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2,901,150

MEASURING DISPENSER

Original Filed April 26, 1954

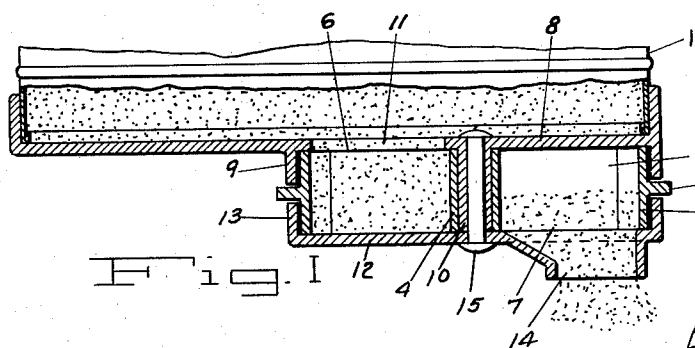


Fig. I

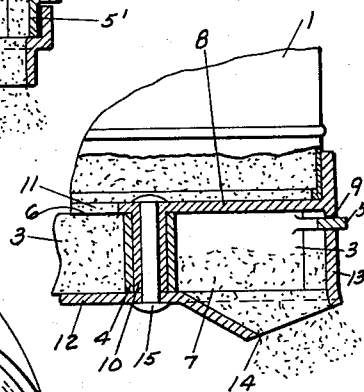


Fig. IV

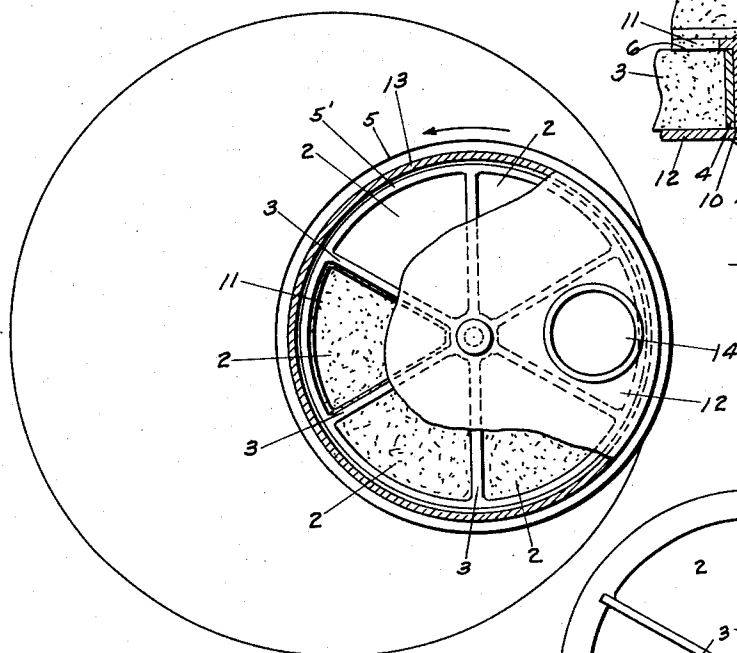


Fig. II

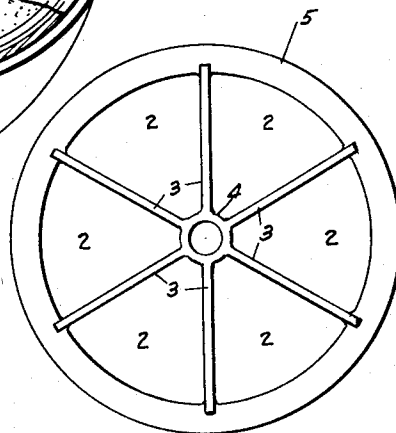


Fig. V

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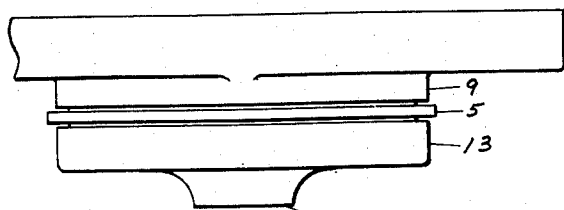


Fig. III

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## MEASURING DISPENSER

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Original application April 26, 1954, Serial No. 425,419.  
Divided and this application August 13, 1956, Serial  
No. 603,515

5 Claims. (Cl. 222—370)

My invention relates to measuring dispensers of the type adapted to dispense a desired amount of granulated, powdered or liquid substance from a container.

This is a division of co-pending application Serial No. 425,419, filed April 26, 1954, now abandoned.

An object of this invention is to provide a dispenser which will allow a measured amount of substance to flow from a container.

Another object is to provide a dispenser of the character described suitable to allow a pre-determined amount of granulated, powdered or liquid substance to flow from its container.

Another object is to provide a dispenser wherein direct flow of a substance from its container is interrupted.

Another object is to provide a dispenser adapted to prevent direct communication through the dispenser from the inside to the outside of the container.

Another object is to provide a dispenser of the character described whereby the contents of a container can be removed therefrom without direct communication through the dispenser from the inside to the outside of the container.

Another object is a dispenser adapted to dispense several measured amounts of contents from a container in a continuous or successive operation.

Further objects and advantages of the invention will appear in and from the following specification considered in connection with the accompanying drawings, which are for purpose of illustration and not intended as a definition of the invention, the invention being defined in the appended claims.

Referring to the drawings, in which like characters of reference indicate corresponding parts throughout the several views:

Fig. I is a vertical section of the dispenser shown attached to a container and showing one of the measuring compartments filled with contents from the container and another compartment being emptied of its contents.

Fig. II is a bottom plan view of Fig. I with a portion broken away and showing six measuring compartments, three of which are shown filled with contents from the container and three are shown empty.

Fig. III is a right hand side elevation of Fig. I with a portion broken away and the container removed.

Fig. IV is a section similar to a portion of Fig. I without the measuring compartment outer wall.

Fig. V is a bottom plan view of the measuring compartment unit shown in Fig. IV.

Referring to the numerals on the drawings, a container 1 has attached thereto a dispenser comprising a rotatable measuring compartment unit consisting of a plurality of measuring compartments 2 with dividing side walls 3 which extend radially from a central hub 4, the outer peripheral ends of the side walls 3 are attached either to an operating rib 5 and outer wall 5' as shown in Figs. I-III or to rib 5 without wall 5' as shown in Figs. IV-V. The open upper side of the compartments 2 serve as inlet means 6 and the open lower side of

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the compartments 2 serve as outlet means 7 for the compartments.

The measuring compartment unit is rotatively mounted within a casing comprising an upper portion consisting of a top wall 8 with depending side wall 9, a central shaft 10 depending from the top wall 8, with an inlet opening 11 in the top wall 8 and a lower portion consisting of a bottom wall 12 with upturned side wall 13, an outlet opening 14 in the bottom wall 12.

The measuring compartment unit is rotatively mounted, as by its hub 4, on the stationary central shaft 10, the lower end of which contacts the bottom wall 12 and is securely attached thereto as by rivet 15, the upper and lower portions of the casing are held in spaced relationship as by central shaft 10 and rivet 15.

The measuring compartments 2 are positioned, in relation to each other and in relation to inlet opening 11 in top wall 8 and outlet opening 14 in bottom wall 12 of the casing, so as to prevent contents in the container from entering and discharging, from any one compartment, at the same time.

As shown in Figs. I and II the outer peripheral surface of the outer wall 5' of the measuring compartment unit is spaced inward from the inner surface of the casing walls 9 and 13. A reason for this construction is the fact that when rotating the measuring compartment unit, which is guided radially by the central shaft 10 and not by the casing walls 9 and 13, less tangential force is required at the outer periphery of the measuring compartment unit to rotate the unit.

The only purpose of the side walls 9 and 13 in the structure as shown in Figs. I and II is for appearance and possible rigidity of the top and bottom walls 8 and 12 respectively, also the operating rib 5 is required only when the side walls 9 and 13 are included in the construction.

When the side walls 9 and 13 and the rib 5 are not included in the structure the measuring compartment unit is manually rotated by tangential force applied directly to the exposed outer periphery of the measuring compartment outer wall 5' which permits the operator's hand to partially or completely encircle the outer wall 5'.

As shown in Figs. IV and V the operating rib 5 is essential and the side walls 9 and 13 serve as the outer wall of the measuring compartments and the measuring compartment unit is manually rotated by permitting the operator's hand to partially or completely encircle the outer periphery of the exposed operating rib 5.

By means of the operating rib 5 or the outer wall 5', the measuring compartment unit is manually rotated to register the inlet means 6, in the upper side of a compartment 2, with the inlet opening 11 in the casing top wall 8 thereby allowing the compartment to become filled with contents from the container 1. Referring to the dispenser as illustrated six measuring compartments are shown, by rotating the measuring compartment unit another one sixth to one third revolution (see Fig. II) the inlet means 6 and outlet means 7 of that compartment will be closed as by the top wall 8 and bottom wall 12 respectively. By rotating the measuring compartment unit another one sixth revolution the outlet means of that compartment is in registration with the outlet opening 14 in the bottom wall 12 thus allowing contents to discharge from that compartment while another compartment is being filled and can proceed through the same cycle.

In actual practice it has been ascertained that, especially when dispensing a granulated substance such as coffee, granular particles become lodged between the moving edge of the measuring compartment inlet means 6 and the stationary edge of the top wall inlet opening 11 when the measuring compartment unit is being rotated

and it then becomes necessary to crush or shear the granular particles between the two edges in order to continue the rotation of the measuring compartment unit, this requires considerable torque or tangential force on the outer periphery of the measuring compartment unit.

When manually rotating the measuring compartment unit by the means provided entirely around the unobstructed outer periphery thereof, as disclosed in this application, this construction permits the operator's hand to partially or completely encircle the outer periphery of the measuring compartment outer wall 5' or the operating rib 5, thereby eliminating any springing or hesitant action in the rotation of the measuring compartment unit and also providing sufficient tangential force around its outer periphery, especially so when it becomes necessary to overcome any obstruction which tends to retard the rotation, such as cutting through a granular substance like coffee being dispensed; and the operation is steady, even when cutting through the obstruction.

As an illustration of an advantage of the structural combination as disclosed and specified herein, assume a common jar lid, which is screwed onto a jar, is to be removed manually therefrom by hand, it would be impossible to remove the lid by merely applying tangential force to one side only of the outer periphery of the lid as by the fingers, but when the outer periphery of the lid is partially or completely encircled by the hand considerably more tangential force is applied on more than just one side of the lid and the lid is more readily removed from the jar.

While the specification sets forth in detail the construction of the device, deviations from the construction shown may be resorted to without departing from the spirit of the invention as defined in the appended claims.

In view of the foregoing description, taken in conjunction with the accompanying drawings, it is deemed that a clear understanding of the invention will be apparent to those skilled in the art. Therefore a more detailed description is accordingly thought unnecessary.

Having described the invention, what is claimed as new is:

1. A dispenser for a container, said dispenser comprising a top wall and a bottom wall held in spaced relationship by a central shaft securely attached to said top and bottom walls to form a stationary unit, an inlet opening in said top wall, an outlet opening in said bottom wall, a measuring compartment unit rotatable around said central shaft and between said top wall and said bottom wall, said measuring compartment unit comprising a plurality of measuring compartments arranged between said top wall and said bottom wall and between said central shaft and an exposed outer wall defining the outer periphery of said measuring compartment unit, said outer wall adaptable to serve as a means to rotate said measuring compartment unit around said central shaft, said top and bottom walls have no connecting element therebetween outside the outer periphery of said exposed outer wall whereby the outer surface of said outer wall is accessible around the entire periphery thereof thereby to permit the operator's hand to partially or completely encircle said outer wall for manual rotation of said measuring compartment unit, each of said measuring compartments provided with top inlet means and bottom outlet means, said measuring compartment unit rotatable in relation to said top wall and said bottom wall to allow registration of said top wall inlet opening with said measuring compartment top inlet means and registration of said measuring compartment bottom outlet means with said bottom wall outlet opening.

2. A dispenser for a container, said dispenser comprising a top wall and a bottom wall held in spaced relationship by a central shaft securely attached to said top and bottom walls to form a stationary unit, an inlet opening in said top wall, an outlet opening in said bot-

tom wall, a measuring compartment unit rotatable around said central shaft and between said top wall and said bottom wall, said measuring compartment unit comprising a plurality of measuring compartments arranged between said top wall and said bottom wall and between said central shaft and an outer wall defining the outer periphery of said measuring compartment unit, an exposed rib around said outer wall and extending outward therefrom, said rib adaptable to serve as a means to rotate said measuring compartment unit around said central shaft, said top and bottom walls have no connecting element therebetween outside the outer periphery of said outer wall whereby said exposed rib is accessible around the entire periphery thereof thereby to permit the operator's hand to partially or completely encircle said rib for manual rotation of said measuring compartment unit, each of said measuring compartments provided with top inlet means and bottom outlet means, said measuring compartment unit rotatable in relation to said top wall and said bottom wall to allow registration of said top wall inlet opening with said measuring compartment top inlet means and registration of said measuring compartment bottom outlet means with said bottom wall outlet opening, a side wall adjacent the outer periphery of said measuring compartment unit, said side wall extending upward, from its junction with said bottom wall, toward said rib.

3. A dispenser for a container, said dispenser comprising a top wall and a bottom wall held in spaced relationship by a central shaft securely attached to said top and bottom walls to form a stationary unit, an inlet opening in said top wall, an outlet opening in said bottom wall, a measuring compartment unit rotatable around said central shaft and between said top wall and said bottom wall, said measuring compartment unit comprising a plurality of measuring compartments arranged between said top wall and said bottom wall and between said central shaft and an outer wall defining the outer periphery of said measuring compartment unit, an exposed rib around said outer wall and extending outward therefrom, said rib adaptable to serve as a means to rotate said measuring compartment unit around said central shaft, said top and bottom walls have no connecting element therebetween outside the outer periphery of said outer wall whereby said exposed rib is accessible around the entire periphery thereof thereby to permit the operator's hand to partially or completely encircle said rib for manual rotation of said measuring compartment unit, each of said measuring compartments provided with top inlet means and bottom outlet means, said measuring compartment unit rotatable in relation to said top wall and said bottom wall to allow registration of said top wall inlet opening with said measuring compartment top inlet means and registration of said measuring compartment bottom outlet means with said bottom wall outlet opening, a side wall adjacent the outer periphery of said measuring compartment unit, said side wall extending downward, from its junction with said top wall, toward said rib.

4. A dispenser for a container, said dispenser comprising a top wall and a bottom wall held in spaced relationship by a central shaft securely attached to said top and bottom walls to form a stationary unit, an inlet opening in said top wall, an outlet opening in said bottom wall, a measuring compartment unit rotatable around said central shaft and between said top wall and said bottom wall, said measuring compartment unit comprising a plurality of measuring compartments arranged between said top wall and said bottom wall and between said central shaft and an exposed rib extending outward from the outer periphery of said measuring compartment unit, said rib adaptable to serve as a means to rotate said measuring compartment unit around said central shaft, a side wall adjacent the outer periphery of said measuring compartment unit, said side wall extending upward, from its

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junction with said bottom wall, toward said rib, said top and bottom walls have no connecting element therebetween outside the outer periphery of said measuring compartment unit whereby said exposed rib is accessible around the entire periphery thereof thereby to permit the operator's hand to partially or completely encircle said rib for manual rotation of said measuring compartment unit, each of said measuring compartments provided with top inlet means and bottom outlet means, said measuring compartment unit rotatable in relation to said top wall and said bottom wall to allow registration of said top wall inlet opening with said measuring compartment top inlet means and registration of said measuring compartment bottom outlet means with said bottom wall outlet opening.

5. A dispenser for a container, said dispenser comprising a top wall and a bottom wall held in spaced relationship by a central shaft securely attached to said top and bottom walls to form a stationary unit, an inlet opening in said top wall, an outlet opening in said bottom wall, a measuring compartment unit rotatable around said central shaft and between said top wall and said bottom wall, said measuring compartment unit comprising a plurality of measuring compartments arranged between said top wall and said bottom wall and between said central shaft and an exposed rib extending outward from the outer periphery of said measuring compartment

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unit, said rib adaptable to serve as a means to rotate said measuring compartment unit around said central shaft, a side wall adjacent the outer periphery of said measuring compartment unit, said side wall extending downward, from its junction with said top wall, toward said rib, said top and bottom walls have no connecting element therebetween outside the outer periphery of said measuring compartment unit whereby said exposed rib is accessible around the entire periphery thereof thereby to permit the operator's hand to partially or completely encircle said rib for manual rotation of said measuring compartment unit, each of said measuring compartments provided with top inlet means and bottom outlet means, said measuring compartment unit rotatable in relation to said top wall and said bottom wall to allow registration of said top wall inlet opening with said measuring compartment top inlet means and registration of said measuring compartment bottom outlet means with said bottom wall outlet opening.

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