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SUGAR DISPENSER AND STRAINER

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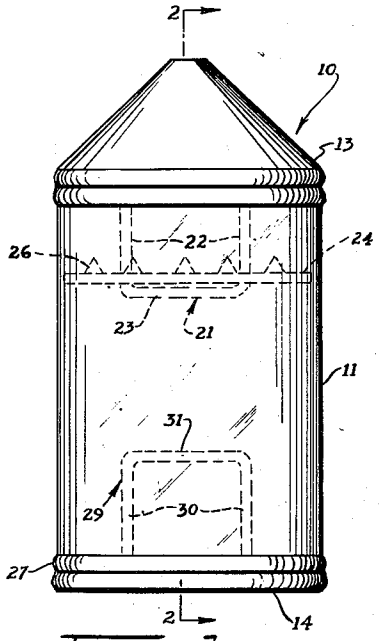


Fig. 1.

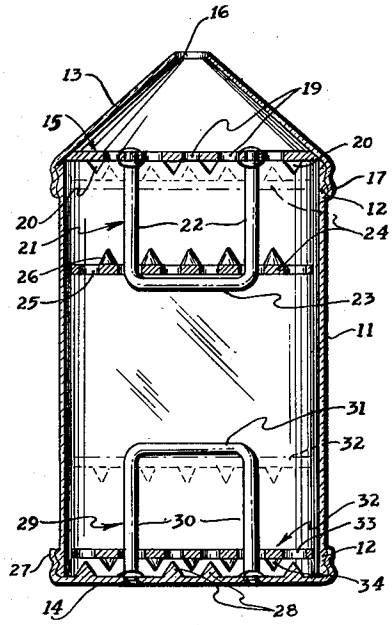


Fig. 2.

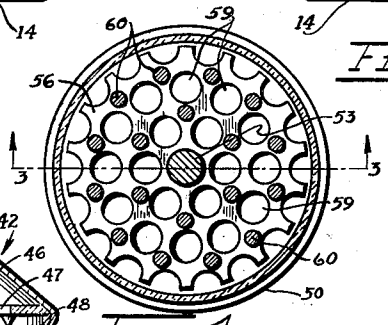


Fig. 4.

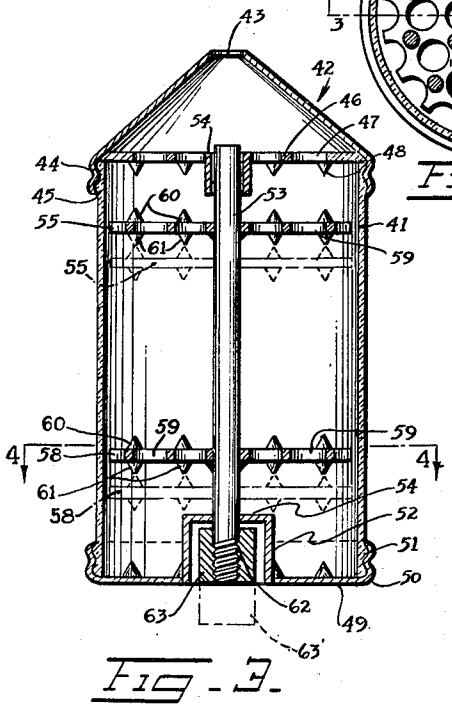


Fig. 3.

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SUGAR DISPENSER AND STRAINER

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8 Claims. (Cl. 241—169)

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This invention relates to new and useful improvements in spills or dispensers for granulated material such as sugar. The type of dispenser to which the invention is well adapted to be applied is the familiar one wherein the body of the dispenser is substantially cylindrical and has a flat bottom, and there is a conical upper portion terminating at its top in a spill opening through which the sugar or the like is dispensed when the dispenser is inverted.

The principal object of the invention is to provide a novel and valuable means within the dispenser for insuring that when the latter is inverted for spill dispensing, the spill opening will not then be clogged by lumps of the granular material to be dispensed. As is the common experience, a store of sugar in a dispenser or other container becomes lumped due to moisture absorption and the pressure of its own weight.

A further object is to provide an arrangement of parts such that said means functions for breaking down lumps whenever the dispenser is handled in the usual way for spill dispensing.

Another object is to provide a lump breaking means as above with which is associated a straining or sifting means, and which as to its lump breaking and straining or sifting parts is contained wholly within the spill dispenser.

A further object is to provide said means so constituted that the parts last referred to operate entirely within the spill dispenser.

Still a further object is to provide a means as above which is of simple and rugged construction, yet easy to manufacture and hence inexpensive to fabricate.

In attaining the objects of the invention, the lump breaking and straining or sifting means is preferably employed in connection with a spill dispenser of the conventional type, that is, one including a cylindrical closed body with readily removable top or bottom members, and with one or both of these members carrying devices for mounting and guiding the lump breaking and straining or sifting elements for movement in their intended fields of operation within the dispenser pursuant to the invention.

In one preferred form of the invention, said top and bottom members carry substantially U-shaped members, the legs of which extend lengthwisely of the dispenser, and slidable on these legs are strainer or sifter members. Said members are preferably disc-shaped, perforated at a plurality of points, and having projections at locations interspersed among the perforations. When the sugar spill is inverted, the slidable discs

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are actuated by gravity to fall down along the legs of the U's, and when the spill is again placed upright they again traverse the legs of the U's. Use of the spill, therefore, is adapted to cause a constantly changing relation between the discs and their mountings, thus to agitate and break up lumps in the sugar contained in the spill to provide unclumped sugar granules, and to strain or sift the latter from any lumps not broken up by said projections or the crushing action of the discs.

In another preferred form of the invention, a plurality of such discs are secured at intervals along a rod which is slidable relative to another disc secured in place inside the top cover of the spill. The latter disc assists a specially constructed bottom cover of the spill in slidably mounting the rod. Said cover is formed with an upwardly extending chamber entered by the bottom portion of the rod, where the rod carries a weight.

Upon lifting the spill preparatory to using the same, the weight causes the rod to move in a direction to send all the discs on the rod down through the sugar, and upon replacing the spill upright on its bottom, said discs are again forced through the sugar.

According to still another preferred form of the invention, a pair of cooperating discs, with perforations and projections as above, act cojointly pursuant to the invention; one of these discs being secured to a preferably readily removable bottom part for the spill or dispenser and the other being revolvable along a rod fixedly upstanding from said bottom part. In this arrangement, each time the dispenser is placed upright on its bottom (as after spill dispensing, thereby to send the last-mentioned disc by its own weight to the end of the rod remote from said bottom cover) said last-mentioned disc, this time also by its own weight, descends toward the bottom of the dispenser, to break up lumps of the material in the latter.

The projections on the disc are preferably conical ones having fairly sharp points.

For further comprehension of the invention, and of the objects and advantages thereof, reference will be had to the following description and accompanying drawing, and to the appended claims in which the various novel features of the invention are more particularly set forth.

In the accompanying drawing forming a material part of this disclosure:

Fig. 1 is a side elevational view of one of the preferred forms of the invention.

Fig. 2 is a section taken on the line 2—2 of Fig. 1.

Fig. 3 is a view similar to Fig. 2, but showing another of the preferred forms, of the invention.

Fig. 4 is a transverse section, taken on the line 4—4 of Fig. 3.

Referring first in detail to the arrangement illustrated in Figs. 1 and 2, the improved sugar spill 10 is here shown as comprising a substantially cylindrical body 11 of glass, plastic or other transparent material. The body 11 is formed at either end with the circumferential threads 12 for the ready attachment of a top cover 13 and the bottom cover 14.

The top cover 13 has, conventionally, a frusto-conical shell formed with the usual upper spill opening 16 and the threads 17 for engagement with the threads 12 of the body 11.

A circular disc 15, secured to and within the top cover 13 at the base of the main conical portion thereof by solder or by other means so as completely to close and overlie the top opening of the body 11, is formed with a plurality of like perforations 19 uniformly placed over the disc, and interspersed at locations adjacent said perforations, said disc is provided with conical projections 20 which project downwardly from its upper surface.

A U-shaped bracket 21 is secured to the disc 15 and extends downwardly therefrom into body 11, the free ends of the legs 22 of the bracket being riveted or upset relative to said disc; the legs 22 being joined at their lower ends by the bight portion 23 of the U-shaped bracket 29. A floating circular disc 24 is slidably mounted on the legs 22 of bracket 21, and this disc has perforations 25 and conical projections 26, these last directed toward disc 15. It will be noted that projections 26 are staggered relative to projections 20 so that as the disc 24 is sliding along the legs 21 approaches disc 18, the tips of the projections 20 of the disc 15 may come very close to the disc 24 and the tips of the projections 26 may come very close to the disc 15.

The bottom cover 14 is a shallow cup member having an upstanding skirt or cylindrical side wall formed with threads at 27 for engagement with the threads 12 at the bottom of the body 11. The upper or inside face of the bottom floor wall of cup 14 is provided with the substantially conical projections 28. Secured to the cup 14 and extending upwardly therefrom is a second inverted U-shaped bracket 29, the legs 30 of which have their lower or free ends riveted or upset relative to the cup 14; the legs 30 being joined at their upper ends by the bight portion 31 of the U-shaped bracket 29. The floating circular disc 32 is slidably mounted on the legs 30 of the bracket 29, and this disc has perforations 33 and conical projections 34, these projections, also, being staggered relative to the projections 28.

In operation, when the sugar spill is inverted, the floating discs 24 and 32 will move by gravity from the positions illustrated in Fig. 2 in full lines to the positions shown in broken lines in that view, said discs then acting as lump breakers and also as strainers or sifters for free granules. Constant sliding of the discs 24 and 32 through the body of the sugar contained in body 11 will operate continually to break up lumps of sugar which may have formed. The projections 20 and 26 will coact, and at the same time the projections 28 and 34 will coact, and thus likewise operate to break up lumps.

In the modified form of the invention shown

in Figs. 3 and 4, the improved sugar spill is here shown as including a substantially cylindrical body 41 of glass, plastic or other transparent material, topped by a cover 42 of frusto-conical shape having a spill opening 43. The cover 42 has the threaded portion 44 adapted removably to engage the threads 45 on body 41.

Secured within the upper cover 42 is a circular disc 46, extending across and closing the upper end of the cylindrical body 41. The disc 46 is provided with perforations 47 and downwardly extending conical projections 48.

The bottom cover 49 is a shallow cup, having an upstanding skirt or cylindrical side wall formed with the threads 50 for engagement with the threads 51 on the body 41.

At its central portion the cup 49 is provided with an upwardly extending open-bottomed chamber 52, through the roof wall of which chamber the lower end of a rod 53 is slidably guided; the upper end of said rod being guided in the sleeve 54 carried by and depending from the disc 46.

Within the body 41 are a plurality of circular discs 55 and 58, these secured to the rod 53 at spaced points therealong. Each of said discs is provided with perforations 59 and intervening conical projections, those marked 60 projecting upwardly and those marked 61 projecting downwardly from their respective discs. In the present case, the projections on one disc are aligned with the projections which from an adjacent disc are directed toward the former disc.

With the dispenser upright, as in Fig. 3, the lower end of the rod 53, which is threaded at 62, is contained in the chamber 52; and to such threaded part of the rod a weight 63 is secured, by means of an internal thread in the weight. The weight 63, which desirably is cylindrical, as is the interior of the chamber 52, has a flat bottom, so that with the dispenser upright the weight will be completely housed in the chamber 52, and, the position of the weight as it rests on its said flat bottom, determines the elevation of the rod 53 in the container.

To restrain down movement of the rod 53 in the body 41 to a predetermined extent, certain of the projections 61 depending from the lowermost disc 58 are relied on to accomplish this, by engagement of the points of these projections with the upper surface of the roof wall of the chamber 52, when, on lifting the dispenser, the weight 63 is free to drop to its broken line position 63'. The sleeve 54 is of a length such that after the weight 63 has dropped all the way, permitted as above, the sleeve still remains in engagement with the upper end of the rod.

While I have illustrated and described the preferred embodiments of my invention, it is to be understood that I do not limit myself to the precise constructions herein disclosed and the right is reserved to all changes and modifications coming within the scope of the invention as defined in the appended claims.

Having thus described my invention, what I claim as new, and desire to secure by United States Letters Patent is:

1. In a sugar spill, in combination with a hollow body portion having a spill opening, an interior means including a part movable inside the spill, means for guiding said part to sliding movement, said part moving in response to gravity toward either end of the spill when that end is lowered below the other end of the spill, said part shaped to break up sugar lumps when strik-

ing same incidental to movement of said part in the spill, said spill also having a strainer member below its spill opening and above the field of operation of said movable part, said body portion being of substantially circular cross section opposite the field of operation of said movable part, said movable part being a substantially circular disc, said guiding means extending vertically when the spill rests on its bottom, and said disc having an opening engaging said guiding means, the mutually engaging portions of the guiding means and of said part being shaped and arranged to hold said part always to a disposition substantially perpendicular to direction of extension of the guiding means, said guiding means being the legs of a U-shaped bracket fixed in the spill.

2. In a sugar spill, in combination with a hollow body portion having a spill opening, an interior means including a part movable inside the spill, and means for guiding said part to sliding movement, said part moving in response to gravity toward either end of the spill when that end is lowered below the other end of the spill, said guiding means being a fixed upstanding rod secured at its lower end to a portion of the spill near its bottom, said part being perforated and having downwardly extending projections, the bottom of the spill having upwardly extending projections.

3. A sugar dispenser, comprising a container body having a pouring spout on its upper end, a rod slidable through the bottom of the dispenser body, said bottom having an upstanding chamber and said rod having a weight normally housed therein, and a combined sifter disc and lump break mounted on the rod and slidable in the body with the rod, said weight being adapted to move the rod and disc downwardly when the dispenser body is lifted from a table on which it is supported.

4. In a sugar spill having a cylindrical body open at its top and bottom ends with a conical shaped top cover closing the open top end and formed with an upper spill opening and a bottom cover closing the bottom opening, means within the body for breaking up lumps which form in the sugar contained in the body, comprising a circular disc mounted within the top cover to extend across the open top end of the body and formed with a plurality of perforations, a plurality of projections formed on the bottom face of said disc between said perforations, a plurality of projections formed on the inside face of the bottom cap, a pair of superimposed discs vertically slidably mounted within the body and formed with perforations, projections formed on the top face of the topmost of said pair of discs to cooperate with the projections formed on the bottom face of said first-mentioned disc, and projections formed on the bottom face of the bottommost of said pair of discs to cooperate with the projections formed on the inside face of said bottom cover.

5. In a sugar spill having a cylindrical body open at its top and bottom ends with a conical shaped top cover closing the open top end and formed with an upper spill opening and a bottom cover closing the bottom opening, means within the body for breaking up lumps which form in the sugar contained in the body, comprising a circular disc mounted within the top cover to extend across the open top end of the body and formed with a plurality of perforations, a plurality of projections formed on the bottom face of said disc between said perforations, a plurality of projections formed on the inside face of the bottom cap, a pair of superimposed discs vertically slidably mounted within the body and formed with perforations, projections formed on the top face of the topmost of said pair of discs to cooperate with the projections formed on the bottom face of said first-mentioned disc, and projections formed on the bottom face of the bottommost of said pair of discs to cooperate with the projections formed on the inside face of said bottom cover, said projections being conical shaped.

6. In a sugar spill having a cylindrical body open at its top and bottom ends with a conical shaped top cover closing the open top end and formed with an upper spill opening and a bottom cover closing the bottom opening, means within the body for breaking up lumps which form in the sugar contained in the body, comprising a circular disc mounted within the top cover to extend across the open top end of the body and formed with a plurality of perforations, a plurality of projections formed on the bottom face of said disc between said perforations, a plurality of projections formed on the inside face of the bottom cap, a pair of superimposed discs vertically slidably mounted within the body and formed with perforations, projections formed on the top face of the topmost of said pair of discs to cooperate with the projections formed on the bottom face of said first-mentioned disc, and projections formed on the bottom face of the bottommost of said pair of discs to cooperate with the projections formed on the inside face of said bottom cover, said projections of said pair of discs being offset with relation to the projections of said first-mentioned disc and the bottom cover so that the projections will be interengaged when each disc of said pair of discs moves toward its respective first-mentioned disc or the bottom wall.

7. In a sugar spill having a cylindrical body open at its top and bottom ends with a conical shaped top cover closing the open top end and formed with an upper spill opening and a bottom cover closing the bottom opening, means within the body for breaking up lumps which form in the sugar contained in the body, comprising a circular disc mounted within the top cover to extend across the open top end of the body and formed with a plurality of perforations, a plurality of projections formed on the bottom face of said disc between said perforations, a plurality of projections formed on the inside face of the bottom cap, a pair of superimposed discs vertically slidably mounted within the body and formed with perforations, projections formed on the top face of the topmost of said pair of discs to cooperate with the projections formed on the bottom face of said first-mentioned disc, and projections formed on the bottom face of the bottommost of said pair of discs to cooperate with the projections formed on the inside face of said bottom cover, and means within the body for guiding vertical sliding movements of said pair of discs within the body.

8. In a sugar spill having a cylindrical body open at its top and bottom ends with a conical shaped top cover closing the open top end and formed with an upper spill opening and a bottom cover closing the bottom opening, means within the body for breaking up lumps which form in the sugar contained in the body, comprising a circular disc mounted within the top

cover to extend across the open top end of the body and formed with a plurality of perforations, a plurality of projections formed on the bottom face of said disc between said perforations, a plurality of projections formed on the inside face of the bottom cap, a pair of superimposed discs vertically slidably mounted within the body and formed with perforations, projections formed on the top face of the topmost of said pair of discs to cooperate with the projections formed on the bottom face of said first-mentioned disc, and projections formed on the bottom face of the bottommost of said pair of discs to cooperate with the projections formed on the inside face of said bottom cover, a U-shaped member depended vertically into the top of the body and having the free ends of its side arms attached to the bottom face of said first-mentioned disc, and an inverted U-shaped member extended vertically into the bottom of the body and having the free ends of its side arms attached to the bottom cover, each of said discs of said pair of discs being formed with spaced holes through which the side arms of one of said U-shaped members slidably extends for guiding vertical sliding movements of said pair of discs.

EDWARD PATOE.

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