

Oct. 30, 1962

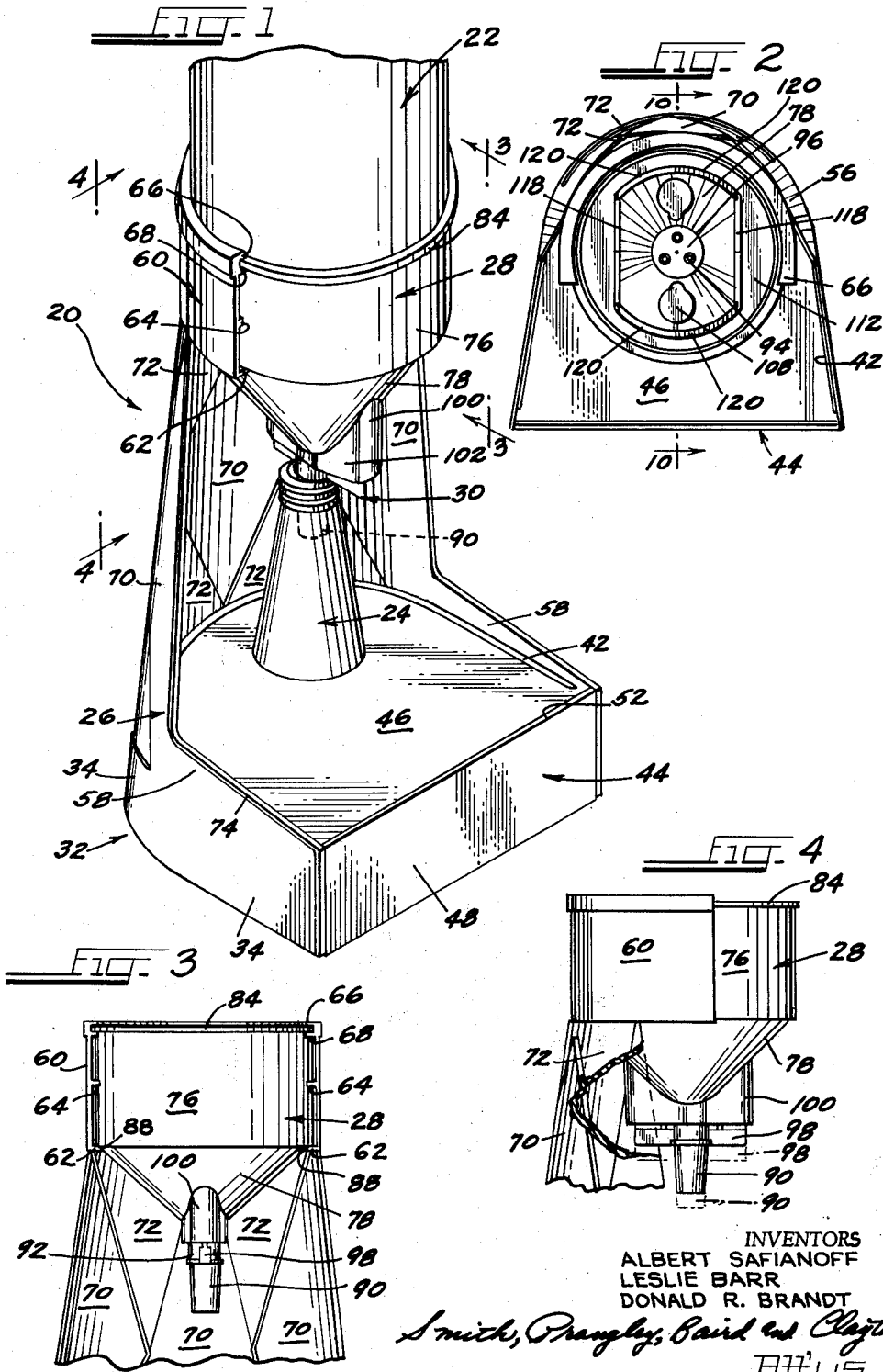
A. SAFIANOFF ET AL

3,061,152

DISPENSER FOR GRANULAR MATERIAL

Filed May 7, 1958

2 Sheets-Sheet 1



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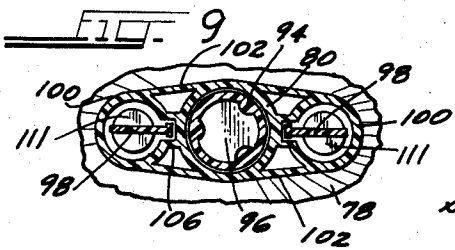
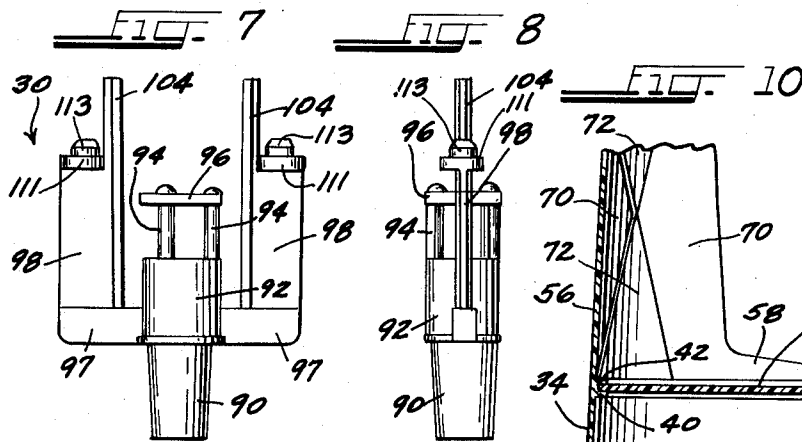
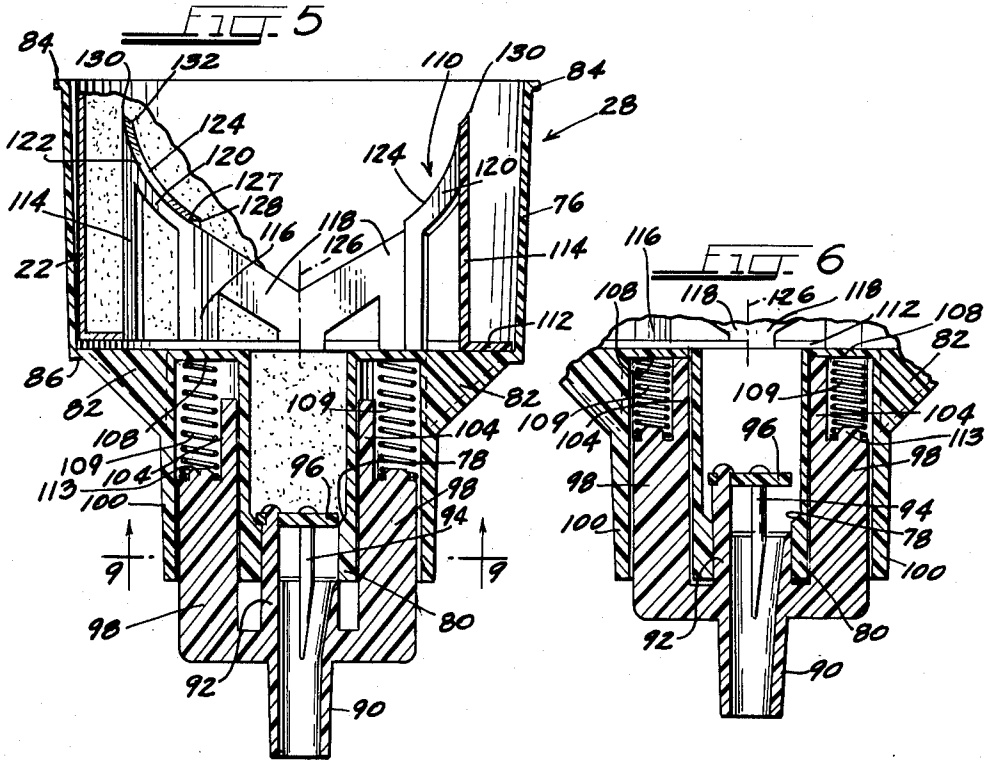
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DISPENSER FOR GRANULAR MATERIAL

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 Filed May 7, 1958, Ser. No. 733,611
 1 Claim. (Cl. 222-514)

This invention relates to dispensers and more particularly to dispensers for salt, pepper and other granular materials.

Many establishments such as restaurants, dining halls, cafeterias and the like employ a large number of salt and pepper shakers. The salt shakers particularly must be filled frequently and in some establishments even several times a day. The filling of these salt shakers is a tedious and time consuming operation and is therefore expensive. Preferably the filling operation should be accomplished quickly with no spillage whereby to minimize the necessity for cleaning. A particular problem is overfilling with resultant spillage, due to the fact that the ordinary salt dispenser does not stop the flow of salt quickly upon demand by the user.

Furthermore, the filling operation must be carried on in a manner such as to exclude moisture from both the shaker being filled and the dispenser from which the shaker is being filled. The necessity for keeping the material dry is particularly important in dealing with salt. The salt can be obtained in hermetically sealed containers that are formed of a cardboard or similar material which inherently resists the entry of moisture therein or can be treated specifically to exclude moisture. Prior devices for dispensing salt from such hermetically sealed containers into the shakers have permitted the entry of humidity into both the shakers and the containers, thereby causing caking of the salt and destruction of the free flowing characteristic thereof. When this happens a great deal of salt may be lost and, what is more important, it will become necessary to clean the dispenser and the shakers with the resultant labor costs.

Accordingly, it is an important object of the present invention to provide an improved dispenser for salt, pepper and similar granular materials.

Another object of the invention is to provide a dispenser which effectively permits transfer of the granular material from a container therefor into a shaker or other receptacle with a minimum expenditure of effort and time.

Yet another object of the invention is to provide a dispenser of the type set forth in which spillage due to overflowing of the receptacle being filled is eliminated by providing a quick acting closure for the dispenser.

Still another object of the invention is to provide a dispenser of the type set forth which can transfer the granular material, such as salt, from a container therefor into a shaker with a minimum exposure to air and the accompanying humidity.

Yet another object of the invention is to provide a dispenser of the type set forth which conveniently mounts the container for the granular material in a position such that a shaker can be accurately and quickly filled by the operator while using only one hand.

Still another object of the invention is to provide in a dispenser of the type set forth an improved perforator member for the dispenser.

A further object of the invention is to provide a dispenser of the type set forth which can be readily fabricated by conventional forming methods from plastic materials, and one which is sanitary and can be readily cleaned when necessary.

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These and other objects and advantages of the present invention will be better understood from the following description when taken in conjunction with the accompanying drawings. In the drawings, wherein like reference numerals have been utilized to designate like parts throughout:

FIG. 1 is a view in perspective of the dispenser of the present invention illustrated as having associated therewith a container of granular material such as salt and showing a shaker for the salt in position to receive salt from the container through the dispenser;

FIG. 2 is a plan view of the dispenser on a reduced scale, with the salt container removed;

FIG. 3 is a fragmentary elevational view showing the upper portion of the dispenser substantially as seen in the direction of the arrows along the line 3-3 of FIG. 1, but with the salt container removed;

FIG. 4 is a fragmentary side view on a reduced scale of the upper portion of the dispenser substantially as seen in the direction of the arrows along the line 4-4 of FIG. 1, the dispensing member being shown in the dispensing position in solid lines and being shown in the no-dispensing position in broken lines;

FIG. 5 is an enlarged view in vertical section with certain portions broken away through the receptacle for the granular material container and the dispensing member, the valve closure member of the dispensing member being shown in its closed position;

FIG. 6 is a view similar to the lower portion of FIG. 5 with certain portions broken away and showing the valve closure member in its open or dispensing position;

FIG. 7 is an elevational view of the valve closure member which forms a part of the present invention;

FIG. 8 is a side view of the valve closure member of FIG. 7;

FIG. 9 is a view in horizontal section taken through the construction of FIG. 5 substantially along the line 9-9; and

FIG. 10 is a fragmentary view in vertical section taken through the lower portion of the dispenser of FIG. 2 substantially along the line 10-10 thereof.

Referring to FIG. 1 of the drawings, there is shown a dispenser made in accordance with and embodying the principles of the present invention. The purpose of the dispenser is to permit transfer of a granular material, such as salt, from a container 22 to a receptacle such as a salt shaker 24. The invention is, in general, useful for such transfer of any granular material but certain of the advantages of the invention are more fully realized when used in connection with the dispensing of salt. Accordingly, the invention will be described as applied to the transfer or dispensing of salt from a container 22 thereof to a shaker 24 therefor.

The dispenser includes a support stand 26, an upper receptacle or holder 28 to receive the salt container 22, and a dispensing member 30 which is operatively associated with the holder 28 and serves as a valve to control the dispensing of salt by vertical movement thereof, as is diagrammatically illustrated in FIGS. 4, 5 and 6 which will be described more fully hereafter.

An important feature of the dispenser resides in the fact that all of the parts thereof are formed of a suitable plastic material such, for example, as high impact polystyrene. Any other suitable plastic material possessing the necessary characteristics may also be used. Such plastic material gives the necessary mechanical strength and rigidity but is light in weight and can be colorfully decorated by incorporating the colors in the plastic material itself. The dispenser, being made of plastic, can also be readily cleaned when necessary and thus may be kept in the desirable sanitary condition.

Referring now particularly to FIGS. 1, 2 and 10, the lower portion or base of the stand 26 will be described in detail. The base, which is generally designated by the numeral 32, includes a generally U-shaped upstanding wall 34 which is closed on the bottom by an integral bottom wall 36. The bottom wall 36 has four feet 38 depending therefrom which serve to support the bottom wall above any underlying support surface. The upstanding wall 34 has formed thereon, on the inner side thereof, a pair of vertically spaced apart and inwardly extending flanges 40 and 42 which are adapted to receive therebetween a cover generally designated by the numeral 44. The cover 44 includes a top member 46 which is shaped to fit between the flanges 40 and 42 and to be retained therebetween. A front wall 48 is provided on the cover 44 and extends downwardly below the bottom wall 36 and is provided with an inturned flange 50 which extends beneath the bottom wall 36. The upper edge of the front wall 48 extends above the top wall 46 to provide a retaining flange 52. A pair of outwardly extending projections 54 is molded integral with the side wall 34 adjacent the forward edges thereof to abut against the inner side of the front wall 48. Preferably the cover 44 is held in operative position on the base 32 by any suitable means such as welding or gluing.

Extending upwardly from the base 32 and formed integrally with the upstanding wall 34 is a back wall 56. This back wall includes side portions 58 that extend to the forward edge of the base 32 and merge with the upstanding curved portion of the back wall 56, as can be best seen in FIGS. 2 and 10 of the drawings. The back wall 56 tapers toward its upper end and has formed integrally with its upper end a substantially semi-cylindrical mounting member, generally designated by the numeral 60, which receives and supports the receptacle 28, as will be described more fully hereafter. As best seen in FIG. 2, the circumferential extent of the mounting member 60 is slightly greater than 180°. A lower support flange 62 (see FIG. 3) extends inwardly adjacent the lower edge of the mounting member 60. At a point spaced vertically above the flange 62 there is a pair of guide flanges 64 which extend rearwardly only a short distance. At the top of the mounting member 60, and extending inwardly thereof, there is a pair of spaced apart guiding and retaining flanges 66 and 68.

Preferably the back wall 56 is provided with alternate areas 70 extending rearwardly and adjacent areas 72 extending forwardly with respect to the area 70 whereby to provide for rigidification of the wall and also for ornamentation. A flange 74 is also provided on the support stand 26 and extends from the forward bottom edge of the wall 34 upwardly and then rearwardly along the wall 56 and up the front edge of the back wall 56 and joins the mounting member 60. Such a flange 74 is provided on each side of the support stand 26 and is formed integrally therewith. Preferably all of the support stand 26, with the exception of the cover 44, and including the walls 34 and 56 and the mounting member 60 and the associated flanges, are formed as a single plastic piece. The cover 44 is likewise formed as a single plastic piece and is secured to the stand 26 by welding or cementing, as has been described above.

The receptacle 28 is likewise formed as a single piece and is preferably fabricated from a suitable plastic of the kind described above. There is provided at the upper end of the receptacle 28 a substantially cylindrical wall 76 which flares outwardly slightly toward the upper end thereof. Formed integrally with the lower edge of the wall 76 is a material receiving compartment formed by a frusto-conical wall 78 which extends downwardly and inwardly and terminates in a substantially cylindrical dispensing outlet 80 (see particularly FIG. 9). Four radially and inwardly directed support ribs 82 are provided in the frusto-conical portion 78 to form supports for

the salt container 22, as will be described more fully hereinafter.

There is provided on the upper edge of the wall 76 an outwardly directed flange 84 which is adapted to be received between the flanges 66 and 68 (see FIG. 3) on the mounting member 60. There also is formed at the junction of the wall 76 and the frusto-conical portion 78 an outwardly extending shoulder 86 which is adapted to rest upon the flange 62 formed on the mounting member 60. As has been described above, the circumferential extent of the flanges 62, 66 and 68 is slightly greater than 180° so that the forward edges of these flanges are directed inwardly toward each other whereby firmly to grasp the receptacle 28 when it is mounted therein. The walls of the mounting member 60 being formed of plastic are sufficiently resilient to permit deformation thereof during the positioning of the receptacle 28 thereon. It will be seen therefore that the flange 84 on the receptacle 28 will be gripped and supported by the mounting member 60 and particularly the flanges 66 and 68 thereof. The flanges 64 will contact the surface of the mounting member 60 and the flange 62 will underlie the shoulder 86. In addition the edge of the flange 62 adjacent the receptacle 28 is beveled as at 88 to conform to the surface of the frusto-conical portion 78. By this means it will be seen that the receptacle 28 including the salt container 22 will be firmly supported by the stand 26.

The construction and operation of the dispensing member 30 will now be described. Referring first to FIGS. 7 8 of the drawing, it will be seen that the dispensing member 30 includes a downwardly tapered hollow dispensing spout 90. Formed integral with the upper end of the dispensing spout 90 is a cylindrical member 92 which is adapted to extend upwardly into the dispensing outlet 80 of the receptacle 28 (see FIGS. 5 and 6 also). Extending upwardly from the upper edge of the cylindrical member 92 are three legs 94 which support on the upper ends thereof a generally circular valve or closure member 96. Referring to FIGS. 5 and 6 it will be seen that the legs 94 and the valve closure member 96 are disposed in the frusto-conical portion 78 of the receptacle 28 when the parts are assembled.

Formed integrally with and extending laterally outwardly from the cylindrical member 92 is a pair of operating members 97, and extending upwardly therefrom are guide members 98. The guide members 98 are adapted to be received in cylindrical wells 100 formed integral with the bottom of the receptacle 28 and joined to the dispensing outlet 80 by walls 102. Formed integral with the guide members 98 are upstanding stop members 104 which are received in complementarily shaped passages 106 in the receptacle 28. The upper ends of the stop members 104 abut against walls 108 closing the upper ends of the wells 100 when the dispensing member 30 is in the upper or dispensing position as is illustrated in FIG. 6 of the drawings.

Means is provided quickly to move the dispensing member 30 to the closed position to prevent overfilling of the shaker 24. To this end coiled springs 109 are provided in the wells 100 (see particularly FIGS. 5 and 6). One end of each spring 109 bears against the wall 108 closing the upper end of the associated well 100. The other end of the spring 109 is received on a flange 111 formed integral with the upper end of the associated guide member 98. A spring positioning and retaining member 113 is also provided on the upper surface of each flange 111 to enter into the adjacent end of the spring 109 to hold it in the proper operating position. Although two springs have been shown in the drawings for purposes of illustration, it is to be understood that only one spring may be utilized or a plurality of springs greater than two may also be utilized to advantage. The described construction provides for rapid closure of the dispensing member whereby to prevent overfilling of the shaker 24 with resultant spillage of salt.

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Referring particularly to FIGS. 5 and 6 of the drawings, the mounting and cooperation of the dispensing member 30 in the receptacle 28 will be described in greater detail. The valve member 96 is cylindrical in form and has a diameter slightly greater than the diameter of the opening in the dispensing outlet 80. Since the wall adjacent to the upper end of the dispensing outlet 80 is the downwardly and inwardly tapering wall of the frusto-conical portion 78, the valve member can fit closely therewith, the tapering wall of the frusto-conical portion 78 providing the necessary valve seat. As a result, the dispensing outlet 80 is closed by the valve member 96 when the dispensing member 30 is positioned downwardly as is illustrated in FIG. 5 of the drawings. Furthermore, this engagement of the valve member 96 with the wall of the frusto-conical portion 78 serves to hold the dispensing member 30 in engagement with the receptacle 28.

When a user pushes the dispensing member 30 upwardly to the position illustrated in FIG. 6 of the drawings, the valve member 96 is moved away from the walls of the frusto-conical portion 78 whereby to permit flow of the material around the valve member 96, downwardly through the dispensing outlet 80 and through the spout 90 of the dispensing member 30 into a receptacle such as the salt shaker 24 disposed beneath the spout 90.

Often the material to be dispensed, such as the salt, is sold in containers 22 which are formed of cardboard or other material which can readily be pierced. Accordingly, there has been provided a perforator generally designated by the numeral 110 (see FIGS. 2 and 5 of the drawings). The perforator 110 serves to form openings in one end of the container 22 and also to position and to support the container 22 within the receptacle 28. In general the perforator 110 includes a support flange 112 which has an outer diameter slightly less than the smallest inner diameter of the wall 76 whereby to fit therein as is best illustrated in FIG. 5. The configuration of the inner periphery of the flange 112 can be best seen in FIG. 2 of the drawings. Extending upwardly from opposed points on the inner periphery of the flange 112 are legs 114. Two pairs of upstanding legs 116 are provided along the straight portions of the inner periphery of the flange 112 and these legs 116 are reinforced by downwardly extending walls 118. Extending upwardly from each of the legs 116 to the adjacent leg 114 is a curved cutting member 120. Each of the cutting members 120 is provided with a pair of spaced apart cutting edges 122 and 124. The shape of these cutting edges 122 and 124 can be best seen from the portion of the showing in FIG. 5 to the left of the vertical dashed line 126 which represents a front elevation of the perforator 110, the portion of the perforator 110 to the right of the line 126 being a vertical section and showing in effect the rear or inner side of the parts. The outer edge 122 adjoins the adjacent wall 118 at a point 127 which is fixed below the lowest point 128 of the inner or rear cutting edge 124. The forward cutting edge 122 curves upwardly and outwardly to a peak 130. The inner cutting edge 124 curves upwardly and outwardly but terminates at a point 132 beneath point 130 as viewed in FIG. 5. The edge joining points 130 and 132 lies at an angle of approximately 45° with respect to the perpendicular. All four of the cutting edges 122 and 124 are similarly formed and shaped.

To use the dispenser 20, the perforator 110 is first pushed into one end of the container 22. The cutting edges 122 and 124 make such movement possible. As is best illustrated in FIG. 5 of the drawings, the perforator flange 112 is pressed against the adjacent end of the container 22. It is self evident that in pushing the perforator 110 into the end of the container 22 to such an extent that the flange 112 is brought into contact with the container end, as shown in FIG. 5, an opening of very substantial size is necessarily cut and torn in the container. This will be understood by a consideration of the elements of the perforator. The points 130 first penetrate

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the container end, and the edges 122 then begin progressively to cut the container end along pairs of arcs respectively extending in opposite directions from the points of penetration. During this initial cutting operation the complexly curved surfaces between the respective inner and outer cutting edges 122 and 124 progressively bend into the interior of the container the tabs or large tongue shaped flaps being formed in the container end by the cutting along the arcs just mentioned. The progressive cutting and bending continues until the container end has been penetrated by the cutting edges to the respective points 127 and 128 thereon. Further pressing of the perforator 110 into the container end causes the upper slanting surfaces of walls 118 to cut or tear the container end progressively from the ends of the arcuate cuts formed by the arcuate cutting edges 122 and 124. Because of the slant of the tops of the walls 118, this cutting or tearing action is accompanied by further folding or bending of the tabs or tongues in a direction into the container. The result is that the container end is severely ruptured. The container 22 with the perforator 110 in position is then positioned in the receptacle 28. The receptacle 28 in turn has been positioned on the mounting member 60 whereby to support the various parts on the stand 26.

To fill a receptacle such as the salt shaker 24, the spout 90 is inserted in the top of the shaker 24. The shaker 24 is then raised upwardly into contact with the operating members 97 whereby to move the valve closure member 96 away from the mouth of the dispensing outlet 80. More particularly, the parts are moved to the position illustrated in FIG. 6 of the drawing. Salt can now flow around the valve closure member 96 through the dispensing outlet 80 and the spout 90 into the shaker 24. When the shaker 24 has been filled to the desired level, it is simply lowered and the springs 109 will force the dispensing member 30 downwardly to the closed position. The closed position is illustrated in FIG. 5 where it will be seen that the valve closure member 96 effectively closes the dispensing outlet 80.

The above operation of filling the shaker 34 can readily be accomplished by the operator using only one hand. There is no chance that there will be any spillage since the spout 90 extends a substantial distance into the shaker 24. The rapid action of the springs 109 forcing the light dispensing member 30 toward the closed position also prevents overfilling of an associated shaker. A minimum of moisture or humidity will come into contact with the salt either in the shaker 24 or in the container 22 in the associated parts of the dispenser. Furthermore, between dispensing operations the valve closure member 96 effectively prevents admission of moisture into the dispensing parts and into the container 22.

As has been pointed out above, all of the parts of the dispenser 20 except the springs 109 can be readily formed of plastic material. Such material is light in weight whereby to minimize the energy needed to operate the dispenser. On the other hand the dispenser is rugged in construction and can withstand a substantial amount of usage. The plastic material also can be readily cleaned whereby to maintain the necessary sanitary conditions.

Although one preferred form of the invention has been described and illustrated in the drawings, it is to be understood that various changes and modifications can be made therein without departing from the spirit and scope of the invention. Accordingly, the invention is to be limited only as set forth in the following claim.

What is claimed is:

A dispenser for dispensing granular material into a shaker or the like, comprising an upstanding receptacle said receptacle including a downwardly converging compartment to receive granular material therein and having an opening in the bottom thereof to permit flow of granular material therethrough, a pair of upstanding tubular members within said downwardly converging compartment on opposite sides of said opening, the lower ends of said

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tubular members being open and unobstructed exteriorly of said compartment, means closing the upper ends of said tubular members, a pair of guide members slidably received in said tubular members, guide joining means disposed exteriorly of said compartment and joining together the lower ends of said guide members, an upstanding hollow tube on said guide joining means, said hollow tube being open at its opposite ends and with its upper end slidably received in said opening in said bottom of said downwardly converging compartment, valve closure support means on said upper end of said hollow tube and extending upwardly therefrom into the interior of said compartment, a valve closure member on said valve closure support means within said compartment and spaced above said upper end of said hollow tube, said valve closure member being adapted to seat over said opening and close the same, and spring means in said tubular members bearing on said guide members and urging said guide members, said guide joining means, said

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hollow tube and said valve closure support means downwardly, thereby to cause said valve closure member to be seated over said opening.

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