March 31, 1964 S. REZNEK 3,127,066

METERING DISPENSER FOR POWDERS AND THE LIKE

Filed Nov. 17, 1960

FIG. 1

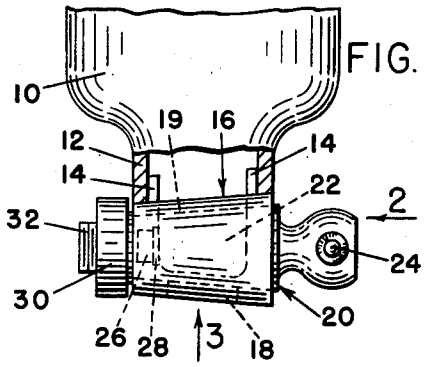


FIG. 2

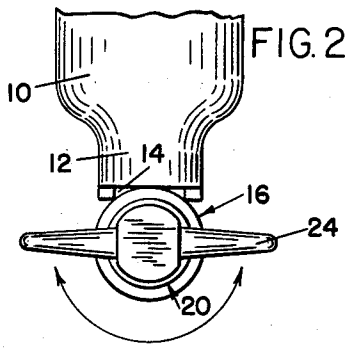


FIG. 3

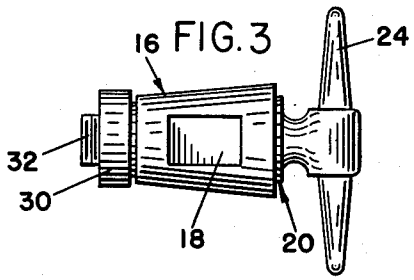


FIG. 4

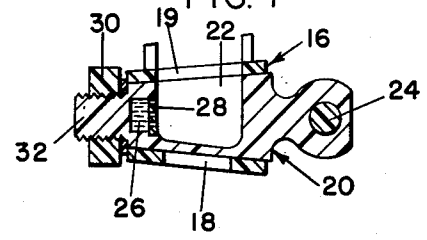


FIG. 5

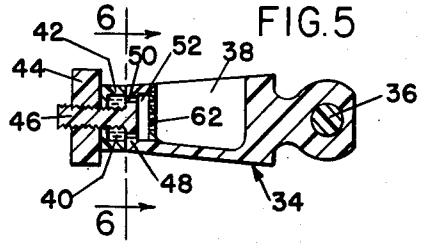


FIG. 6

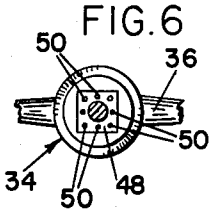


FIG. 7

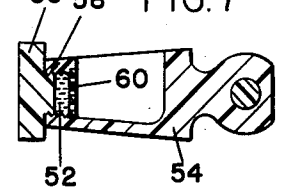


FIG. 8

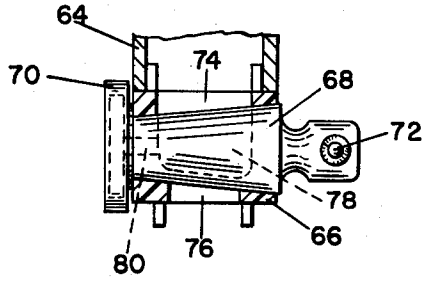


FIG. 9

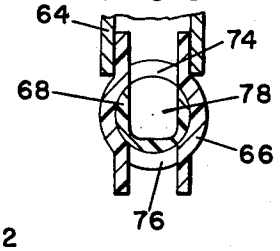
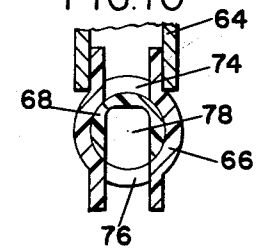


FIG. 10



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METERING DISPENSER FOR POWDERS AND THE LIKE

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Filed Nov. 17, 1960, Ser. No. 69,909
7 Claims. (Cl. 222—190)

This invention relates to a metering dispenser particularly but not limited to dispensing charges of granulated or powdered material as it descends by gravity from a container. This type of dispenser is in the nature of a valve and it is very simple to operate including as it does a fixture containing a relatively rotatable charging and metering valve member having a recess therein normally pointed in an upward direction, with free communication to the interior of the container aforementioned, and said fixture having an opening at the lower side thereof whereby when the valve metering member is rotated 180°, the granulated or powdered material merely drops and the valve metering member at the same time cuts off any further discharge from the container.

It is the principal object of the present invention to provide a device of this nature with a desiccant chamber which will normally be in communication with material in the container for removing atmospheric moisture trapped in the filling the main chamber, and keeping the contents of the container dry. The desiccant material will be in contact with the atmosphere only very momentarily as when the valve metering member is turned downwardly to discharge its load. The valve normally faces upwardly to receive a charge from the main container, and in this position it is closed from the atmosphere.

The invention further relates to arrangements and combinations of parts which will be hereinafter described and more particularly set forth in the appended claims.

Reference is to be had to the accompanying drawings, in which

FIG. 1 is a view in elevation showing one form of the invention, part being cut away and in section;

FIG. 2 is a view in side elevation thereof, looking in the direction of arrow 2 in FIG. 1;

FIG. 3 is a bottom view, looking in the direction of arrow 3 in FIG. 1;

FIG. 4 is a longitudinal section particularly showing the valve metering device;

FIG. 5 is a similar view showing a modification;

FIG. 6 is an enlarged section on line 6—6 of FIG. 5;

FIG. 7 is a view similar to FIG. 4 showing a further modification;

FIG. 8 is a view showing a modification, parts being in section; and

FIGS. 9 and 10 are sectional views illustrating the action of the valve metering member.

In carrying out the present invention, the same may be applied to a main container 10 which is normally held in inverted condition on a stand not shown. Such containers are old and well known and per se form no part of the present invention except insofar as a combination with the novel features of the present valve device is concerned.

The container 10 usually has a neck or the like 12 into which is inserted legs or other fastening means 14 of a fixture generally indicated at 16. This fixture may be held in any way desired to the neck of the container 10 even though the latter is inverted.

The fixture 16 is generally hollow and is tapered so that it is essentially a section of a hollow cone. It is conveniently molded of plastic material such as polyethylene to provide desirable low friction properties as well as good moisture vapor protection for the parts, and particularly for the contents of container 10.

The fixture 16 has an opening 18 in the lower surface thereof and also has an opening 19 similar thereto in the upper surface thereof to communicate with the interior of container 10. The fixture 16 may be open at its ends and receive therein the valve or metering dispenser element best shown in FIG. 4 and generally indicated by the reference character 20. This member is correspondingly tapered as clearly shown and it has a hollow chamber or recess therein 22 generally centrally thereof and adapted to be aligned selectively with the openings 18 or 19. Any kind of handle means such as at 24 may be applied to the member 20 and the handle extends from the end of fixture 16 as clearly shown in FIG. 1.

Closely associated with recess 22 in the metering valve member 20 there is a smaller chamber 26 which holds a quantity of a desiccant, e.g., silica gel. This material may be contained in a porous pouch or the like, or it may be separated and kept out of chamber 22 by means of a porous or dividing wall or partition 28. This partition may be provided with small holes in order to allow the action of the desiccant to take place and provide the moisture removal effect on the contents of container 10 when the parts are in the FIG. 1 position with recess 22 upwardly located as shown in FIG. 4. The chamber at 26 is conveniently refilled from the interior of recess 22, and the valve member 20 may be conveniently removably held in position in its fixture 16 by any desired means such as a nut 30 mounted on a projecting screw thread 32.

In FIG. 5 there is shown a modified valve device generally indicated at 34 and having a handle 36 together with a charging recess 38. In this case, however, the desiccant chamber is provided at 40 in a separate piece 42 attached at the small end of the valve member 34 and held in position by any desired means such as a nut 44 on a screw-threaded member 46 which extends from an apertured block or part at 48, see FIG. 6. This block is provided with the apertures at 50 to provide the desiccant action to extend through the passage 52 and into the recess 38 as before. In this case the desiccant chamber is serviced by removing the nut and piece 42 and reapplying the same.

In FIG. 7 there is shown a further modification in which the desiccant chamber is indicated at 52 and the metering member is at 54 and may be otherwise similar to those already described. In this case the desiccant chamber 52 is open to the small end of the valve member 54 being closed by a thumbpiece or the like 56 having screw threads 58 or some similar fastening means. In this case, the member 56 not only holds the valve in position in the fixture but it also acts as the closure for the desiccant chamber 52 which can be filled merely by removing the thumbpiece 56. In this case there may also be used an apertured partition 60 similar to that at 28 in FIG. 4 and if desired or found desirable, a similar partition 62 may be utilized as in FIG. 5. The desiccant can, however, be placed in a porous pouch.

Referring now to FIG. 8 there is shown a modification in which the main container is indicated at 64, the fixture at 66, and the valve member at 68. In this case the valve member is provided with an enlarged portion at the small end thereof at 70 and the desiccant may be placed in a pouch therein or a partition similar to those previously described may also be utilized. In this case, the handle 72 is applied after assembling the parts. The portion 70 can be cemented on or separately fastened.

The fixture (FIG. 8) is provided with its upper opening at 74 and its lower opening as at 76 and the valve member 68 has the recess as at 78 with a passageway 80 leading to the desiccant chamber. The action of these parts is clearly apparent from a comparison of FIGS. 9 and 10 wherein the valve metering member receives its

charge in its normal position as in FIG. 9, and delivers the charge downwardly as in FIG. 10.

Having thus described my invention and the advantages thereof, I do not wish to be limited to the details herein disclosed, otherwise than as set forth in the claims, but what I claim is:

1. A metering dispenser for loose materials comprising a fixture adapted to be associated with the discharge opening of a container for the loose materials, said fixture comprising in general a hollow walled chamber having openings in opposite side walls thereof, a relatively rotatable valve member located in the chamber in the fixture, said valve member being provided with a recess therein which is selectively capable of being aligned with either of said openings in the wall of said fixture upon rotation of the valve member for receiving the loose material in one position thereof when the recess therein is in loading position relative to the container, and discharging the material through the opposite opening when rotated to coincide therewith, means on said rotatable valve member for closing the container for the loose material when in the discharging position thereof, and means forming a secondary chamber associated with said relatively rotatable valve member, said chamber being adapted to contain a desiccant, said recess forming a passage for communication between the desiccant chamber and the interior of the container when said valve member is in position with the recess therein communicating with said container.

2. The metering dispenser of claim 1 wherein the means forming the desiccant chamber is located directly within the relatively rotatable valve member.

3. The metering dispenser of claim 1 including a separate element for the valve member, said desiccant chamber being located in said separate element, and including means for securing said separate element to said valve member.

4. The metering dispenser of claim 1 wherein the means forming the desiccant chamber is located directly within the relatively rotatable valve member wherein the desiccant chamber extends to an exterior surface of the valve member, and including separate means closing said desiccant chamber at said surface, whereby the desiccant chamber may be serviced exteriorly.

5. The metering dispenser of claim 1 wherein the means forming the desiccant chamber is located directly within the relatively rotatable valve member, said desiccant chamber being completely sealed off from the exterior surface of the valve member.

6. The metering dispenser of claim 1 including a separate element for the valve member, said desiccant chamber being located in said separate element, and including means for securing said separate element to said valve member and maintaining said valve member in position in the fixture.

7. The metering dispenser of claim 1 including a separate element for the valve member, said desiccant chamber being located in said separate element, and including means for securing said separate element to said valve member, and a passage located in said valve member and leading from the desiccant chamber in said separate element to the recess in the valve member.

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