A hand operated pill dispenser for dispensing a pill from a blister pack, comprises a base and a dispensing handle pivotally mounted at a pivot at one end of the base. At least one of the base and handle can be provided with a pill retaining cavity, and the other of the base and handle can be provided with a pill dispensing protrusion adjacent the pivot. A blister pocket locator can be provided between the cavity and the protrusion. The handle can comprise a hand grip distal from the pivot and the pill dispensing protrusion. The dispenser in one form is operative such that the locator locates a blister pack pocket adjacent the protrusion by engaging the blister pack pocket, depression of the hand grip moving the handle such that the protrusion engages the blister pack pocket to dispense a pill from the blister pack pocket into the cavity. The relative spacing of the hand grip and protrusion from the pivot can be established such that the force applied by the user to the hand grip results in an increased force at the protrusion.
The present invention relates to a hand operated pill dispenser for dispensing pills from blister packs. Pills such as medicaments or vitamins for example, are often sold in blister packs. The pills are retained in blister pockets by a foil seal which may typically be a metal or plastics seal. A pill is dispensed by pushing on the top side of the blister pocket and forcing a pill to burst through the foil seal. The force required to achieve this can be significant, particularly for elderly or infirm users, or users with physical disability. Many people thus have difficulty in removing pills from blister packs when in their home environment, i.e. when not in a pharmacy or the like having a mechanised pill dispensing machine.

Hand operated pill dispensers have been previously proposed comprising two arm portions that can be squeezed together to sandwich a blister pocket, but these do not significantly reduce the force required to burst a pill from a blister pocket.

According to a first aspect of the invention there is provided a hand operated pill dispenser for dispensing a pill from a blister pack, the dispenser comprising a base, and a dispensing handle pivotally mounted at a pivot at one end of the base, at least one of the base and handle being provided with a pill retaining cavity, the other of the base and handle being provided with a pill dispensing protrusion adjacent the pivot, the dispenser further comprising a blister pocket locator between the cavity and the protrusion, the handle comprising a hand grip distal from the pivot and the pill dispensing protrusion, the dispenser being operative such that the locator locates a blister pack pocket adjacent the protrusion by engaging the blister pack pocket, depression of the handgrip moving the handle such that the protrusion engages the blister pack pocket to dispense a pill from the blister pack pocket into the cavity, the relative spacing of the hand grip and protrusion from the pivot being such that the force applied by the user to the hand grip results in an increased force at the protrusion.

In one embodiment the increased force is approximately four times the applied force.

Preferably the protrusion is mounted on a first portion of the handle, adjacent the pivot, the pill retaining cavity being provided on the base.

The protrusion may comprise a tip, the profile of which is planar, curved or concave such that the outer periphery of the tip projects further from the handle than the centre of the tip.

Preferably the handle is provided with an aperture to enable the locator and any blister pack pocket engaged by the locator to be viewed through the aperture when looking down on the top of the handle. This assists in correct positioning of the blister pack pocket.

The handle is preferably curved when viewed from the side, that is, in a direction aligned with the pivot axis. This facilitates sight of the locator.

The handle is preferably curved when viewed from above, that is, in a direction perpendicular to the pivot axis. This further facilitates sight of the locator.

The handle preferably comprises a scalloped waist portion separating two bulbous ends, when viewed from above.

Preferably the handle is biased away from the base by a spring. This aids the levering process.

The pill retaining cavity may be provided in a drawer, removably mounted on the base.

The drawer may be arranged to be removed in a direction perpendicular to the longitudinal axis of the base.

Preferably the drawer may be removed from either side of the base. This enables the drawer to be suitable for left and right handed users.

The drawer may be provided with a cover operative to close the drawer such that the drawer comprises a portable pill container.

The dispenser may be provided with a plurality of drawers, each comprising indicia indicative of a particular pill dosage required. The indicia may comprise a colour or colours.

The locator may be provided with a cut-out adapted to engage with a blister pack pocket in use.

The cut-out may be "V" shaped.

Preferably the locator comprises an arm projecting from the base to a position spaced above the cavity.

Other aspects of the present invention may include any combination of the features or limitations referred to herein.

The present invention may be carried into practice in various ways, but embodiments will now be described by way of example only with reference to the accompanying drawings in which:

FIG. 1 is a side view of a dispenser in accordance with the present invention, with the dispenser handle in a non-depressed condition;

FIG. 2 is a side view of the dispenser of FIG. 1, with the dispenser handle in a depressed condition;

FIG. 3 is a plan view of the dispenser of FIGS. 1 and 2;

FIG. 4 is a plan view of a further dispenser in accordance with the present invention, with the dispenser handle removed for clarity;

FIG. 5 is a side view of the dispenser of FIG. 4, with the dispenser handle removed for clarity; and

FIG. 6 is a plan view of the dispenser of FIGS. 4 and 5, with the handle and an upper part of the base removed for clarity.

Referring to the Figures, a hand operated pill dispenser comprises a generally cuboidal hollow base formed with a lateral slot in which a removable pill drawer is slidably mounted. The pill drawer comprises a pill retaining cavity.

The top of the lateral slot, above the drawer, comprises a stripping plate formed with a tear-drop shaped aperture.

One end of the base is provided with two spaced apart pivot mounts.

A blister pocket locator is provided in the form of an arm projecting from the pivot mounts, parallel to the base, the tip of the arm being positioned directly above the pill drawer. The tip of the arm is formed with a concave blister pack pocket engaging formation comprising a "V" shaped cutout.

A handle is pivotally mounted on the pivot mounts by way of a suitable axle that extends through the mounts and one end of the handle. A spring (not shown) is provided to bias the handle away from the base.

One embodiment of the invention comprises:

[0001] The present invention relates to a hand operated pill dispenser for dispensing pills from blister packs.

[0002] Pills such as medicaments or vitamins for example, are often sold in blister packs. The pills are retained in blister pockets by a foil seal which may typically be a metal or plastics seal. A pill is dispensed by pushing on the top side of the blister pocket and forcing a pill to burst through the foil seal. The force required to achieve this can be significant, particularly for elderly or infirm users, or users with physical disability. Many people thus have difficulty in removing pills from blister packs when in their home environment, i.e. when not in a pharmacy or the like having a mechanised pill dispensing machine.

[0003] Hand operated pill dispensers have been previously proposed comprising two arm portions that can be squeezed together to sandwich a blister pocket, but these do not significantly reduce the force required to burst a pill from a blister pocket.

[0004] According to a first aspect of the invention there is provided a hand operated pill dispenser for dispensing a pill from a blister pack, the dispenser comprising a base, and a dispensing handle pivotally mounted at a pivot at one end of the base, at least one of the base and handle being provided with a pill retaining cavity, the other of the base and handle being provided with a pill dispensing protrusion adjacent the pivot, the dispenser further comprising a blister pocket locator between the cavity and the protrusion, the handle comprising a hand grip distal from the pivot and the pill dispensing protrusion, the dispenser being operative such that the locator locates a blister pack pocket adjacent the protrusion by engaging the blister pack pocket, depression of the handgrip moving the handle such that the protrusion engages the blister pack pocket to dispense a pill from the blister pack pocket into the cavity, the relative spacing of the hand grip and protrusion from the pivot being such that the force applied by the user to the hand grip results in an increased force at the protrusion.

[0005] In one embodiment the increased force is approximately four times the applied force.

[0006] Preferably the protrusion is mounted on a first portion of the handle, adjacent the pivot, the pill retaining cavity being provided on the base.

[0007] The protrusion may comprise a tip, the profile of which is planar, curved or concave such that the outer periphery of the tip projects further from the handle than the centre of the tip.

[0008] Preferably the handle is provided with an aperture to enable the locator and any blister pack pocket engaged by the locator to be viewed through the aperture when looking down on the top of the handle. This assists in correct positioning of the blister pack pocket.

[0009] The handle is preferably curved when viewed from the side, that is, in a direction aligned with the pivot axis. This facilitates sight of the locator.

[0010] The handle is preferably curved when viewed from above, that is, in a direction perpendicular to the pivot axis. This further facilitates sight of the locator.

[0011] The handle preferably comprises a scalloped waist portion separating two bulbous ends, when viewed from above.

[0012] Preferably the handle is biased away from the base by a spring. This aids the levering process.

[0013] The pill retaining cavity may be provided in a drawer, removably mounted on the base.

[0014] The drawer may be arranged to be removed in a direction perpendicular to the longitudinal axis of the base.

[0015] Preferably the drawer may be removed from either side of the base. This enables the drawer to be suitable for left and right handed users.

[0016] The drawer may be provided with a cover operative to close the drawer such that the drawer comprises a portable pill container.

[0017] The dispenser may be provided with a plurality of drawers, each comprising indicia indicative of a particular pill dosage required. The indicia may comprise a colour or colours.

[0018] The locator may be provided with a cut-out adapted to engage with a blister pack pocket in use.

[0019] The cut-out may be "V" shaped.

[0020] Preferably the locator comprises an arm projecting from the base to a position spaced above the cavity.

[0021] Other aspects of the present invention may include any combination of the features or limitations referred to herein.

[0022] The present invention may be carried into practice in various ways, but embodiments will now be described by way of example only with reference to the accompanying drawings in which:

[0023] FIG. 1 is a side view of a dispenser in accordance with the present invention, with the dispenser handle in a non-depressed condition;

[0024] FIG. 2 is a side view of the dispenser of FIG. 1, with the dispenser handle in a depressed condition;

[0025] FIG. 3 is a plan view of the dispenser of FIGS. 1 and 2;

[0026] FIG. 4 is a plan view of a further dispenser in accordance with the present invention, with the dispenser handle removed for clarity;

[0027] FIG. 5 is a side view of the dispenser of FIG. 4, with the dispenser handle removed for clarity; and

[0028] FIG. 6 is a plan view of the dispenser of FIGS. 4 and 5, with the handle and an upper part of the base removed for clarity.

[0029] Referring to the Figures, a hand operated pill dispenser comprises a generally cuboidal hollow base formed with a lateral slot in which a removable pill drawer is slidably mounted. The pill drawer comprises a pill retaining cavity.

[0030] The top of the lateral slot, above the drawer, comprises a stripping plate formed with a tear-drop shaped aperture.

[0031] One end of the base is provided with two spaced apart pivot mounts.

[0032] A blister pocket locator is provided in the form of an arm projecting from the pivot mounts, parallel to the base, the tip of the arm being positioned directly above the pill drawer. The tip of the arm is formed with a concave blister pack pocket engaging formation comprising a "V" shaped cutout.

[0033] A handle is pivotally mounted on the pivot mounts by way of a suitable axle that extends through the mounts and one end of the handle. A spring (not shown) is provided to bias the handle away from the base.
The handle 19 is substantially the same length as the base 3 and thus extends substantially to the end of the base 3 distal from the pivot mounts 13.

The handle 19 is curved when viewed from the side of the dispenser 1 such that the handle 19 is convex when viewed from the side. The handle 19 is also curved when viewed from above by the handle 19 being scalloped such that it comprises two bulbous ends 22, 23 and an intermediate waisted region 25. One bulbous end 22 is mounted to the pivot mounts 13, the other bulbous end comprising a hand grip 23.

The handle 19 is substantially hollow and comprises two internal, curved reinforcing ribs 26, 27.

A pill dispensing protrusion 29 extends from one of the ribs 26 and projects beneath the underside of the handle 19 to a position generally above the drawer 5, aperture 11 and the cut-out 17 of the locator arm 15. The protrusion 29 generally tapers inwardly from the handle 19 to a pill engaging tip 31.

The handle 19 is also provided with an oval viewing aperture 33 that extends over the drawer 5, aperture 11 and the cut-out 17 of the locator arm 15 so that all of these features can be viewed when looking down onto the handle 19.

In use of the dispenser 1, a pocket 41 of a blister pack 43 is positioned in, and engages, the cut-out 17 of the locator arm 11. This engagement is facilitated by the user being able to see these components from above the handle 19 through viewing aperture 33.

The underside of blister pack 41, that is the foil seal, rests on the stripping plate 9, with the blister pack pocket 41 being above the tear-drop shaped aperture 11.

The user then depresses the hand grip 23 to move the handle 19 towards the base plate 3. This moves the tip 31 of the protrusion 29 into engagement with the top of the blister pocket 43, further movement forcing the pill to break the foil seal and drop out of the blister pocket 43, through the tear drop shaped aperture 11 and into the drawer 5. All of this process can be viewed through the viewing aperture 33 from above the handle 19.

The user can then release the handle 19 which reverts to its rest position under influence of the spring.

The user may then access the dispensing pill by sliding the drawer 5 from one or other side of the base 3 of the dispenser 1.

The protrusion 29 is adjacent to the pivot axis 21 but spaced from it by a distance X. However, the hand grip 23 is distal from the pivot axis 21 and is spaced from the protrusion 29 by a distance Y. It is envisaged that Y may be around four times X although other ratios are envisaged.

Thus, in contrast to prior art devices, the dispenser 1 in accordance with the present invention exerts a significant moment at the protrusion for a given force applied at the hand grip 23. This provides considerable mechanical advantage for dispensing a pill.

The drawer 5 may comprise a clip-on or snap-fit cover (not shown) such that the drawer 5 comprises a pill container that a user may place in their pocket or handbag or the like.

The dispenser 1 may be provided with a plurality of drawers 5, each comprising indicia such as a colour that indicates the dosage of pills required. The indicia may comprise Braille indicia.

The handle 19, pivot axle 21, and base 3 may be arranged to fit together without requiring fixings such as bolts or screws or the like.

It is envisaged that the handle 19 and base 3 may be formed from any suitable material or combination of materials, such as a metal material or a plastics material for example.

Referring additionally to FIGS. 4 to 6, a modified dispenser 51 comprises most of the features of the dispenser 1 described above. Like features have been given like references.

However, in this example, the base 3 is of two part form comprising a lower structural part 3A and an upper aesthetic cover part 3B that fits on top of the lower part 3A and is affixed thereto by snap fit lugs 53.

A non-limiting example of the structure of the locator arm 15 can be seen with reference to FIG. 4. In this example, the locator arm 15 is of trapezoidal form defining side margins arranged at an angle of 30°, and a ‘V’ shaped cut-out 17 wherein the two fingers of the ‘V’ are at an angle of 90°.

It is envisaged of course that any other suitable shape of locator arm 15, and set of angles may alternatively be used as required to enable the dispenser 1 to work effectively with blister packs/blister pack pockets of different shapes, sizes.

Having illustrated and described the principles of our invention with reference to a number of exemplary embodiments, it should be apparent to those of ordinary skill in the art that these embodiments may be modified in arrangement and detail without departing from the inventive principles disclosed herein. We claim as our invention all such embodiments that fall within the scope of the following claims.

1 claim:

1. A hand operated pill dispenser for dispensing a pill from a blister pack, the dispenser comprising a base, and a dispensing handle pivotally mounted at a pivot at one end of the base, at least one of the base and handle being provided with a pill retaining cavity, the other of the base and handle being provided with a pill dispensing protrusion adjacent the pivot, the dispenser further comprising a blister pocket locator between the cavity and the protrusion, the handle comprising a hand grip distal from the pivot and the pill dispensing protrusion, the dispenser being operative such that the locator locates a blister pack pocket adjacent the protrusion by engaging the blister pack pocket, depression of the handgrip moving the handle such that the protrusion engages the blister pack pocket to dispense a pill from the blister pack pocket into the cavity, the relative spacing of the hand grip and protrusion from the pivot being such that the force applied by the user to the hand grip results in an increased force at the protrusion.

2. The dispencer of claim 1 wherein the protrusion is mounted on a first portion of the handle, adjacent the pivot, the pill retaining cavity being provided on the base.

3. The dispenser of claim 1 wherein the handle is provided with an aperture to enable the locator and any blister pocket engaged by the blister pocket locator to be viewed through the aperture when looking down on the top of the handle.

4. The dispenser of claim 1 wherein the handle is curved when viewed from the side, that is, in a direction aligned with the pivot axis.

5. The dispenser of claim 1 wherein the handle is curved when viewed from above, that is, in a direction perpendicular to the pivot axis.

6. The dispencer of claim 5 wherein the handle comprises a scalloped waist portion separating two bulbous ends, when viewed from above.
7. The dispenser of claim 1 wherein the handle is biased away from the base by a spring.

8. The dispenser of claim 1 wherein the pill retaining cavity is provided in a drawer, removably mounted on the base.

9. The dispenser of claim 8 wherein the drawer is arranged to be removed in a direction perpendicular to the longitudinal axis of the base.

10. The dispenser of claim 9 wherein the drawer is removably from either side of the base.

11. The dispenser of claim 8 wherein the drawer is provided with a cover operative to close the drawer such that the drawer comprises a portable pill container.

12. The dispenser of claim 8 comprising a plurality of drawers, each comprising indicia indicative of a particular pill dosage required.

13. The dispenser of claim 1 wherein the blister pocket locator is provided with a cut-out adapted to engage with a blister pack pocket in use.

14. The dispenser of claim 13 wherein the cut-out is ‘V’ shaped.

15. The dispenser of claim 1 wherein the blister pocket locator comprises an arm projecting from the base to a position spaced above the cavity.

16. The dispenser of claim 1 wherein the protrusion is mounted on a first portion of the handle, adjacent the pivot, the pill retaining cavity being provided on the base; and wherein the handle is provided with an aperture to enable the blister pocket locator and any blister pocket engaged by the locator to be viewed through the aperture when looking down on the top of the handle.

17. The dispenser of claim 16 wherein the hand is curved when viewed from the side, that is, in a direction aligned with the pivot axis; wherein the handle is curved when viewed from above, that is, in a direction perpendicular to the pivot axis; wherein the handle comprises a scalloped waist portion separating two bulbous ends, when viewed from above; and wherein the handle is biased away from the base by a spring.

18. The dispenser of claim 1 wherein the pill retaining cavity is provided in a drawer, removably mounted on the base; wherein the drawer is arranged to be removed in a direction perpendicular to the longitudinal axis of the base; wherein the drawer is removable from either side of the base; wherein the drawer is provided with a cover operative to close the drawer such that the drawer comprises a portable pill container; and comprising a plurality of drawers, each comprising indicia indicative of a particular pill dosage required.

19. The dispenser of claim 1 wherein the blister pocket locator is provided with a ‘V’ shaped cut-out adapted to engage with a blister pack pocket in use; and wherein the blister pocket locator comprises an arm projecting from the base to a position spaced above the cavity.

20. A hand operated pill dispenser for dispensing a pill from a blister pack, the dispenser comprising a base; and a dispensing handle pivotally mounted at a pivot at one end of the base, at least one of the base and handle being provided with a pill retaining cavity, the other of the base and handle being provided with a pill dispensing protrusion adjacent the pivot, the dispenser further comprising a blister pocket locator between the cavity and the protrusion, the handle comprising a hand grip distal from the pivot and the pill dispensing protrusion, the dispenser being operative such that the locator locates a blister pack pocket adjacent the protrusion by engaging the blister pack pocket, depression of the hand grip moving the handle such that the protrusion engages the blister pack pocket to dispense a pill from the blister pack pocket into the cavity, the relative spacing of the hand grip and protrusion from the pivot being such that the force applied by the user to the hand grip results in an increased force at the protrusion;

wherein the protrusion is mounted on a first portion of the handle, adjacent the pivot, the pill retaining cavity being provided on the base;

the handle being provided with an aperture to enable the locator and any blister pocket engaged by the locator to be viewed through the aperture when looking down on the top of the handle;

the handle being curved when viewed from the side, that is, in a direction aligned with the pivot axis;

the handle being curved when viewed from above, that is, in a direction perpendicular to the pivot axis;

the handle comprising a scalloped waist portion separating two bulbous ends, when viewed from above;

a spring operable to bias the handle away from the base;

the pill retaining cavity being provided in a drawer, removably mounted on the base; the drawer being arranged to be removed in a direction perpendicular to the longitudinal axis of the base and the drawer being removable from either side of the base;

the drawer being provided with a cover operative to close the drawer such that the drawer comprises a portable pill container; and

a plurality of said drawers, each comprising indicia indicative of a particular pill dosage required;

wherein the blister pocket locator is provided with a ‘V’ shaped cut-out adapted to engage with a blister pack pocket in use and the blister pocket locator comprising an arm projecting from the base to a position spaced above the cavity.