April 16, 1935. A. TAURMAN 1,997,837

DISPENSING DEVICE

Filed July 2, 1934.

Fig. 1

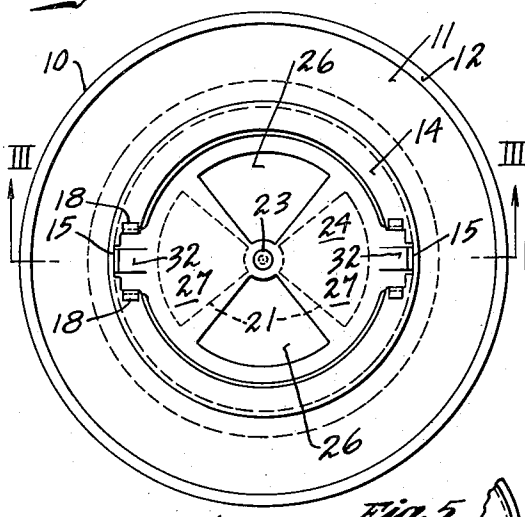



Fig. 2

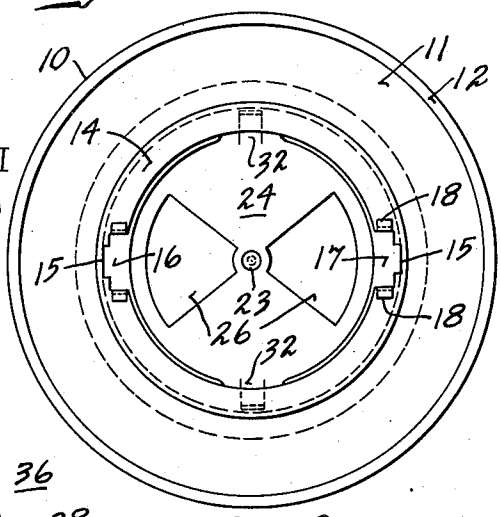



Fig. 5

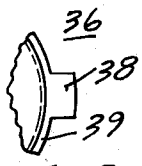



Fig. 4

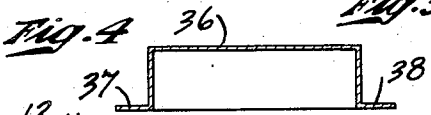



Fig. 3

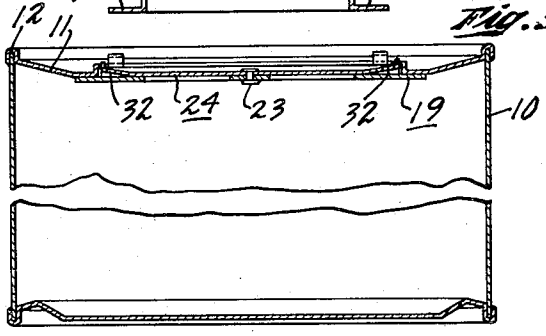



Fig. 8

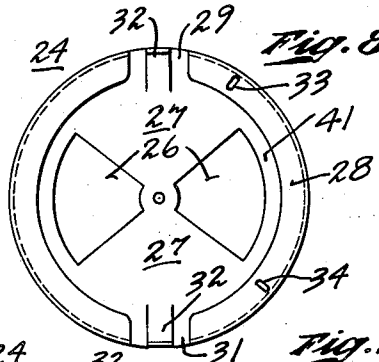



Fig. 9

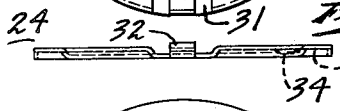



Fig. 10

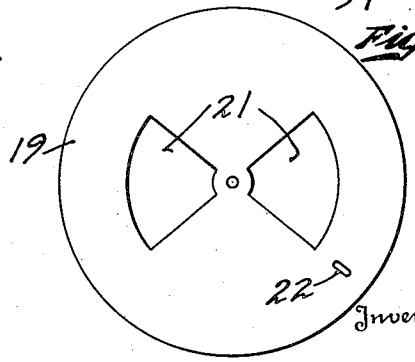



Fig. 6

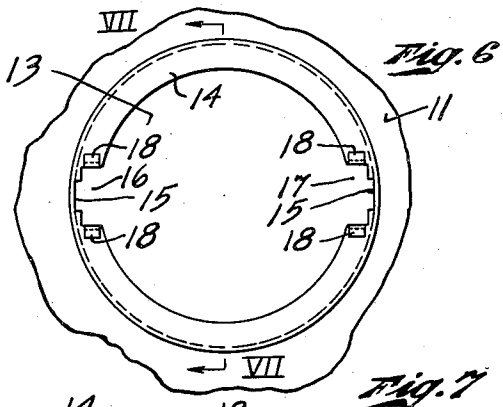
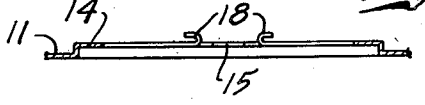



Fig. 7




Inventor

Alphonso Taurman

By Johnston & Jennings

Attorneys

Patented Apr. 16, 1935 1,997,837

# UNITED STATES PATENT OFFICE

1,997,837

## DISPENSING DEVICE

Alphonso Taurman, Birmingham, Ala.

Application July 2, 1934, Serial No. 733,466

5 Claims. (Cl. 221—95)

My invention relates to dispensing devices, and more particularly to a device for removal of the contents of a sealed container with a minimum of access of air thereto.

One object of my invention is to provide a simple dispensing device through which substances in sealed containers may be dispensed without access of air thereto, and which may be so economically manufactured that it may become a part of the sealed containers in which such substances are regularly marketed without unduly increasing the packaging cost.

A further object of my invention is to provide a dispensing device for granular merchandise containers which shall include a valve locked in closed position and providing a substantially air tight seal when closed, and a measuring device adapted to cooperate with the valve mechanism to unlock the valve and move it to open position, and which may not be removed from the container until the valve is again in closed position.

As is well known in the art to which my invention relates, there are a number of granular substances marketed for household use which should be protected against free contact of the atmosphere until used up. Among such substances are the hygroscopic cleaners and washing powders which cake upon absorbing moisture from the air, and food products which loose their flavor by volatilization and possibly oxidation, such, for example, as coffee and tea. It is accordingly a particular object of my invention to provide a dispensing device by means of which measured quantities of such substances may be removed from the containers, with a minimum access of air thereto.

Briefly, my invention comprises a rotary valve structure formed in a container top and embodying means for locking the valve in closed position, in which position it provides an effective air seal. The valve structure preferably does not extend above the level of the perimeter of the top so that it does not interfere with packing the containers on top of each other for shipping. Access to the contents of the container is provided by a measuring cup having means to unlock the valve and move it to open position, and which forms an effective air seal with the opening, and the cup may only be removed from engagement with the valve structure when the valve is in closed position.

Apparatus embodying features of my invention is illustrated in the accompanying drawing forming a part of this application, in which

Fig. 1 is a plan view of a container having my improved dispensing device applied thereto and showing the valve in closed position;

Fig. 2 is a view similar to Fig. 1 and showing the valve in open position;

Fig. 3 is a vertical sectional view taken along the line III—III of Fig. 1;

Fig. 4 is a sectional view of the measuring cup employed with my dispensing device;

Fig. 5 is a fragmentary plan view of the measuring cup;

Fig. 6 is a view of the top of the container with the valve structure removed;

Fig. 7 is a sectional view along the line VII—VII of Fig. 6;

Fig. 8 is a plan view of the valve removed from the container top;

Fig. 9 is an edge view of Fig. 8; and

Fig. 10 is a plan view of the valve seat removed from the container top.

Referring now to the drawing for a better understanding of my invention, I show a container 10 adapted particularly for granular household products. The container 10 is provided with a cover 11 secured thereto in any approved manner. Preferably the cover 11 is formed with a depression toward its center with respect to the outer edges 12 thereof, in order to accommodate the valve structure of my improved dispensing device without said valve structure extending above the level of the outer edges.

Referring particularly to Figs. 6 and 7, the cover 11 is provided with a central circular opening 13 formed so as to provide an overhanging flange 14, which flange is cut to provide diametrically opposed slots 16 and 17. Preferably these slots have their edges turned over to provide rounded ears 18 which act as guides for the valve operating device, yet to be described. The outer walls of the slots are also cut back to provide smaller notches 15 to accommodate the valve locking device employed with my invention.

Fitting across the opening 13 and secured thereto in air-tight relation, is a valve seat 19. See Figs. 3 and 10. The valve seat is provided with segmental ports 21 and with a valve stop 22 formed to protrude upwardly a slight distance from its surface and which comes directly beneath the overhanging flange 14 of the opening 13.

Mounted on the valve seat 19 between said valve seat and the overhanging flange 14, is a rotary valve 24 which is tightly held by means of a central rivet 23, but which permits rotary movement of the valve with respect to its seat. The rotary valve is provided with segmental ports 26 which, when the valve is in an open position, are adapted to register with the ports 21 of the valve seat and permit removal of the contents of the container. When the valve is in a closed position, the solid portions 27 thereof lie flat upon the solid portions of the valve seat, with considerable overlap as may be seen in Fig. 1, so as to form an air-tight seal with respect to the seat. The effectiveness of this seal may be enhanced,

if desired, by a light coating of paraffin, or similar substance, on the upper surface of the seat.

The valve 24 is formed with an outer channel 28 extending above the solid portions 27 of the valve, and which bears tightly against the overhanging flange 14 of the opening 13 so as to hold the solid portions of the valve and its seat in tight engagement when the valve is closed.

The channel 28 is provided with diametrically opposed depressions 29 and 31, in which are located resilient latch members 32 which are adapted to fit into the notches 15 and lock the valve 24 in its closed position. The valve 24 is also provided with stop members 33 and 34 which extend downwardly into the outer channel 28 and which are adapted to engage with the stop member 22 on the valve seat 19 when the valve is in its open and in its closed positions.

The valve 24 is rotated on its seat to open position and access is had to the contents of the container by means of a measuring cup 36 provided with diametrically opposed lugs 37 and 38, which are adapted to be entered in the slots 16 and 17 in the overhanging flange 14 and into the depressions 25 and 31. The lugs 37 and 38, when the cup 36 is pressed downwardly on the container, also serve to depress the resilient latches 32 so as to disengage same from the edges of the notches 15 in the flange 14. When this is done, the valve 24 may be turned in a counter-clockwise direction, as seen in the drawing, until the stop member 34 of the valve engages the stop member 22 of the valve seat, at which time the valve is in open position. In this position the lugs 37 and 38 are beneath the flange 14 and the outer edge 39 of the measuring cup is bearing tightly against the circular solid portion 41 of the valve 24, thereby preventing access of air to the interior of the container, except such small amount of air as was contained in the cup when it was placed upon the valve.

The container may now be inverted and the granular contents thereof will fill the cup 36, but the cup can not be removed until it is again turned to the closed position of the valve 24. When in this position the cup may be removed and the resilient latch members 32 again engage with the notches 15, locking the valve in its closed position.

The container 10 and the valve structure shown may be made of any suitable material which may be molded or shaped as herein shown and described. The invention is particularly adapted for metallic containers such as are commonly employed for packaging tea, coffee, and certain household cleansing agents. Its adaptability for use with various substances and made from a variety of different materials will at once be appreciated by those skilled in the art.

From the foregoing, it will be apparent that I have devised a simple dispensing device which is extremely economical of manufacture and which protects the contents of the container from harmful effects of the atmosphere, and which permits removal of the contents of the container without undue access of air thereto.

While I have shown my invention in but one form, it will be obvious to those skilled in the art that it is not so limited, but is susceptible of various changes and modifications, without departing from the spirit thereof, and I desire, therefore, that only such limitations shall be placed thereupon as are imposed by the prior art or as are specifically set forth in the appended claims.

What I claim is:

1. A dispensing device for closed containers comprising a rotary valve structure adapted to seal against the atmosphere, a locking device included in the valve structure for locking the valve and holding it in closed position, a measuring cup, means thereon to cooperate with the locking device to unlock the valve and turn it to open position, and means to hold the measuring cup in engagement with the valve structure until the valve is moved to closed position.

2. In a dispensing device for closed containers, a cover having an opening therein provided with an overhanging flange, a valve seat having ports therein and extending across the opening beneath the flange, a rotary valve member interposed and fitting snugly between the valve seat and the overhanging flange, said valve member having ports therein corresponding to the ports of the valve seat, resilient latch means to lock the valve in closed position, a measuring cup having means thereon to cooperate with the resilient latch means and unlock the valve and move it to open position, said latter means being adapted to bear against the overhanging flange and hold the measuring cup in engagement with the valve until said valve is again moved to closed position.

3. In a dispensing device for granular merchandise containers, a valve seat having ports therein giving access to the interior of the container, a rotary valve having similar ports mounted on the seat, a central axis pin passing through the valve and seat to hold the valve centrally on its seat, means limiting movement of the valve with respect to the seat to wide open and shut positions and so positioned as to provide considerable overlap for the valve when it is in closed position, and a flange on the container structure bearing against the valve for holding the outer portion of the valve in tight engagement with the seat.

4. In a dispensing device for granular merchandise containers, a valve seat having ports therein giving access to the interior of the container, a rotary valve having similar ports mounted on the seat, means limiting movement of the valve with respect to the seat to wide open and shut positions and so positioned as to provide considerable overlap for the valve when it is in closed position, a flange on the container structure bearing against the valve for holding the valve in tight engagement with the seat, and a locking mechanism coacting betweeen the valve and the flange for automatically locking the valve in closed position.

5. In a dispensing device for granular merchandise containers, a valve seat having ports therein giving access to the interior of the container, a rotary valve having similar ports mounted on the seat, means limiting movement of the valve with respect to the seat to wide open and shut positions and so positioned as to provide considerable overlap for the valve when it is in closed position, a flange on the container structure bearing against the valve for holding the valve in tight engagement with the seat, a locking mechanism coacting between the valve and the flange for automatically locking the valve in closed position, a measuring cup, and means on the cup to coact with the locking mechanism and move the valve to open position, said means coacting with the flange to hold the cup in tight engagement with the valve when it is in open position.

ALPHONSO TAURMAN.