

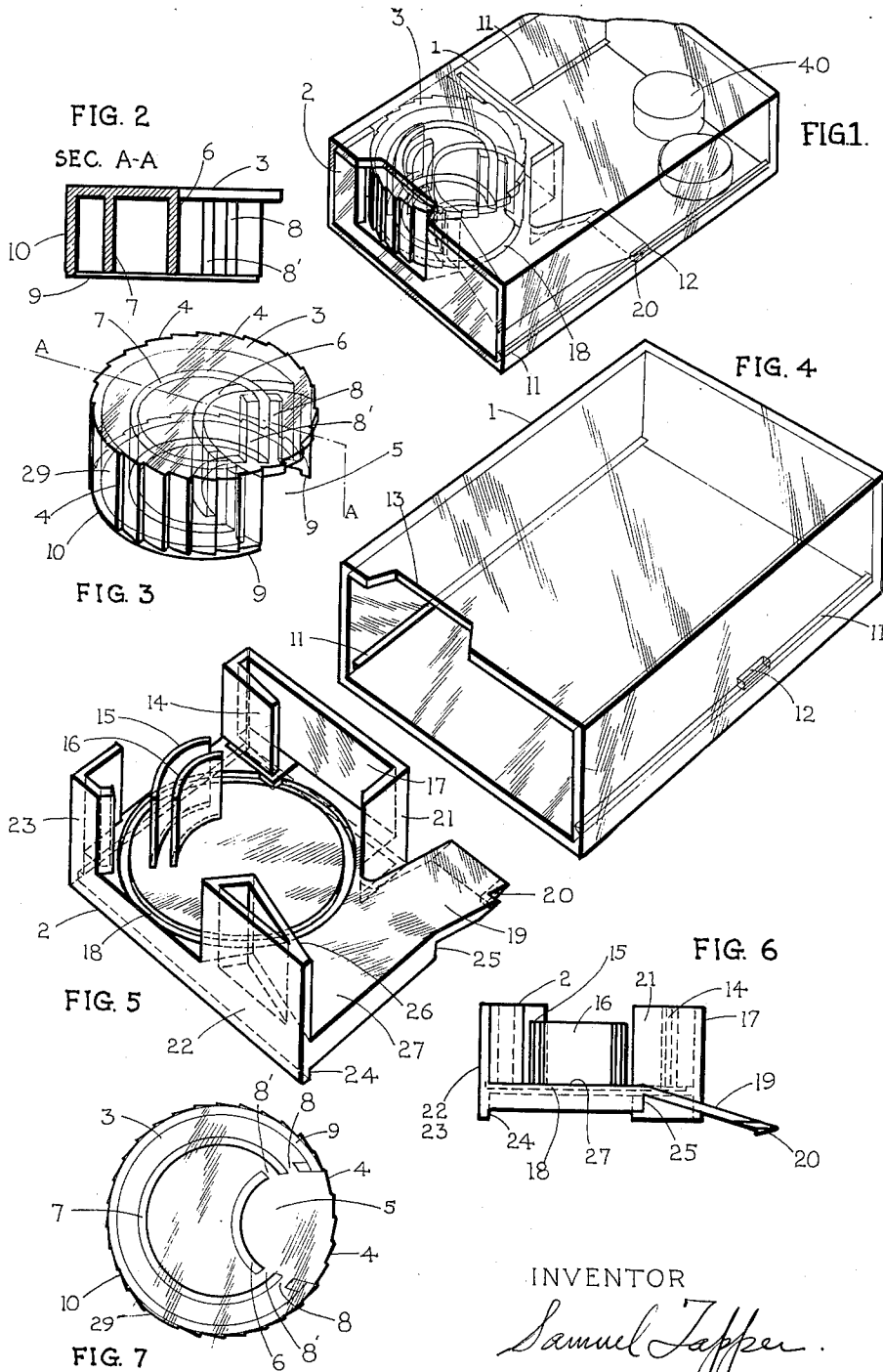
Feb. 12, 1963

S. TAPPER

3,077,261

TABLET STORAGE CASE WITH DISPENSING CONTROL UNIT

Filed Jan. 26, 1962



INVENTOR

Samuel Tapper

1

3,077,261

TABLET STORAGE CASE WITH DISPENSING CONTROL UNIT

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

Filed Jan. 26, 1962, Ser. No. 168,978

3 Claims. (Cl. 206-42)

This invention relates to tablet storage packages equipped with dispenser units.

The object of this invention is to provide a package for tablets which will dispense one tablet at a time and prevent both the return of a tablet once it is ejected to eliminate possible substitutions and the handling of tablets other than those used.

At present, the method of dispensing medication in hospitals in the form of tablets is to put the tablets in small cups or containers. It is thus possible to handle the tablets before use, to interchange tablets from one cup to another, or to substitute tablets by careless handling or mistake. With petitioner's invention, the packages would be filled in the pharmacy, sealed and sent to nurses' stations properly identified and completely safe to use. Once a tablet is taken from the package, it could not be replaced, thereby preventing contamination from handling. The label containing the name, dosage and other pertinent information is placed on the bottom of the package on the inside in between the channels provided therefor, and locked in when the package is assembled.

Other uses for this invention will probably arise as familiarity with the package develops.

It will be noted that two parts of this invention, namely, the case and the dispensing drum, are transparent, and the platform is opaque. This is done for a very special reason. When assembled, the lock, identified by 12 and 20, will be covered by an outer label, thereby concealing the mechanism holding the package together and frustrating any attempt to open it. Only when it is returned to the pharmacy will the outer label be removed and the package opened for refilling.

Petitioner points out the possibility of using the same mechanism for dispensing capsules. This can be done by changing the form of the opening in the dispensing drum and the shape of the approach thereto. Petitioner intends to file a separate application covering same.

Petitioner's invention consists of three parts: the case, the platform, and the dispensing drum, hereafter referred to as the drum. The case is provided with two longitudinal channels, one on either side of the inner bottom surface. Into these channels would be slipped a card containing pertinent information concerning the drug therein. There is also a small hole in the bottom which is part of the locking device, and a cut-back on the upper wall to facilitate rotating the drum. The platform has a ramp for a tablet to separate itself from the others and come into position for entering the drum, a circular recessed track to hold the drum in proper position and to allow for turning of same; two curved wall segments or posts so placed that when the drum is in dispensing position and is rotated in the circular track, the said wall segments or posts block the passage of any tablet that might be in the dispensing drum; and a pawl for use in cooperation with the ratchet formation on the outside wall of the drum. At one corner of the ramp and facing downward is the lock tab for fastening the platform to the outer case. While reference is made to two curved wall segments or posts, any number may be used. The dispensing drum has an opening in its side to receive one tablet for dispensing, said opening being delineated by a vertically disposed curved wall. This wall has two openings on either side to allow the drum when it rotates to pass by the curved wall segments or posts on the platform. Concentric with the outside wall is a

2

vertically disposed wall broken only by the opening for the tablet. This wall rotates in between the wall segments or posts of the platform. On the outside of the drum is a series of teeth facing in one direction and separated by one blank area. This blank area on the outside wall is very important to the proper functioning of the drum. When the drum receives a tablet, and is then rotated to dispensing position, it is conceivable that the drum be turned too much and the tablet would jam against the curved wall segments 15 and 16. To avoid such a possibility, an area of freedom of motion is provided by said blank area 29. The pawl 14 of FIG. 5, when resting on area 29, would permit the user to turn the drum back far enough to release the tablet. The way the package works is as follows:

A tablet moves up the ramp and into the drum. The drum is rotated by finger or thumb until the tablet is facing the outside opening in the platform wall. Any attempt to return the tablet by reversing the direction of motion of the drum is blocked by the pawl engaging a tooth in the outer wall of the drum. Also, any attempt to continue rotating the drum in a complete circle without first removing the tablet is blocked by the curved wall segments or posts of the platform. Any attempt to remove the platform is blocked by the lock under the corner of the ramp. To unlock the platform it would be necessary to remove the outer label, press the lock tab inward and pull the platform outward. This procedure would not be obvious to one not aware of the construction of the package.

Referring to the figures of the drawing:

FIG. 1 shows the complete package assembled and containing tablets.

FIG. 2 shows a cross section thru the dispensing drum.

FIG. 3 shows the dispensing drum in perspective.

FIG. 4 shows the outer case in perspective.

FIG. 5 shows the platform that holds the dispensing drum and which fits into the open end of the outer case. This is also in perspective.

FIG. 6 shows a side view of the platform to better show the ramp and lock tab.

FIG. 7 shows a top view of the dispensing drum to better illustrate the relationship of the inner parts, as the delineating wall for isolating a tablet, and the concentric wall.

Referring to the figures for more detailed description:

FIG. 1 shows 1 as the outer case, which in this case is of rectangular form, 2 is the platform and 3 is the drum. 40 represents tablets. Drum 3 is held in position on platform 2 by fitting the lower rim of the drum into the circular track 18 on the platform. Then the platform and drum are inserted into the opening of the case 1 until the platform wall is flush with the opening rim of the case. In this position the tab 20 drops into and cooperates with the opening 12 to form a lock, fastening the platform into the case 1. The drum is now securely held between the platform and the opposing case wall. The assembly is complete, and the package is ready for dispensing any tablets that it might contain.

FIG. 2 shows a cross-section thru A—A of FIG. 3, the drum. 3 designates the entire drum. 6 represents the delineating wall around the opening for receiving the tablet for dispensing. 7 represents the concentric inner vertically disposed wall that terminates at either end at the opening for the tablet. 9 is the depending rim of the outside wall of the drum which runs in the circular track or channel in the platform. 8 and 8' are openings in the delineating wall 6 to allow for passing the vertical curved wall segments or posts on the platform.

FIG. 3 shows the drum in greater detail. 5 is the open space for receiving a tablet. 6 is the wall that delineates the limits of the space 5 for the tablet. 8 and 8' are open-

3

ings that appear in the delineating wall 6. There are four such openings in wall 6, two on either side of space 5. 7 is a circular wall concentric with the outside wall 10. This wall is eliminated in area of opening 5. Wall 7 is so placed as to pass between the curved wall segments or posts 15 and 16 of FIG. 5. 9 is the bottom rim of wall 10 and is designed to fit into the circular track on the platform 18 shown in FIG. 5. 4 shows the ratchet teeth on the outside wall of the drum. The top of the drum is completely closed and teeth are cut into the edge that appears over the opening 5. 29 is a blank area containing no teeth. This permits the user to turn the drum back a little to release a jammed tablet resulting from over rotating the drum.

FIG. 4 shows the case, designated by 1. 11 and 11 are guides for retaining a card or stiff label. These guides are shortened at the open end of the case by an amount equal to the thickness of the front facing wall 22—23 of the platform 2. 13 is a cutaway to allow a better contact between the drum and a finger used for turning said drum. 12 is an opening in the bottom wall so placed that when the platform 2 is slipped into the case, the locking tab 20 will drop into it.

FIG. 5 shows the platform. 19 is the ramp up which tablets travel to reach the opening 5 in the drum 3. 20 is a depending tab which, in cooperation with the opening 12 of the case wall, forms a locking device to secure the platform to the case. Ramp 19 is unattached to any other part of the platform except the platform floor so that it may act as a spring to keep the lock, 20 and 12, closed, or if no lock is used, to act as a pressure point to hold the platform in the case. The elevation of the ramp is determined by the size of the tablets to be dispensed. On the platform is circular track 18 which guides the turning of the drum 3 when said drum rim 9 rests in track 18. 15 and 16 are curved wall segments that act to block the movement of a tablet back into the case. 14 is a fixed pawl which cooperates with the ratchet teeth on the outside wall of the drum allowing the drum to turn in only one direction. 17 forms an inside wall for delimiting the area within the case, and 22, 23 form a facing wall for the assembled unit with a dispensing opening therein. 26 is an angular guide wall. This wall permits a second tablet to slide back in the direction of motion and permit the drum to turn unhindered. 24 is the stop portion of the front wall that butts against the forward end of guide 11 shown in FIG. 4.

FIG. 6 shows the platform 2 in a side view. 22, 23 is the front facing wall containing the tablet dispensing opening. 24 is the stop portion that abuts the forward end of 11 in FIG. 4. 15 and 16 are the curved wall sections for blocking the circular movement of the tablet in the drum. 17 is the platform wall facing into the case. 14 is the pawl. 19 is the ramp and 20 is the locking tab.

FIG. 7 shows a top view of the drum 3. 4—4 are the teeth on the outside wall 10. 29 is the blank area for correcting any over turning of the drum when in use that could cause a tablet to jam against the wall segment blocks 15 and 16. 7 is the inner concentric wall. 6 is the wall that delineates the open area 5 for receiving a tablet for dispensing. 8—8' are the openings provided to bypass the wall segments 15 and 16 shown in FIG. 5.

What is claimed is:

1. A combination tablet container and dispensing control unit consisting of three cooperative parts, namely, a case, a platform and a drum, wherein the case has one end open, there being in the case two longitudinal guides, one on each of the two longitudinal side walls, said guides located at the junctions of the side walls and the bottom adjoining wall, and also having a portion of the top surface along the open end cut away to expose one edge of the drum to facilitate rotating, and wherein the said platform has a front wall, back wall and a floor, the said front wall having an opening of sufficient size to permit a given tablet to pass thru, and the said back wall being

4

shortened to permit a given tablet to pass it by at one end, there being a circular track in the floor between the back wall and the opening in the front wall for accommodating the above mentioned drum, and within said circular track rising vertically from the floor of the platform there are one or more wall segments or posts to act in cooperation with the drum when it rotates to force the ejection of any tablet contained within the said drum, there also being a fixed pawl fastened to one vertical edge of the back wall of the platform by means of a U-shaped turn, said pawl so placed as to contact the teeth on the outer surface of the drum as it is rotated to prevent reversal of the drum motion, there also being a guide wall rising from the platform floor outside of the track area and located behind the front facing wall of the platform, said guide wall starting at the outside edge of said front wall and proceeding at an angle thereto until almost reaching the aforementioned track, and wherein there is a cooperating drum which is closed at the top and open at the bottom, said drum having a portion of its side wall removed to receive a tablet, the remainder of said wall except for one small portion having a series of vertically disposed teeth thereon for engaging the aforementioned pawl of the platform, the excepted small portion of said wall being smooth and without teeth, said smooth portion so located as to contact the aforementioned pawl when the opening in the side wall of the drum faces outward from the case, and where the lower rim of the said drum rests within the circular track on the floor of the platform to secure said drum in its proper rotating position, said drum also having a curved wall depending from its top surface delineating the size of the area for receiving the tablets to be dispensed, said depending wall having vertical openings therein to permit the drum to turn without striking the aforementioned posts or wall segments rising from the floor of the cooperating platform, there also being within the said drum a concentric wall depending from the top of the drum and so placed as to pass between the aforementioned posts or wall segments of the platform, but which does not extend thru the open area for receiving the tablet for dispensing, the top of said drum fitting flush against the under surface of the top of the cooperating case, thus securing the drum in the platform track when the said platform with the drum resting in the track of the platform is inserted into the opening in the case.

2. A combination tablet container and dispensing control unit consisting of three cooperative parts, namely, a case, a platform and a drum, wherein the case has one end open, there being in the case two longitudinal guides, one on each of the two longitudinal side walls, said guides located at the junctions of the side walls and the bottom adjoining wall, and also having a portion of the top surface along the open end cut away to expose one edge of the drum to facilitate rotating, and wherein the said platform has a front wall, back wall and a floor with a ramp attached thereto, the said front wall having an opening of sufficient size to permit a given tablet to pass thru, and the said back wall being shortened to permit a given tablet to pass it by at one end, there being a circular track in the floor between the back wall and the opening in the front wall for accommodating the above mentioned drum, and within said circular track rising vertically from the floor of the platform there are one or more wall segments or posts to act in cooperation with the drum when it rotates to force the ejection of any tablet contained within the said drum, there also being a fixed pawl fastened to one vertical edge of the back wall of the platform by means of a U-shaped turn, said pawl so placed as to contact the teeth on the outer surface of the drum as it is rotated to prevent reversal of the drum motion, there also being a guide wall rising from the platform floor outside of the track area and located behind the front facing wall of the platform, said guide wall starting at the outside edge of said front wall and proceeding at an angle thereto until almost reaching the aforementioned

5

track, and the aforementioned ramp which extends from the floor of the platform to the bottom wall of the cooperating case, said ramp exerting pressure against the bottom wall of the case to hold the platform in the case by friction, and wherein there is a cooperating drum which is closed at the top and open at the bottom, said drum having a portion of its side wall removed to receive a tablet, the remainder of said drum wall except for one small portion having a series of vertically disposed teeth thereon for engaging the aforementioned pawl of the platform, the excepted small portion of said wall being smooth and without teeth, said smooth portion so located as to contact the aforementioned pawl when the opening in the side wall of the drum faces outward from the case, and where the lower rim of the said drum rests within the circular track on the floor of the platform to secure said drum in its proper rotating position, said drum also having a curved wall depending from its top surface delineating the size of the area for receiving the tablets to be dispensed, said depending wall having vertical openings therein to permit the drum to turn without striking the aforementioned posts or wall segments rising from the floor of the cooperating platform, there also being within the said drum a concentric wall depending from the top of the drum and so placed as to pass between the aforementioned posts or wall segments of the platform, but which does not extend thru the open area for receiving the tablet for dispensing, the top of said drum fitting flush against the under surface of the top of the cooperating case, thus securing the drum in the platform track when the said platform with the drum resting in the track of the platform is inserted into the opening in the case.

3. A combination tablet container and dispensing control unit consisting of three cooperative parts, namely, a case, a platform and a drum, wherein the case has one end open, there being in the case two longitudinal guides, one on each of the two longitudinal side walls, said guides located at the junctions of the side walls and the bottom adjoining wall, said case also having an opening in the bottom wall for receiving a cooperating tab on the platform ramp, said opening and tab together constitute a lock that fastens the platform to the case, and also having a portion of the top surface along the open end cut away to expose one edge of the drum to facilitate rotating, and wherein the said platform has a front wall, back wall and a floor with a ramp and locking device attached thereto, the said front wall having an opening of sufficient size to permit a given tablet to pass thru, and the said back wall being shortened to permit a given tablet to pass it by at one end, there being a circular track in the floor between the back wall and the opening in the front wall for accommodating the above mentioned drum, and within said circular track area rising vertically from the floor of the platform there are one or more wall segments or posts to act in cooperation with the drum when it rotates to force the ejection of any tablet contained within the

6

said drum, there also being a fixed pawl fastened to one vertical edge of the back wall of the platform by means of a U-shaped turn, said pawl so placed as to contact the teeth on the outer surface of the drum as it is rotated to prevent reversal of the drum motion, there also being a guide wall rising from the platform floor outside of the track area and located behind the front facing wall of the platform, said guide wall starting at the outside edge of said front wall and proceeding at an angle thereto until almost reaching the aforementioned track, and the aforementioned ramp and locking device attached thereto, said ramp extending from the floor of the platform to the bottom wall of the cooperating case, the free end of said ramp exerting pressure upon the bottom wall of the case, the locking device being a depending tab at the end of the ramp, said tab dropping into the hole provided therefor in the bottom wall of the case to secure the platform to the case, and wherein there is a cooperating drum which is closed at the top and open at the bottom, said drum having a portion of its side wall removed to receive a tablet, the remainder of said drum wall except for one small portion having a series of vertically disposed teeth thereon for engaging the aforementioned pawl of the platform, the excepted small portion of said wall being smooth and without teeth, said smooth portion so located as to contact the aforementioned pawl when the opening in the side wall of the drum faces outward from the case, and where the lower rim of the said drum rests within the circular track on the floor of the platform to secure said drum in its proper rotating position, said drum also having a curved wall depending from its top surface delineating the size of the area for receiving the tablets to be dispensed, said depending wall having vertical openings therein to permit the drum to turn without striking the aforementioned posts or wall segments rising from the floor of the cooperating platform, there also being within the said drum a concentric wall depending from the top of the drum and so placed as to pass between the aforementioned posts or wall segments of the platform, but which does not extend thru the open area for receiving the tablet for dispensing, the top of said drum fitting flush against the under surface of the top of the cooperating case, thus securing the drum in the platform track when the said platform with the drum resting in the track of the platform is inserted into the opening in the case and locked therein.

References Cited in the file of this patent

UNITED STATES PATENTS

1,021,602	Holkum	Mar. 26, 1912
2,258,866	Sanford	Oct. 14, 1941
2,558,394	Stewart	June 26, 1951
2,679,950	Swanson	June 1, 1954
3,016,167	Richards et al.	Jan. 9, 1962
3,027,000	Kantrow	Mar. 27, 1962