Oct. 23, 1962 NOBORU YOSHIMOTO 3,059,762

CONTAINER FOR PILLS OR THE LIKE

Filed Feb. 23, 1960 2 Sheets-Sheet 1

FIG. 1

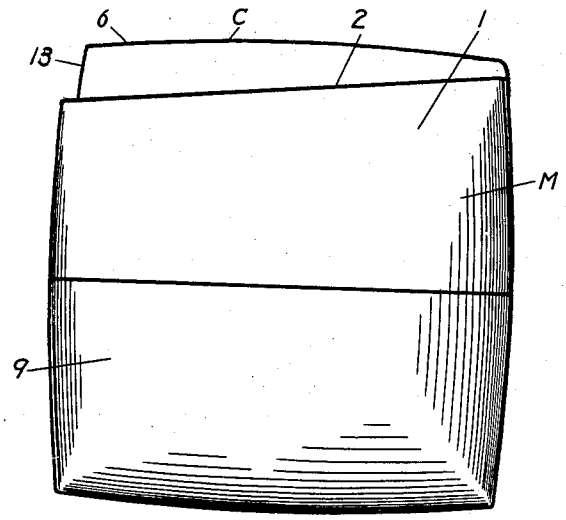
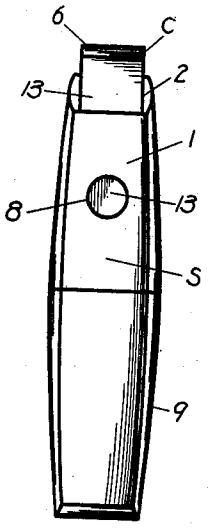


FIG. 2



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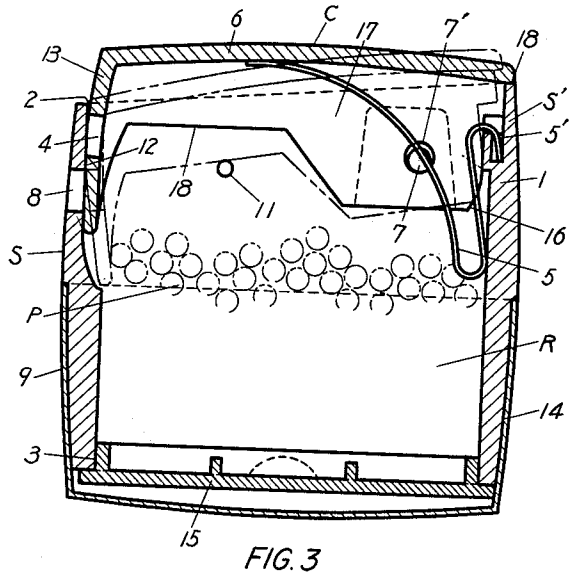
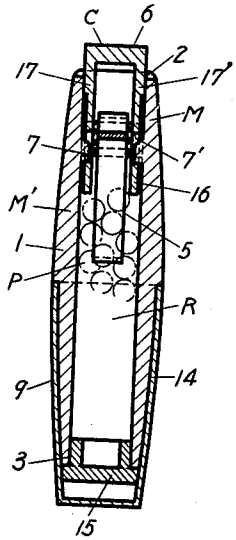


FIG. 3

FIG. 4



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CONTAINER FOR PILLS OR THE LIKE

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8 Claims. (Cl. 206—42)

This invention relates to a container for medicinal pill or the like such as medicinal granules, and particularly to a container which is compact to facilitate carrying in a pocket, handbag or the like and which is made convenient in charging pills in the container and in dispensing or discharging the pills therefrom, and which is so constructed that pills would not be spilt accidentally during carrying in the pocket, bag or the like.

In conventional containers for granules or pills, there is provided a small opening on the wall of the container body. There is also provided a shutter slidable across the opening to close or open the said opening. A small tappet is connected with the slidable shutter so that the shutter is moved by operating the tappet by a finger or the tip of a nail. The said opening is used as an outlet for dispensing the pills and also as an inlet through which the pills are charged or filled in the container. The structure of this type has many drawbacks. First, when dispensing the content the user must make two operations, namely pushing the tappet for opening and then another pushing for closing the opening after dispensation or discharge. Secondarily, since the opening is considerably small in diameter it is inconvenient and takes much time in admitting granules, pills, etc. therethrough in the container. Thirdly, sometimes the opening is opened accidentally by an accidental movement of the tappet in the carrier's pocket or bag so that the pills will be spilt.

A principal object of the present invention is to eliminate these drawbacks. According to the present invention, there is used a container body which is opened at its upper and lower ends and which, preferably, is made in a flat or shin shape having a pair of approximately square broad main walls and a pair of narrow rectangular side walls to define a reservoir chamber thereby. A detachable bottom closure means is to close the bottom opening of the container body. The closure means consists preferably of an inner closure and an outer cover. A cap means is inserted within the upper opening of the container body and is pivotally supported by the main broad walls of the container body. The cap means comprises a top wall and a nose wall extending downwardly from the narrower edge of the top wall and being adapted to slidably engage with one of the narrow side walls of the container body. An outlet hole is formed in the upper position of said one of the side walls. Said inlet hole is normally closed by the nose wall but it is adapted to register with a discharge hole on the nose wall when the said nose wall is pressed downwardly along the inner surface of the said narrow side wall of the container body. A spring means is associated with said cap means so that the cap normally is pressed or biased upwardly. The aforementioned downward movement of the nose wall so as to register the discharge hole with the outlet hole on the narrow side wall of the container body is effected by depressing the top wall of the cap with a finger against the resilient force of the spring means. The spring means may be a leaf spring which is arranged within said container body and engaged at its one end with the other narrow side wall of the container body and at the other end with the inside surface of the top wall of the cap. Undue upward movement of the cap means by the action of the spring may be prevented by an engagement of the outer surface of the nose wall of the cap with the inner surface of the narrow side wall having the outlet hole thereon or by an engagement of the other narrower edge of the top wall with the top edge of the said other narrow side wall of the container body. When the said outlet hole registers with the discharge hole the content such as granules, pills and the like in the container may be readily dispensed or discharged. Filling of the content in the container is quite easily carried out after removal of the bottom closure means.

Other objects and various features of the present invention will be clear from the following description made with reference to the accompanying drawings in which:

FIG. 1 is a front elevation of a container embodying the present invention;

FIG. 2 is a side elevation of the container as viewed from the right hand of FIG. 1;

FIG. 3 is a sectional view taken along the line A—A of FIG. 2;

FIG. 4 is a sectional view taken along the line B—B of FIG. 3.

Referring to the drawings, the container has a body **1** which is opened at its upper and lower ends and is flat or thin shape having a pair of approximately square broad main walls M, M′ and a pair of rectangular narrow side walls S, S′. A reservoir chamber R is defined by these walls M, M′, S, S′. Each main wall M, M′ is inclined at its uper edge so that a cap means C extend upwardly beyond thereover as shown.

A cap means C is inserted within the upper opening of the container body **1** and comprises a top wall **6**, a forward nose wall **13** extending downwardly from the narrower edge of the top wall **6**, and a pair of side walls **17**, **17′** extending downwardly into the body opening from the wider edges of the top wall **6**. Each of the side walls **17**, **17′** has a cut out portion **18**. The cap means C is pivotally connected to the container body **1**. This pivotal connection may be by any conventional manner. In the embodiment shown, on the inner surface of each of the main walls M, M′ there is provided an inwardly projected stub **7** to be received in a recess **7′** provided on the corresponding side wall **17**, **17′** of the cap. Thus, the cap means C is pivotally movable with respect to the container body **1**. A stopper **11** is also provided on the inner surface of each of the main walls M, M′ and these stoppers **11** serve to prevent undue downward pivotal movement of the cap C by engagement with the cut out portions **18** of the side walls **17**, **17′** of the cap. It is preferable to make the cap C by a resilient material and to form the same in such a manner that the side walls **17**, **17′** are slightly diverged toward the free ends. In mounting the cap C on the container body **1**, the said side walls **17**, **17′** are slightly pressed toward each other and slid into the upper opening of the container body **1**, whereby the said side walls **17**, **17′** are press fitted on the inner surfaces of the main walls M, M′ and pivotal mounting is completed when the projecting stubs **7**, **7** are fitted into the respective recesses **7′**, **7′** on the side walls **17**, **17′**.

The nose wall **13** of the cap C is provided with a discharge hole **4** and is adapted to be slidable along the inner face of the narrow side wall S in contact or in close proximity therewith. It is preferable to slightly arcuate the nose wall **13** as shown and to excavate the inner face of the narrow side wall S in the shape of a slight arc as well shown in FIG. 3 to facilitate the sliding movement of the nose wall **13**. The narrow side wall S is provided with an outlet hole **8** which normally is closed by the nose wall **13** (FIG. 3) but which is adapted to register with the discharge hole **4** on the nose wall **13** when the said nose wall is moved downwardly along the inner surface of the narrow side wall S of the container body as hereinlater described.

A spring means is arranged in the container body 1 to normally press or bias the cap means C upwardly. In the embodiment shown, the spring means consists of a leaf spring 5 which is hooked at its one end within an upwardly opened recess 5' formed on the inside of the other narrow side wall S' of the container body 1. The other end of the spring 5 is engaged with the lower inner face of the top wall 6 of the cap C (FIG. 3). Undue upward movement of the cap C by the action of the spring is prevented by an engagement of the outer surface of the nose wall 13 of the cap C with the inner surface of the narrow side wall S, and/or by an engagement of the rear end or edge 18 of the top wall 6 with the top or upper edge of the narrow side wall S'.

When the top wall 6 of the cap C is depressed by a finger against the resilient force of the spring 5, the cap C is pivotally moved with the pair of points 7, 7' and 7, 7' as the fulcrum. Consequently, the nose wall 13 is moved downwardly along the inner surface of the narrow side wall S of the container body 1 and this downward movement is prevented when the cut out portions 18 on the side walls 17, 17' of the cap means C contacted with the stopper means 11. The arrangement is such that when the said cut out portions 18 engage with the stopper means 11 the discharge hole 4 of the nose wall 13 registers or coincides with the outlet hole 8 which has normally been closed by the nose wall 13. Under this condition, the pills P in the reservoir chamber R in the container body 1 can be discharged or dispensed through the registered holes 4 and 8. In actual operation, it is preferable to hold the container on a palm with its thumb applied to the top wall 6 of the cap and to incline the container so that the outlet hole 8 is directed toward the other palm and then to depress the top wall 6 with said thumb. After desired discharge, the thumb is released so that the cap C will be automatically returned to the original or normal position by the action of the spring 5 and the outlet hole 8 is again closed by the nose wall 13 as shown by the full line in FIG. 3. The dotted line in FIG. 3 shows the position where the cap C has been depressed for discharge of the pills.

It is preferable that bottom closure means consists of an inner bottom closure 15 and an outer cover 9. The bottom closure 15 may be made of an elastic material such as polyethylene resin and is adapted to tightly close the bottom opening of the container body 1 as well shown in FIGS. 3 and 4. Around the outer face of the lower portion of the container body 1 there is formed a depression area 14 over which detachably fitted the outer cover 9. To charge or fill the content such as granules, pills and the like in the container, the outer cover 9 is first removed and then the inner bottom closure 15 is removed.

The container body 1 and the cap C may conveniently be formed by a plastic material. The spring 5 may be a metallic material. The outer cover 9 is preferable to be made of a metallic sheet such as of aluminium plated for example in golden color. The metallic cover 9 will serve to reinforce the contianer body 1.

While the invention has been shown and described in respect of a particular embodiment, the invention is not limited to the embodiment shown and described, and it should be understood that various modifications and changes can be made without departing from the scope of the invention. Thus, for example, instead of the projection stubs 7, 7 on the container body and the corresponding recesses on the cap means C, one can utilize projection stubs on the cap means and the corresponding recesses on the container body to obtain the same pivotal connection. Furthermore, the ends of the side walls M, M' remote from the nose wall 13 may be rounded at 16 so that they may slide on the inner face of the narrow side wall S' to facilitate their movement. While the container body 1 has been described and shown as to have approximately square broad walls, it may take a circular, oval, polygonal or other shape. Furthermore, in place of the leaf spring 5, other type of spring means which normally urges the cap upwardly but permits the cap to be depressed downwardly may be used.

The container according to this invention has various advantages. Since the detachable bottom closure is utilized it is quite easy and does not take much time to charge or fill pills and the like to the container. The number of the structural parts or elements is minimum, and most of them are quite easily formed. The structure is simple and easy to assemble so that it is not costful. There is no part or element which is easy to break or to be damaged. The operation is easy and reliable. Only requirement is to depress the cap and release the finger. There would be no danger that the pills in the container get spilt accidentally in the carrier's pocket or bag because of the provision of the spring member. Even when such accidental opening occurs, the opened condition will not be maintained since the cap is immediately and automatically returned to the normal or closing position by the action of the spring.

What I claim is:

1. A container for small pills and the like, which consists essentially of a container body defining a reservoir space therein and having at least one narrow side wall, said container body being opened at its upper and lower ends, the said narrow side wall having an outlet hole therein, closure means detachably mounted on said container body to close the lower opening thereof, cap means inserted within the upper opening of the container body and pivotally connected to said container body adjacent one end thereof, said cap means being provided with a top wall and a nose wall extending downwardly from the top wall at the other end thereof and in close proximity with the inner face of said narrow side wall so as to normally close the outlet hole on the said side wall, the said nose wall having a discharge hole therein, spring means in the container body above the lower opening and engaging said cap means above the discharge opening in said nose wall for normally biassing the cap means upwardly, the arrangement being such that when the top wall of the cap means is depressed by a finger against the force of said spring means the cap means is pivotally moved so that the nose wall is moved downwardly to the position where the outlet on said narrow side wall registers with the discharge hole to enable the content in the reservoir space in the container body being dispensed through the registered holes.

2. A container for small pills and the like as claimed in claim 1, in which the said closure means consists of an inner bottom closure and an outer cover, said bottom closure being detachably inserted in the lower opening of the container body to close said opening, said outer closure being detachably mounted on outer face of the lower portion of the container body to enclose the bottom of the container body.

3. A container for small pills and the like as claimed in claim 2, in which the inner bottom closure is made of elastic material and the outer cover is metallic.

4. A container for small pills and the like, which consists essentially of a container body defining a reservoir space therein and having a pair of broad main walls and a pair of narrow side walls, said container body being opened at its upper and lower ends, the first side wall having an outlet hole therein, bottom closure means detachably mounted on said container body to close the lower opening thereof, cap means inserted within the upper opening of the container body and pivotally connected to the broad main walls adjacent one end of said cap, said cap means being provided with a top wall and a nose wall at the other end of said cap extending downwardly from the top wall and in close proximity with the inner face of said first narrow side wall so as to normally close the outlet hole on said first narrow side wall, said nose wall having a discharge hole therein, a spring arranged in said container body, said spring being supported

at its one end on the second narrow side wall and the other end contacting the inner face of the top wall of the cap means to normally press the cap means upwardly, the arrangement being such that when the top wall of the cap means is depressed by a finger against the force of the spring the cap means is pivotally moved so that the nose wall is moved downwardly to the position where the outlet on said first narrow side wall registers with the discharge hole on said nose wall to permit discharge of the content through the registered holes.

5. A container for small pills and the like as claimed in claim 4, in which the said cap means comprises the said top wall, said nose wall and a pair of side walls, said pivotal connection being made between the said side walls and the corresponding main walls of the container body, said side walls of the cap means being provided with cut out portions, stop means provided on the inner surface of the main walls of the container body, the arrangement being such that when the cap means is depressed and the cut out portions engage with the stopper means the discharge hole of the nose wall registers with the outlet hole on the first narrow side wall.

6. A container for small pills and the like as claimed

in claim 4, in which the said side walls of the cap means are slightly divergent toward the free ends so that these walls are press fitted on the inner surfaces of the main broad walls of the container body.

7. A container for small pills and the like as claimed in claim 4, in which the inner face of the first narrow side wall is in the shape of a slight arc to facilitate the sliding movement of the nose wall along the same.

8. A container for small pills and the like as claimed in claim 4, in which the upper ends of the both main broad walls are inclined so that the cap means is exposed beyond the upper end of the container body so as to facilitate manual depression of the top wall of the cap.

References Cited in the file of this patent

UNITED STATES PATENTS

781,527	Jeffers	Jan. 31, 1905
2,353,629	Apfelbaum	July 18, 1944
2,472,871	Williamson	June 14, 1949
2,559,522	Sparacio	July 3, 1951
2,575,106	Hermani	Nov. 13, 1951
2,927,686	Blum	Mar. 8, 1960