Jan. 15, 1963 S. TAPPER 3,073,433

TABLET OR CAPSULE DISPENSER

Filed Sept. 6, 1961

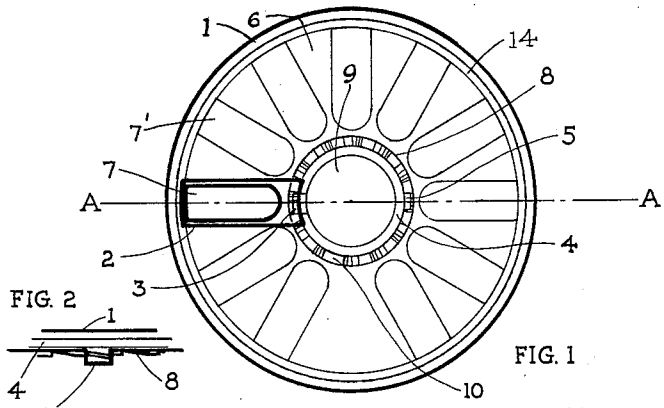


FIG. 1

FIG. 2

FIG. 3
A-A

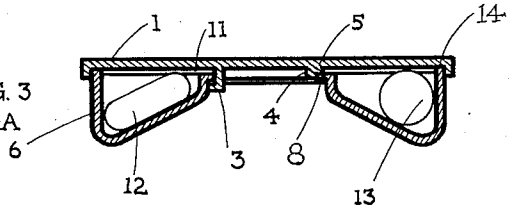
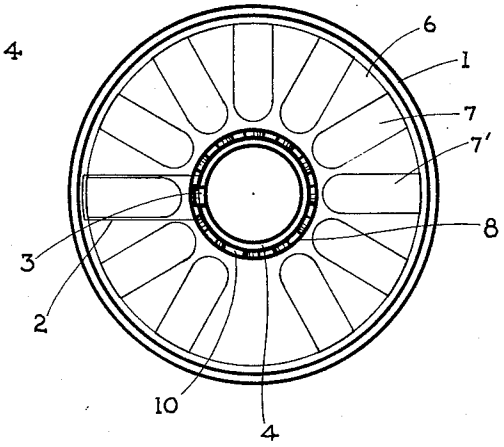


FIG. 4



INVENTOR

Samuel Tapper.

United States Patent Office 3,073,433 Patented Jan. 15, 1963

3,073,433

TABLET OR CAPSULE DISPENSER

Samuel Tapper, 440 Baldwin Road, Maplewood, N.J.

Filed Sept. 6, 1961, Ser. No. 136,299
1 Claim. (Cl. 206—42)

This invention relates to dispensers for small objects such as tablets and capsules.

An object of the invention is to provide a cover and container assembly that is easy to make by the injection molding process, and easy to assemble without an educational program.

Another object is to create a single dispenser that will accommodate either capsules or tablets, and look as if it were meant to contain capsules or tablets, as the case may be.

Another object of the invention is to provide a simple and inexpensive method of securing the cover to the container in a manner leaving the cover free to rotate in one direction. It must be removable in only one predetermined position.

Applicant believes that he has advanced the state of the art of round dispensers by the innovations found in his invention which consists of a flat top fastened to a co-operating container by means of a fixed pawl, said pawl functioning together with a downward facing centrally located annular rachet on said container, and a cover which flexes to allow the pawl to have vertical motion while the cover rotates, and a strategically located boss to maintain a constant contact between the pawl and rachet, said boss acting also as a fulcrum in the flexing of the cover as the pawl moves from tooth to tooth along the rachet. Together with the pawl, the boss prevents any warping of the cover from interfering with the smooth operation of the dispenser. As can readily be seen, applicant's invention can function without the teeth of the rachet. Without its teeth, the rachet becomes an annular flange, and the pawl becomes a co-operating tab. In this situation, the cover would be able to rotate in either direction whereas with the rachet, the cover could rotate in only one direction.

Another innovation is the slanted bottom design of the individual cells for receiving the tablets or capsules. As shown in FIG. 3 both the capsule and the tablet fit snugly in their respective cells. There would be no rattling and therefore no damage to them while the dispenser is carried in one's purse or pocket, or transported from place to place. By placing the dispensing opening of the cover in line with the pawl and the boss the flexing of the cover is facilitated.

In the accompanying drawings which form a part of this application:

FIG. 1 is a top plan view of the dispenser showing the cover on the container and in position to dispense from a cell.

FIG. 2 is a side view of the pawl 3 which is part of the cover unit, and shows how it meshes with the teeth of the rachet 8.

FIG. 3 is a cross-sectional view of the dispenser through A—A of FIG. 1.

FIG. 4 is a bottom plan view of the assembled dispenser.

Referring to FIG. 1, 1 is the cover unit which is made of one flat circular piece having a narrow depending rim. In one area of the cover, corresponding to one cell in the container, and extending inward toward the center of the cover is an opening 2 through which dispensing takes place. The opening 2 is extended inwardly only far enough to allow for the formation of pawl 3 through the said opening. Pawl 3 is attached to collar 4 which fits rotatably into opening 9 of the container. On the bottom surface of cover 1 and directly above rachet 8, and

abutting collar 4 is boss 5. This boss reaches down to make contact with the top surface of rachet 8, and serves as a support for cover 1 as well as a fulcrum for action that takes place in the cover when, upon rotating, the tooth on pawl 3 causes the cover to flex downward as the said tooth moves from one position on the rachet to another.

The container 6 has a series of cells 7, 7, etc. for receiving either capsules or tablets, said cells arranged radially around an open circular center 9. Edging center 9 is a rachet 8 with its triangular teeth facing downward. In rachet 8 there is one opening 10 through which pawl 3 passes to secure the cover to the container and to co-operate with the rachet 8.

FIG. 2 shows how the pawl is attached to the cover and extends downward below the bottom of the rachet. The teeth on the rachet are designed to allow movement in one direction only, and the tooth on the pawl extending under the rachet is shaped to conform with the teeth on the rachet.

In FIG. 3 the cells 7, 7, etc. are seen to be triangular in vertical longitudinal cross-section. This construction allows for a longer capsule to be put into a shorter cell, and permits the same to be used effectively for round or oval shaped tablets. The cover 1 is seen here to rest on the outside top rim 14 of container 6, said rim 14 being elevated above the general plane of the container top, and to make contact with the top surface of rachet 8 by means of boss 5, rachet 8 being so placed as to have its teeth below the top surface of the container 6 and facing downward, while the reverse or top side of the rachet 8 is in the general plane of the container top. Boss 5 compensates for any warping of the cover which would render the rachet and pawl ineffective. Here it can be seen that pressure on the cover would not separate the tooth of the pawl from the rachet. By pressure is meant that of ordinary handling while in use. Collar 4 is shown extending below the general plane of the container top to hold the cover in a rotatable position. The purpose in allowing space between the bottom of the cover and the top of the container is to provide room for flexing of the cover as its rotates and is drawn downward and released as the pawl and rachet operate. This method of construction permits the pawl to be made rigid and strong.

FIG. 4 shows the dispenser as it appears looking from below. The teeth on the annular rachet 8 are seen to be contiguous to the centrally located collar 4 of the cover 1. Extending outward from the collar is pawl 3, the tooth of which engages a tooth in rachet 8. As the cover rotates in a counter-clockwise direction, the pawl will move from tooth to tooth on the rachet and the opening 2 of the cover will successively appear over the individual cells in the container 6 to permit the dispensing of the tablets or capsules. Number 10 is the opening through which the pawl passes in order to make contact with the rachet 8.

I claim:

A tablet or capsule dispenser of circular disposition consisting of a container and co-operating cover, said container having a group of elongated cells suitably disposed in a radial manner, wherein the bottom of each elongated cell is tilted upward to form a cavity of triangular form in its depth, and wherein there is in the center of the plane of the top of the container a circular open area defined by an annular flange, said flange having its circular continuity interrupted by a vertical opening in its body structure, said container also having the rim along its periphery raised above the plane of top area of the said container thereby holding the co-operating cover in a raised position, and wherein the co-operating cover for said container has a depending circular

collar that fits rotatably into the space defined by the aforementioned annular flange and holds the cover in its proper rotating relationship to the co-operating container, there being attached to said circular collar an outwardly directed tab which passes through the aforementioned vertical opening in the body structure of the flange to engage the under surface of the flange when the cover is rotated, said tab being located directly below the inner portion of an opening in the cover through which dispensing occurs when the said opening is directly above one of the cells in the container, and wherein there is a boss on the under side of the cover and placed next to the aforementioned depending collar but on the opposite side of the center of the cover in relation to the tab, said boss being equal in depth to the space between the plane of the top area of the container and the peripheral rim

of the container and functioning, together with the portion of the peripheral rim of the container in the area of the dispensing opening of the cover, as a fulcrum in flexing of the cover when the cover and container are fastened together by means of the aforementioned tab; said tab, boss and peripheral rim co-operating with the annular flange to provide the rotatable cover with a predetermined frictional resistance.

References Cited in the file of this patent

UNITED STATES PATENTS

2,828,005 Ricke ---------- Mar. 25, 1958

FOREIGN PATENTS

1,213,622 France ---------- Nov. 2, 1959