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3,186,608

CONTAINER DISPENSING DEVICE

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Fig. 1

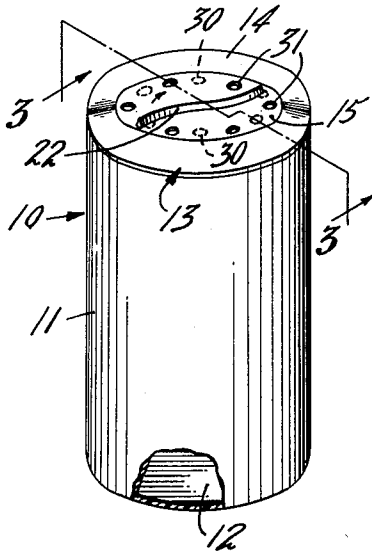


Fig. 2

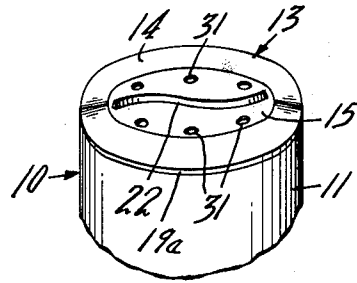


Fig. 4

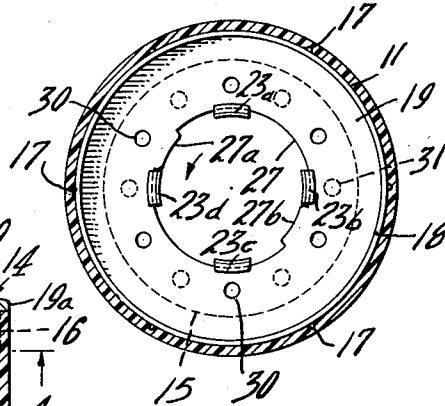


Fig. 3

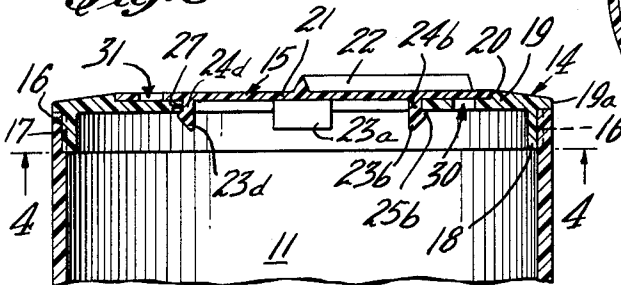
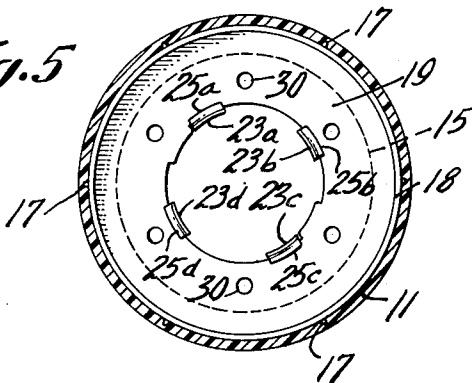


Fig. 5



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CONTAINER DISPENSING DEVICE

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1 Claim. (Cl. 222—554)

The present invention relates broadly to containers, and is more particularly concerned with a dispensing device for comminuted materials wherein the closure means is comprised of a stationary element and a rotatable element which cooperate in a novel manner to connect the latter element to the former and to limit its rotation thereon.

It is a primary aim of the instant invention to provide a dispenser for power-like materials desirably constructed entirely of plastic and which has as one important advantage thereof insusceptibility to attack by sodium chloride and related substances.

Another object of this invention lies in the provision of a shaker or sifter comprised of a minimum number of readily molded parts and which further features reusability.

Still another object of the invention is to provide a dispenser particularly designed for comminuted condiments and formed of a container body, a stator readily insertable thereon and a rotor for snappable engagement with the stator.

A further object of the instant invention lies in the provision of a dispenser of the foregoing character wherein the stator is provided generally centrally with an irregularly shaped opening and the rotor is equipped with depending fingers which effect engagement with the stator through the opening therein and abut thereagainst during rotation to determine the open and closed positions of the dispenser.

An even further object of this invention is to provide a container with a body portion closed at one end, an annular stator connected to said body portion at the opposite end thereof and equipped with a plurality of dispensing openings, means on the inner wall of the stator providing abutment means thereon, a rotor rotatable upon said stator and having a plurality of openings for registration with the dispensing openings in said stator, and means depending from said rotor engageable with said stator to provide a connection therewith and contacting said abutment means during rotation of said rotor to determine the open and closed positions of the container.

Other objects and advantages of the invention will become more apparent as the description proceeds, particularly when taken in connection with the accompanying drawings.

In the drawings, wherein like numerals are employed to designate like parts throughout the same:

FIGURE 1 is a perspective view of a container constructed in accordance with the principles of this invention, and shown with the closure means in a closed position;

FIGURE 2 is a fragmentary perspective view of the container, but showing it in an open position;

FIGURE 3 is a longitudinal sectional view taken substantially along the line 3—3 of FIGURE 1;

FIGURE 4 is a transverse sectional view taken generally along the line 4—4 of FIGURE 3; and

FIGURE 5 is a view similar to FIGURE 4, but showing the closure means in an open position.

Referring now to the drawings, a container embodying the novel concepts of this invention is designated therein generally by the numeral 10, and in its preferred form, all parts thereof are plastic in order to effect cost and

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weight advantages, as well as to eliminate attack by table salt or other comminuted materials typically used in dispensers of this character. Polyethylene attains these objectives, although other thermoplastic materials such as polyamide, polyesters, vinyl polymers and copolymers, polymers of vinylidene chloride, polystyrene, and polypropylene and its copolymers may be employed.

The container or dispensing device 10 comprises a tubular body portion 11, shown as cylindrical although other shapes can be utilized, having one end thereof closed by a wall member 12 heat sealed or otherwise attached to the body portion 11. The opposite end of the body portion supports closure means, identified generally at 13, and comprised of only two elements, an inner disc or stator 14 and an outer disc or rotor 15.

Mounting of the closure means 13 upon the body portion 11 is achieved in a simplified manner, while at the same time providing a non-leakable connection which resists accidental separation, by equipping the upper end of the body portion with a plurality of relatively short length circumferentially spaced grooves 16 which receive complementarily shaped ribs 17 formed on the outer surface of an annular flange or skirt portion 18 depending from a relatively flat annulus or ring-shaped body portion 19 of the stator 14. As appears best in FIGURE 3, the annular skirt 18 is spaced radially inwardly of the outer periphery of the stator body portion 19 to provide a shoulder 19a which seats upon the upper end of the tubular body portion 11 in flush tight fitting contact therewith.

Proper sizing and dimensioning of the annular stator 14 and tube body 11 assures that a leakproof connection therebetween is attained, which further resists separation if the container 10 is dropped. The stator is press fitted in place and relative rotation between the container body 11 and stator 14 is prevented by the rib or tongue and groove arrangement, and yet, the container may be re-used simply by prying upwardly on the shoulder section 19a. The plastic container materials are of course flexible, and removal of the stator can be aided by flexing the container body inwardly.

The upper surface of the ring-like body portion of the stator 14 is recessed at 20 to seat therein the rotor 15, shown as taking the form of a disc-like body portion 21 of essentially circular shape when viewed in plan. The rotor body portion along its upper surface is formed with finger manipulable means or an upstanding rib 22, while depending from said body portion is a plurality of circumferentially spaced lugs or fingers 23a-d each formed with a stem portion 24a-d and a claw portion 25a-d, the novel functions of which will shortly be described.

The annular body portion 19 of the stator 14 has a central enlarged opening. Along its inner annular wall 27, surrounding the opening, are a pair of diametrically opposed radially inwardly facing abutment means or lugs 27a and 27b which function in cooperation with the stem portions 24a-d of the depending rotor fingers 23a-d as stop means to limit the extent of rotative movement of the rotor 15 and to thus predetermine the open and closed positions of the closure means 13.

To explain more fully, after the stator 14 has been pressed in place in the position of FIGURE 3, the rotor 15 is oriented thereabove so that the depending fingers 23a-d on said rotor are circumferentially offset or out of alignment with the abutment means 27a and 27b on the stator. The rotor is then pressed inwardly against the stator, which causes the claw portions 25a-d to flex radially inwardly past the edge of the wall 27, and into snap engagement with the lower surface of the stator 14, in the manner of FIGURE 3. As thus positioned, the stem portion 24a-d of the rotor fingers 23a-d normally

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contact the inner annular wall 27 of the stator body portion 19 intermediate the lugs 27a and 27b thereon. Further, the rotor body portion 21 is received in the recess 20 of the stator so as to be essentially flush therewith.

The stator in its ring-shaped body portion 19 is provided with a plurality of circumferentially spaced dispensing orifices 30 located for registration with circumferentially spaced dispensing openings 31 in the rotor body portion 21 when the closure means is in the open or dispensing position of FIGURES 2 and 5. As can be seen therein, the fingers 23a and 23c on the rotor are then in abutment with one side of the lugs 27a and 27b, thereby effectively limiting rotation of the rotor and assuring that the rotor will not overtravel to a closed position.

On the other hand, to advance the rotor from an open position to the closed position of FIGURES 1, 3 and 4, wherein the rotor body portion 21 between its openings 31 blocks the stator dispensing openings 30, the finger manipulable rib 22 is grasped and a clockwise turning force applied thereto. This causes the finger stem portions 24a-d to travel along the inner annular wall 27 of the stator until the rotor fingers 23b and 23d abut against the other side of the stator lugs 27a and 27b, as appears best in FIGURE 4. It is then immediately apparent to the user that the closure means 13 is completely closed and leakage will not then occur.

It is to be seen from the foregoing that applicant has provided a novel dispensing device for comminuted materials wherein the closure means is comprised of a stationary element and a rotatable element which cooperate in a novel manner to connect the latter element to the former and to limit its rotation thereon. The container is preferably all plastic, although all applications therefor do not require this to be the case. Further, while the dispensing openings in the rotor and stator are shown as of uniform diameter, an enlarged pouring opening together with smaller sifter openings can be provided therein. These and other modifications may of course be effected without departing from the novel concepts of the invention.

I claim:

A dispensing device adapted to be sealingly fitted to an

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open end of a container in circumferentially coextensive relation therewith, comprising:

- an annular stator having dispensing openings and a central enlarged opening therein and adapted to be fixedly and sealingly fit to said open container end;
- a rotor disk in rotatable engagement with said stator and having an outer diameter less than the outer diameter of said stator, and having a plurality of openings for registration with said dispensing openings in said stator;
- a plurality of radially inwardly facing abutment lugs on an inner annular wall of said stator;
- a plurality of fingers depending from said rotor having lower claw portions engaging the lower surface of said stator to seat said rotor within an annular recess within the upper surface of said stator;
- said annular wall, surrounding and defining said central enlarged opening, providing an edge from which the plurality of radially inwardly facing abutment lugs project and past which edge the lower claw portions of the plurality of fingers snap;
- and upper stem portions of said fingers contacting the inner annular wall of that said stator so said rotor may rotate with relation to said stator thus bringing into alignment said stator and rotor openings for dispensing product within said container and said stem portions may engage said abutment lugs to stop rotation of said rotor when said stator and rotor openings are aligned.

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