

Sept. 9, 1958

R. D. SEMSCH
PILL DISPENSER

2,851,191

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FIG. 2

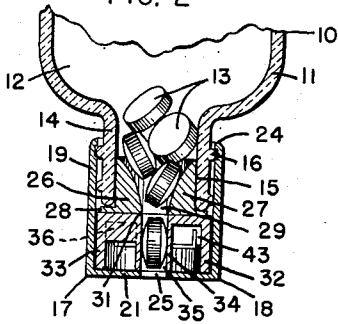


FIG. 1

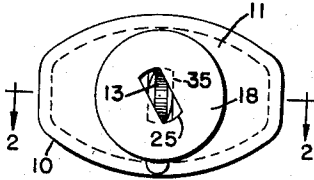


FIG. 9

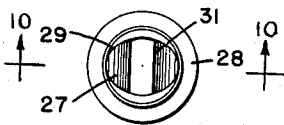


FIG. 10

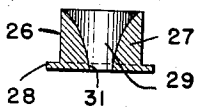


FIG. 11

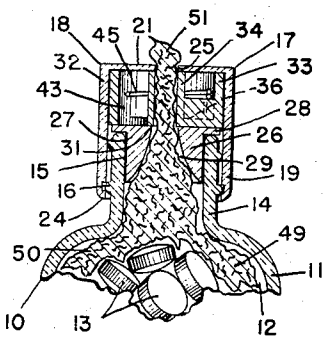


FIG. 5

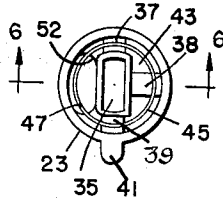


FIG. 6

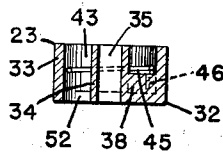


FIG. 7

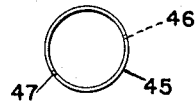


FIG. 8

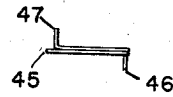


FIG. 3

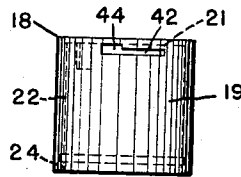
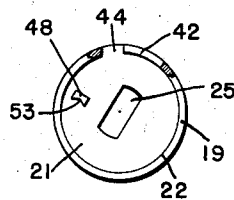


FIG. 4



INVENTOR
ROBERT D. SEMSCH

Carwell & Lagaard
ATTORNEYS

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2,851,191

PILL DISPENSER

Robert D. Semsch, Minneapolis, Minn.

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2 Claims. (Cl. 221—264)

The herein disclosed invention relates to pill dispensers and has for an object to provide a dispenser which cannot be readily operated by small children and thus prevent the promiscuous taking and eating of pills by children.

Another object of the invention resides in providing a dispenser in which the usual wad of cotton ordinarily employed to prevent movement of the packaged pills in the receptacle may be easily removed without taking off the closure for the receptacle.

A still further object of the invention resides in providing a construction in which only one pill at a time may be dispensed.

An object of the invention resides in utilizing a receptacle having a neck through which the pills may be dispensed together with a closure for the open end of the neck and in constructing the closure with the dispenser.

Another object of the invention resides in constructing the closure with a cap adapted to fit over the neck of the receptacle and having a discharge opening therein through which the pills may be discharged, in providing a funnel within said neck and having a passageway converging toward a transfer opening in said funnel and a rotor received within said cap and having a pocket adapted to receive pills from the transfer opening of said funnel and to discharge them through the discharge opening of said cap.

A still further object of the invention resides in providing a dispenser adapted to dispense disc-like pills and in constructing the discharge and transfer openings as narrow slots through which the pills may pass edgewise and in similarly constructing the pocket in the rotor and in arranging the openings in the funnel and cap angularly with respect to one another to cause one pill at a time to be dispensed.

A feature of the invention resides in providing resilient means for returning the rotor to normal position.

An object of the invention resides in disposing the openings in the cap and funnel so that the axis of the rotor passes through said openings whereby a passageway is at all times afforded through the cap and through which the end of the flexible packing may extend.

Other objects of the invention reside in the novel combination and arrangement of parts and in the details of construction hereinafter illustrated and/or described.

In the drawings:

Fig. 1 is a plan view of a receptacle and a closure therefor illustrating an embodiment of the invention.

Fig. 2 is a fragmentary, inverted elevational sectional view taken on line 2—2 of Fig. 1.

Fig. 3 is an elevational view of the cap of the invention removed from the receptacle.

Fig. 4 is an inverted plan view of the structure shown in Fig. 3 with portions broken away.

Fig. 5 is a plan view of the rotor of the invention removed from the cap.

Fig. 6 is a sectional view taken on line 6—6 of Fig. 5.

Fig. 7 is a plan view of the spring of the device and removed therefrom.

Fig. 8 is a side view of the spring shown in Fig. 7.

Fig. 9 is an inverted plan view of the funnel of the invention.

Fig. 10 is a sectional view taken on line 10—10 of Fig. 9.

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Fig. 11 is a view similar to Fig. 2 showing the packing received within the dispenser.

For the purpose of illustration, a receptacle 10 has been shown, which may be a bottle constructed of glass or any other suitable material. This receptacle has a body 11 formed with a chamber 12 in which pills 13 to be dispensed from the receptacle are contained. The body 11 has issuing from it a neck 14 having a bore 15 communicating with the exterior and with the chamber 12 and through which the pills may be dispensed. The exterior of the neck 14 is formed with threads 16 or other suitable protuberances and which serve to hold a closure 17 attached thereto.

The instant invention has been illustrated as applicable to pills in the form of a disc or tablet and the pills 13 are so shown in the drawings. It can, however, be readily understood that the invention may be utilized with other forms of pills or with other similarly shaped objects.

The closure 17 comprises a cap 18, best shown in Figs. 3 and 4, which has a cylindrical wall structure 19 closed at its outer end by means of an end wall 21. This construction forms a cylindrical socket 22 within said cap in which is mounted a rotor 32. The cap 18 is preferably constructed of polyethylene or some other elastic material, and the wall structure 19 is of slightly lesser internal diameter than the threads or protuberances 16 on the bottle 10 so that the cap becomes firmly attached to said neck when forced over the same. An inwardly extending lip 24 at the lower end of the wall structure 19 further assists in holding the cap 18 attached to the receptacle 10. Centrally located in the end wall 21 of cap 18 is an opening 25 in the form of a narrow slot which is of suitable dimensions to freely pass the pills 13 when the same enter said opening edgewise.

Mounted in the bore 15 of neck 14 of the receptacle 10 is a funnel 26 shown in detail in Figs. 9 and 10. This funnel has a body 27 cylindrical in form and which fits into the bore 15 of neck 14. A flange 28 issuing outwardly from the outermost portion of said body overlies the end of the neck and prevents the funnel from sliding into the chamber 12 within the receptacle 10. The body 27 has a passageway 29 extending through the same which flares from a rectangular transfer opening 31 in the outermost portion of the same to the diameter of the bore 15 at the innermost portion of the same. The opening 31 is of the same shape and size as the discharge opening 25 in the end wall 21 of cap 18 and is concentrically disposed with reference to said opening and the bore 15. The passageway 29 serves to direct the pills one at a time edgewise through the opening 31 when the receptacle is inverted.

In the socket 22 is rotatably mounted the rotor 32 best shown in Figs. 5 and 6. This rotor is cylindrical in form and has an annular wall 33 which fits freely in the socket 22 and supports the rotor for rotation. Said rotor further includes a core 34 which is formed with a pocket 35 open at both ends. The pocket 35 is of the same cross-sectional shape and size as the openings 25 and 31 and is of a length great enough to completely receive and hold one of the pills 13. The core 34 and the wall 33 are connected together by means of a radial wall 36 and the parts are stiffened by means of webs 37, 38 and 39 integral therewith. This construction forms a space 43 within the rotor 32. The rotor 32 fits in between the flange 28 of funnel 26 and the end wall 21 of cap 18. The rotor 32 may be rotated by means of a finger piece 41 which projects through a segmental shaped bayonet slot 42 formed in the wall structure 19 of the cap 18. This slot has a notch 44 in it and in which the finger piece 41 may be received. A wire coil spring 45 of a few convolutions, best shown in Figs. 7 and 8, is disposed within the space 43 in the rotor 32. Webs 37, 38 and

39 are somewhat shorter than the core 34 and the annular wall 33 and form rests on which the spring 45 may rest. These webs maintain said spring within the confines of the rotor. One end 46 of the spring 45 is bent outwardly in one direction and engages the web 38 while the other end 47 is bent outwardly in the opposite direction and engages a lug 48 issuing inwardly from the end wall 21 of cap 18. The spring 45 is so tensioned that it urges the finger piece 41 toward the notch 44. The rotor 32 is preferably constructed of polyethylene or some other flexible plastic material and is so constructed that the finger piece 41 normally lies within the notch 44 of slots 42. Due to the flexibility of the material, this finger piece may be depressed and urged out of the notch 44 and into the slot 42 proper where the rotor may be manually rotated for a fraction of a turn.

The lug 48 and the slot 42 are so positioned with reference to the cap 18 that the pocket 35 of rotor 32 is partially out of register with the opening 25 in the end wall 21 of said cap when the finger piece 41 lies in the notch 44 of said slot 42 and the lug 48 engages the web 37. The cap 18 is so applied to the neck 14 that the inlet of the pocket 35 registers with the opening 31 in the funnel 26. While the parts are so disposed, a pill can enter the pocket 35 through opening 31 of said funnel.

The method of operation of the invention is obvious. When the pills are packaged, a wad 49 of cotton is inserted through the passageway 29 in funnel 26, with the major portion 50 thereof disposed inwardly of the same and with a tail 51 extending outwardly of the same. The portion 50 is then inserted into the receptacle 10 and the funnel 26 applied to neck 14 of said receptacle. Portion 50 of said cotton wad is of sufficient quantity to properly pack the pills. Spring 45 is next inserted into the space 43 in rotor 32 and the rotor 32 inserted into the socket 22 of cap 18 with the finger piece 41 projecting through slot 42 in said cap. The radial wall 36 of rotor 23 has an opening 52 in the same and through which a suitable tool may be inserted by means of which the end 47 of spring 45 may be engaged in a notch 53 in the lug 48 of cap 18. After these parts have been assembled the tail 51 of the wad 49 of cotton is drawn through the pocket 35 of rotor 32 and through the opening 25 in the end wall 21 of cap 18. The cap 18 is then applied to the neck 14 of bottle 10 with the pocket 35 making the proper angle with reference to the opening 31 of the passageway 29 of rotor 32. The surplus cotton of the tail 51 is then cut off to allow sufficient thereof projecting beyond the end of the cap. It will be noted in Fig. 1 that the opening 25 and the pocket 35 are normally out of register with one another. However, the said pocket and opening being substantially coaxial with respect to the rotor 32 and the socket 22 of the cap 18, sufficient passageway is afforded through the same to receive the tail 51 of the cotton. In use the cotton is withdrawn from the receptacle by engagement with the tail 51. As previously stated, the opening 31 of passageway 29 of funnel 26 is in register with the pocket 35 of rotor 23 so that when the receptacle is inverted, as shown in Fig. 2, one of the pills 13 will be directed by the passageway 29 in funnel 26 into the pocket 35. Normally opening 25 is held out of register with the pocket 35 through the action of spring 45, the finger piece 41 being disposed in the notch 44 in slot 42 of cap 18. Upon moving the finger piece 41 out of said notch and into the slot proper, rotor 32 may be rotated to bring the pocket 35 into register with spring 45. This permits the pill to discharge from said pocket. However, such rotation brings the opening 31 of passageway 29 of funnel 26 out of register with the pocket 35 and prevents another pill from entering said pocket until the rotor has been brought back to normal position. In this manner only one pill at a time may be dispensed.

The advantages of the invention are manifest. Only one pill at a time can be dispensed. By means of the con-

struction employed, several successive operations are necessary before a pill can be procured. Small children can hence not operate the dispenser and the danger of children consuming the pills is prevented. The device can be easily cast out of polyethylene or other suitable plastic materials and at a nominal expense.

Changes in the specific form of the invention, as herein described, may be made within the scope of what is claimed without departing from the spirit of the invention.

Having described the invention, what is claimed as new and desired to be protected by Letters Patent is:

1. In a pill dispenser for disc-like pills, a receptacle having a neck through which the pills contained in the receptacle may be dispensed, a cap detachably mounted on said neck and formed with an end wall having a narrow opening therein and through which the pills may be discharged edgewise, a funnel disposed within said neck and formed with a surface spaced from said end wall, said funnel having a passageway converging toward a transfer opening in said surface of the same size and shape as the discharge opening, a rotor within said cap disposed between said end wall and surface and having a pocket communicating with said opening, said openings being coaxial and normally angularly disposed relative to one another with reference to the axis of said rotor, said rotor having an annular space within the same encircling said pocket and open at the portion thereof facing the end wall of said cap, a lug on said end wall entering said space and a torsion spring in said space encircling said pocket and engaging said lug and said rotor and tensioned to return the rotor to its normal position and means manually engageable exteriorly of said cap and connected to said rotor to effect transfer of a pill within said funnel and into said pocket and to discharge said pill from said pocket and through the discharge opening in said cap.

2. In a pill dispenser for disc-like pills, a receptacle having a neck through which the pills contained in the receptacle may be dispensed, a cap detachably mounted on said neck and formed with an end wall having a narrow opening therein and through which the pills may be discharged edgewise, a funnel disposed within said neck and formed with a surface spaced from said end wall, said funnel having a passageway converging toward a transfer opening in said surface of the same size and shape as the discharge opening, a rotor within said cap disposed between said end wall and surface and having a pocket communicating with said opening, said openings being coaxial and normally angularly disposed relative to one another with reference to the axis of said rotor, said rotor having an annular space within the same encircling said pocket and open at the portion thereof facing the end wall of said cap, a lug on said end wall entering said space, said rotor having a web disposed in said space and a torsion spring in said space encircling said pocket and engaging said web and said lug and tensioned to return the rotor to its normal position and means manually engageable exteriorly of said cap and connected to said rotor to effect transfer of a pill within said funnel and into said pocket and to discharge said pill from said pocket and through the discharge opening in said cap.

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