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(71) Applicant: **CHESEBROUGH-POND'S INC.**
Nyala Farm Road
Westport Connecticut 06881 (US)

(72) Inventor: **Pettengill, Edwin Raymond**
222B Shoshoni Lane
Stratford Connecticut 06497 (US)

Russo, John Alfred
36 Weston Road
Westport Connecticut 06880 (US)

Vandenberg, Ronald Henry
16 Half Mile Road
Norwalk Connecticut 06851 (US)

(74) Representative: **Froud, Clive et al**
Elkington and Fife High Holborn House 52/54 High Holborn
London WC1V 6SH (GB)

(54) Dispenser having rotary dispensing wheel.

(57) A dispenser for a plurality of articles (12) is described which comprises a magazine (11) and a dispensing wheel (14) rotatably mounted on the interior surface of the magazine for dispensing articles therefrom. The magazine has an opening (13) at one end which is substantially larger than the size of the article to be dispensed. The magazine has an open storage space which is both substantially greater in length and width than the individual articles to be held therein so that a substantial plurality of articles can be stored in the magazine. The rotatable dispensing wheel has at least one peripheral pocket (19) which is designed to hold an article therein for movement from the storage space within the magazine to a position outside the magazine, through the opening in the end of the magazine, responsive to rotation of the wheel.

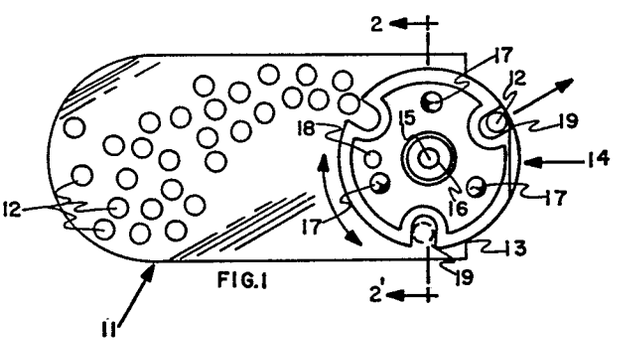

FIG.1

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Description

DISPENSER HAVING ROTARY DISPENSING WHEEL

The present invention is a dispenser for articles, for example, confectionery articles, which employs a rotatable dispensing wheel.

Various types of dispensers are known to the prior art for dispensing articles. For example, U.S. Patent No. 3,318,491 to J. C. Williamson shows a container having a trap-chamber dispensing means. A rotary dispensing element is adapted to receive an article in an article-receiving recess or pocket and to dispense it through a discharge port in a cap member. The size of the discharge port approximates the size of the article (e.g., pills, tablets and the like) which is to be dispensed and the cap member substantially closes the container interior off from the exterior.

U.S. Patent No. 2,878,964 to W. R. Avis describes a flint carrier and dispenser which employs a rotary dispensing wheel. The dispensing wheel is located in a generally open section of a magazine for the article (i.e., a flint) to be dispensed. This patent specifies that the magazine for the flint articles is to be in the shape of a bore extending lengthwise of the body. The bore may be cylindrical or square cross-section, but it must be of a width to freely receive the flint and only slightly wider than the flint so that the flint articles will be kept in a straight stacked column and will not be permitted to tumble about so as to crumble their edges.

The present invention is a dispenser for articles, such as confectionery articles which can be in pill or tablet form. It comprises a magazine for storing such articles. The magazine has an opening at one end which is substantially larger than the size of the article to be dispensed. The magazine of the present dispenser has an open storage space of both substantially greater length and width than the dimensions of an individual article it holds so as to be capable of accommodating a substantial plurality of articles therein. A rotatable dispensing wheel is rotatably mounted on the interior surface of the magazine adjacent the open end of the magazine. This wheel contains at least one peripheral pocket which is designed to hold the article. Rotation of the wheel moves the article, when in the pocket, from within the magazine to outside the magazine through the opening at the end of the magazine.

The present invention will be further understood with reference to the Drawings which illustrate certain embodiments of the present invention wherein:

Fig. 1 is a side view showing the dispensing apparatus of the present invention;

Fig. 2 is a cross-sectional view of the rotatable dispensing wheel only taken along line 2-2′ of Fig. 1;

Fig. 3 is an end view of the dispenser of the present invention taken in the direction of the end holding the rotatable dispensing wheel; and

Fig. 4 is a bottom side view, taken at a 90° angle to the view shown in Fig. 1, illustrating an article dispensing hole adjacent an open end of the apparatus.

Fig. 1 of the Drawings shows the dispenser of the present invention holding a plurality of generally round confectionery articles. It comprises a magazine 11 which is substantially open in regard to its internal dimensions so as to be capable of holding a substantial plurality of articles 12 therein. In other words, the magazine of the present invention does not have the type of narrow bore which is described as being an essential requirement of the flint carrier and dispenser shown in U.S. Patent No. 2,878,964 to W. R. Avis, which is mentioned above. The magazine 11 of the present invention, said magazine preferably being formed of transparent plastic, has an opening 13 at one end thereof which is of substantially greater size than the individual articles 12 to be held in the magazine 11. A rotatable dispensing wheel 14 is mounted on the interior surface of the magazine 11 adjacent the opening 13. The mounting can be easily accomplished by having the raised central hub 15 of the wheel 14 mounted in an appropriate mounting hole 16 in the surface of magazine 11 adjacent opening 13. The hole 16 would be centrally located along the width of the magazine 11 so that the round dispensing wheel 14 can be rotated, preferably in either direction as shown by the double-headed arrow in Fig. 1. In order to provide for appropriate locking of the wheel to prevent undesired rotation, the preferred embodiment of the present invention calls for the provision of appropriate protrusions 17 on the surface of wheel 14 which are adapted to fit into locking hole 18 which can be formed in the surface of the magazine 11. The rotatable dispensing wheel 14 can have one or more peripheral pockets 19 which are adapted to hold one or more of the articles 12, so that, when the wheel 14 is rotated, the articles are conveyed from a position inside the magazine 11, through opening 13, to the exterior of the dispenser. Generally, two or three substantially equally spaced peripheral pockets are satisfactory. When this has been done, the article 12 can be easily be removed as shown by the single-headed arrow in Fig. 1.

Fig. 3 illustrates the shape of magazine 11 in somewhat greater detail when viewed in the direction of opening 13. Preferably, it can be generally rectangular in cross-section when viewed toward its open end 13, although other designs are possible. The rectangular shape, however, insures that a relatively thin dispensing wheel 14 can be fabricated in making a useful device. As shown Fig. 3, the diameter and the thickness of the dispensing wheel 14 are each only slightly less than the respective dimensions of the opening 13.

Fig 4 illustrates the provision of dispensing hole 20 in the bottom side wall of magazine 11 for article 12 held in peripheral pocket 19 of wheel 14. If a person holds the apparatus with its wheel to either the extreme right (as shown in Fig. 1) or left, this dispensing hole can be approximately placed to face

downwardly so the article 12 can be dropped into the hand of the user, rather than being extracted as shown by the arrow in Fig. 1. Users may prefer to have a dispensing hole oriented in this fashion.

Claims

1. A dispenser for a plurality of articles characterised in that it comprises:

(a) a magazine (11), for storing the articles (12), which has an opening (13) at one end thereof substantially larger than the size of the article to be dispensed and which has an open storage space of both substantially greater length and width than the dimensions of an individual article to be held therein so as to be capable of accomodating a substantial plurality of articles therein; and

(b) a dispensing wheel (14) rotatably mounted on the interior surface of the magazine adjacent the opening in the magazine, said wheel containing at least one peripheral pocket (19) designed to hold an article so that the article can be moved from the storage space within the magazine to outside the magazine, through the opening in the end of the magazine, responsive to rotation of the wheel.

2. A dispenser as claimed in claim 1 wherein the wheel further comprises at least one protrusion (17) adapted to fit into a locking hole (18) in the surface of the magazine.

3. A dispenser as claimed in claim 1 or 2 wherein the magazine is rectangular in cross-section when viewed in the direction of the opening.

4. A dispenser as claimed in any of claims 1 to 3 wherein there are at least two, substantially equally spaced, peripheral pockets on the wheel.

5. A dispenser as claimed in any of claims 1 to 4 wherein the thickness and diameter of the wheel are only slightly less than the size of the opening in the end of the magazine.

6. A dispenser as claimed in any of claims 1 to 5 wherein the magazine is formed of transparent plastic.

7. a dispenser as claimed in any of claims 1 to 6 wherein the wheel has a raised central hub (15) which is mounted in a hole (16) centrally located along the width of the magazine.

8. A dispenser as claimed in any of claims 1 to 7 wherein there are two or three substantially equally spaced peripheral pockets on the wheel.

9. A dispenser as claimed in any of claims 1 to 8 wherein there is a dispensing hole (20) in the side wall of the magazine adjacent its open end.

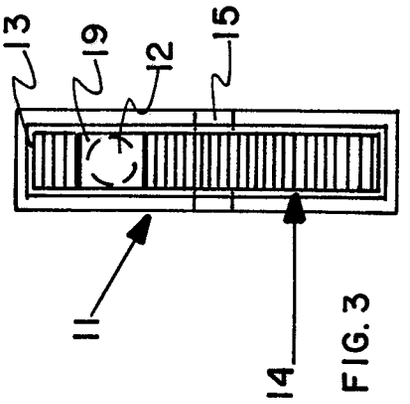

FIG. 3

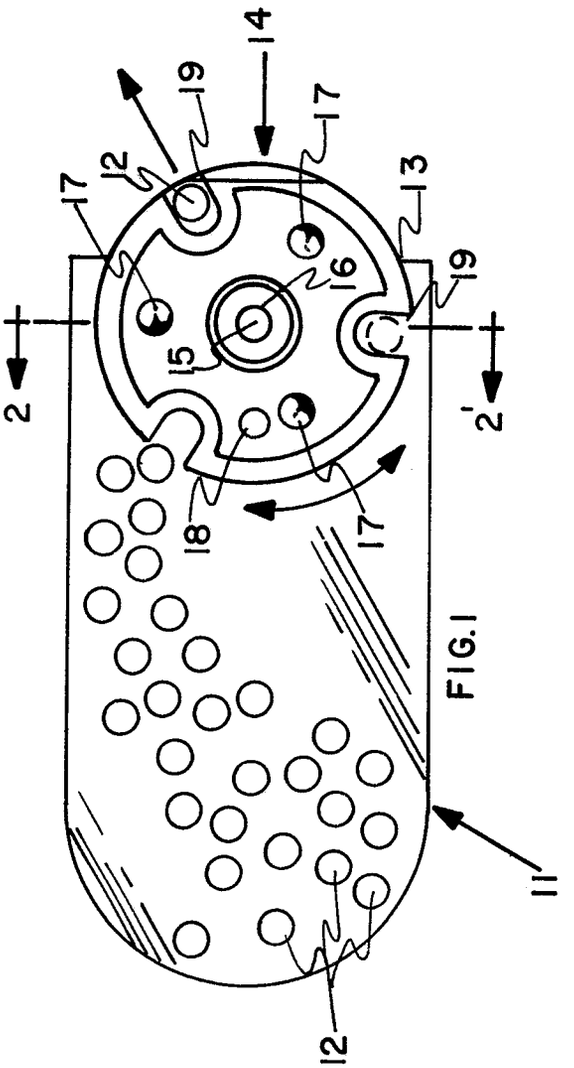

FIG. 1

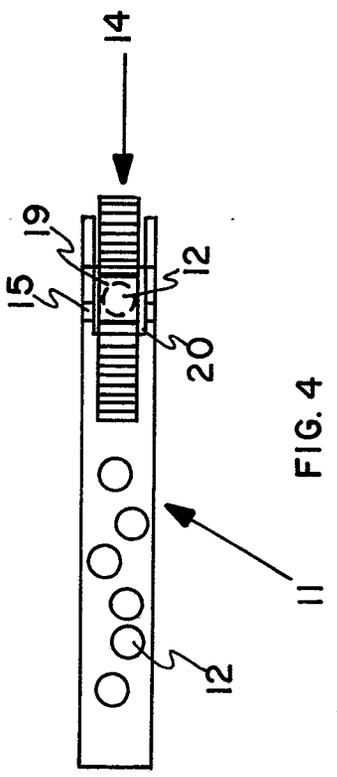

FIG. 4

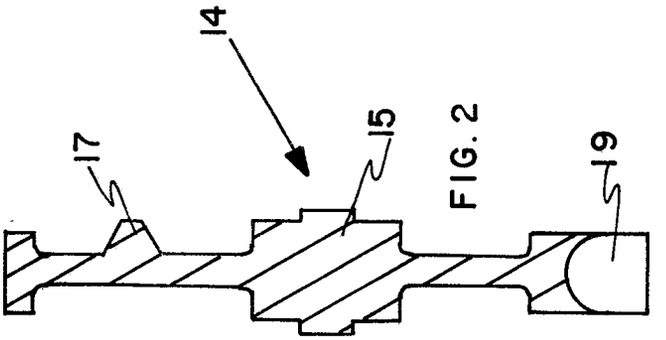

FIG. 2