Note: Within nine months from the publication of the mention of the grant of the European patent, any person may give notice to the European Patent Office of opposition to the European patent granted. Notice of opposition shall be filed in a written reasoned statement. It shall not be deemed to have been filed until the opposition fee has been paid. (Art. 99(1) European Patent Convention).
Description

Technical Field of the Invention

[0001] The present invention relates to a blister pack device for storing, protecting and dispensing a dosage unit, i.e. a tablet or capsule from a blister pack. The invention also relates to a method of dispensing a dosage unit from a blister pack by using a blister pack device.

Background of the Invention

[0002] Blister packs for drugs in tablet form or in the form of powder or liquid enclosed in a capsule normally incorporate at least one blister part, which consists of a set of interconnected foils covering each other. One relatively rigid foil is in most cases referred to as the base and comprises cavities, so-called open “blisters”, for accommodating a tablet or a capsule each, while the other foil, which is flat, is in most cases referred to as the lid and seals the opening of the cavities or blisters.

[0003] Blister packs can be accidentally damaged during transport or by being carried around in pockets, handbags etc. Such damage occurs frequently, especially if the lid foil is breakable. To avoid the accidental damage blister packs are normally stacked in a separate box or casing, which protects the blisters during transport and storage.

[0004] For dispensing a tablet or capsule from a blister, the user is required to push the pill or tablet through the rupturable lid foil. Some blister packs have a design that makes them difficult to open and others are intentionally more difficult to open in order to prevent or discourage small children from easily pushing pills out of the blister packs. These packs sometimes become very difficult for the average person to open. Further, also blister packs that are relatively easy for the average adult to open, can be difficult to open for handicapped, elderly people and people with arthritis and other hand impediments.

[0005] US 5,791,513 relates to a blister pack device for storing and dispensing a dosage unit comprising a container having an opening for receiving a blister pack of the type having a base foil with cavities and a flat lid foil that seals the cavities. The container is provided with a dispensing means for ejecting a dosage unit from a blister of the blister pack, the dispensing means comprises a lever arm pivotally mounted on the container and a cavity in the container for receiving an ejected dosage unit wherein the lever arm has a first open position allowing the blister pack to be positioned under the lever arm and a second lowered position for ejecting the dosage unit from the blister into the cavity in the container. The dispensing means further comprises a guide plate for positioning the blister pack with its base foil facing the lever arm and its lid foil facing the cavity in the container. The guide plate is positioned on the container adjacent the cavity. For receiving the blister pack in the right position a gap is provided between the container and the guide plate.

[0006] Preferably, the guide plate is provided with a U-shaped indentation partly surrounding the cavity for positioning a blister of the blister pack.

[0012] Preferably, the guide plate comprises at least one leg partly surrounding the cavity and fixing a blister in the guide plate.

[0014] For pushing the content out of the blister, the lever arm is preferably provided with a protruding member.

[0015] Preferably, the lever arm is connected to the
container via a hinge. Preferably, the lever arm is L-shaped such that the distal end of the lever arm closes off the opening of the container in a closed position.

Preferably, the distance (b) between the protruding member and the distal end of the lever arm is greater than the distance (a) between the protruding member and the hinge.

Preferably, the relationship b/a between the distances a and b has a value between 1.5 and 5.

Preferably, the container is provided with a notch on each side of the opening for easy access of the blister pack.

Preferably, the container and the lever arm are made out of a plastics material.

Preferably, the lever arm is at least partially transparent.

Preferably, the lever arm is at least partially transparent.

Preferably, the present invention also provides a method as defined in the appended claims.

The main advantage of the present invention is that it provides effective protection for the blister pack and at the same time an effective dispensing means for ejecting a dosage unit.

A further advantage of the present invention is that it can be operated using only one hand.

Still a further advantage of the present invention is that the lever arm provides enough force such that even users with weak hands can eject a dosage unit from a blister pack having a tough back foil, such as a child resistant blister pack.

Brief description of the drawings

The above and other features and advantages of the invention are defined in the claims and described in greater detail below with reference to the accompanying drawings, which illustrate preferred embodiments.

Figure 1 illustrates a perspective view of the blister pack device in an open position.

Figure 2 illustrates a perspective view of the blister pack device in a closed position.

Figure 3 shows a perspective view of the blister pack device with a blister pack positioned for dispensing a dosage unit therefrom.

Figure 4 is a cross-section of the blister pack device according to Figure 1.

Figures 5a-5c illustrate in enlarged scale the dispensing means of the blister pack device of Figure 1.

Description of preferred embodiments

Figure 1 illustrates a blister pack device 1, which comprises a container 2 having an opening 4 for receiving a blister pack and a dispensing means for ejecting a dosage unit from a blister of the blister pack. A dosage unit is for example a tablet or a capsule. A notch 3 is provided in the container material on each side of the opening 4 to facilitate the withdrawal of the blister pack 12 from the container. Inside the container there is also space for receiving a leaflet carrying information to the user, such as patient information. In a preferred embodiment, the container 2 is substantially flat and elongate formed of a plastics material, such as polypropylene or polycarbonate.

The dispensing means can be seen in Figure 1 showing the blister pack device in an open position. The dispensing means comprises a lever arm 6, a guide plate 9 for positioning the blister pack and a cavity 8 receiving the ejected dosage unit. The lever arm is attached to the container 2 via a hinge 5 such that the lever arm is movable between an open position allowing a blister pack to be positioned under the lever arm and a lowered position for ejecting a dosage unit from the blister pack into the cavity. The cavity 8 is a depression in the material of container 2, the cavity being positioned under the lever arm 6 between the opening 4 and the hinge 5.

Figure 2 shows the blister pack device 1 in a closed position for storing and protecting a blister pack inside the container 2. The lever arm 6 being a part of the dispensing means also has the function of being a closing member for closing off the opening 4. The lever arm has a L-shaped form and the distal end 7 of the lever arm closes off the opening 4. A thin rim (not shown) under the edge of the distal end 7 of the lever arm will snap fit onto the end of the container when the lever arm closes the opening 4.

In a preferred embodiment the container 2 is made partially transparent such that the user can see the blister pack 12 and the number of doses left in it inside the container. Also the lever arm 6 can be made at least partially transparent as to facilitate the positioning of the blister pack into the guide plate 9 under the lever arm.

In Figure 3, a blister pack 12 is introduced into position under the guide plate 9 for ejecting a dosage unit from a blister 13. The blister pack is introduced in a gap 20 between the container 2 and the guide plate 9. The width of the gap 20 is dimensioned to receive a blister pack. The guide plate further has a U-shaped indentation 18 partly surrounding the cavity 8 and two legs 16 on each side of the cavity for positioning and fixing the blister 13 in a correct position. Details of the dispensing means can be seen in Figures 5a to 5c. A protrusion 10 is provided on the inside of the lever arm 6 for pushing the dosage unit 15 from the blister into the cavity. As the lever arm is lowered the protrusion 10 pushes out the content of the blister 13 into the cavity 8 located under the guide plate and lever arm. The blister pack 12 is then removed, preferably put back into the container 2 and the user can pick up or tip out the dosage unit 15 from the cavity.

The lever action will provide enough force for ejecting a tablet from a blister pack having a tough back foil, i.e. a child resistant blister pack. The tough, strong film is used to prevent children from getting access the
content of the blisters. Unfortunately, this film is sometimes so strong that an adult user with weak hands or a hand impediment cannot eject the content. Therefore, the present invention discloses a device that is able to develop enough force in the dispensing means to open such blisters. To be able to develop enough force from the lever arm the relationship $b/a$ between the distances $a$ and $b$ should be 1.5 to 5. The distances $a$ and $b$ are shown in Figure 4 where $a$ is the distance between the protruding member 10 and the hinge 5 and $b$ is distance between the protruding member 10 and the distal end 7 of the lever arm. By use of the lever arm for dispensing the content from a blister the user needs less hand force than if he/she had to push out the content from the blister with their fingers. In this way even persons with reduced hand strength will be able to dispense the content from a blister pack.

Further, it will be understood that the present invention is not limited to the described embodiments but can be modified in many different ways without departing from the scope of the appended claims.

Claims

1. A blister pack device (1) for storing a blister pack (12) of the type having a base foil with cavities and a flat lid foil that seals the cavities and for dispensing a dosage unit (15) therefrom, comprising a container (2) having an opening (4) for receiving the blister pack, wherein the container is provided with a dispensing means (6, 8, 9) for ejecting a dosage unit from a blister (13) of the blister pack, the dispensing means comprises a lever arm (6) pivotally mounted on the container and a cavity (8) in the container for receiving an ejected dosage unit wherein the lever arm has a first open position allowing the blister pack to be positioned under the lever arm and a second lowered position for ejecting the dosage unit from the blister into the cavity (8) in the container (2), characterised in that the dispensing (6, 8, 9) means further comprises a guide plate (9) for positioning the blister pack (12) with its base foil facing the lever arm (6) and its lid foil facing the cavity (8) in the container (2), wherein the guide plate (9) is positioned on the container (2) adjacent the cavity (8), wherein a gap (20) is provided between the container (2) and the guide plate (9) for receiving the blister pack (12).

2. A blister pack device according to claim 1, wherein the guide plate (9) is provided with a U-shaped indentation (18) partly surrounding the cavity (8) for positioning a blister (13) of the blister pack (12).

3. A blister pack device according to any of claims 1 to 2, wherein the guide plate (9) comprises at least one leg (16) partly surrounding the cavity (8) and fixing a blister (13) in the guide plate.

4. A blister pack device according to any of claims 1 to 3, wherein the lever arm (6) is provided with a protruding member (10) for pushing a unit dosage (15) out of the blister (13) into the cavity (8).

5. A blister pack device according to claim 4, wherein the lever arm (6) is connected to the container (2) via a hinge (5), wherein the distance (b) between the protruding member (10) and the distal end (7) of the lever arm is greater than the distance (a) between the protruding member (10) and the hinge (5).

6. A blister pack device according to claim 5, wherein the relationship $b/a$ between the distances (a) and (b) has a value between 1.5 and 5.

7. A blister pack device according to any of claims 1 to 6, wherein the lever arm (6) is L-shaped such that the distal end (7) of the lever arm closes off the opening (4) of the container in a closed position.

8. A blister pack device according to any of the preceding claims, wherein the container (2) is provided with a notch (3) on each side of the opening (4) of the container.

9. A blister pack device according to any of the preceding claims, wherein the container (2) and the dispensing means (6, 8, 9) are made out of a plastics material.

10. A blister pack device according to any of the preceding claims, wherein the container (2) is partially transparent.

11. A blister pack device according to any of the preceding claims, wherein the lever arm (6) is at least partially transparent.

12. A method of dispensing a dosage unit from a blister pack of the type having a base foil with cavities and a flat lid foil that seals the cavities, characterised by using a blister pack device (1) for storing a blister pack (12) and dispensing a dosage unit (15) therefrom, the blister pack device (1) comprising a container (2) having an opening (4) for receiving the blister pack, wherein the container is provided with a dispensing means (6, 8, 9) for ejecting a dosage unit from a blister (13) of the blister pack, the dispensing
means comprises a lever arm (6) pivotally mounted on the container and a cavity (8) in the container for receiving an ejected dosage unit wherein the lever arm has a first open position allowing the blister pack to be positioned under the lever arm and a second lowered position for ejecting the dosage unit from the blister into the cavity (8) in the container (2); positioning the blister pack with its base foil facing the lever arm (6) and its lid foil facing the cavity (8) in the container (2); and lowering the lever arm (6) from the first position to the second position for ejecting the dosage unit from the blister into the cavity (8) in the container (2).

Patentansprüche

1. Blisterpackungsvorrichtung (1) zum Aufbewahren einer Blisterpackung (12) jener Art, die eine Basisfolie mit Hohlräumen und eine flache Deckelfolie, die die Hohlräume abdichtet, aufweist, und zum Ausgeben einer Dosiseinheit (15) daraus, umfassend einen Behälter (2) mit einer Öffnung (4) zum Aufnehmen der Blisterpackung, wobei der Behälter mit einer Ausgabeinrichtung (6, 8, 9) zum Ausstoßen einer Dosiseinheit aus einem Blister (13) der Blisterpackung versehen ist, wobei die Ausgabeinrichtung einen Hebelarm (6), der an dem Behälter verschwenkbar angebracht ist, und einen Hohlraum (8) in dem Behälter zum Aufnehmen einer ausgestoßenen Dosiseinheit umfasst, wobei der Hebelarm eine erste, geöffnete Position, die es gestattet, die Blisterpackung unter dem Hebelarm zu positionieren und eine zweite, abgesenkte Position zum Ausstoßen der Dosiseinheit aus dem Blister in den Hohlraum (8) im Behälter (2) aufweist, dadurch gekennzeichnet, dass die Ausgabeinrichtung (6, 8, 9) ferner eine Führungsplatte (9) zum Positionieren der Blisterpackung (12) mit ihrer Basisfolie zu dem Hebelarm (6) weisend und ihrer Deckelfolie zum Hohlraum (8) im Behälter (2) weisend umfasst, wobei die Führungsplatte (9) auf dem Behälter (2) neben dem Hohlraum (8) positioniert ist, wobei ein Spalt (20) zwischen dem Behälter (2) und der Führungsplatte (9) zum Aufnehmen der Blisterpackung (12) vorgesehen ist.

2. Blisterpackungsvorrichtung nach Anspruch 1, bei der die Führungsplatte (9) mit einer U-förmigen Einkerbung (18) versehen ist, die den Hohlraum (8) zur Positionierung eines Blisters (13) der Blisterpackung (12) teilweise umgibt.

3. Blisterpackungsvorrichtung nach einem der Ansprüche 1 bis 2, bei der die Führungsplatte (9) wenigstens einen Schenkel (16) umfasst, der den Hohlraum (8) teilweise umgibt und einen Blister (13) in der Führungspalte fixiert.

4. Blisterpackungsvorrichtung nach einem der Ansprüche 1 bis 3, bei der der Hebelarm (6) mit einem vorragenden Element (10) zum Herausdrücken einer Dosiseinheit (15) aus dem Blister (13) in den Hohlraum (8) versehen ist.

5. Blisterpackungsvorrichtung nach Anspruch 4, bei der der Hebelarm (6) über ein Gelenk (5) mit dem Behälter (2) verbunden ist, wobei der Abstand (b) zwischen dem vorragenden Element (10) und dem distalen Ende (7) des Hebelarms größer als der Abstand (a) zwischen dem vorragenden Element (10) und dem Gelenk (5) ist.

6. Blisterpackungsvorrichtung nach Anspruch 5, bei der das Verhältnis b/a zwischen den Abständen (a) und (b) einen Wert zwischen 1,5 und 5 aufweist.

7. Blisterpackungsvorrichtung nach einem der Ansprüche 1 bis 6, bei der der Hebelarm (6) L-förmig ist, so dass das distale Ende (7) des Hebelarms die Öffnung (4) des Behälters in einer geschlossenen Position verschließt.

8. Blisterpackungsvorrichtung nach einem der vorhergehenden Ansprüche, bei der der Behälter (2) auf jeder Seite der Öffnung (4) des Behälters mit einer Aussparung (3) versehen ist.

9. Blisterpackungsvorrichtung nach einem der vorhergehenden Ansprüche, bei der der Behälter (2) und die Ausgabeinrichtung (6, 8, 9) aus einem Kunststoff hergestellt sind.

10. Blisterpackungsvorrichtung nach einem der vorhergehenden Ansprüche, bei der der Behälter (2) teilweise transparent ist.

11. Blisterpackungsvorrichtung nach einem der vorhergehenden Ansprüche, bei der der Hebelarm (6) wenigstens teilweise transparent ist.

12. Verfahren zum Ausgeben einer Dosiereinheit aus einer Blisterpackung jener Art, die eine Basisfolie mit Hohlräumen und eine flache Deckelfolie, die die Hohlräume abdichtet, aufweist, gekennzeichnet durch:

   Verwenden einer Blisterpackungsvorrichtung (1) zum Aufbewahren einer Blisterpackung (12) und zum Ausgeben einer Dosiseinheit (15) daraus, wobei die Blisterpackungsvorrichtung (1) einen Behälter (2) mit einer Öffnung (4) zum Aufnehmen der Blisterpackung umfasst, wobei der Behälter mit einer Ausgabeinrichtung (6, 8, 9) zum Ausstoßen einer Dosiseinheit aus einem
Dispositif d'emballage alvéolaire selon la revendication 1, la plaque-guide (9) étant pourvue d'une indentation en forme de U (18) entourant partiellement la cavité (8) pour positionner une alvéole (13) de l'emballage alvéolaire (12).
vu d’un moyen de distribution (6, 8, 9) destiné à éjecter une unité de dosage à partir d’une alvéole (13) de l’emballage alvéolaire, le moyen de distribution comportant un bras de levier (6) monté de façon pivotante sur le récipient et une cavité (8) dans le récipient destinée à recevoir une unité de dosage éjectée, le bras de levier ayant une première position ouverte permettant à l’emballage alvéolaire d’être positionné sous le bras de levier et une deuxième position abaissée destinée à éjecter l’unité de dosage de l’alvéole dans la cavité (8) dans le récipient (2) ; le positionnement de l’emballage alvéolaire avec sa feuillette de base faisant face au bras de levier (6) et sa feuillette de couvercle faisant face à la cavité (8) dans le récipient (2) ; et l’abaissement du bras de levier (6) de la première position à la deuxième position pour éjecter l’unité de dosage de l’alvéole dans la cavité (8) dans le récipient (2).