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2,180,468

DISPENSER

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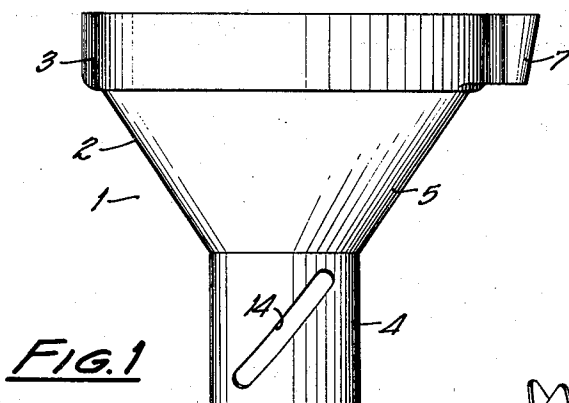


FIG. 1

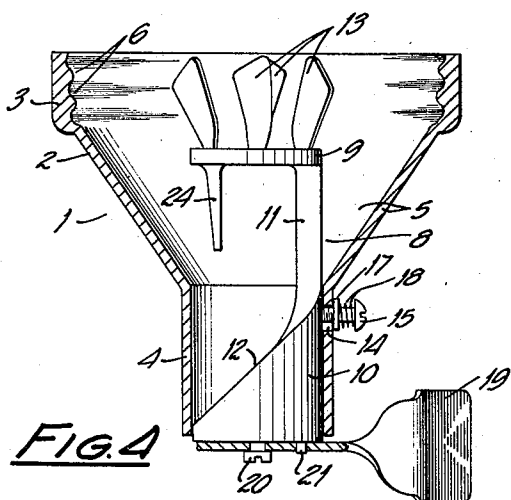


FIG. 4

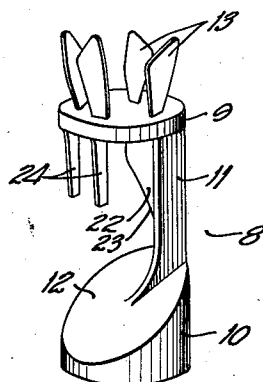


FIG. 2

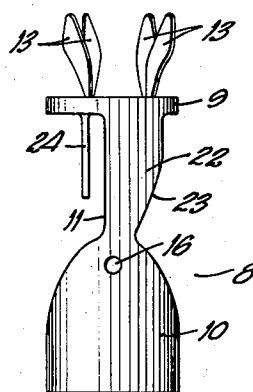


FIG. 3

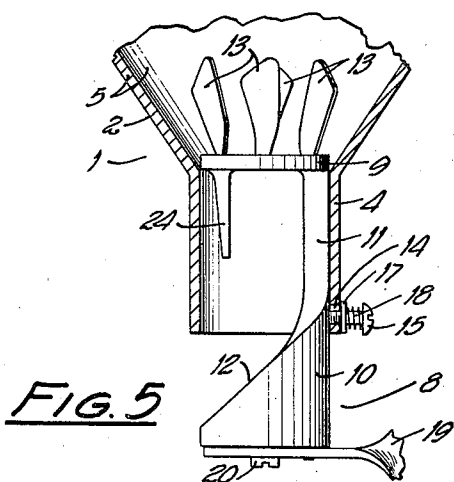
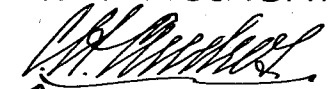


FIG. 5

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DISPENSER

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7 Claims. (Cl. 221-114)

My invention particularly relates to dispensers for use, for example, in kitchens in dispensing measured quantities of materials such as coffee and the like.

Many foodstuffs, such as coffee, when finely ground for use in so-called "dripolators" often pack or cake under humid atmospheric conditions. When such conditions exist, of course, the material cannot accurately be dispensed in measured quantities.

My invention, therefore, has for a first object the provision of a dispensing device comprising a valve element which is arranged and designed to break up material which may become caked or packed and thereby permit accurate dispensing thereof under all conditions. Another object resides in providing a valve element of the foregoing character which is designed for both axial and rotary movement to accomplish the foregoing result. A still further object lies in providing a dispensing device which is cheap to manufacture, simple in design and one which is adapted removably to support reservoirs or containers of materials to be dispensed whereby the assembly may easily be taken apart and thoroughly cleansed.

With these and other objects in view, my invention includes the novel elements and the combinations and arrangements thereof described below and illustrated in the accompanying drawing in which—

Fig. 1 is an elevation view of the casing of my dispenser with the valve element removed;

Fig. 2 is a perspective view of the valve element;

Fig. 3 is an elevation view of the valve;

Fig. 4 is a sectional elevation view of the dispenser casing with the valve element operatively mounted therein; and

Fig. 5 is a fragmentary, sectional elevation view, somewhat similar to Fig. 4, showing the valve element in its lowered position.

Inasmuch as my dispenser is preferably formed as a base support for the container of material to be dispensed thereby, I have not illustrated the container itself and it is to be understood that my dispenser may comprise a reservoir into which materials may be deposited and protected from the atmosphere as, for example, illustrated in my Patent No. 2,084,029.

The dispenser, indicated generally at 1, comprises a casing 2 which includes a first cylindrical portion or element 3 and a somewhat smaller second cylindrical or tubular element 4 communicating through the inverted, frusto-conical sec-

tion 5. The element 3 may be interiorly threaded as indicated at 6 to receive the threaded base of a container as, for example, the threaded neck of a "Mason" jar or the like within which the material to be dispensed is contained. The casing is provided with a tapered lug 7 adapted to support the same upon a suitable bracket (not shown) provided with a complementary, tapered recess.

The valve element, indicated generally at 8 and as illustrated in perspective in Fig. 2, comprises an upper cylindrical portion 9 and a lower truncated cylindrical portion 10. A web 11 is preferably cast integrally with the upper and lower portions 9 and 10 and serves to retain the same in spaced relationship, the portions 9 and 10 forming spaced closure elements for the tubular section 4 of the dispenser casing. The upper surface 12 of the truncated portion 10 preferably lies in an oblique plane whereby it may serve not only to effect a closure of the tubular element 4 at the lower or discharge end thereof but also serves as a spout to guide the flow of material in its discharge. The upper closure element 9 is provided with one or, preferably, a plurality of blade-like elements 13 which extend upwardly therefrom and serve, as will be evident from an inspection of Fig. 4, to penetrate and agitate the material contained in the dispenser and above the valve in the manner hereinafter pointed out.

In order to break up any caking or packing of the material by means of the blades 13, I have provided means for effecting an axial and rotary movement of valve 8. In the embodiment illustrated, the tubular element 4 of the dispenser casing is provided with a helical slot 14 which serves through the medium of a pin or bolt 15 operatively to secure the valve element within the casing of the dispenser and at the same time to guide the valve, when operated, in an axial and rotary movement. In assembling, the valve element 8 is inserted within the tubular element 4 of the casing and a tapped opening 16 with which the valve is provided is brought into registry with the slot 14. Bolt 15 is then screwed into the opening 16 and a washer 17 and helical spring 18, disposed between the washer and head of bolt 15, afford free but resiliently constrained operations of the valve. An operating handle 19 is provided which, in the form illustrated, is secured to the base of the valve element by means of a screw 20 and relative movement between the handle and the valve is prevented by pin 21 which is adapted to fit within an opening in the handle 19.

The upper cylindrical portion 9 of the valve element may, in diameter, exceed the internal diameter of the tubular element 4 of the casing or the surface elements of the portion 9 may coincide with the elements of the truncated portion 10 which, of course, is of a diameter affording a sliding fit within the tubular element 4. Either alternative construction may be employed due to the fact that the slot 14 limits the movement of valve 8 and is of a length whereby when the valve is moved downwardly the portion 9 effects a closure at the upper end of tubular element 4.

In order to prevent material from escaping through the slot 14 upon an actuation of the valve, the cylindrical surface of the valve 8 is continued adjacent the web 11, as indicated at 22, so as to cover the slot 14 when the valve is lowered. The extended surface 22 need only extend to the edge 23 which is illustrated as helical in shape, in which event the edge 23 follows in registry with or slightly below the lower edge of the slot 14 upon a downward movement of the valve.

Inasmuch as there may be some tendency of the material to cake beneath the upper closure element 9 of the valve 8 when, for example, the valve is permitted to remain in its upper position, I have provided the element 9 with depending lugs or projections 24 which, in the above instance, serve to agitate and break up such material.

In the normal operation of my device and assuming that the casing 2 is suitably mounted with a container of material supported thereon with the valve element 8 in the position illustrated in Fig. 5, the upper closure element 9 prevents discharge of material from the space thereabove. Upon actuating the handle 19, the slot 14 guides the valve in an upward and rotary direction causing the blades 13 to agitate and break up any caked or packed particles of material. When bolt 15 lies at the upper end of slot 14, closure element 10 of the valve effects a closure of the tubular element 4 near the bottom thereof and material may flow into and fill the space between the two closure elements 9 and 10, see Fig. 4. By actuating the handle 19 in the reverse direction, the valve 8 is returned to its initial position as illustrated in Fig. 5 thereby discharging the material captured between the upper and lower closure elements and effecting a closure of the tubular element 4 at the top thereof. In operation, of course, the valve is operated quickly from one position to the other and therefore substantially equal volumes of material will be discharged therefrom upon each operation thereof, the closure elements being spaced preferably to discharge about one heaping tablespoonful.

The blades 13 may extend outwardly to pass in close proximity to the sides of the inverted, frusto-conical portion 5 and may be provided with broad surfaces to engage a considerable volume of the material to be dispensed. Obviously with the blades disposed in quadrature, a rotary movement of the valve through about 90°, will effect an agitation of substantially the entire volume of material lying above the valve and extending to a height determined by the upper limit of axial movement of the blade tips.

Obviously, I may provide any means whereby a rotary and an axial movement of the valve 8 may be effected within the casing of the dispenser to produce the results above pointed out. Furthermore, I may rely upon the closure element

9 to limit the downward movement of the valve 8 by forming the same to engage the sides of the inverted frusto-conical section 5 as should be evident from the foregoing description.

While I have described my invention in its preferred embodiments, it is to be understood that the words which I have used are words of description rather than of limitation. Hence, changes within the purview of the appended claims may be made without departing from the true scope and spirit of my invention in its broader aspects.

What I claim is:

1. In a dispensing device of the character described, a tubular element forming a passageway for the flow of material therethrough, a valve element slidably fitted within said tubular element and comprising spaced closure elements for said tubular element, means for connecting said valve to said tubular element and for guiding said valve, when actuated, in an axial and rotary movement and means associated with said valve for agitating the material for dispensation.

2. In a dispensing device of the character described, a tubular element forming a passageway for the flow of material therethrough, a valve element slidably fitted within said tubular element and comprising upper and lower, spaced, closure elements for said tubular element and means for guiding said valve, when actuated, in an axial and rotary movement; the upper closure element of said valve being provided with upstanding, blade-like projections whereby material to be dispensed is agitated when said valve is operated.

3. In a dispensing device of the character described, a tubular element forming a passageway for the flow of material therethrough, a valve element slidably fitted within said tubular element and comprising upper and lower, spaced, closure elements for said tubular element, said upper element being provided with a plurality of blade-like projections, and means for guiding said valve in a substantially helical movement whereby, when said valve is operated, an agitation of the material to be dispensed is effected.

4. In a dispensing device of the character described, a tubular element forming a passageway for the flow of material therethrough, and a valve element slidably fitted within said tubular element and adapted to rotate therewithin; said valve comprising upper and lower, spaced, closure elements for said tubular element, the upper of said closure elements being provided with blade-like projections extending thereabove and said valve being provided with a projection extending within the space defined by said spaced closure elements for agitating material to be dispensed whereby, when said valve is rotated and moved axially of said tubular element, said blade-like projections and last mentioned projection will rotate and move therewithin.

5. In a dispensing device of the character described, a tubular element forming a passageway for the flow of material therethrough, a valve element slidably fitted within said tubular element and comprising upper and lower, spaced, closure elements for said tubular element, said upper element being provided with a plurality of blade-like projections, and means for connecting said valve element to said tubular element comprising a pin associated with one of said elements and a curvilinear slot provided in the other element whereby said valve is guided in an axial and rotary movement when operated.

6. In a dispensing device of the character described for delivering measured quantities of granular material, the combination with a tubular element forming a discharge passage for the
5 flow of material therethrough, of a valve element slidably fitted therein and comprising spaced closure elements adapted to effect a closure of said tubular element in spaced zones, said valve
10 being provided with means disposed to penetrate the material to be dispensed and means for guiding said valve to move in an axial and rotary direction when operated whereby a breaking up
of caked particles of said material is effected when
15 said valve is operated.

7. In a dispensing device of the character de-

scribed for dispensing measured quantities of granular material, a tubular element forming a passageway for the flow of material therethrough, a valve element slidably and rotatably fitted
5 within said tubular element and comprising spaced closure elements for said tubular element, and means associated with said valve and operable thereby for agitating the material to be
dispensed; said valve and tubular element being
10 so constructed and arranged that said valve may be moved longitudinally of said tubular element and rotated therein whereby to cause said agitating means to penetrate and break up said material when caked.

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