

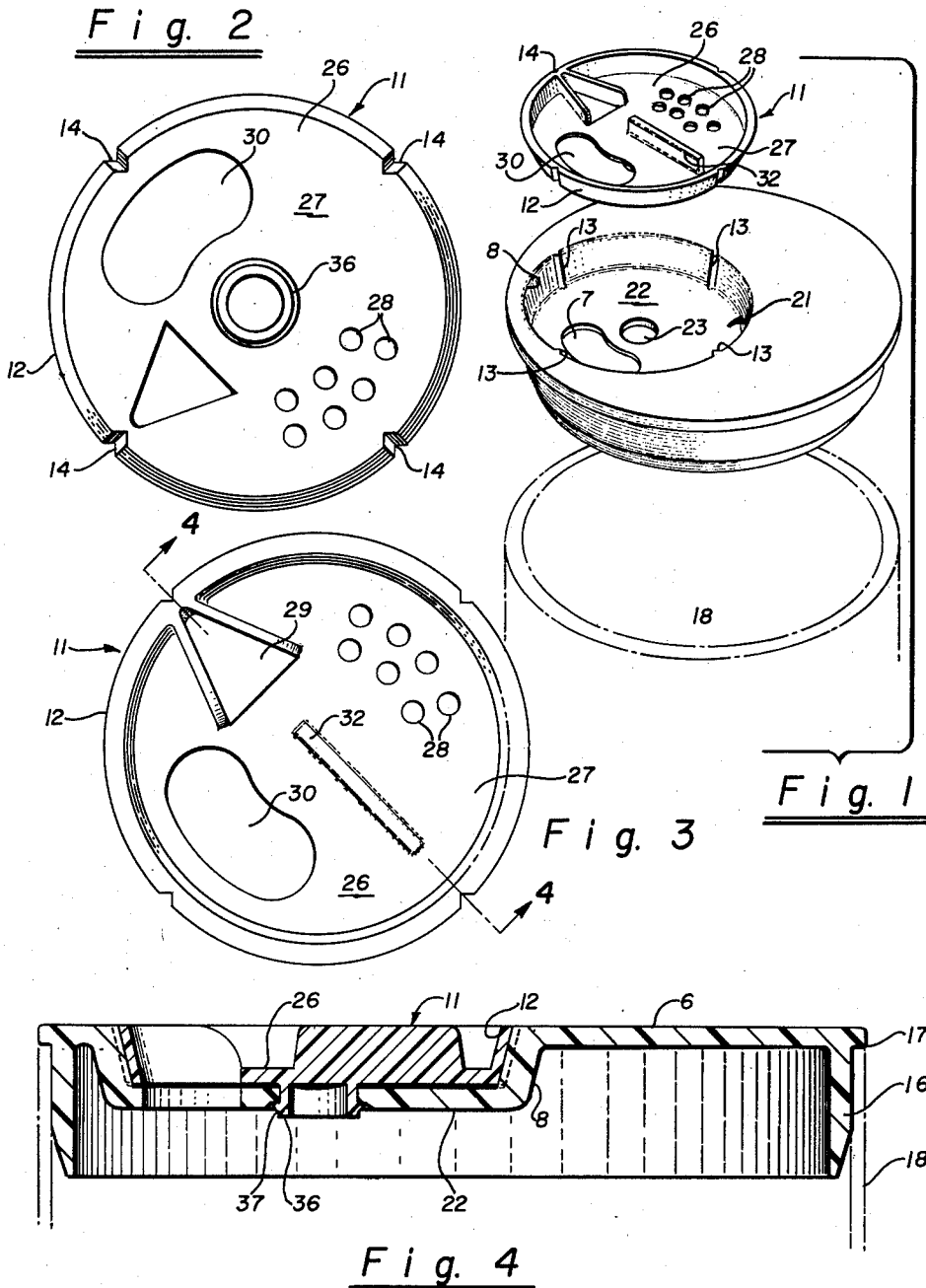
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CONTAINER CLOSURE AND DISPENSER

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CONTAINER CLOSURE AND DISPENSER

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The invention relates to closures for containers for powdered or granular materials desired to be dispensed through shaker sifting or pouring openings, such as in the case of salt shaker containers and the like.

An object of the present invention is to provide a simple, yet highly effective closure and dispenser unit of the character described which is designed for low-cost mass production and for rapid assembly with containers to provide a closure, and which embodies a manually operable rotor for readily providing desired styles of outlet openings with improved snap action indexing of the rotor in each of its closure and open positions.

The invention possesses other objects and features of advantage, some of which of the foregoing will be set forth in the following description of the preferred form of the invention which is illustrated in the drawing accompanying and forming part of this specification. It is to be understood however, that variations in the showing made by the said drawing and description may be adopted within the scope of the invention as set forth in the claims.

Referring to said drawing (one sheet):

FIGURE 1 is an exploded perspective view of a container closure and dispenser constructed in accordance with the present invention.

FIGURE 2 is a bottom view of one of the parts, taken on an enlarged scale.

FIGURE 3 is a top view of the part illustrated in FIGURE 2.

FIGURE 4 is a cross-sectional view of the container closure and dispenser with the parts in assembled position, the view being taken through the part illustrated in FIGURES 2 and 3, as indicated by the plane of line 4-4 of FIGURE 3.

The container closure and dispenser of the present invention consists briefly of a container closure member 6 formed to provide a discharge opening 7 surrounded by an eccentric circular side wall 8; a rotor 11 pivotally secured to the closure member 6 and having a side wall 12 positioned concentrically within the side wall 8, the rotor having adjoining solid and open portions selectively movable to positions covering and registering with discharge opening 7; the side walls 8 and 12 being formed with interfitting projection and recess portions 13 and 14 indexing in at least one of the rotor positions; and one of the side walls 8 and 12 being formed of resiliently flexible material functioning to cause movement of the rotor to its indexed position with snap action.

Preferably closure member 6 is designed for low-cost mass production as by injection molding from a thermoplastic material as for example, styrene, polymers and co-polymers or similar types of material readily available for plastic injection molding to provide a clean, smooth, well-finished and detailed and relatively rigid member. This closure member may be formed as here illustrated with a peripheral flange 16 extending from a peripheral edge shoulder 17 and arranged for convenient and rapid press-fitting into the open end of a cylindrical container 18, here shown in phantom line in FIGURES 1 and 4. It is common to produce this style of container, as in the case of the well-known salt shaker, out of tubular paper stock.

The closure member 6 is here formed with a circular depression 21 defined by a base wall 22 and a surrounding side wall 8. Usually the base wall 22 is formed with a weakened kidney-shaped outline for striking out of a

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kidney-shaped discharge opening 7 and as will be noted from FIGURE 1, this outlet opening is provided eccentric to a central mounting opening 23 provided in base wall 22. The member 6 is further detailed with a series of circumferentially spaced projections 13 on side wall 8. In the present construction four such projections are positioned at 90° separation on wall 8 and as wedge-shaped ribs projecting out from the wall and extending axially of opening 23.

The rotor 11 is also preferably designed for low cost mass production as by injection molding from a suitable thermoplastic material to provide a smooth, clean, sharply defined and well-detailed member. Preferably the resilient flexibility hereinabove referred to, to provide snap action indexing of the rotor, is embodied in the rotor material. This may be accomplished by forming the rotor out of a thermoplastic having resilient flexibility such as polyethylene. The rotor is preferably formed with a base wall 26 and an integral, upstanding, surrounding, side wall 12, so as to fit concentrically within the depression 21 with the base and side walls of the rotor in sliding engagement with the base and side walls of the depression. The base wall 26 of the rotor is here provided with a closed area 27, a series of shaker openings 28, a pouring spout 29, and a large kidney-shaped pouring opening 30, the portions 27-30 being circumferentially spaced for selective positioning upon rotation of the rotor into positions covering and registering with the opening 7 in the base wall of the depression 21. A handle bar 32 may be conveniently formed on the upper side of the rotor for manual engagement, and as here shown, this bar extends radially across the closed area section 27 generally diametrically opposed to and in alignment with the pouring spout 29 so as to give the rotor a pleasing design. In keeping with the four rotary positions of the rotor 11, and the four projections 13, provided on the closure walls 8, the peripheral wall 12, of the rotor is formed with four equally spaced recesses 14 which extend axially over the wall 12 so as to interfit with the ribs 13 provided on wall 8. In this construction the wall 12 will resiliently flex inwardly and outwardly as the rotor is moved to its several positions so as to provide the snap action indexing of the rotor above described.

The rotary mounting of rotor 11 within the circular depression 21 is here provided by an axial hub 36 integrally formed at the under side of base wall 26 centrally of the rotor and dimensioned for journalling in opening 23. The hub 36 is here formed tubular to give it desired resilient flexibility and a locking ring shoulder 37 is formed adjacent the end of the hub for snapping through the wall of opening 23 to hold the rotor in place.

I claim:

1. A closure and selectable dispenser for a container comprising, a closure member formed for sealed engagement in a container opening and having a circular depression defined by a base wall and a surrounding angularly disposed side wall, said base wall being formed to provide an eccentric discharge opening for the contents of said container, a rotor mounted for rotation in said depression and having a base wall and a surrounding angularly disposed side wall formed and dimensioned for full fitted engagement with said depression base and side wall, said rotor base wall having circumferentially spaced solid and open portions selectively movable into positions covering and registering with said discharge opening, said depression and rotor base walls being provided with a center pivotal connection, said base walls being formed to provide full annular matched bearing surfaces retained in full and continuous engagement upon movement of said rotor to and between all said positions, said side walls having a plurality of equally circumferentially spaced interfitting projection and recess portions simultaneously indexing

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said positions to provide a plurality of indexed rotor positions and maintaining radially balanced forces on said pivotal connection during movement of said rotor between said positions, and said rotor side wall being formed as an upstanding wall of resiliently flexible material and with the upstanding end thereof laterally unsupported in an inward direction permitting inward flexing of said rotor side wall, the latter thereby functioning to resiliently distort upon rotational movement of said rotor between said positions and to provide snap action interlocking of said projection and recess portions at said positions.

2. A closure and selectable dispenser for a container comprising, a closure member having a circular depression defined by an annular side wall and a circular bottom wall formed with an eccentric discharge opening for container contents, a rotor mounted in said depression and having a base wall having a central pivotal connection to said bottom wall and a free upstanding annular side wall having an outside surface concentric to and mating with the inside surface of said depression wall, said rotor base wall having circumferentially spaced solid and open portions selectably movable into a plurality of discreet positions

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covering and registering with said discharge opening, said side walls having a plurality of diametrically opposed interfitting projecting and recess portions indexing said positions, said depression side wall being formed of relatively rigid plastic material and said rotor side wall being formed of relatively flexible plastic material and with the upstanding end thereof laterally unsupported in an inward direction thereby permitting resilient inwardly flexing of said rotor side wall during rotation of said rotor between said positions and to provide snap action at said positions, the diametrically opposed disposition of said projection and recess portions functioning to maintain radially balanced forces on said pivotal connection during said rotor movement between said positions.

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