Sept. 3, 1957 H. KAPPLER 2,805,005

DISPENSING CONTAINER

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FIG. 1

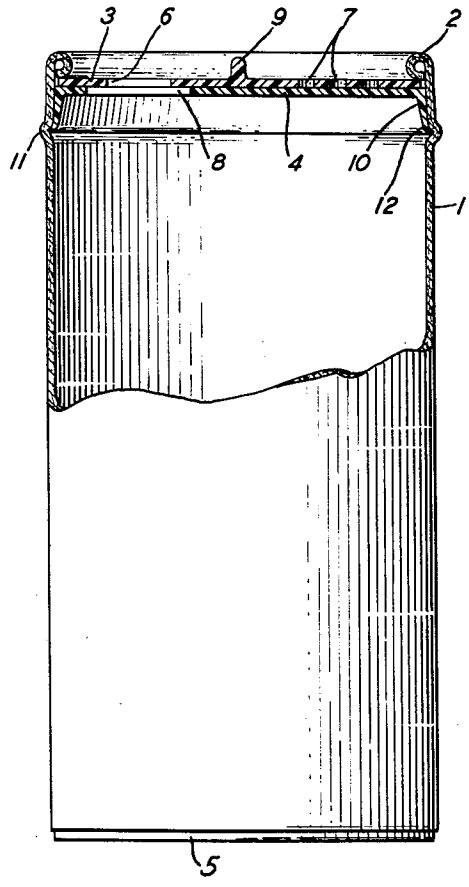


FIG. 2

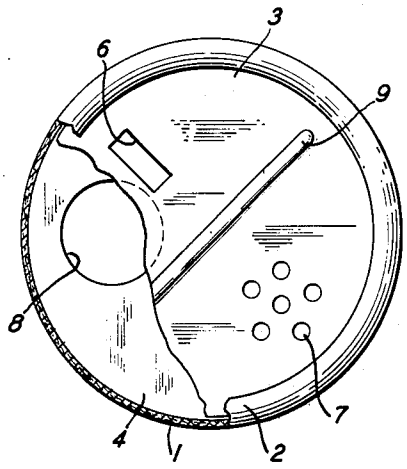
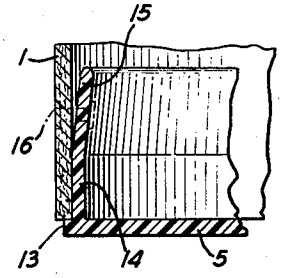


FIG. 3



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DISPENSING CONTAINER

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7 Claims. (Cl. 222—480)

The instant invention relates to containers, preferably cylindrical, adapted to hold material generally in granular or comminuted form which is, or may be, consumed by dispensing more or less thereof directly from the container.

The object of the invention is to provide a dispensing container of improved construction consisting of a minimum of structural elements.

A further object of the invention is to provide a dispensing container in which the sifter assembly is rigidly retained in its predetermined position at one end region of the container per se without the use of any liner within the container for spacing, at a predetermined distance, the sifter assembly from the bottom of the container.

Still a further object of the invention is to provide a container having an inner sifter disc with an integral peripheral flange adapted to engage the inner surface of the container accurately to position the sifter assembly at one end region of the container while the other end region thereof is securely closed by a formed plug, which may be of a construction to facilitate its repeated removal from the container, or, in the alternative of a construction as substantially to destroy the container end region about it on its removal.

The foregoing, and other, objects of the invention will be more readily understood from the following description of an illustrative embodiment, with a modification, thereof when read in conjunction with the accompanying drawing in which:

Figure 1 is an elevational view, partly in section, of an illustrative embodiment of my invention;

Figure 2 is a top view thereof with a portion broken away and in section; and

Figure 3 is a detail section, on an enlarged scale, of a portion of Figure 1 showing the bottom closure plug thereof.

The container 1 of the illustrative embodiment is a hollow cylinder of a material of adequate rigidity such as, for example, Kraft paper or cardboard, to the outer surface of which the identification of the contents and information as to the supplier or manufacturer of the contents, may be applied. The dimensions of a typical household size dispensing container for salt, by way of example, may be of the order of 3¾ inches in height and some 1½ inches in diameter. The upper edge 2 of the cylinder 1 is crimped or rolled over into a reentrant annular bead in well known manner. The sifter disc 3 is of an outer diameter to permit facile rotation of the disc within the cylinder 1 with its annular periphery extending radially beyond the inner diameter of the bead 2, and is supported against the bead by the inner flanged disc 4. The lower end region of the cylindrical container is closed by means of the formed plug 5. In one practical embodiment, both of the elements of the sifter assembly, namely, sifter disc 3 and inner disc 4, as also the formed bottom closure plug 5, are of polystyrene, thus providing a grease and moisture resistant sifter assembly and bottom closure.

The sifter disc 3 is provided with at least one appropriate pouring aperture registerable with an aperture through the inner disc 4. In the salt dispensing container here described by way of example, the disc 3 has two pouring apertures, one being a single, relatively large, aperture 6 of rectangular shape, and the other consisting of a group of small circular apertures 7 having a total aperture area preferably considerably less than the area of aperture 6. Both the aperture 6 and the aperture group 7 are of a dimension, respectively spacing, radially of the disc 3 such that they may selectively be brought into complete registration with, or to complete shut-off from, the pouring aperture 8 through the inner disc 4. The aperture 8 is of a radial dimension in excess of either the radial dimension of the aperture 6 or the radial spacing of the aperture group 7, and is preferably a circular aperture, as shown clearly in Figure 2. The aperture 8 is positioned centrally of a radius of the disc 4 and is of a diameter which is preferably less than the radius of disc 4. As will be noted, the mutual spacing of the aperture group 7 is such that one or more of the individual apertures thereof register with the aperture 8, thus permitting of further control of the pouring volume of the contents from the container. The disc 3 is rotatable by means of an upwardly extending ridge 9 positioned along a diameter of the disc and of a length less than such diameter. It will be noted that the aperture 6 and the aperture group 7 are centered on the respective radii perpendicular to the ridge 9 and to opposite sides thereof.

The inner disc 4 is provided with an integral annular flange 10 which tapers slightly outwardly, in the order of one or two degrees for example, from the disc per se. The flange 10 is a force fit into the container 1, its outer diameter being such that when it is assembled with the container its lower end region slightly displaces the engaged adjacent region of the container so that its location may be seen on the external surface of the container in the form of a slight annular ridge 11, as shown in Figure 1. The lower edge of the flange 10 is relatively thin and has a small annular hook 12 extending outwardly, thus permitting of intimate engagement with the inner surface of the container. It must be noted that with the flanged inner sifter disc of my invention, the sifter assembly is accurately and permanently held in its required position without the use of any spacing cylindrical liner or any other additional supporting means within the container.

The bottom closure formed plug 5 comprises essentially a lower annular stop portion 13 extending across the bottom of the container, an intermediate cylindrical portion 14 and an upper frusto-conical portion 15, both the last mentioned portions extending as a flange from the solid bottom of plug portion 13. The outer diameter of the stop portion 13 is preferably of a magnitude slightly less than that of the container 1, as is shown in the drawing. With such dimensioning the container is essentially capable of but a single filling use since it is rather difficult for the ultimate user of the filled container to withdraw the plug 5 from the container. The intermediate portion 14 is of such diameter as to provide a tight fit with the interior of the container while the frusto-conical portion 15 tapers to such diameter from a lesser diameter so that an easy start may be had in the plug inserting operation. It is of course possible that the supplier of the contents may intend the dispensing container for repeated fillings by the ultimate user, in which event the outer diameter of the lower plug portion 13 is preferably at least as large as the outer diameter of the container and even somewhat larger. Where the supplier of the contents intends positively to assure that the dispensing container shall be used but once by the ultimate consumer, a plurality of spikes or rivets 16, as in-

dicated by dashed lines in Figure 3, may be inserted at spaced circumferential intervals through the flanged regions, **14** and **15**, of the plug, preferably through the upper region, as assembled, of the frusto-conical region **15** and the cylinder **1**. Thus when the ultimate consumer does remove the plug **5**, he will in the course of the removal damage the lower end region of the container to such an extent that it will not be fit for further use.

The structural elements above described of the dispensing container of my invention may be assembled in any convenient manner. The cylinder **1** and the sifter assembly, disc **3** and inner disc **4**, may be first assembled, and the bead **2** produced at the end of the cylinder adjacent to the sifter assembly. The partial assembly is now positioned with its open bottom uppermost and the contents filled into it in a measured quantity therethrough, while there is complete shut off between the pouring apertures **6** and **7** and the aperture **8**, whereupon the formed bottom closure plug **5** is inserted to complete the container. The described method of assembly is but one way of assembling the filled dispensing container and may be varied in numerous ways without any change in the ultimate finished product, the dispensing container of my invention.

While the container per se has been described as of Kraft paper or cardboard, the material thereof may be any convenient material capable of being formed into a hollow, self-sustaining, cylinder, such as metal. Similarly each of the other structural elements above described as of polystyrene may be of other material, such as cardboard, fibrous material, or metal. In short, any of the materials which are sufficiently rigid and non-corrosive in respect of the intended contents and are resistant essentially to moisture, and preferably to grease, oil and fats, may be used.

It is expressly to be understood that the dispensing container above described is by way of illustration only and in no manner by way of limitation. Various changes in the content and in materials, size and shape of the elements making up the container assembly, and in the size, shape and number of the sifting apertures will suggest themselves to those skilled in the art without departing from the spirit and scope of my invention.

What I claim is:

1. A dispensing container comprising a hollow cylinder open at both ends, an internally reentrant bead of a predetermined width at one end region of the cylinder, an aperture rotatable disc across the interior of the cylinder of a diameter such that its peripheral region lies within at least a portion of the bead width, a lower apertured disc across the interior of the cylinder adjacent to and in surface contact with the apertured rotatable disc, an annular, outwardly tapering, flange integral with the lower apertured disc extending downwardly and having a force fit with the interior of the cylinder and securing the lower disc against rotation and in its predetermined position against the upper rotatable disc, and a formed plug closing the other end of the hollow cylinder.

2. A dispensing container according to claim 1 in which the annular flange tapers outwardly and downwardly to a relatively thin end region and the thin end region is hooked radially outward to engage intimately into the inner surface of the hollow cylinder.

3. A dispensing container according to claim 1 in which the rotatable disc has means positioned along a diameter thereof and extending upwardly to permit rotation of the rotatable disc to bring the aperture of the rotatable disc into and out of registry with the aperture of the lower disc.

4. A dispensing container according to claim 1 in which the rotatable disc is apertured at two regions, the area of one apertured region being larger than that of the other, an upwardly extending means positioned along a diameter of the rotatable disc permits rotation thereof selectively to bring into or out of registry with the aperture of the lower disc one of the two apertured regions of the rotatable disc, the two apertured regions of the rotatable disc being centered about the respective radius perpendicular to either side of the diameter at which the upwardly extending means is positioned.

5. A dispensing container according to claim 1 in which the formed plug is in the form of a second hollow cylinder closed at its bottom and having a plurality of steps, the lowermost step having a diameter of a magnitude between those of the inner and outer diameters of the cylinder and at least the step adjacent to the lowermost step is a force fit into the interior of the cylinder.

6. A dispensing container according to claim 1 in which the formed plug is a second hollow cylinder closed at its bottom and having three stepped regions, the lowermost stepped region has a diameter in excess of the internal diameter of the cylinder, the diameter of the intermediate stepped region is a force fit into the cylinder, and the upper stepped region tapers downwardly to a diameter equal substantially to that of the intermediate stepped region.

7. A dispensing container according to claim 6 in which a plurality of rivets spaced circumferentially on the cylinder surface interconnects one of the two upper stepped regions of the plug and the radially adjacent region of the cylinder.

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