

(12)

EUROPEAN PATENT APPLICATION

(21) Application number: 88200665.3

(51) Int. Cl. 4: **A47F 1/035**

(22) Date of filing: 07.04.88

(30) Priority: 07.04.87 DK 1758/87

(43) Date of publication of application:
12.10.88 Bulletin 88/41

(34) Designated Contracting States:
AT BE CH DE ES FR GB GR IT LI NL SE

(71) Applicant: **Frederiksen, Lars Chresten**
Age Bergs Vej 37A
DK-8240 Risskov(DK)

Applicant: **Grilmer, Poul Anderskov**
Ostergardsvej 253
DK-8355 Solbjerg(DK)

(72) Inventor: **Frederiksen, Lars Chresten**
Age Bergs Vej 37A
DK-8240 Risskov(DK)
Inventor: **Grilmer, Poul Anderskov**
Ostergardsvej 253
DK-8355 Solbjerg(DK)

(74) Representative: **Smulders, Theodorus A.H.J.**
et al
Vereenigde Octrooibureaux Nieuwe Parklaan
107
NL-2587 BP 's-Gravenhage(NL)

(54) **Dispenser for granular sweets, particularly for use in self-service stores.**

(57) In self-service stores it is an increasingly common practice that the customers can help themselves to desired quantities of certain coarsely granular sweets from respective dispensers, whereby the goods may be collected e.g. in a common bag, which is then weighed and price marked. The taking out of such goods from open containers is connected with hygienic and other problems. Known are containers having bottom sluice systems for special products such as peanuts, but these systems are not applicable for both more and less coarse products, e.g. for particle sizes between 3 mm and 3 cm. The invention provides for such a universally applicable dispenser, the sluice system of which comprises a simple slide frame (14) which is manually displaceable from a receiver position towards a delivery position for enabling the material to be dispensed in a graduated manner. This sluicing principle is known from powder dispensers, in which the slide frame is moved in the horizontal direction, whereas for the invention it is important that the

bottom area (6, 4) of the container (2) and the moving direction of the slide frame (14) be pronounced inclined upwardly from the receiver position of the frame (14) towards its delivery position, as it is hereby possible to effect dispensing even of small particles in a well controlled graduated manner.

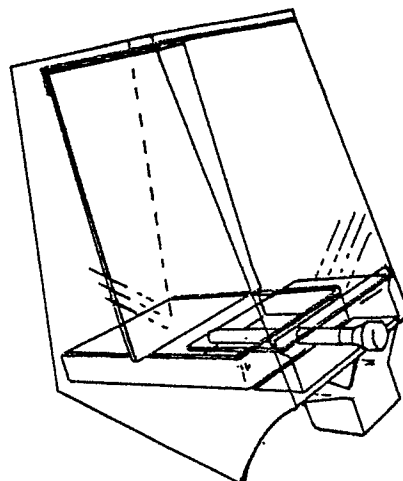


FIG. 1

Dispenser for granular sweets, particularly for use in self-service stores

The present invention relates to a dispenser for coarsely granular confectioneries, also including dried fruit such as abricots as well as dragée by way of example, i.e. for dispensing granulates preferably within the size range 2 mm to 5 cm, the dispenser having a supply container and a sluice system that can be activated from the outside for dispensing the granulate from the container to a dispenser opening.

The invention is especially intended for use in self-service stores where the customers can help themselves to required quantities of the goods in question, such dispensers being arranged e.g. in a battery of dispensers containing different granulate goods which at a standard price can be collected in e.g. a bag, which, upon completion of its filling, can be weighed and price tagged.

A primitive form of dispensers are made up of open containers with associated spoons for taking out the products. Such dispensers do not consider the most elementary hygienic demands, however, and are already for this reason not permissible in self-service stores. A variety of closed dispensers for handing out special products like peanuts and confectionery balls have been developed, but with these it is normally a question of dispensing a quantity by volume and not a large or small quantity graduated in accordance with the customer's requirement.

For powders dispensers consisting of a container with a bottom outlet are known, underneath which a horizontally displaceable sluice frame is placed. This frame can slide along a fixed bottom plate such that in an inserted mode it can be filled with material from the bottom outlet and thereafter when being pulled or pushed from the receiving area out over an open dispensing area, can carry along the actual portion contained in the frame, whereby the portion is brought to fall down for delivery from the dispenser. At its rear end the frame has a rearwardly projecting top plate which prevents the falling down of material from the container when the frame is moved forwardly. Admittedly the material is hereby dispensed in portions, but by manual movements of the sliding frame it is possible to limit its displacement more or less, thus also allowing the taking out of desired partial portions. This principle of dispensing is advantageous in several ways, but it has been ascertained that it is not well suited for the dispensing of coarsely granular products as here considered, since noticeable squeezing tendencies occur, particularly not when a variable dispensing is desired.

In connection with the invention it has been found, surprisingly, that a dispensing principle well

suited for this purpose can be achieved by a rather small, but in fact significant modification of the above powder dispensing principle, viz. by arranging the bottom area of the container to be upwardly inclined as seen in the moving direction of the sliding frame towards its open position. It has been found and will be explained in further detail below - that the gravity contributes to solving those problems that have otherwise been encountered when using the "horizontal" guiding principle for the sliding frame and that the construction itself will need no alteration on the principal level, obviously apart from size adjustments as far as required.

It has even been found that a dispenser dimensioned for handling granular products as big as 3-4 cm, i.e. where the sliding frame must be correspondingly high, may well be used for dragées of only 3-4 mm, whereby in practice one only apparatus model is needed for practically all relevant types of articles, which is a great advantage as far as the production of the dispensers is concerned. On the face of it it does not sound appropriate to have e.g. dragées dispensed from an identical type of apparatus which is also used for e.g. dried abricots, but here it must be considered that it is not a matter of fixed volume dosages but of a dispensing controlled by the user, who can stop it when his demand has been fulfilled. The drawer chamber in the sliding frame may be quite large without the user in any way be induced to overdose when the apparatus contains a granulate of a small particle size. It is also important here that the bottom area is slanting as mentioned, as a "high" layer of small particles will overflow the delivery edge in a better controlled manner than when it be a horizontal layer.

The invention which is further defined in the claims, is explained in more detail in the following with reference to the drawing, in which:-

Fig. 1 is a perspective view of a dispenser according to the invention,

Fig. 2 is a lateral sectional view thereof, and

Fig. 3 is an enlarged view of a partial area thereof.

In the drawing is shown a dispenser having a container 2, which is obliquely upstanding from a likewise inclined bottom area, though the container 2 could well extend vertically upwardly from the inclined bottom area. This area comprises a foremost, upper bottom plate 4, which projects rearwardly underneath the container 2, approximately half-way of the depth dimension thereof, and a lower bottom plate 6, which, spaced underneath the upper plate 4, projects from the rear to a front edge area 8 in front of the rear edge of the upper plate

4. From this area the plate 6 continuous in a funnel portion 10, the front wall of which is constituted by a downwardly directed prolongation of the front wall, designated 12, of the container 2.

Between the planes defined by the plates 4 and 6 is mounted a slide frame element 14, which is slidably supported on the bottom plate 6 and consists of a foremost frame portion having upright rear, front and side walls, 16, 18 and 20, respectively, and a rear, lying plate portion designated 22, which projects rearwardly from the upper edge of the rear side wall 16, flush with the upper edges of the side walls 20. The rear container wall, designated 24, has its lower end or edge located just above the top side plane of the plate portion 22. Both the container 2 and the bottom area thereof is confined between opposed, parallel side walls 26.

The frame element 14 is connected with a forwardly projecting drawbar 28, which projects through a hole in the front wall of the container 2 and is provided with an outer pulling handle 30. The rear wall 16 of the frame element is provided with a hook 32 serving to hold one end of a rubber string 34, the other end of which is secured to a hook portion 36 connected with the bottom plate 6. Thus, by pulling out the handle 30, the frame element 14 will be forwardly displaceable against the action of the rubber string 34, whereby the frame element is moved out over the funnel portion 10. By this movement the rear, lying plate portion 22 of the frame element will be moved into a position underneath the lower outlet opening 38 of the container 2 so as to close this outlet until the frame element is returned into its initial position.

The basic concept of this outsluicing system is not really novel, but it is novel and entirely decisive for the invention that the bottom area of the dispenser container is inclined upwardly and forwardly in the direction of the drawing out of the frame element 14; granular products cannot be dispensed in a well controlled manner unless the bottom portion assumes an angular position of at least some 10° with the horizontal plane, and a preferred angle is some 30° or at least somewhere between 10° and 50°.

The lower edges of the side walls 26 of the container 2 are shaped or cut such that the bottom portion of the dispenser will be inclined as desired when the dispenser unit is placed on a horizontal support such as a shelf, and in the rear side of each side wall 26 there is provided a lower notch 38, which goes with a complementary holding portion adjustment the rear side of the shelf for holding the dispenser relative the user's pulling out of the actuator rod 28. Preferably this rod projects rearwardly through a hole in the front wall 18 of the frame element so as to be fixed to the rear wall 16 of this element, this rear wall via its connection with

the rearwardly extending plate portion 22 being reinforced against being bent by the pull in the drawbar 28. However, for the dosing out of the material it is impertinent whether the drawbar 28 is thus traversing the space inside the frame element 14.

The upper bottom plate 4 is supported in a liftable manner for facilitating a cleaning of the dispenser.

The foremost wall portion 18 of the frame element 14 is not strictly necessary, but it will prevent outlets of articles by incidental impacts and shutterings, and besides it will form a hygienic barrier between the contents of the container 2 and the article delivery area.

In a practical embodiment of the invention the height of the sliding frame is some 35 mm, while the spacing between the top plane of the frame and the overlying plate 4 is some 10 mm, whereby jamming problems will be avoided. The plate 4 projects some 3 cm rearwardly beyond the front wall 18 of the slidable frame 14, such that the frame 14 can be filled only partially with granular material falling down from the container 2. The length of the plate 4 is 8-9 cm, which also applies to the length of the open portion of the frame element 14. Thus, the frame element may be advanced through some 6 cm, approximately corresponding to the length of the opening 38 and of the delivery opening in front of the frame front wall 18.

Optionally the upper bottom plate 4 can extend further upwardly inclined from its free rear edge, whereby any remaining jamming risk will be eliminated. However, it has been found that this risk is overcome already by the inclined positioning of the system and by the other measures.

The inclined orientation is particularly important for making sure that the material can be dispensed at a moderate rate during the initial displacement of the sliding frame, when the dispenser with its relatively high sliding frame is used for a material of small particle size, e.g. for dragées, as sought illustrated in Fig. 3.

In Fig. 2 an inclined dotted line 40 is drawn downwardly and forwardly from the rear edge of the upper bottom plate 4, representing the front side or the angle of slide of the material as deposited on the lower bottom 6 from the container opening 38 when the sliding frame 14 is in its rear position. This line will not reach as far as to the delivery edge 8 or at least not much higher than that, and when the frame is initially pulled forwardly the foremost particle as hereby eased over the edge 8 will not cause the overlying particles in the front layer to lose their support, i.e. normally even a single particle may be dispensed in a controlled manner, this being practically impossible if the

slide is horizontally oriented. Thus the user may dispense the articles if not one by one then at least few by few as the handle 30 is pulled, such that a well controlled amount of particles can be taken out, even when the particles are small.

5

Claims

1. A dispenser device, particularly for dispensing granular sweets in self-service stores, comprising a supply container (2) and a sluice system at the bottom thereof, characterized in that the device is of the type, in which the sluice system (14, 4) comprises a sliding plate or frame (14), which is displaceable between a receiver position underneath a bottom outlet (38) of the container (2) and a delivery position above a delivery area (10), and in that the device is mounted or adapted to be supported on a horizontal or vertical carrier surface in such a manner that the moving direction of the slide frame (14) is pronounced upwardly inclined in the direction from the receiver position towards the delivery position.

10

15

20

2. A device according to claim 1, in which the sliding frame (14) has a height of the magnitude 3-4 cm and that its top edge is located in a level some 1 cm underneath the foremost edge of the bottom outlet of the container.

25

30

35

40

45

50

55

4

FIG. 1

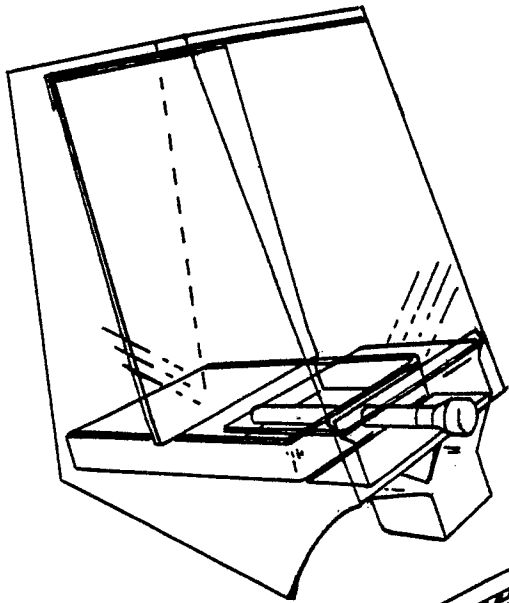


FIG. 2

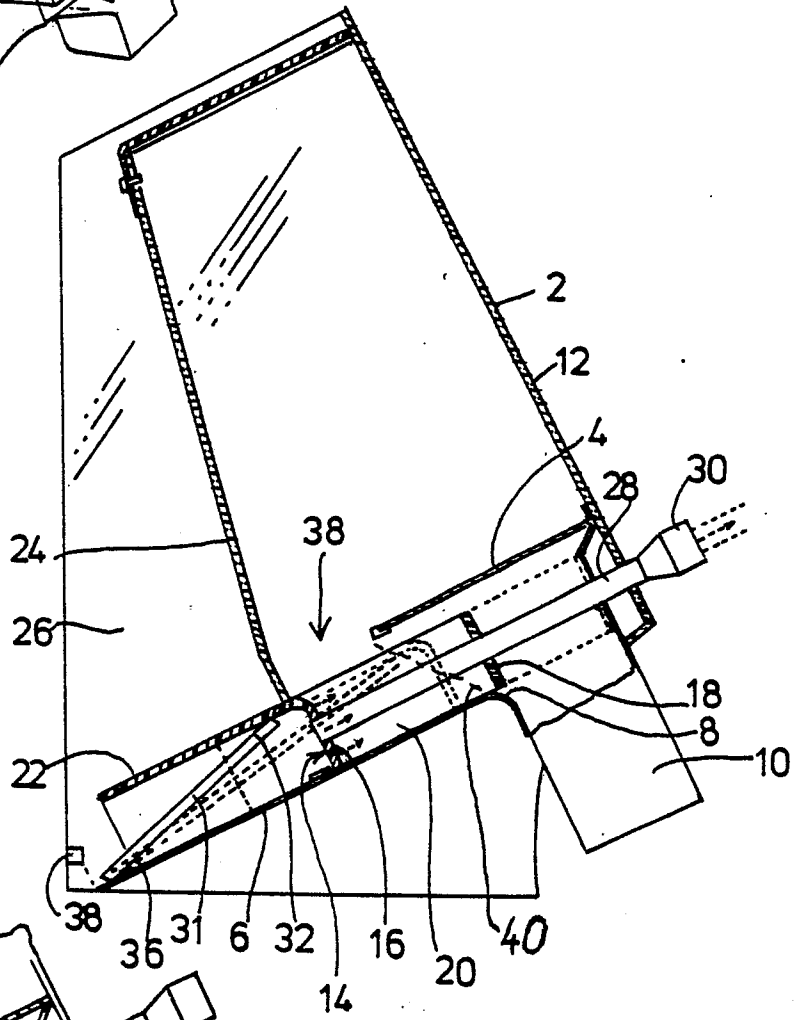
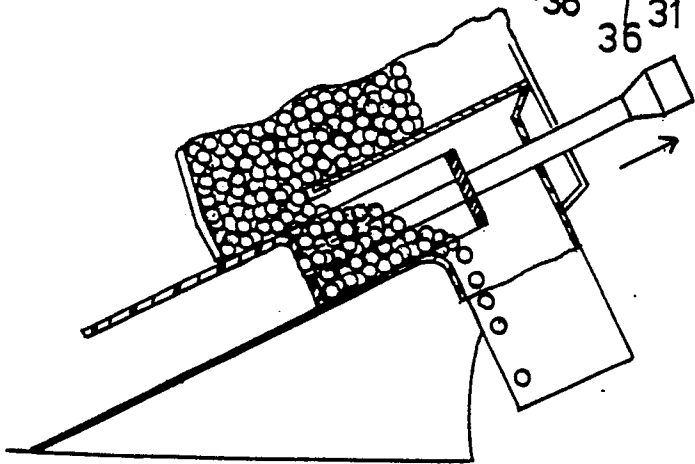


FIG. 3





European Patent
Office

EUROPEAN SEARCH REPORT

Application Number

EP 88 20 0665

DOCUMENTS CONSIDERED TO BE RELEVANT			
Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (Int. Cl. 4)
Y	GB-A- 594 472 (J. CARTNER) * Page 1, figures 1-5 * ---	1,2	A 47 F 1/035
Y	US-A-2 825 161 (M.A. MILBURN) * Column 2, line 40 - column 3, line 33; figures 3,5 * ---	1,2	
A	DE-C- 107 007 (A.M.H. HANSEN) * Whole document * ---	1	
A	BE-A- 902 575 (GB-INNO-BM) * Pages 4-7; figures 3,4 * -----	1,2	
			TECHNICAL FIELDS SEARCHED (Int. Cl.4)
			A 47 F G 07 F
The present search report has been drawn up for all claims			
Place of search THE HAGUE		Date of completion of the search 08-07-1988	Examiner OFFMANN P.A.
CATEGORY OF CITED DOCUMENTS X : particularly relevant if taken alone Y : particularly relevant if combined with another document of the same category A : technological background O : non-written disclosure P : intermediate document T : theory or principle underlying the invention E : earlier patent document, but published on, or after the filing date D : document cited in the application L : document cited for other reasons & : member of the same patent family, corresponding document			