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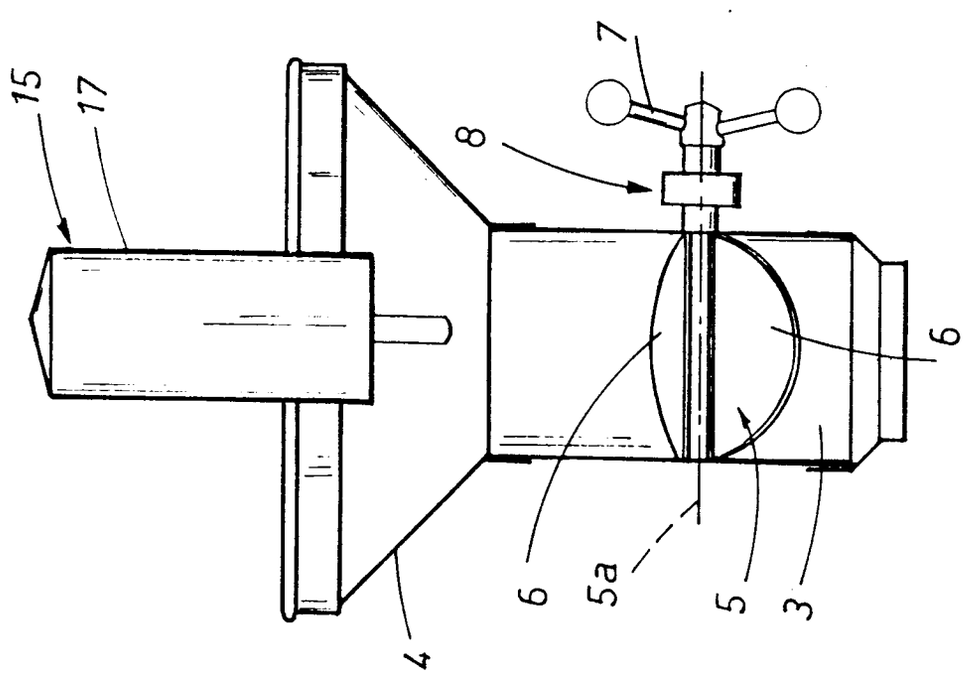
(54) An automatic dispenser for sweets.

(57) An automatic dispenser for sweets, attached to the bottom of a container (2), comprises a rotor (5) coupled to a detent mechanism (8) and rotatable about an axis (5a) normal to that of the container ; the rotor (5) is buried directly in the mass of sweets and designed to take up and dispense a given quantity with each rotation allowed by the detent.

FIG 5



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The present invention relates to an automatic dispenser for sweets, of the type designed for association with a container positioned above. The art field of automatic dispensers suitable for sweats, confectionery and similar edible products, embraces a type of device consisting substantially in a set of dispensing elements revolving in guides internally of a cylindrical chamber, of which the axis is horizontally disposed, and affording radial pockets into which the sweets drop from a container above through an opening formed in the cylindrical wall of the chamber. The sweets which fall into the pocket are released from the cylindrical chamber by manual rotation of the dispensing element.

The basic drawbacks encountered with dispensers of the type in question derive substantially from the fact that smooth operation can be guaranteed only when the sweets dispensed exhibit a stable roundish shape with no projecting corners or edges, matched to the size and geometry of the dispensing pockets; otherwise the revolving elements will be likely to jam. Disadvantageously therefore, such a dispenser cannot be utilized for sweets of random shape or of soft consistency, or those likely to deform in any way under the weight of the mass of sweets above, since this would constitute a risk of their jamming in the radial pockets of the dispensing element and preventing its operation.

Accordingly, the object of the present invention is to eliminate the drawbacks outlined above.

The stated object is realized in a dispenser as characterized in the appended claims, which is of the type designed for association with a container of sweets, positioned above, and comprises a rotor buried in the mass of sweets and rotatable about a horizontal axis, and detent means associated with and allowing stepped rotation of the rotor between stable at-rest positions.

According to the invention, the dispenser further comprises a hollow body positioned above the rotor, of which the lateral surface affords an opening directed toward the rotor in such a way that with each:discrete rotational movement the sweets are able to recede freely into the void encompassed by , the hollow body; thus, a sufficient headspace is provided to accommodate the dimensional bulk of the sweets, the resistance offered to the movement of the rotor by the amassing sweets is minimized, and the sweets are subjected to a more delicate action without becoming defaced or deformed in any way.

The advantages of the invention consist essentially in the fact that, during the movement of the rotor, the sweets can arrange themselves automatically in the dispenser according both to their shape and size and to the deformability of the substance from which they are confected. In short, the dispenser according to the present invention features better regulated operation, free of the risk of jamming, and a widened scope of utilization.

The invention will now be described in detail, by way of example, with the aid of the accompanying drawings, in which:

– fig 1 and fig 2 are front and side elevations, respectively, showing part of a dispenser embodied . according to the present invention;

– fig 3 shows the invention in plan and on smaller scale, with certain parts omitted better to reveal others;

– figs 4 and 5 are the respective sections through IV-IV and V-V in fig 3.

In the drawings, 1 denotes an automatic dispenser for sweets, in its entirety, of the type designed for attachment to the bottom end of a vertically disposed container 2, and comprising a tubular chamber 3 associated with a connector 4 of conical shape by means of which to effect the attachment to the container 2.

According to the invention, the tubular chamber 3 houses a rotor 5 with radial vanes 6 invested directly by the mass of sweets, rotatable about an axis 5a disposed transversely to the axis of the container 2 and designed such that a predetermined quantity of sweets will be taken up between two adjacent vanes 6 each time a handle 7 is operated manually to produce the necessary rotation, and ejected subsequently from the dispenser 1.

Advantageously, the radial vanes 6 of the rotor 5 are fashioned in an elastically deformable material in order to reduce the stress on the sweets during rotation.

8 denotes detent means by which rotation of the rotor 5 is restricted to discrete steps.

In a preferred embodiment, illustrated in fig 1, such means 8 comprise a rotating element 9 rigidly associated with the rotor 5 and affording a set of peripheral projections 10 of which at least two, immediately adjacent, are engaged by at least one element denoted 11 whenever the rotor occupies a stable at-rest position; the element 11 in question is shaped so as to match the profile 12 of the two adjacent projections 10, and tensioned elastically, in such a way as to impose a permanent restraint on the angular movement of the rotor 5.

In the preferred example of fig 1, detent means 5 comprise two such shaped elements 11, associated rotatably with corresponding ends 13a of a pair of parallel levers 13 that are disposed one on either side of the rotor axis 5a and pivotably anchored by the remaining ends 13b to the fixed structure of the dispenser. The levers 13 are interconnected by a spring 14 attached at points between the opposite ends 13a and 13b, in such a way that the shaped elements 11 are urged permanently into contact with the rotating element 9.

The automatic dispenser further comprises a hollow body 15 enveloped by the mass of sweets, posi-

tioned above the rotor 5 and supported rigidly from the conical connector 4 by way of relative arms 18, of which the lateral surface 17 affords an opening 16 directed toward the rotor 5; thus, each time the vanes 6 rotate, sweets accumulating between the hollow body 15 and the rotor 5 are able to recede through the opening 16 and gain the interior of the hollow body 15, which affords the space necessary to accommodate their bulk in any eventuality.

In the preferred example illustrated, the hollow body 15 is cylindrical and associated with the connector 4 in such a way as to project toward and into the container 2 above.

The hollow body 15 is by no means indispensable to efficient performance of the invention, especially in the event that the container 2 is not filled to capacity; in this instance, the resulting headspace will enable the sweets to return upwards and thus minimize resistance offered to the rotation of the vanes 6.

Claims

1) An automatic dispenser for sweets, of the type associated with a container, positioned above, characterized

in that it comprises a rotor (5), rotatable about an axis (5a) disposed transversely in relation to the axis of the container (2) and invested directly by the mass of sweets in an enclosure affording headspace sufficient to allow the sweets to recede upward each time the rotor (5) is operated, and detent means (8) associated with the rotor (5), by which the rotation of the rotor is caused to occur in discrete steps; and

in that with each discrete step, a predetermined quantity of sweets is taken up by the rotor (5) and distanced from the container (2).

2) A dispenser as in claim 1, comprising a hollow body (15) positioned above the rotor (5) and enveloped by the mass of sweets, of which the lateral surface (17) affords an opening (16) directed toward the rotor (5) in such a way that the sweets occupying the space between the hollow body (15) and the rotor (5) are afforded access to the interior of the hollow body during operation of the rotor.

3) A dispenser as in claim 1, wherein the rotor (5) is embodied with vanes (6) by which the sweets are taken up and distanced from the container.

4) A dispenser as in claim 3, wherein detent means (8) comprise:

– a rotating element (9) rigidly associated with the rotor (5) and exhibiting a plurality of peripheral projections (10);

– at least one shaped element (11) urged elastically into contact with at least two adjacent projections (10) of the rotating element (9) and serving thus to impose a restraint on rotation of the rotor (5).

5) A dispenser as in claim 4, wherein the profile of the shaped element (11) is complementary to the profile (12) of the projections (10).

6) A dispenser as in claim 5, wherein the shaped element (11) is associated rotatably with one end (13a) of a lever (13), of which the remaining end (13b) is pivotably anchored to a fixed part of the dispenser, and tensioned by a spring (14) attached to the lever (13) at a point between the two ends (13a, 13b).

7) A dispenser as in claim 3, wherein the vanes (6) are radially disposed.

8) A dispenser as in claim 3, wherein the vanes (6) are embodied in elastically deformable material.

9) A dispenser as in claim 4, wherein the rotor (5) is accommodated internally of a tubular chamber (3) in which the sweets accumulate.

10) A dispenser as in claim 2, wherein the hollow body (15) projects toward and into the container (2).

11) A dispenser as in claim 2, wherein the hollow body (15) is cylindrical in embodiment.

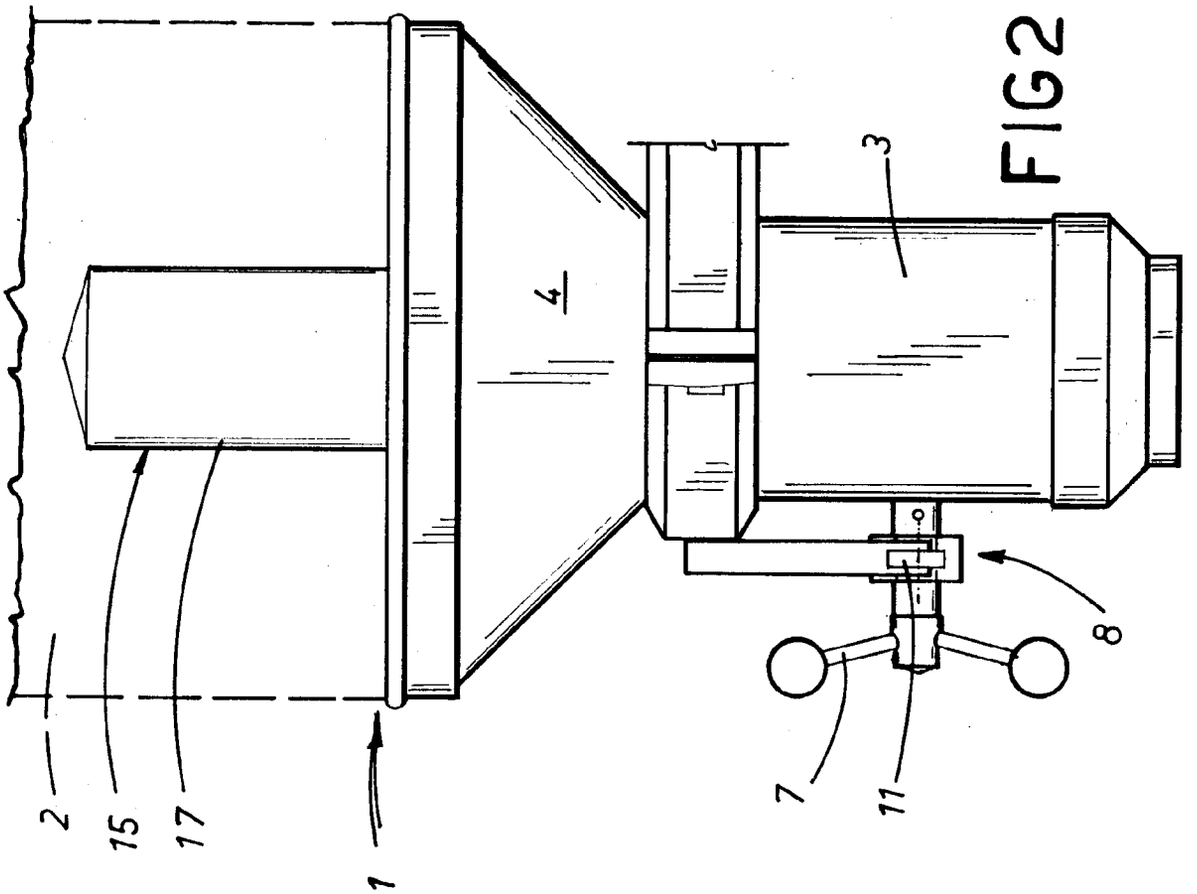


FIG2

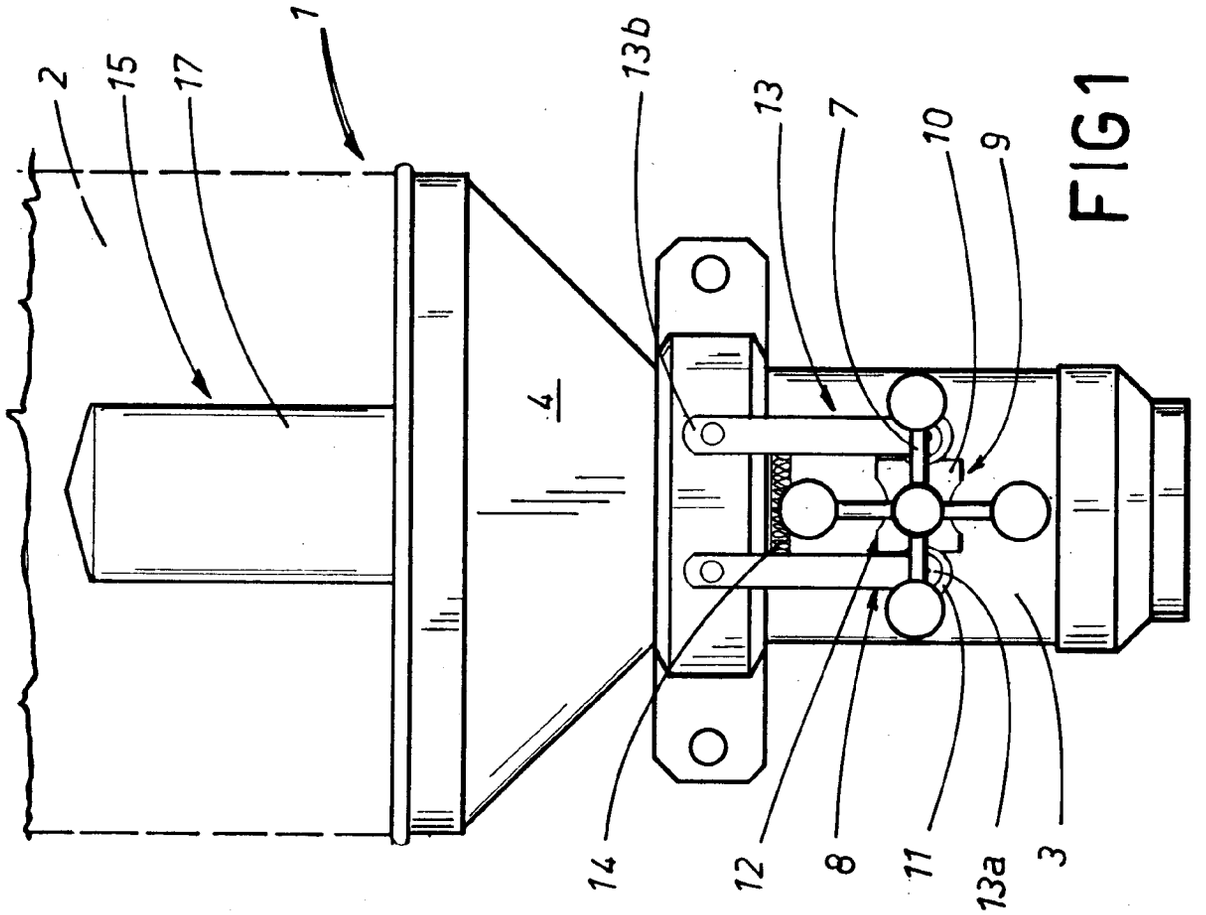


FIG1

FIG 5

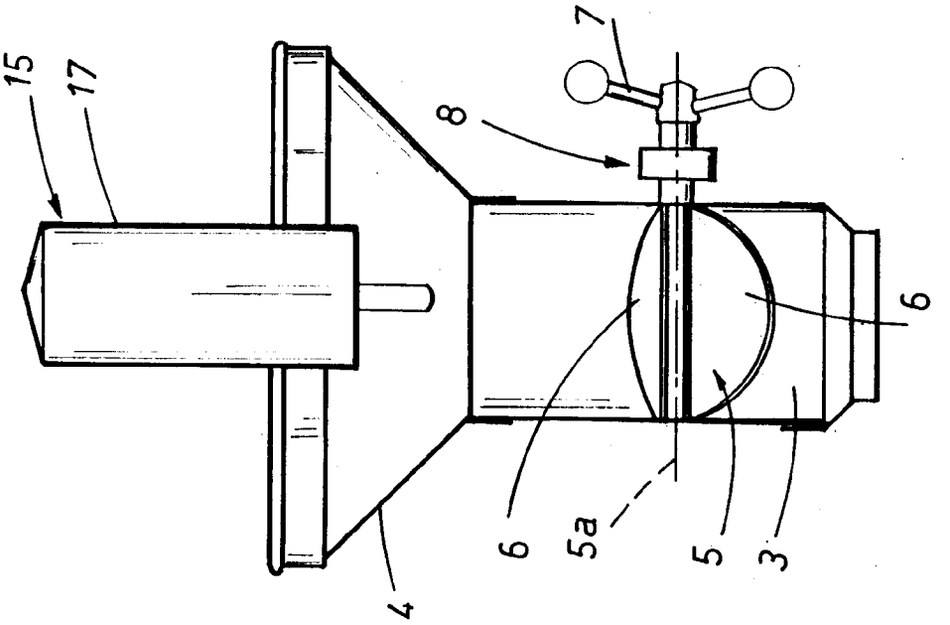


FIG 4

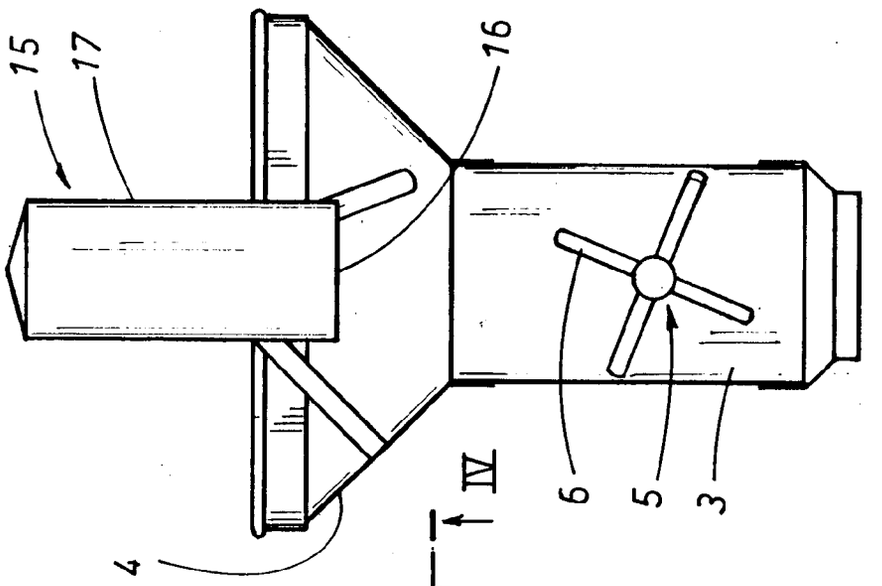
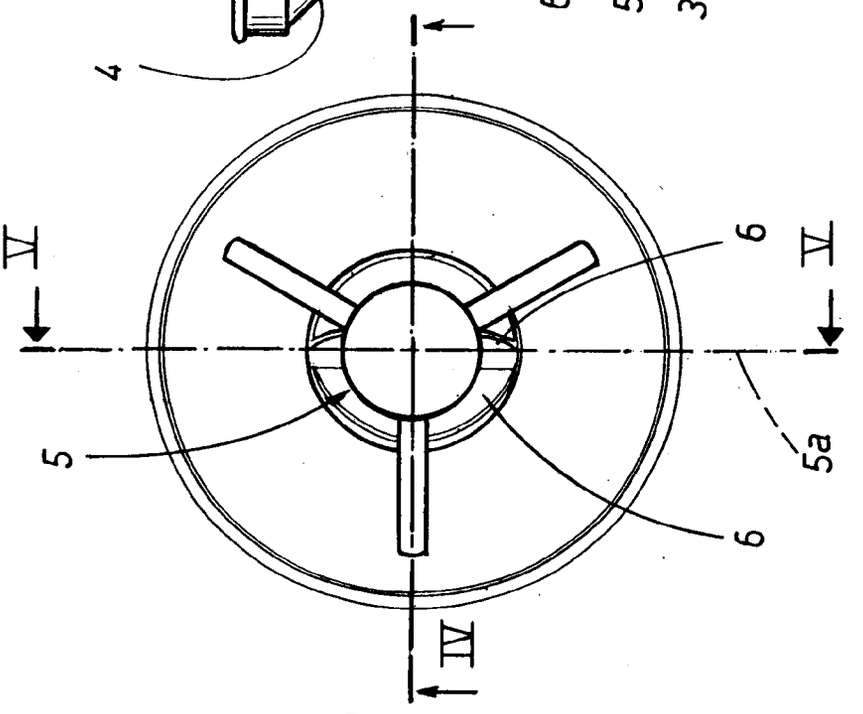


FIG 3



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EUROPEAN SEARCH REPORT

Application Number

EP 91 83 0262

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.5)
A	FR-A-1100544 (PERESS) * page 1, left-hand column, paragraph 1; figures 1-4 *	1, 3-7	A47F1/10 B65D83/00
A	DE-U-1962650 (KISSLING) * figures 1-3 *	1, 3, 7, 9	
A	US-A-1876332 (MABEY) * figures 1, 4 *	1, 3, 7	

TECHNICAL FIELDS SEARCHED (Int. Cl.5)

A47F
B65D
G07F

The present search report has been drawn up for all claims

Place of search	Date of completion of the search	Examiner
BERLIN	20 SEPTEMBER 1991	SPETTEL, J.D.M.L.

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