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MEASURING CAP CONSTRUCTION FOR RECEPTACLE DISPENSERS

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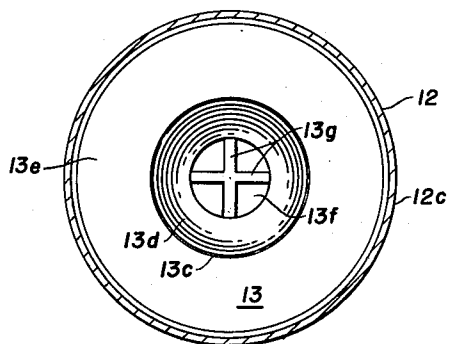


Fig. 3

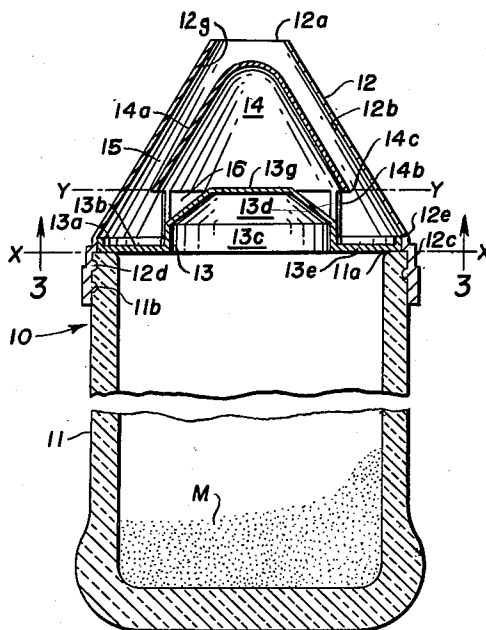


Fig. 1

Fig. 4

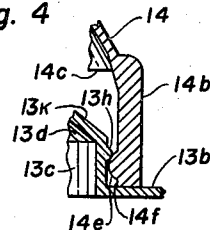


Fig. 5

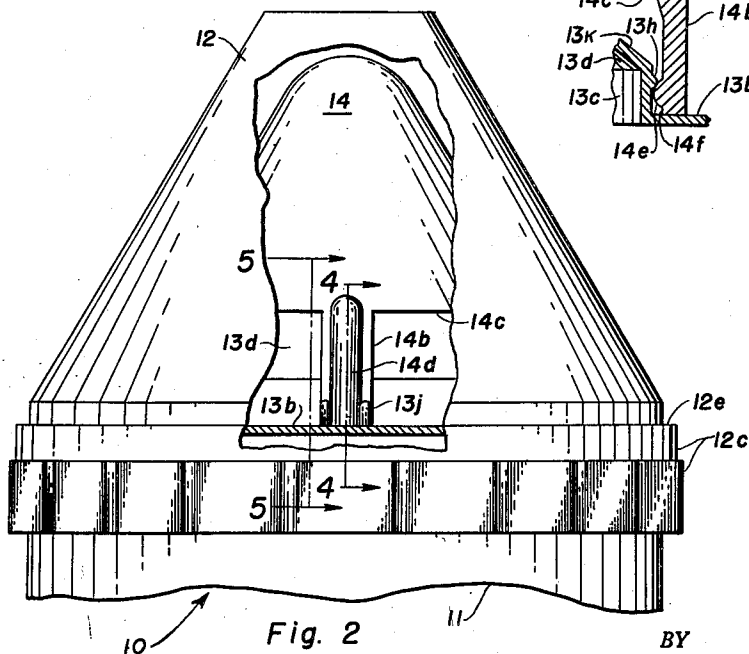
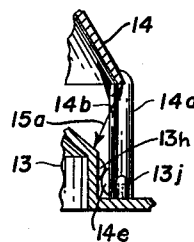


Fig. 2

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MEASURING CAP CONSTRUCTION FOR RECEPTACLE DISPENSERS

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This invention relates to dispensing receptacles for fluid material, and more particularly is directed to improved cover constructions of receptacles for dispensing from a bulk contents thereof predetermined or measured quantities of dry fluid material, such for example as, sugar and the like in granulated or pulverized state.

Among the objects of the invention is to generally improve devices of the character described, which shall comprise few and simple parts that are readily assembled to form a rugged yet attractively appearing structure that will dispense substantially precise measured quantities of a dry fluid material, as for example, granular sugar, contained in a receptacle, which device shall be readily dissembled for cleaning and refilling, which shall be constructed to reduce to a minimum clogging by relatively large lumps that may be formed by the material being dispensed, which shall be relatively cheap to manufacture by molding from plastic resinous material, which shall be capable of retaining an effective serviceable condition for a long period of time with minimum attention and which shall be practical and efficient to a high degree in use.

Other objects of the invention will in part be obvious and in part hereinafter pointed out. The invention accordingly consists of features of constructions, combination of elements, arrangement of parts which will be exemplified in the construction hereinafter described and of which the scope of application will be indicated in the following claims.

In the accompanying drawings in which are various possible illustrated embodiments of this invention:

Fig. 1 is a vertical cross-sectional view of a receptacle-dispenser comprising a container for fluid granulated or powdered material, such as sugar, fitted with an improved cap construction embodying the invention.

Fig. 2 is an enlarged elevational view of the improved cap construction mounted on the container, partly broken away to show the interior construction of the measuring cup element.

Fig. 3 is a cross-sectional view taken on line 3-3 in Fig. 1 showing the central circular opening and sieve cross elements of the partitioning disc member, and

Figs. 4 and 5 are cross-sectional views taken on lines 4-4 and 5-5, respectively, in Fig. 2 showing details of construction of the interlocking anchorage of the cup element standard with the partitioning disc member.

Referring in detail to the drawing, 10 denotes

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a receptacle-dispenser such as may be used in the household and restaurants for conveniently serving granulated sugar or other dry fluids in predetermined measured quantities constructed to embody the invention.

Said receptacle dispenser 10, as seen from Figs. 1 and 2, may comprise a container 11 here shown of circular cross section, the contents of which provide a bulk supply of granular material M which is to be poured in desired measured quantities therefrom through central opening 12a terminating conical shaped discharge funnel or spout 12b of an improved cap construction 12 when said receptacle-dispenser 10 is inverted, that is, turned upside down from the position shown in Fig. 1.

Base end of the discharge funnel 12b opposite said opening 12a may be provided with an integrally formed annular flange 12c having an interior surface which may be formed with a suitable coupling portion, such as screw threads 12d that are made to releasable fit coupling grooves 11b in outer surface of open end 11a of said container 11.

Said cap 12 on the interior surface thereof inwardly from flange 12c may be formed with a shallow stepped shoulder 12e of slightly less diameter than the interior size of flange 12c, said stepped shoulder 12e providing a seat for a relatively thin partitioning disc member 13, the latter having a thickened peripheral edge 13a upstanding from a top surface 13b thereof, said edge 13a being made to neatly fit and seat on said stepped shoulder 12e as is clear from Figs. 1 and 2. Member 13 has a centrally positioned auxiliary pouring portion 13c which also upstands from said disc surface 13b and may be in the form of an integral hollow truncated conical structure 13d projecting normally upward as seen in Fig. 1 from a base wall 13e.

Said pouring portion 13c may have sector shaped through-passages 13f which terminate said truncated conical structure 13d, said passages 13f, as shown in Fig. 3 being formed by sieve cross element 13g dividing the circular orifice into suitable sized sectors.

Mounted on disc member 13 midway between conical structure 13d and the funnel there is interposed a measuring cup element 14 which may also be conical shaped having substantially the same slope or slant as the spout 12b so that the inner surface 12g of the latter and the outer surface 14a of said cup element 14 are disposed in substantially parallel alignment to provide a conically shaped passageway 15 for spout 12b

that communicates with central opening 12a. It has been found that the width of said passageway 15 as indicated at 15a, may be made slightly less than the radius of said opening 12a and effective size of through-passages 13f, for giving a satisfactory free flow.

Where cup element 14 has a measuring capacity of one and three quarters teaspoonfuls for finally dispensing from spout 12b one teaspoonful, the base angle slant of spout 12b and cup element 14 made approximately 55° with respect to level plane X—X of container top open end which may be about two inches in diameter, and the width of said passageway 15 made about one quarter of an inch, container 11 having a content capacity of about sixteen ounces of granulated sugar or other like dry fluid material, have been found convenient for general use requirements.

Cup element 14 may be releasably secured in a firm position on uniformly spaced appendages or standards 14b made integrally to extend in parallel alignment from peripheral edge 14c of cup element 14 as shown in Figs. 1 and 2, said standards 14b each having a reinforcing rib 14d extending the length thereof on the exterior side, and a boss 14e extending from terminal foot 14f of each standard 14b on the interior side thereof to provide a toe engaging means when sprung over projecting ledge 13h provided on the external surface of auxiliary pouring portion 13c as is clear from Figs. 4 and 5.

In order that the toe sprung connecting engagement of the boss 14e with ledge 13h forms an interlocking snap-in and snap-out anchorage, there may be provided abutment means integrally carried to upstand from disc member 13 adjacent the path of the interlocking positioning of the standard 14b on disc member 13, said abutment means and said ledge 13h being effective to retain said interconnection and from which anchorage the foot 14f may be readily disconnected for dismounting the cup element 14 from the disc member 13, said abutment means as here shown, may each be a pair of spaced apart teats 13j that serve as a stop against which portions of the terminal foot 14f straddling rib 14d contact to provide interlockment of said interconnected anchor as is clear from Figs. 1, 4 and 5.

With the cup element 14 in effectively mounted assembled position on disc member 13, a spillway 16 is provided between the exterior side 13k of said conical structure 13d and interior side of cup element 14, the perpendicular distance between said exterior side 13k and the rim edge of cup element 14 may be at least as great as the width of said passageway 15, that is, in the size above described about one quarter of an inch, the base angle slope of said exterior side 13k being about 45° so that spillway 16 is provided with a relative large inlet area from cup element 14.

As seen from Fig. 1 through-passages 13f may align substantially with the plane of cup rim edge 14c to lie in level plane Y—Y. Said rim edge 14c extending to substantially shield conical structure 13d as shown in Fig. 1.

After constructing the parts as above described, preferably of resinous plastic material in a well known manner, as for example, injection molding, cap construction 12 may be readily assembled by first mounting cup element 14 on partitioning disc member 13 by springing bosses 14e of standards 14b into effective engagement under said projecting ledges 13h and against teats 13j. Cup element 14 and disc member 13 will then be united

and disc member 13 when inserted into position against stepped shoulder 12e of spout 12b completes the assembly of cap construction 12. If desired peripheral edge 13a of disc member 13 may be provided on its outer face with a suitable wedging means which removably secures the disc 13 and spout 12b in frictional assembly.

The assembled cap construction 12 may now be secured to the open end of container 11 previously filled with dry fluid material M by screwing threads 12d into said grooves 11b until the bottom side of disc 13 is securely clamped against said container open end 11a, as is clear from Fig. 1.

The utility of the invention will now be apparent. With the material M to be dispensed placed in container 11 and the cap construction 12 mounted in place, as described above, receptacle-dispenser 10 may be inverted, approximately 180° from the normal position in Fig. 1, to measure a quantity of material M to be dispensed, that is, upon said inversion, material M pours through each of the sector-shaped through-passages 13f until cup element 14 is filled with approximately 1 3/4 teaspoonfuls of material M. Now on tilting receptacle-dispenser 10 back to said normal position, some of the material in cup element 14 will flow back through passages 13f into the container 11 while the remainder, more than a teaspoonful, will be deflected into spillway 16 and will be lodged on disc member 13 below peripheral edge 14c of cup element 14, below plane Y—Y. Upon again inverting receptacle-dispenser 10, about a desired measured teaspoonful of material M passes through passageway 15 and out of central opening 12a, while a small amount drops back into cup element 14 simultaneously with again measuring a quantity of material M passing through passages 13f to fill cup element 14. Thus, measuring cycles are successively completed each time dispenser 10 is returned to said normal position, a measured quantity of material M again passing through spillway 16, as above described, in readiness to provide for the next teaspoonful of material M upon again inverting receptacle-dispenser 10, as above described.

Should material M become lumpy, sieve element 13g will restrict passage of lumps into cup element 14 during said measuring operation to a size that will readily pass through spillway 16 and passageway 15 without obstructing the same, since the sizes of the latter are made to be slightly in excess of the effective size of sector-shaped passages 13f.

When it is required to refill container 11 with material M, the cap construction 12 may be readily removed by unscrewing the same at which time, if it is necessary, the various parts thereof may be disassembled and cleaned. Said disassembling is readily accomplished by removing the disc member 13 with cup element 14 from its seated position in spout 12b and if necessary the cup element 14 may be detached from the disc member 13 by springing bosses 14e from engagement with ledges 13h as retained by teats 13j, as is clear from Figs. 2, 4 and 5 and from the manner of assembly, above described.

It should be noted that any lumpy material passing through or back and forth with respect to sector-shaped passages 13f in manipulation of the dispenser 10 when measuring quantities of material therewith will be subjected to a grinding or disintegrating action which will serve as a size reducing means therefor and will facilitate the passage thereof through spillway 16 and passage 15.

It will thus be seen that there is provided a receptacle-dispenser construction in which the several objects of the invention are achieved and which are well adapted to meet the conditions of practical use.

As various possible embodiments of the invention may be made in the above invention and as various changes may be made in the embodiment above set forth, it is to be understood that all matters herein set forth and shown in the accompanying drawing are to be interpreted as illustrative and not in a limiting sense.

Having thus described my invention I claim as new and desire to secure by Letters Patent:

1. In a portable receptacle-dispenser for delivering measured dry fluid material, an interlocking anchorage for elongated appendages of a measuring cup with a partitioning disc member formed with pouring structure integrally formed to upstand on a mid-portion of said disc member in the direction of said measuring cup, a reinforcing rib extending along the length of each appendage, a toe projecting to terminate each appendage, and integrally formed portions on said disc member complementing each of said toes and ribs for providing a releasable interlockment of said anchorage with the appendages in predetermined positions to the disc member.

2. In a portable-receptacle dispenser for delivering measured quantities of dry, fluid material, a container for holding a supply of said fluid material having an open end, a cone-shaped cap funnel terminating in a central outlet opening mounted on said container over said open end, a partitioning disc member carried by said cap funnel interposed to extend over said container open end, a hollow truncated conical shaped auxiliary pouring structure integrally formed to upstand centrally on said disc member to project in the direction of said cap funnel, a conical shaped measuring cup interposed between the auxiliary pouring structure and said cap funnel, spaced apart appendages demountably supporting said measuring cup in a spaced position from said auxiliary pouring structure to provide a spillway therebetween, an interlocking anchorage detachably securing each of the ends of said appendages in snap-in and snap-out relation with said disc member, stop elements upstanding from said disc member spaced from said auxiliary pouring struc-

ture for retaining said interlocking anchorage against disconnection from said snap-in relation and against relative movement between the disc member and measuring cup, said auxiliary pouring structure being formed with an integral sieve cross element lying in a plane forming multiple openings of predetermined size, said measuring cup having a peripheral end edge disposed to be substantially in said plane, each of said last mentioned openings having an effective dimensional diameter substantially equivalent to the width of said spillway.

3. In a portable receptacle-dispenser for delivering measured quantities of dry, fluid material, a plastic molded partitioning disc member having a base wall for interposing between a cap funnel and an open end of a container on which said cap funnel is mounted, a truncated conical shaped through-pouring structure integrally formed to upstand centrally on a mid portion of said disc member base wall, a measuring cup demountably supported by spaced apart appendages in a position spaced from said disc member in axial alignment with said through-pouring structure, said through-pouring structure having a screened passage formed of sieve cross elements to provide multiple sector openings of predetermined areas, ledges formed on said through-pouring structure corresponding in number and spaced to register with a toe projecting from each appendage, a reinforcing rib extending along an exterior side of each appendage, and a pair of stop elements upstanding from said disc member spaced apart to straddle said rib for each of the appendages when assembled therewith to provide with said ledge and toe a snap-in and snap-out anchorage to releasably interlock said appendages in a predetermined position with the disc member.

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