag seats 60 also merge in forwardly and downwardly extending guide edges 62 as seen in FIGS. 1 and 2 which in turn merge in bagger camming edge 64 which is coincident with the free edge of floor 50.

As seen in FIG. 1 bagger camming edge 64 comprises angled edge segments 66 which intersect in a curved nose 68 symmetrical with respect to crease line 52. Angled edge segments 66 merge with the downwardly sloping guide edges 62 as illustrated in FIGS. 1 to 3 inclusive. The outermost side limits 70 of bagging walls 58 as viewed in FIG. 1 are parallel and define with the remaining components of bagging segment 12 an elongated bagging segment of generally uniform width throughout the extent of side limits 70. As shown the collector segment 10 may be said to converge toward bagging segment 12 while bagging segment 12 may be said to be of a generally uniform width throughout its length. The bagging segment 12 may also be said to be disposed at an angle to collector segment 10, as seen, for example in FIG. 1.

As stated a handle means 14 is also provided. As shown, handle means 14 includes a handle 72 having an outwardly extending threaded stud 74 projecting therefrom. Stud 74 is adapted to be threadedly received in a complementary threaded opening in handle mounting means 76. Handle mounting means 76 comprises a fastening bracket 78 tapped to receive stud 74 and a curved plate member 80 secured to bracket 78 and configured to conform to the outer contour of collector wall 40 where plate 80 is to be connected. Plate 80 is secured to collector wall 34, as by welding or brazing if the material of which bagger 1 is fabricated is metallic. While bagger 1 may be fabricated of stainless steel, aluminum or other metals, it is also possible to fabricate 34 forming a continuation of triangular segment 30. 30 it of plastic, as by molding. Bracket 78 and plate 80 may be integrally formed.

A method of utilizing a bagger of this invention is illustrated in FIGS. 5 to 12 inclusive. As shown in FIGS. 5 to 12 the bagger 1 of FIGS. 1 to 4 is utilized. 35 It is adapted principally for righthanded use by virtue of the positioning of the handle means 14. A handle means 14 may be disposed on the left side of bagger 1 for lefthand use.

As seen in FIG. 5 a user secures one or more openable containers such as bags B. Bags B are proportioned to receive bagging segment 12 and may be proportioned so that there is a snug fit when bag B is seated on the bagger in the manner to be described. The bags B illustrated here are flat, are generally rectangular in plan view and have a straightline bottom with an openable end or mouth M. A user grasps the bagger with his right hand placing his thumb on top of the handle and at least several of his fingers beneath the bagging segment as best seen in FIG. 8. The mouth of a bag B is positioned to face the bagger camming edge 64 and the bagger camming edge at the bagging segment open end is then brought into contact with the mouth M of bag B. The central leading curved nose 68 is positioned in the mouth M between the confronting major surfaces of the bag. By virtue of the configuration of camming edge 64, as curved nose 68 is moved inwardly of the bag, angled edge segments 66 contact the edge of the mouth M and move inwardly of the bag gradually camming mouth M open.

FIG. 6 illustrates the initial penetration of the camplatform portion 28. Floor 50 is divided longitudinally 60 ming edge of the bag into the mouth of the bag to partially cam open mouth M of bag B. In FIG. 7 the bag is shown in a position in which the bagger has substantially fully entered bag B. As the bag moves from the position shown in FIG. 6, the guide edges 62 tend to further cam the mouth of the bag open to a full open position which is reached as the bag mouth begins to reach over and circumscribe bagging segment 12 in the vicinity of bag seats 60 of bagging walls 58. The bottom of the bag (see in FIG. 8) follows the con-70 tour of the lower surface of floor 50. The insertion of the bagger into the bag continues until the bag either contacts the converging collector walls 40, until leading curved nose 68 contacts the straight-line bottom of the bag or until it is otherwise stopped. That depends upon 75 the size and shape of the bag. When positioned in the

manner indicated the side edges of a straight-line bottom bag will lie close to and generally coplanar with the side limits 70 of bagging segment 12.

As seen in FIG. 8 the bag is retained with respect to the bagger and in a position for receiving a product by one or more of a user's fingers being urged against the bagger and the intermediate bag surface. As shown in FIG. 8

the bag is held against a bottom surface of bagger 1. Handle 14 is positioned so that it is spaced apart from bagging segment 12, as seen in FIG. 1, to comfortably 10 balance bagger 1 when in a user's hand and to permit the positioning of a user's fingers as shown in FIG. 8 when the bagger is used to collect and bag a product. As seen in FIG. 8, after the bag has been opened and positioned with respect to the bagging segment 12, the user's 15 first and second fingers may hold the bag in place against the bottom side of the bagger leaving the user's thumb, and third and fourth fingers if desired, to rest against and to hold handle 14. In the embodiment illustrated the positioning of the handle with respect to the re- 20 mainder of the bagger is an optimal one for balance and ease of use. That positioning also tends to minimize fatigue.

As seen in FIG. 9 the collector segment open end of the bagger has been moved into a position to collect 25 a product, in this case elongated french-fried potato The scraper 20 of collector segment 10 is segments. moved along a surface S upon which a quantity of frenchfried potatoes is positioned and is moved into contact with them to collect them. A backing element E to 30 resist movement of the french-fried potatoes away from the bagger during the collecting operation may be pro-

vided to facilitate that collection.

In FIG. 10 a quantity of potatoes collected is shown. The collector segment and the platform portion thereof may be used, while retaining the collected potato segments in a generally horizontal position, to visually measure and estimate the quantity of the collected potatoes. Collector walls 40 assist in containing and collecting the potato segments. With experience a fairly consistent visual determination of the quantity of potato segments collected on the collector segment may be made by a

After the potato segments have been collected, and measured if desired, while maintaining bag B in contact 45 with the bagger in the manner illustrated in FIGS. 8 and 9, the bagger is inclined upwardly to discharge the collected potatoes from the collector segment downwardly into and through the intercommunicating bagging segment. At least some of the elongated potato segments 50 tend to become oriented so that as they are channelled through bagging segment 12 they are discharged into bag B generally vertically of a transverse plane taken through the bagging segment. The convergence of the collector segment toward the bagging facilitates that partial orientation and that orientation may be enhanced by shaking the bagger slightly from side to side while the bagger is in a horizontal position and as it is moved to its vertical bag filling position. The converging collector walls assist When the bagger is moved to the in the orientation. somewhat vertical position, the potato segments discharge by gravity into bag B. The orientation of the potato segments, particularly where they are quite long, in the bag so that they extend generally parallel to the side edges of the bags is desirable in merchandising such products. For one thing the lentgh is emphasized. For another the quantity used to fill a bag of given size tends to be more uniform.

Once the food product has been discharged into bag B, the bag may be transferred to a bag rack such as rack R. It may be placed into the rack in the manner illustrated in FIG. 12 with a slight bump to settle the fries into the bag somewhat more. Once the bag has been positioned in the bag rack, the user releases his grip of 75 ceived in a user's hand between the thumb and a plurality

the bag and withdraws the bagger to repeat the same sequence of operations for filling further bags.

A convenient means for nesting and holding a plurality of bags B is illustrated in FIG. 13. As there shown a holder 100 includes a generally rectangular base plate 102, upwardly extending side walls 104 and a rear wall 106. Side walls 104 are spaced apart a distance sufficient to accommodate bags B of a given width. Base plate 102 extends forwardly a sufficient distance to facilitate ready and easy grasping by a user of the holder 100 with a plurality of bags B seated thereon. Rear wall 106 retains the line-bottom ends of bags B to resist their rearward movement or displacement from the holder 100 as a bagger is inserted into the mouth M of a bag B. The use of holder 100 is optional, but is desirable.

While the bagger of this invention and the method of this invention have sometimes been described in the context of a food product such as elongated french-fried potato segments, it is clear that other segmental food products and other particulate and segmental products may be bagged similarly. It is also clear that the bagger of this invention and the method of this invention may be used to fill containers such as boxes and flat-bottom bags and the like in addition to straight-line bottom bags. Therefore, where the terms bagger and bag have been used herein and are used in the claims, those terms contemplate the utilization of the method and means of this invention with containers other than bags and with particulate and segmental products other than elongated french-fried potato segments.

While I have described pursuant to statute specific embodiments of the method and means of my invention, it will be apparent to those ordinarily skilled in the art that various modifications and changes may be made therein without departing from the spirit and scope of my invention.

I claim:

1. A contoured manual bagger for bagging segmental products comprising intercommunicating collector and bagging segments having spaced apart open ends, said collector segment comprising a platform, a collector edge at its open end and upwardly extending side walls, said collector segment converging in plan view towards said bagging segment, said bagging segment comprising a floor segment interconnected with said platform, upwardly extending side walls, and a discharge edge at the open end of said bagging segment, said bagging segment being proportioned and adapted to be seated within a bag to be filled with a product received from said collector segment, said collector segment side walls and said bagging segment side walls being interconnected and curving outwardly and upwardly and recurving inwardly and upwardly above said platform and said floor, respectively, said collector segment side walls and said bagging segment side walls 55 intersecting at angles to each other.

2. A contoured manual bagger for bagging segmental products comprising intercommunicating collector and bagging segments having spaced apart open ends, said collector segment comprising a platform, a collector edge at its open end and upwardly extending side walls, said collector segment converging in plan view towards said bagging segment, said bagging segment comprising a floor segment interconnected with said platform, upwardly extending side walls, and a discharge edge at the open end of said bagging segment, said bagging segment being proportioned and adapted to be seated within a bag to be filled with a product received from said collector segment, said side walls curving outwardly and upwardly and recurving inwardly and upwardly above said platform and 70 said floor, respectively.

3. The contoured manual bagger of claim 2 in which said bagger includes a handle means secured thereto, a portion of which is spaced from and cooperable with said bagger, said handle means being proportioned to be re-

8

of fingers wherein the fingers lie against the bottom surface of said floor segment and said thumb lies over said handle means.

4. The contoured manual bagger of claim 2 in which the uppermost edges of the upwardly extending side walls of said collector segment are spaced apart whereby the platform of said collector segment is visible in plan view and whereby segmental products collected on said collector segment may be viewed in plan view.

5. The contoured manual bagger of claim 2 in which FRANK E. BAILEY, Primary Examiner. said collector edge inclines upwardly and rearwardly from said platform.

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