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(54) **A DISPENSER FOR HOLDING E.G. A BLISTER STRIP**

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- **FALK KNUDSEN, Lars**
DK-7600 Struer (DK)
- **JOHANSEN, Esben, W.**
DK-7600 Struer (DK)

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(74) Representative: **Inspicos A/S**
Bøge Allé 5
P.O. Box 45
2970 Hørsholm (DK)

(73) Proprietor: **Bang & Olufsen Medicom A/S**
7600 Struer (DK)

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(72) Inventors:
• **FABRICIUS, Paul, Erik**
DK-7500 Holstebro (DK)

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Description

[0001] The present Invention relates to a dispenser for holding a means for dispensing units, such as pills, tablets, sweets, which dispenser is resistant to (or prevents) children's access to the units. This holding means may be a blister card or other means holding the units and from which a user may access one or more units. The dispenser performs the function of preventing (or making difficult) access to the units when the holding means is held by the dispenser.

[0002] A number of attempts have been, made to make tablet/pill dispensers resistant to children's access attempts. Attempts of this type may be seen in: EP-A1-1002744 on which the preamble of the appended independent claims is based and 1293436 as well as US-A-4,120,400 US 6,446,693 and US-2003-047482.

[0003] In general, two manners exist of preventing children's access to medication or the like: hiding the release mechanism of the medication or requiring a release force larger than what a normal child is able to exert. The mechanism may be hidden by e.g. requiring the combined operation of multiple buttons or the like, where the child would normally focus only on one.

[0004] The present Invention may use either of these manners - or a combination thereof.

[0005] A First aspect of the Invention relates to a dispenser for holding a means for dispensing units,

- the holding means comprising a plurality of units to be dispensed from a predetermined surface thereof,
- the dispenser comprising:
 - o an opening for receiving the holding means,
 - o means for preventing access to the units from the predetermined surface, when the holding means is received by the dispenser,
 - o means for engaging the holding means, when the holding means is received by the dispenser,
 - end
 - o means for releasing the engaging means,
 - o means for maintaining the first surface at or in a predetermined plane, when the holding means is received by the dispenser,

wherein:

- the engaging means comprises means for abutting an edge portion, of the holding means, facing the opening, when the holding means is received in the opening, the abutting means having an abutting surface facing the edge portion of the holding means, extending at an angle to the predetermined plane, and a predetermined distance away from the plane, and
- the releasing means comprises means for displacing the edge portion of the holding means at least the predetermined distance away from the plane.

[0006] In the present context, the predetermined plane may be any plane and may have any shape, such as straight or bent.

[0007] The abutting surface may extend at any angle to the plane, but the angle is preferably 90° or close thereto. In order to provide a sufficient abutment and child resistance.

[0008] The predetermined distance will normally be the distance which the holding means may be displaced in order to overcome the engagement with the abutment surface. The larger the surface, the larger the displacement.

[0009] In the present context, the edge portion may be part of an outer periphery of the holding means or it may be an inner edge portion, such as part of a hole or indentation of the holding means.

[0010] In fact, a dispenser may be especially suited for a given holding means (or a holding means holding a specific or predetermined type of unit), by providing one or more holes, indentations, or edges at predetermined positions, positions corresponding to one or more positions of abutting surfaces of the dispenser. A holding means not having the edge parts at the correct positions may not be held/maintained in the dispenser, whereby the child resistance is lost.

[0011] Preferably, the maintaining means is adapted to bias the holding means against one or more surface parts of the dispenser, the surface part(s) defining the predetermined plane. Thus, this biasing may help the maintaining the holding means in the desired shape - and may, in fact, require only surface parts for abutting the holding means only at certain positions or places (the positions where the biasing force needs to be countered).

[0012] Preferably, the abutting edge portion extends the predetermined distance away from the surface part(s). Also, preferably, the displacing means is adapted to displace the edge portion at least the predetermined distance away from the surface part(s).

[0013] In one embodiment, the displacing means is positioned in a part of the dispenser, also defining the surface part(s), the displacing means being adapted to displace the edge portion in a direction at an angle to the predetermined plane.

[0014] This part of the dispenser may be an end portion thereof or a relatively small distance from the surface part(s). The part may also be a monolithic or assembled part forming, together with other parts, the dispenser.

[0015] Preferably, the displacing means is adapted to displace the holding means close to the edge part(s) engaging the surface part(s) in order to e.g. be able to better control the displacement.

[0016] In the preferred embodiment, the displacing means is engageable by a user from one or more outer surface part(s) of the dispenser. Thus, the dispenser may comprise, at the outer surface part and in the part(s) of the dispenser defining the surface part(s), a resilient or deformable element adapted to be deformed or displaced by the user so as to displace the edge portion of the

holding means.

[0017] In one embodiment, the predetermined surface part(s) of the holding means is/are adapted to face the surface part(s).

[0018] In that or another embodiment, the edge portion of the holding means is an outer, edge portion of the holding means.

[0019] Also, the engaging means may be displaceable in a direction at least substantially along the predetermined plane, the dispenser comprising means for allowing a part of the holding means adjacent to the edge portion to bend away from the predetermined plane due to the biasing. Again, the plane may be bent or otherwise not straight, and as the displacing of the engaging means may be a linear displacement, the direction of the displacement may be in the direction of the plane at one or more predetermined positions thereof - such as at the position (e.g. at a longitudinal position of the dispenser or holding means) at which the displacement takes place.

[0020] The predetermined plane may have a bent shape.

[0021] A second aspect of the invention relates to a method of operating a dispenser for holding a means for dispensing units,

- the holding means comprising a plurality of units to be dispensed from a predetermined surface thereof,
- the dispenser comprising:
 - o an opening for receiving the holding means,
 - o means for preventing access to the units from the predetermined surface, when the holding means is received by the dispenser,
 - o means for engaging the holding means, when the holding means is received by the dispenser, and
 - o means for releasing the engaging means,

the method comprising the step of maintaining the first surface at or in a predetermined plane, when the holding means is received by the dispenser, wherein the method further comprises the steps of:

- abutting an edge portion of the holding means, facing the opening, when the holding means is received in the opening, the abutting means having an abutting surface facing the edge portion of the holding means, extending at an angle to the predetermined plane, and a predetermined distance away from the plane, and
- a releasing step comprising displacing the edge portion of the holding means at least the predetermined distance away from the plane.

[0022] The maintaining step may comprise biasing the holding means against one or more surface parts of the dispenser, the surface part(s) defining the predetermined plane. Then, the abutting edge portion could extend the

predetermined distance away from the surface part(s).

[0023] Also, the displacing step preferably comprises displacing the edge portion at least the predetermined distance away from the surface part(s).

[0024] In addition, preferably, the displacing means are positioned in a part of the dispenser also defining the surface part(s), the displacing step comprising displacing the edge portion in a direction at an angle to the predetermined plane. Then, the displacing step preferably comprises a user providing the displacement from an outer surface part of the dispenser. This may be obtained when the displacement is provided by the user deforming or displacing the edge portion of the holding means by deforming or displacing a resilient or deformable element provided in the part of the dispenser defining the surface part(s).

[0025] In one embodiment, the predetermined surface part of the holding means faces the surface part(s).

[0026] In that or another embodiment, the edge portion of the holding means is an outer edge portion of the holding means.

[0027] Also, the engaging means could be displaced in a direction at least substantially along the predetermined plane so that a part of the holding means adjacent to the edge portion bends away from the predetermined plane due to the biasing.

[0028] As mentioned above, preferably, the predetermined plane has a bent shape.

[0029] In a third aspect, the invention relates to a dispenser for holding a means for dispensing units,

- the holding means comprising a plurality of units to be dispensed from a predetermined surface thereof,
- the dispenser comprising:
 - o a slot having an opening for receiving the holding means,
 - o means for preventing access to the units from the predetermined surface, when the holding means is received in the slot,
 - o means for engaging the holding means, when the holding means is received in the slot, and
 - o means for releasing the engaging means,

wherein the engaging means comprise releasable biasing means for exerting a friction force to a surface of the holding means in order to prevent or make difficult removal thereof from the dispenser.

[0030] In the present context, the units may be any type of units useful to persons, but primarily units which it is not desired that children get access to, such as medication, cigarettes, toxic or otherwise dangerous or unhealthy substances.

[0031] A normal manner of providing and dispensing e.g. medication is the use of a blister pack having a sheet of plastic material having a number of blisters into which the medication or other units is provided and which blisters are closed by a metal foil which is breakable in order

to gain access to the medication.

[0032] In blister packs, the breakable foil defines the predetermined surface.

[0033] Other types of holding means may be means having a surface which may be openable, rupturable, pre-scored, closable or the like in order to gain access to the units.

[0034] Preferably, the holding means comprises a plurality of units individually dispensable or dispensable in smaller quanta, so that also less capable persons may dispense the units with no errors or problems.

[0035] A number of manners exist of preventing access to the units at the predetermined surface. Such manners will depend on how access is provided via the surface. If the units are dispensable via a single opening, preventing access to that opening itself suffices, whereas multiple openings (as will be seen in blister packs) will require preventing access to multiple openings. Preventing access to an opening may merely require preventing e.g. a unit (having a given physical extension) from exiting the hole. Thus, hermetical or total sealing of the opening may not be required. It may suffice to only block part of the opening.

[0036] Preferably, the slot is adapted to fully receive the holding means. As will become dear further below, the slot may not be closed but may be open, as long as the preventing operation is fulfilled.

[0037] The engagement between the holding means and the dispenser is a friction engagement. This has the advantage that prior art holding means, such as blister cards or the like, may be used. If the engagement was an engagement wherein an element was introduced into e.g. a hole or the like in a holding means, this might require the design and production of a new holding means.

[0038] In the present context, the engagement makes it difficult - or prevents - to remove the holding means from the dispenser and thereby gain access to the units via the predetermined surface. In this respect, this will normally mean that a child, using his/her fingers, will not be able to overcome the engagement/friction and remove the holding means. Also, normally, this will mean that the dispenser is not harmed, destroyed or otherwise altered unallowably.

[0039] Preferably, the releasable biasing means is adapted to exert a first friction during movement of the holding means into the dispenser and a second, higher, friction during removal of the holding means from the dispenser, when the releasing means is not operated.

[0040] This higher friction may require a force for removal of the holding means, this force exceeding any predetermined force, a "standard" child is able to provide.

[0041] Then, the releasing means could be adapted to have the biasing means exert a third friction during removal of the holding means from the dispenser, when the releasing means is operated, the third friction being lower than the second friction. This third friction may, in principle, be zero. The important factor is that it is sufficiently low for the user to be able to remove the holding

means from the dispenser.

[0042] In one embodiment, the releasable biasing means comprises at least one leaf spring having two ends, one end engaging the dispenser and the other end being positioned so as to engage the holding means when received in the dispenser, the spring being positioned so that the one end is positioned closer to the opening than the other end.

[0043] In this situation, an attempt to extract the holding means from the dispenser will require the leaf spring to compress (the other end being forced toward the one end). Then, the dispenser may be designed so that the leaf spring is not able to be compressed or moved in this manner, or the leaf spring may be designed so that the force required to obtain this compression exceeds a predetermined force.

[0044] In this embodiment, the at least one leaf spring preferably has a longitudinal direction between the one end and the other end, the longitudinal direction being at least substantially parallel to a direction of movement of the holding means during reception in the slot. Normally, this direction is also in the direction of a longitudinal axis of the slot or the holding means.

[0045] Normally, the releasing means is adapted to remove the engagement between the leaf spring and the holding means. Then, the releasing means are preferably adapted to move the other end of the leaf spring in a direction away from the holding means. Preferably, the releasing means is adapted to be translated in a longitudinal direction of the spring (or the holding means), the releasing means having means for engaging the spring and maintaining at least part of the spring away from the holding means. This engaging means may translate along the spring - toward the other end - and maintain the parts of the spring engaged by the engaging means in a position away from the holding means.

[0046] In another embodiment, the releasable biasing means comprises an element rotatable around a predetermined axis and having a part adapted to exert the friction force, when the element is rotated into a first position, the releasing means being adapted to rotate the element to a second position where a lower friction (such as no friction) is exerted by the element. This may be a rigid arm engaging the holding means.

[0047] Then, the releasable biasing means could further comprise means for biasing the element toward the holding means, when the element is in the first position. This biasing means may provide a predetermined biasing either toward the holding means or between the holding means and the dispenser (so as to require a predetermined minimum force in order to overcome the friction and remove the holding means from the dispenser).

[0048] In one embodiment, the element comprises one or more edge parts adapted to engage the holding means, when the element is in the first position. A plurality of edge parts may increase the friction or ensure that a single edge part getting rounded in time does not destroy or reduce the efficiency of the engagement.

[0049] Preferably, the predetermined axis is at least substantially perpendicular to a direction of movement of the holding means during reception in the slot. Especially when the axis of rotation is positioned closer to the opening than the part adapted to exert the friction, it is seen that the rotatable element will require a deformation either of the dispenser or the holding means in order for the rotatable element to allow the holding means to travel out of the slot - as long as the engagement is maintained.

[0050] In a fourth aspect, the invention relates to a method of operating a dispenser for holding means for dispensing units,

- the holding means comprising a plurality of units to be dispensed from a predetermined surface thereof,
- the dispenser comprising:

- o a slot having an opening for receiving the holding means,
- o means for preventing access to the units from the predetermined surface, when the holding means is received in the slot,
- o means for engaging the holding means, when the holding means is received in the slot, and
- o means for releasing the engaging means,

the method comprising the step of having a releasable biasing means of the engaging means exert a friction force to a surface of the holding means in order to prevent or make difficult removal thereof from the dispenser.

[0051] In one embodiment, the releasable biasing means exerts a first friction during movement of the holding means into the dispenser and a second, higher, friction during removal of the holding means from the dispenser, when the engaging means is not operated. Then, the biasing means may exert a third friction during removal of the holding means from the dispenser when the releasing means is operated, the third friction being lower than the second friction.

[0052] In one embodiment, the releasable biasing means comprises at least one leaf spring having two ends, one end engaging the dispenser and the other end engaging the holding means when received in the dispenser, the spring being positioned so that the one end is positioned closer to the opening than the other end. Then, the at least one leaf spring may have a longitudinal direction between the one end and the other end, the longitudinal direction being at least substantially parallel to a direction of movement of the holding means during reception in the slot (normally a longitudinal axis of the slot).

[0053] Also, preferably, the method further comprises a releasing step wherein the releasing means removes the engagement between the leaf spring and the holding means. Then, the releasing means may move the other end of the leaf spring in a direction away from the holding means. This may be obtained when the releasing means are translated in a longitudinal direction of the spring (or

the holding means), the releasing means having means for engaging the spring and maintaining at least part of the spring away from the holding means.

[0054] In another embodiment, the releasable biasing means are rotated around a predetermined axis and having a part exerting the friction force, when the element is rotated into a first position, the releasing means rotating the element to a second position where a lower friction (such as no friction) is exerted by the element. Then, the releasable biasing means could further comprise means for biasing the element toward the holding means, when the element is in the first position.

[0055] Also, the engaging step may comprise having one or more edge parts of the releasable biasing means engage the holding means, when the element is in the first position, the rotation may be performed around a predetermined axis which is at least substantially perpendicular to a direction of movement of the holding means during reception in the slot, and the axis of rotation may be positioned closer to the opening than the part adapted to exert the friction.

[0056] In the following, preferred embodiments, described in relation to dispensers for medication in blister cards, are described with reference to the drawing, wherein;

Fig. 1 illustrates a first embodiment of the invention,

Fig. 2 is a cut-through part of the embodiment of Fig. 1,

Fig. 3 illustrates a second embodiment of the invention,

Fig. 4 is a cut-through part of the embodiment of Fig. 3,

Fig. 5 is a cut-through part of a third embodiment,

Fig. 6 illustrates the upper side of the third embodiment,

Fig. 7 a-c illustrates a fourth embodiment according to the invention,

Figs. 8-10 illustrate other manners of releasing the holding means,

Figs. 11-13 illustrate other manner of engaging and releasing the holding means,

Fig. 14 illustrates another manner of releasing a holding means, and

Fig. 15 illustrates a manner of obtaining easier access to a released holding means.

[0057] Fig. 1 illustrates a dispenser according to the

invention. This dispenser has an opening 10 adapted to receive a blister card (not illustrated on this figure) and a slot 12 adapted to receive and hold the sides of the blister card.

[0058] When fully inserted, the blister card is received in the slot 12, where the edges of the blister card are guided by guides 14 which also define the shape which the blister card obtains when held by the dispenser. Finally, an outer and innermost edge abuts an abutting member 16 and a bottom (not illustrated) part of the slot 12. This biasing, together with the shape of the slot 12, preferably gives the blister card a curved shape which acts to bias the blister card against a lower part 18 of the dispenser.

[0059] This curved shape has a number of advantages, such as less noise from the blister card, the positioning of the blister card, such as in relation to engaging means etc, is better defined in that the curved shape makes the blister card bias toward predetermined surfaces.

[0060] An upper part 20 of the dispenser comprises an opening 20' through which a user may engage the blister card during sliding into and out of the slot 12. This upper part 20 and the opening 20' are designed so that they cover those parts of the metallic sheet of the blister card through which access is normally gained to the medication in the blister card. This covering needs not be a total covering, but a covering sufficient to ensure that either the metallic sheet is not broken or the medication is not removable from the blisters.

[0061] When fully received, the blister card is present in the slot 12, and the outer most edge part engages and biases against the inner surface 16' of the member 16.

[0062] Thus, a child is not able to remove the blister card, unless it is able to have the edge part of the blister card travel over the member 16. The biasing of the blister card, the size of the opening 10, the height, H, of the surface 16' over the normal, biased position of the blister card end, will all determine the child resistance or how easy removal of the blister card will be.

[0063] In order to be able to remove the blister card, a displacing element 30 is provided which is able to be displaced in a direction toward the blister card and to displace the outermost end of the blister card over the element 16, and thereby release the blister card. The element 30 is provided as an elongated part of the upper part 18, which is made of a relatively stiff plastic material. This part, 30' is embedded in a softer material 32 which makes it possible to plastically deform the element 30' and to have that displacement return to its original state thereafter. This two-component moulding is simple, cheap, and the design of the dispenser may be such that the operation of the displacing means is not visible to or obvious to children.

[0064] Figs. 3 and 4 illustrate another manner of releasing a blister card which is held by a dispenser in which it is held by the guides (preferably in the bent shape) 14, and which is biased between the bottom of the slot 12

and the element 16.

[0065] In this embodiment, the release is obtained by moving the element 16 toward the bottom of the slot 12, whereby the blister card is further compressed and will attempt to bulge out. The guides 14 will make the blister card maintain its shape along the length of the dispenser but a predetermined length at the opening 10, where the blister card is allowed to bulge out due to the further compression. This bulging out (which is here only possible to one side) will eventually make the blister card end move over the element 16, whereby the blister card is released.

[0066] In this embodiment, the element 16 is mounted so as to be displaceable in the longitudinal direction of the dispenser. The element 16 is biased away from the centre of the dispenser by one or more torsion springs 34, but is movable, by exerting a predetermined force, toward the centre of the dispenser in order to release the blister card.

[0067] Figs. 5 and 6 illustrate a different embodiment, which, again, comprises the opening 10, the slot 12, the guides 14 (but which are not illustrated), the upper and lower parts 18 and 20 as well as the opening 20'.

[0068] In this embodiment, the engagement of the blister card is obtained by two leaf springs 50, one positioned at each longitudinal side of the blister card - but where only one is illustrated.

[0069] These leaf springs are attached, at one end, 50', to the upper part 18 of the dispenser by e.g. weldings 52.

[0070] The leaf springs are shaped so as to bias the other end, 50", toward the blister card.

Removal of the blister card is in the right direction of the Figures, whereby it is seen that the leaf springs 50 will tighten the engagement even further and block the movement of the blister card. Insertion, however, of the blister card meets no substantial friction with the leaf springs 50.

[0071] Release of the springs 50 is obtained by sliding a sliding member 54 in a direction from the end 50' toward the end 50". The member 54 engages the spring 50, at the part 54', and forces it toward the part 18, which means that the spring 50 is moved away from the blister card, whereby the engagement between the blister card and the spring 50 is released.

[0072] The member 54 is biased toward a right-most (in the figure) position so as to only release the blister card when a force is applied to the member 54.

[0073] When two springs 50 are provided, two releasing movements are required in order to remove the card. The more independent releasing actions that are required, the "safer" or more child resistant the dispenser.

[0074] Another feature of this - as well as of other of the embodiments, is the sliding releasing means. The sliding in the direction of the plane of the blister card (or at least at the longitudinal position at which the sliding means are positioned, when the blister card is not straight) is more difficult for children to see or deduce. This is especially true, when two such operations are

required in order to release the blister card.

[0075] Fig. 7 illustrates another manner of providing the displaceable member 30 in the embodiment of Fig. 1. This manner comprises a displaceable member 60 which is not "embedded" in a softer plastic material but is simply cut out or moulded with the remaining part of the upper part 18.

[0076] Fig. 8 is a further alternative, where the displaceable member 62 is made displaceable by providing two elongate slots 64, which make the member 62 more easily displaced toward the blister card.

[0077] In Fig. 9, the softer material 32 in Fig. 1 is replaced by a part 66 which is thinner than the surrounding parts of the upper part 18. Again, the displaceable element, 64, is displaceable in order to have the blister card end move over the part 16.

[0078] Fig. 10 illustrates yet another manner, which may be found to be efficient and cheap but less child resistant. An opening or hole 68 is provided for inserting a finger or a tool (pencil or the like) for displacing the blister card over the member 16.

[0079] Fig. 11 illustrates a manner alternative to that of Fig. 3 for providing an engagement and a release thereof using a leaf spring.

[0080] In Fig. 11, the leaf spring 70 forms part of a deformable element having two studs 72 which are adapted to engage the dispenser or the blister card. When pushing the element at the arrow, a deformation will occur due to the abutment of the studs 72, whereby the leaf spring will be lifted from the blister card and the blister card released. The user may engage the element via push buttons at the outer side of the dispenser - or directly via e.g. a hole - or the element may be integrated in the dispenser.

[0081] Fig. 12 illustrates an embodiment where the leaf spring 50 is replaced by a rotatable element 70 rotatably attached to the part 18 and rotatable around an axis 70'.

[0082] The element 70 is biased against the blister card by a spring 72, and is adapted to be lifted therefrom by a slidable element 74 which is translated in the direction of the arrow, whereby the element 70 will disengage the blister card.

[0083] The direction of insertion of the blister card is in the direction from right to left, whereby it is seen that unauthorized removal of the blister card will make the element 70 engage even more with the blister card.

[0084] The element 70 is illustrated with a number of edges or peaks 70'' which are adapted to provide a sufficient friction with the blister card.

[0085] In Fig. 13, an element 80 with an operation similar to that of Fig. 12 is seen (rotatably mounted and rotatable around an axis 80'). However, in this embodiment, the element 80 abuts and engages a blister 82' of the blister card 84. Again, a slideable element 82 releases the engagement. Thus, lower requirements as to the friction and other engagements is obtained in that removal of this blister card will require deformation of the blister - and then some.

[0086] Fig. 14 illustrates an embodiment with a functionality close to that of Fig. 3, but where the blister card is deformed around the longitudinal axis by two push buttons 84. This deformation will displace the central portion of the blister card, whereby disengagement may be obtained with any of the above engaging means.

[0087] Fig. 15, finally, illustrates that at the bottom of the slot 12 of the dispenser, a spring or other resilient means may be provided. This spring/means 90 is biased when the blister card 92 is inserted and will act to push the card outwardly, when the engaging means are released. This has the advantage that when two fingers or two hands are required for releasing the holding means, another finger/hand is not required to bring the holding means to a position where it may be removed without further disengagement or where it may more easily be accessed/handled by the user.

[0088] In the foregoing, the invention has been described with reference to blister cards. It is, however, obvious that all other types of holding means may be used, due to the fact that the engagements proposed are adapted to a large variations of holding means, stiff as well as bendable, straight as well as with extending parts, adapted to friction engagement or not, etc.

Claims

1. A dispenser for holding a holding means (92) for dispensing units,

- the holding means (92) comprising a plurality of units to be dispensed from a predetermined surface thereof,
- the dispenser comprising:

- o an opening (10) for receiving the holding means,
- o means (20) for preventing access to the units from the predetermined surface, when the holding means is received by the dispenser,
- o means (14, 16) for engaging the holding means (92), when the holding means (92) is received by the dispenser,
- o means for releasing the engaging means, and
- o means (14) for maintaining the predetermined surface at or in a predetermined plane, when the holding means (92) is received by the dispenser,

characterized in that:

- the engaging means comprises means (16) for abutting an edge portion of the holding means, facing the opening (10), when the holding means (92) is received in the opening (10), the abutting

- means (16) having an abutting surface (16') facing the edge portion of the holding means (92), extending at an angle to the predetermined plane, and a predetermined distance away from the plane, and
 - the releasing means comprises means (16, 30, 60, 62, 64) for displacing the edge portion of the holding means at least the predetermined distance away from the plane.
2. A dispenser according to claim 1, wherein the maintaining means is adapted to bias the holding means against one or more surface parts of the dispenser, the surface part(s) defining the predetermined plane.
 3. A dispenser according to claim 2, wherein the abutting edge portion extends the predetermined distance away from the surface part(s).
 4. A dispenser according to claim 2 or 3, wherein the displacing means is adapted to displace the edge portion at least the predetermined distance away from the surface part(s).
 5. A dispenser according to any of the preceding claims, wherein the displacing means is positioned in a part of the dispenser also defining the surface part(s), the displacing means being adapted to displace the edge portion in a direction at an angle to the predetermined plane.
 6. A dispenser according to claim 5, wherein the displacing means is engageable by a user from one or more outer surface part(s) of the dispenser.
 7. A dispenser according to claim 6, the dispenser comprising, at the outer surface part and in the part(s) of the dispenser defining the surface part(s), a resilient or deformable element adapted to be deformed or displaced by the user so as to displace the edge portion of the holding means.
 8. A dispenser according to any of claims 2-7, wherein the predetermined surface part(s) of the holding means is/are adapted to face the surface part(s).
 9. A dispenser according to any of claims 2-8, wherein the edge portion of the holding means is an outer edge portion of the holding means.
 10. A dispenser according to any of claims 2-9, wherein the engaging means is displaceable in a direction at least substantially along the predetermined plane, the dispenser comprising means for allowing a part of the holding means adjacent the edge portion to bend away from the predetermined plane due to the biasing.
 11. A dispenser according to any of the preceding claims, wherein the predetermined plane has a bent shape.
 12. A method of operating a dispenser for holding a holding means for dispensing units,
 - the holding means (92) comprising a plurality of units to be dispensed from a predetermined surface thereof,
 - the dispenser comprising:
 - o an opening (10) for receiving the holding means,
 - o means (20) for preventing access to the units from the predetermined surface, when the holding means is received by the dispenser,
 - o means (14, 16) for engaging the holding means (92), when the holding means (92) is received by the dispenser, and
 - o means for releasing the engaging means,
 the method comprising the step of maintaining the first surface at or in a predetermined plane, when the holding means is received by the dispenser, **characterized in that** the method further comprises the steps of:
 - abutting an edge portion of the holding means (92), facing the opening (10), when the holding means (92) received in the opening (10), the abutting means (16) having an abutting surface (16') facing the edge portion of the holding means (92), extending at an angle to the predetermined plane, and a predetermined distance away from the plane, and
 - a releasing step comprising displacing the edge portion of the holding means (92) at least the predetermined distance away from the plane.
 13. A method according to claim 12, wherein the maintaining step comprises biasing the holding means against one or more surface parts of the dispenser, the surface part(s) defining the predetermined plane.
 14. A method according to claim 13, wherein the abutting edge portion extends the predetermined distance away from the surface part(s).
 15. A method according to claim 13 or 14, wherein the displacing step comprises displacing the edge portion at least the predetermined distance away from the surface part(s).
 16. A method according to claim 13, 14, or 15, wherein the displacing means are positioned in a part of the

dispenser also defining the surface part(s), the displacing step comprising displacing the edge portion in a direction at an angle to the predetermined plane.

17. A method according to claim 16, wherein the displacing step comprises a user providing the displacement from an outer surface part of the dispenser. 5
18. A method according to claim 17, wherein the displacement is provided by the user deforming or displacing the edge portion of the holding means by deforming or displacing a resilient or deformable element provided in the part of the dispenser defining the surface part(s). 10
19. A method according to any of claims 13-18, wherein the predetermined surface part of the holding means faces the surface part(s). 15
20. A method according to any of claims 13-19, wherein the edge portion of the holding means is an outer edge portion of the holding means. 20
21. A method according to any of claims 13-20, wherein the engaging means are displaced in a direction at least substantially along the predetermined plane so that a part of the holding means adjacent to the edge portion bends away from the predetermined plane due to the biasing. 25
22. A method according to any of claims 12-21, wherein the predetermined plane has a bent shape. 30
23. A dispenser for holding a holding means (92) for dispensing units, 35
 - the holding means (92) comprising a plurality of units to be dispensed from a predetermined surface thereof,
 - the dispenser comprising: 40
 - o a slot (12) having an opening for receiving the holding means,
 - o means (20) for preventing access to the units from the predetermined surface, when the holding means (92) is received in the slot, 45
 - o means for engaging the holding means (92), when the holding means (92) is received in the slot (12), and 50
 - o means (54, 75, 82) for releasing the engaging means, 55

characterized in that the engaging means comprise releasable biasing means (50, 70, 80) for exerting a friction force to a surface of the holding means in order to prevent or make difficult removal thereof from the dispenser.

24. A dispenser according to claim 23, wherein the releasable biasing means is adapted to exert a first friction during movement of the holding means into the dispenser and a second, higher, friction during removal of the holding means from the dispenser, when the releasing means is not operated.
25. A dispenser according to claim 24, wherein the releasing means is adapted to have the biasing means exert a third friction during removal of the holding means from the dispenser, when the releasing means is operated, the third friction being lower than the second friction.
26. A dispenser according to any of claims 23-25, wherein the releasable biasing means comprises at least one leaf spring having two ends, one end engaging the dispenser and the other end being positioned so as to engage the holding means when received in the dispenser, the spring being positioned so that the one end is positioned closer to the opening than the other end.
27. A dispenser according to claim 26, the at least one leaf spring having a longitudinal direction between the one end and the other end, the longitudinal direction being at least substantially parallel to a direction of movement of the holding means during reception in the slot.
28. A dispenser according to any of claims 26 or 27, wherein the releasing means is adapted to remove the engagement between the leaf spring and the holding means.
29. A dispenser according to claim 28, wherein the releasing means are adapted to move the other end of the leaf spring in a direction away from the holding means.
30. A dispenser according to claim 29, wherein the releasing means is adapted to be translated in a longitudinal direction of the spring, the releasing means having means for engaging the spring and maintaining at least part of the spring away from the holding means.
31. A dispenser according to any of claims 23-30, wherein the releasable biasing means comprises an element rotatable around a predetermined axis and having a part adapted to exert the friction force, when the element is rotated into a first position, the releasing means being adapted to rotate the element to a second position where a lower friction is exerted by the element.
32. A dispenser according to claim 31, wherein the releasable biasing means further comprises means for

biasing the element toward the holding means, when the element is in the first position.

33. A dispenser according to claim 31 or 32, wherein the element comprises one or more edge parts adapted to engage the holding means, when the element is in the first position.

34. A dispenser according to any of claims 31-33, wherein the predetermined axis is at least substantially perpendicular to a direction of movement of the holding means during reception in the slot.

35. A dispenser according to claim 34, wherein the axis of rotation is positioned closer to the opening than the part adapted to exert the friction.

36. A method of operating a dispenser for holding a holding means (92) for dispensing units,

- the holding means (92) comprising a plurality of units to be dispensed from a predetermined surface thereof,
- the dispenser comprising:

- o a slot (12) having an opening (10) for receiving the holding means (92),
- o means (20) for preventing access to the units from the predetermined surface, when the holding means (92) is received in the slot (12),
- o means for engaging the holding means (92), when the holding means (92) is received in the slot (12), and
- o means (54, 74, 82) for releasing the engaging means,

characterized in that the method comprises the step of having a releasable biasing means of the engaging means (50, 70, 80) exert a friction force to surface of the holding means (92) in order to prevent or make difficult removal thereof from the dispenser.

37. A method according to claim 36, wherein the releasable biasing means exerts a first friction during movement of the holding means into the dispenser and a second, higher, friction during removal of the holding means from the dispenser, when the releasing means is not operated.

38. A method according to claim 37, wherein the biasing means exerts a third friction during removal of the holding means from the dispenser when the releasing means is operated, the third friction being lower than the second friction.

39. A method according to any of claims 36-38, wherein the releasable biasing means comprises at least one

leaf spring having two ends, one end engaging the dispenser and the other end engaging the holding means when received in the dispenser, the spring being positioned so that the one end is positioned closer to the opening than the other end.

40. A method according to claim 39, the at least one leaf spring having a longitudinal direction between the one end and the other end, the longitudinal direction being at least substantially parallel to a direction of movement of the holding means during reception in the slot.

41. A method according to any of claims 39 or 40, further comprising a releasing step wherein the releasing means removes the engagement between the leaf spring and the holding means.

42. A method according to claim 41, wherein the releasing means move the other end of the leaf spring in a direction away from the holding means.

43. A method according to claim 42, wherein the releasing means are translated in a longitudinal direction of the spring, the releasing means having means for engaging the spring and maintaining at least part of the spring away from the holding means.

44. A method according to any of claims 36-43, wherein the releasable biasing means are rotated around a predetermined axis and having a part exerting the friction force, when the element is rotated into a first position, the releasing means rotating the element to a second position where a lower friction exerted by the element.

45. A method according to claim 44, wherein the releasable biasing means further comprises means for biasing the element toward the holding means, when the element is in the first position.

46. A method according to claim 44 or 45, wherein the engaging step comprises having one or more edge parts of the releasable biasing means engage the holding means, when the element is in the first position.

47. A method according to any of claims 44-46, wherein the rotation is performed around a predetermined axis which is at least substantially perpendicular to a direction of movement of the holding means during reception in the slot.

48. A method according to claim 47, wherein the axis of rotation is positioned closer to the opening than the part adapted to exert the friction.

49. A dispenser according to any of claims 1-11 or 23-35,

further comprising a biasing means adapted to be biased by the holding means when received in the slot and which is adapted to move the holding means in a direction out of the slot, when the releasing means are operated.

50. A dispenser according to any of claims 1-11 or 23-35, wherein the releasing means comprises one or more push buttons, pushing the one or more buttons toward or into the dispenser releasing the engaging or biasing means.

51. A dispenser according to any of 1-11 or 23-35, wherein the releasing means comprises one or more rotatable members, rotation of the rotatable member (s) releasing the engaging or biasing means.

52. A method according to any of claims 12-22 or 36-48, further comprising the step of biasing a biasing means during insertion of the holding means in the slot, an outputting step comprising the step of the biasing means pushing, upon operation of the releasing means, the holding means in a direction out of the slot.

53. A method according to any of claims 12-22 or 36-48, wherein the releasing step comprises pushing one or more push buttons toward or into the dispenser in order to release the engaging or biasing means.

54. A method according to any of claims 12-22 or 36-48, wherein the releasing step comprises rotating one or more rotatable members in order to release the engaging or biasing means.

Patentansprüche

1. Spender zum halten eines Haltermittels (92) zur Abgabe von Einheiten,

- wobei das Haltermittel (92) eine Vielzahl von Einheiten umfasst, welche von einer vorbestimmten Oberfläche davon abgegeben werden sollen,
- wobei der Spender umfasst:
- eine Öffnung (10) zur Aufnahme des Haltermittels,
- Mittel (20) zum Verhindern eines Zugriffs auf die Einheiten ausgehend von der vorbestimmten Oberfläche, wenn das Haltermittel von dem Spender aufgenommen ist,
- Mittel (14, 16) zum in Eingriff Bringen des Haltermittels (92), wenn das Haltermittel (92) von dem Spender aufgenommen ist,
- Mittel zum Lösen der Mittel zum in Eingriff Bringen, und
- Mittel (14) zum Halten der vorbestimmten

Oberfläche an oder in einer vorbestimmten Ebene, wenn das Haltermittel (92) von dem Spender aufgenommen ist,

dadurch gekennzeichnet:

- **dass** das Mittel zum in Eingriff Bringen Mittel (16) umfasst zum Angrenzen an einem Kantenabschnitt des Haltermittels, welcher der Öffnung (10) zugewandt ist, wenn das Haltermittel (92) in der Öffnung (10) aufgenommen ist, wobei die Mittel zum Angrenzen (16) eine dem Kantenabschnitt des Haltermittels (92) zugewandte Angrenzfläche (16') aufweisen, welche sich in einem Winkel zu der vorbestimmten Ebene und einem vorbestimmten Abstand von der Ebene erstreckt und
- **dass** das Mittel zum Lösen Mittel (16, 30, 60, 62, 64) umfasst zum Verschieben des Kantenabschnitts des Haltermittels um wenigstens den vorbestimmten Abstand von der Ebene.

2. Spender nach Anspruch 1, wobei das Mittel zum Halten dazu ausgestaltet ist, das Haltermittel gegen ein oder mehrere Oberflächenteile des Spenders vorzuspannen, wobei der Oberflächenteil bzw. die Oberflächenteile die vorbestimmte Ebene definieren.

3. Spender nach Anspruch 2, wobei der angrenzende Kantenabschnitt sich um den vorbestimmten Abstand von dem Oberflächenteil bzw. den Oberflächenteilen weg erstreckt.

4. Spender nach Anspruch 2 oder 3, wobei das Mittel zum Verschieben dazu ausgestaltet ist, den Kantenabschnitt um wenigstens den vorbestimmten Abstand weg von dem Oberflächenteil bzw. den Oberflächenteilen zu verschieben.

5. Spender nach einem der vorhergehenden Ansprüche, wobei das Mittel zum Verschieben in einem Teil des Spenders positioniert ist, welcher auch den Oberflächenteil bzw. die Oberflächenteile definiert, wobei das Mittel zum Verschieben dazu ausgestaltet ist, den Kantenabschnitt in einer zu der vorbestimmten Ebene gewinkelten Richtung zu verschieben.

6. Spender nach Anspruch 5, wobei das Mittel zum Verschieben von einem Nutzer ausgehend von einem oder mehreren äußeren Oberflächenteilen des Spenders angreifbar ist.

7. Spender nach Anspruch 6, wobei der Spender an dem äußeren Oberflächenteil und in dem Teil bzw. den Teilen des Spenders, welche den Oberflächenteil bzw. die Oberflächenteile definieren, ein elastisches oder verformbares Element umfasst, welches dazu ausgestaltet ist, von dem Benutzer verformt

oder verschoben zu werden, um den Kantenabschnitt des Haltermittels zu verschieben.

8. Spender nach einem der Ansprüche 2-7, wobei der vorbestimmte Oberflächenteil bzw. die vorbestimmten Oberflächenteile des Haltermittels dazu ausgestaltet ist bzw. sind, dem Oberflächenteil bzw. den Oberflächenteilen zugewandt zu sein. 5
9. Spender nach einem der Ansprüche 2-8, wobei der Kantenabschnitt des Haltermittels ein äußerer Kantenabschnitt des Haltermittels ist. 10
10. Spender nach einem der Ansprüche 2-9, wobei das Mittel zum in Eingriff Bringen verschiebbar ist in einer Richtung, welche zumindest im Wesentlichen entlang der vorbestimmten Ebene ist, wobei der Spender Mittel umfasst, um es einem Teil des Haltermittels benachbart zu dem Kantenabschnitt zu ermöglichen, sich aufgrund der Vorspannung weg von der vorbestimmten Ebene zu biegen. 15 20
11. Spender nach einem der vorhergehenden Ansprüche, wobei die vorbestimmte Ebene eine gekrümmte Form aufweist. 25
12. Verfahren zum Betreiben eines Spenders zum Halten eines haltermittels zur Abgabe von Einheiten,
 - wobei das Haltermittel (92) eine Vielzahl von Einheiten umfasst, welche von einer vorbestimmten Oberfläche davon abgegeben werden sollen, 30
 - wobei der Spender umfasst:
 - eine Öffnung (10) zum Aufnehmen des Haltermittels, 35
 - Mittel (20) zum Verhindern eines Zugriffs auf die Einheiten ausgehend von der vorbestimmten Oberfläche, wenn das Haltermittel in dem Spender aufgenommen ist, 40
 - Mittel (14, 16) zum in Eingriff Bringen des Haltermittels (92), wenn das Haltermittel (92) von dem Spender aufgenommen ist, und
 - Mittel zum Losen der Mittel zum in Eingriff Bringen, 45

wobei das Verfahren den Schritt eines Haltens der ersten Oberfläche an oder in einer vorbestimmten Ebene, wenn das Haltermittel von dem Spender aufgenommen ist, umfasst, 50

dadurch gekennzeichnet, dass das Verfahren ferner die Schritte umfasst:

 - Angrenzen eines Kantenabschnitts des Haltermittels (92), welches der Öffnung (10) zugewandt ist, wenn das Haltermittel (92) in der Öffnung (10) aufgenommen ist, wobei die Mittel (16) zum Angrenzen eine dem Kantenabschnitt 55

des Haltermittels (92) zugewandte Angrenzfläche (16') aufweisen, welche sich in einem Winkel zu der vorbestimmten Ebene und einem vorbestimmten Abstand von der Ebene erstreckt, und

- einen Löseschritt, welcher ein Verschieben des Kantenabschnitts des Haltermittels (92) um wenigstens den vorbestimmten Abstand weg von der Ebene umfasst.

13. Verfahren nach Anspruch 12, wobei der Schritt des Haltens ein Vorspannen des Haltermittels gegen ein oder mehrere Oberflächenteile des Spenders umfasst, wobei der Oberflächenteil bzw. die Oberflächenteile die vorbestimmte Ebene definieren.
14. Verfahren nach Anspruch 13, wobei der angrenzende Kantenabschnitt sich um den vorbestimmten Abstand weg von dem Oberflächenteil bzw. den Oberflächenteilen erstreckt.
15. Verfahren nach Anspruch 13 oder 14, wobei der Schritt des Verschiebens ein Verschieben des Kantenabschnitts um wenigstens den vorbestimmten Abstand weg von dem Oberflächenteil bzw. den Oberflächenteilen umfasst.
16. Verfahren nach Anspruch 13, 14 oder 15, wobei die Mittel zum Verschieben in einem Teil des Spenders positioniert sind, welcher auch den Oberflächenteil bzw. die Oberflächenteile definiert, wobei der Schritt des Verschiebens ein Verschieben des Kantenabschnitts in einer zu der vorbestimmten Ebene gewinkelten Richtung umfasst.
17. Verfahren nach Anspruch 16, wobei der Schritt des Verschiebens umfasst, dass ein Benutzer die Verschiebung ausgehend von einem äußeren Oberflächenteil des Spenders bereitstellt.
18. Verfahren nach Anspruch 17, wobei die Verschiebung bereitgestellt wird, indem der Benutzer den Kantenabschnitt des Haltermittels verformt oder verschiebt, indem er ein elastisches oder verformbares Element verformt oder verschiebt, welches in dem Teil des Spenders bereitgestellt ist, welcher den Oberflächenteil bzw. die Oberflächenteile definiert.
19. Verfahren nach einem der Ansprüche 13-18, wobei der vorbestimmte Oberflächenteil des Haltermittels dem Oberflächenteil bzw. den Oberflächenteilen zugewandt ist.
20. Verfahren nach einem der Ansprüche 13-19, wobei der Kantenabschnitt des Haltermittels ein äußerer Kantenabschnitt des Haltermittels ist.
21. Verfahren nach einem der Ansprüche 13-20, wobei

die Mittel zum in Eingriff Bringen in einer Richtung verschoben werden, welche zumindest im Wesentlichen entlang der vorbestimmten Ebene ist, so dass ein zu dem Kantenabschnitt benachbarter Teil des Haltermittels sich aufgrund der Vorspannung weg von der vorbestimmten Ebene biegt.

22. Verfahren nach einem der Ansprüche 12-21, wobei die vorbestimmte Ebene eine gekrümmte Form aufweist.

23. Spender zum Halten eines haltermittels (92) zur Abgabe von Einheiten,

- wobei das Haltermittel (92) eine Vielzahl von Einheiten umfasst, welche von einer vorbestimmten Oberfläche davon abgegeben werden sollen,
- wobei der Spender umfasst:
- einen Schlitz (12) mit einer Öffnung zum Aufnehmen des Haltermittels,
- Mittel (20) zum Verhindern eines Zugriffs auf die Einheiten ausgehend von der vorbestimmten Oberfläche, wenn das Haltermittel (92) in dem Schlitz aufgenommen ist,
- Mittel zum in Eingriff Bringen des Haltermittels (92), wenn das Haltermittel (92) in dem Schlitz (12) aufgenommen ist, und
- Mittel (54, 75, 82) zum Lösen der Mittel zum in Eingriff Bringen,

dadurch gekennzeichnet, dass die Mittel zum in Eingriff Bringen lösbare Vorspannmittel (50, 70, 80) zum Ausüben einer Reibungskraft auf eine Oberfläche des Haltermittels umfassen, um dessen Entfernen aus dem Spender zu verhindern oder zu erschweren.

24. Spender nach Anspruch 23, wobei das lösbare Vorspannmittel dazu ausgestaltet ist, eine erste Reibung während einer Bewegung des Haltermittels in den Spender und eine höhere zweite Reibung während des Entferns des Haltermittels aus dem Spender auszuüben, wenn das Mittel zum Lösen nicht betätigt wird.

25. Spender nach Anspruch 24, wobei das Mittel zum Lösen dazu ausgestaltet ist, die Vorspannmittel während des Entferns des Haltermittels aus dem Spender eine dritte Reibung ausüben zu lassen, wenn das Mittel zum Lösen betätigt wird, wobei die dritte Reibung niedriger ist als die zweite Reibung.

26. Spender nach einem der Ansprüche 23-25, wobei das lösbare Vorspannmittel wenigstens eine Blattfeder mit zwei Enden umfasst, wobei ein Ende mit dem Spender in Eingriff ist und das andere Ende so

positioniert ist, dass es mit dem Haltermittel in Eingriff ist, wenn es in dem Spender aufgenommen ist, wobei die Feder so positioniert ist, dass das eine Ende näher an der Öffnung positioniert ist als das andere Ende.

27. Spender nach Anspruch 26, wobei die wenigstens eine Blattfeder eine Längsrichtung zwischen dem einen Ende und dem anderen Ende aufweist, wobei die Längsrichtung zumindest im Wesentlichen parallel zu einer Bewegungsrichtung des Haltermittels während der Aufnahme in dem Schlitz ist.

28. Spender nach einem der Ansprüche 26 oder 27, wobei das Mittel zum Lösen dazu ausgestaltet ist, den Eingriff zwischen der Blattfeder und dem Haltermittel zu beseitigen.

29. Spender nach Anspruch 28, wobei die Mittel zum Lösen dazu ausgestaltet sind, das andere Ende der Blattfeder in einer Richtung weg von dem Haltermittel zu bewegen.

30. Spender nach Anspruch 29, wobei das Mittel zum Lösen dazu ausgestaltet ist, in einer Längsrichtung der Feder verschoben zu werden, wobei das Mittel zum Lösen Mittel zum in Eingriff Bringen der Feder und Halten wenigstens eines Teils der Feder weg von dem Haltermittel umfasst.

31. Spender nach einem der Ansprüche 23-30, wobei das lösbare Vorspannmittel ein Element umfasst, welches um eine vorbestimmte Achse drehbar ist und einen Teil aufweist, welcher dazu ausgestaltet ist, die Reibungskraft auszuüben, wenn das Element in eine erste Position gedreht wird, wobei die Mittel zum Lösen dazu ausgestaltet sind, das Element in eine zweite Position zu drehen, in welcher von dem Element eine geringere Reibung ausgeübt wird.

32. Spender nach Anspruch 31, wobei das lösbare Vorspannmittel darüber hinaus Mittel umfasst, um das Element in Richtung des Haltermittels vorzuspannen, wenn das Element in der ersten Position ist.

33. Spender nach Anspruch 31 oder 32, wobei das Element ein oder mehr Kantenteile umfasst, welche dazu ausgestaltet sind, mit dem Haltermittel in Eingriff zu kommen, wenn das Element in der ersten Position ist.

34. Spender nach einem der Ansprüche 31-33, wobei die vorbestimmte Achse zumindest im Wesentlichen senkrecht ist zu einer Bewegungsrichtung des Haltermittels während der Aufnahme in dem Schlitz.

35. Spender nach Anspruch 34, wobei die Drehachse näher an der Öffnung positioniert ist als der zum Aus-

üben der Reibung ausgestaltete Teil.

36. Verfahren zum Betreiben eines Spenders zum Halten eines Haltermittels Abgabe von Einheiten,

- wobei das Haltermittel (92) eine Vielzahl von Einheiten umfasst, welche von einer vorbestimmten Oberfläche davon abgegeben werden sollen,
 - wobei der Spender umfasst:
 - einen Schlitz (12) mit einer Öffnung (10) zur Aufnahme des Haltermittels (92),
 - Mittel (20) zum Verhindern eines Zugriffs auf Einheiten ausgehend von der vorbestimmten Oberfläche, wenn das Haltermittel (92) in dem Schlitz (12) aufgenommen ist,
 - Mittel zum in Eingriff Bringen des Haltermittels (92), wenn das Haltermittel (92) in dem Schlitz (12) aufgenommen ist, und
 - Mittel (54, 74, 82) zum Lösen der Mittel zum in Eingriff Bringen,

dadurch gekennzeichnet, dass das Verfahren den Schritt umfasst, ein lösbares Vorspannmittel der Mittel zum in Eingriff Bringen (50, 70, 80) eine Reibungskraft auf eine Oberfläche des Haltermittels (92) ausüben zu lassen, um dessen Entfernen aus dem Spender zu verhindern oder zu erschweren.

37. Verfahren nach Anspruch 36, wobei das lösbare Vorspannmittel eine erste Reibung während einer Bewegung des Haltermittels in den Spender und eine höhere zweite Reibung während eines Entfernens des Haltermittels aus dem Spender ausübt, wenn das Mittel zum Lösen nicht betätigt wird.

38. Verfahren nach Anspruch 37, wobei das Vorspannmittel eine dritte Reibung während eines Entfernens des Haltermittels aus dem Spender ausübt, wenn das Mittel zum Lösen betätigt wird, wobei die dritte Reibung niedriger ist als die zweite Reibung.

39. Verfahren nach einem der Ansprüche 36-38, wobei das lösbare Vorspannmittel wenigstens eine Blattfeder mit zwei Enden umfasst, wobei ein Ende im Eingriff mit dem Spender ist und das andere Ende im Eingriff mit dem Haltermittel ist, wenn es in dem Spender aufgenommen ist, wobei die Feder so positioniert ist, dass das eine Ende näher an der Öffnung positioniert ist als das andere Ende.

40. Verfahren nach Anspruch 39, wobei die wenigstens eine Blattfeder eine Längsrichtung zwischen dem einen Ende und dem anderen Ende aufweist, wobei die Längsrichtung zumindest im Wesentlichen parallel zu einer Bewegungsrichtung des Haltermittels während der Aufnahme in den Schlitz ist.

41. Verfahren nach einem der Ansprüche 39 oder 40, darüber hinaus umfassend einen Löseschritt, wobei das Mittel zum Lösen den Eingriff zwischen der Blattfeder und dem Haltermittel beseitigt.

42. Verfahren nach Anspruch 41, wobei die Mittel zum Lösen das andere Ende der Blattfeder in einer Richtung weg von dem Haltermittel bewegen.

43. Verfahren nach Anspruch 42, wobei die Mittel zum Lösen in einer Längsrichtung der Feder verschoben werden, wobei die Mittel zum Lösen Mittel zum in Eingriff Bringen der Feder und Halten wenigstens eines Teils der Feder weg von dem Haltermittel aufweisen.

44. Verfahren nach einem der Ansprüche 36-43, wobei die lösbaren Vorspannmittel um eine vorbestimmte Achse gedreht werden und einen die Reibungskraft ausübenden Teil aufweisen, wenn das Element in eine erste Position gedreht wird, wobei die Mittel zum Lösen das Element in eine zweite Position drehen, in welcher von dem Element eine geringere Reibung ausgeübt wird.

45. Verfahren nach Anspruch 44, wobei das lösbare Vorspannmittel darüber hinaus Mittel umfasst zum Vorspannen des Elements in Richtung des Haltermittels, wenn das Element in der ersten Position ist.

46. Verfahren nach Anspruch 44 oder 45, wobei der Schritt des in Eingriff Bringens umfasst, dass ein oder mehrere Kantenteile des lösbaren Vorspannmittels an dem Haltermittel angreifen, wenn das Element in der ersten Position ist.

47. Verfahren nach einem der Ansprüche 44-46, wobei die Drehung um eine vorbestimmte Achse ausgeführt wird, welche zumindest im Wesentlichen senkrecht ist zu einer Bewegungsrichtung des Haltermittels während der Aufnahme in dem Schlitz.

48. Verfahren nach Anspruch 47, wobei die Drehachse näher an der Öffnung positioniert ist als der zum Ausüben der Reibung ausgestaltete Teil.

49. Spender nach einem der Ansprüche 1-11 oder 23-35, darüber hinaus umfassend ein Vorspannmittel, welches dazu ausgestaltet ist, von dem Haltermittel vorgespannt zu werden, wenn es in dem Schlitz aufgenommen wird, und welches das ausgestaltet ist, das Haltermittel in einer Richtung aus dem Schlitz zu bewegen, wenn die Mittel zum Lösen betätigt werden.

50. Spender nach einem der Ansprüche 1-11 oder 23-35, wobei das Mittel zum Lösen einen oder mehrere Druckknöpfe umfasst, wobei ein Drücken des

einen oder mehrerer Druckknöpfe in Richtung des oder in den Spender die Mittel zum in Eingriff Bringen oder Vorspannen löst.

51. Spender nach einem der Ansprüche 1-11 oder 23-35, wobei das Mittel zum Lösen ein oder mehrere drehbare Teile umfasst, wobei eine Drehung des drehbaren Teils bzw. der drehbaren Teile die Mittel zum in Eingriff Bringen oder Vorspannen löst. 5
10
52. Verfahren nach einem der Ansprüche 12-22 oder 36-48, darüber hinaus umfassend den Schritt eines Vorspannens eines Vorspannmittels während des Einsetzens des Haltermittels in den Schlitz, einen Ausgabeschritt, welcher den Schritt umfasst, dass das Vorspannmittel bei Betätigung der Mittel zum Lösen das Haltermittel in einer Richtung aus dem Schlitz schiebt. 15
53. Verfahren nach einem der Ansprüche 12-22 oder 36-48, wobei der Schritt des Lösens umfasst, dass ein oder mehrere Druckknöpfe in Richtung des oder in den Spender gedrückt werden, um die Mittel zum in Eingriff Bringen oder Vorspannen zu lösen. 20
54. Verfahren nach einem der Ansprüche 12-22 oder 36-48, wobei der Schritt des Lösens umfasst, dass ein oder mehrere drehbare Teile gedreht werden, um die Mittel zum in Eingriff Bringen oder Vorspannen zu lösen. 25
30

Revendications

1. Un distributeur destiné à soutenir un moyen de support (92) pour distribution d'unités, 35
- le moyen de support (92) comprenant une pluralité d'unités devant être distribuées depuis une surface prédéterminée de celui-ci, 40
 - le distributeur comprenant :
 - o une ouverture (10) destinée à recevoir le moyen de support,
 - o des moyens (20) empêchant l'accès aux unités depuis la surface prédéterminée lorsque le moyen de support est reçu par le distributeur, 45
 - o des moyens (14, 16) permettant d'engager le moyen de support (92) lorsque le moyen de support (92) est reçu par le distributeur, 50
 - o des moyens permettant de libérer les moyens d'engagement, et
 - o des moyens (14) destinés à maintenir la surface prédéterminée sur ou dans un plan prédéterminé lorsque le moyen de support (92) est reçu par le distributeur, 55

caractérisé en ce que :

- le moyen d'engagement comprend des moyens (16) permettant de faire venir en butée une partie de bord du moyen de support faisant face à l'ouverture (10) lorsque le moyen de support (92) est reçu dans l'ouverture (10), le moyen de butée (16) ayant une surface de butée (16'') faisant face à la partie de bord du moyen de support (92), s'étendant de façon à former un angle avec le plan prédéterminé et à une distance prédéterminée du plan, et
 - le moyen de libération comprend des moyens (16, 30, 60, 62, 64) permettant de déplacer la partie de bord du moyen de support à l'écart du plan au moins de la distance prédéterminée.
2. Un distributeur selon la revendication 1, dans lequel le moyen de maintien permet de solliciter le moyen de support contre une ou plusieurs parties de surface du distributeur, la (les) partie(s) de surface définissant le plan prédéterminé.
3. Un distributeur selon la revendication 2, dans lequel la partie de bord de butée s'étend à l'écart de la (des) partie(s) de surface de la distance prédéterminée.
4. Un distributeur selon la revendication 2 ou la revendication 3, dans lequel le moyen de déplacement permet de déplacer la partie de bord au moins de la distance prédéterminée à l'écart de la (des) partie(s) de surface.
5. Un distributeur selon l'une quelconque des revendications précédentes, le moyen de déplacement étant agencé dans une partie du distributeur définissant également la (les) partie(s) de surface, le moyen de déplacement permettant de déplacer la partie de bord dans une direction formant un angle avec le plan prédéterminé.
6. Un distributeur selon la revendication 5, dans lequel le moyen de déplacement peut être engagé par un utilisateur depuis une ou plusieurs des parties de surface externe du distributeur.
7. Un distributeur selon la revendication 6, le distributeur comprenant, à l'emplacement de la partie de surface externe et dans la (les) partie(s) du distributeur définissant la (les) partie(s) de surface, un élément élastique ou déformable pouvant être déformé ou déplacé par l'utilisateur afin de déplacer la partie de bord du moyen de support.
8. Un distributeur selon l'une quelconque des revendications 2 à 7, dans lequel la (les) partie(s) de surface prédéterminée(s) du moyen de support est (sont) prévue(s) pour faire face à (aux) partie(s) de surface

9. Un distributeur selon l'une quelconque des revendications 2 à 8, dans lequel la partie de bord du moyen de support est une partie de bord externe du moyen de support.

10. Un distributeur selon l'une quelconque des revendications 2 à 9, dans lequel le moyen d'engagement est déplaçable selon une direction située au moins sensiblement le long du plan prédétermine, le distributeur comprenant des moyens permettant à une partie du moyen de support adjacente de la partie de bord de se courber à l'écart du plan prédéterminé suite à la sollicitation.

11. Un distributeur selon l'une quelconque des revendications précédentes, dans lequel le plan prédéterminé a une forme incurvée.

12. Un procédé de fonctionnement d'un distributeur destiné à soutenir un moyen de support pour distribution d'unités,

- le moyen de support (92) comprenant une pluralité d'unités devant être distribuées depuis une surface prédéterminée de celui-ci,
- le distributeur comprenant :

- o une ouverture (10) destinée à recevoir le moyen de support,
- o des moyens (20) empêchant l'accès aux unités depuis la surface prédéterminée lorsque le moyen de support est reçu par le distributeur,
- o des moyens (14, 16) permettant d'engager le moyen de support (92) lorsque le moyen de support (92) est reçu par le distributeur, et
- o des moyens permettant de libérer les moyens d'engagement,

le procédé comprenant l'étape de maintien de la première surface sur ou dans un plan prédéterminé lorsque le moyen de support est reçu par le distributeur,

caractérisé en ce que le procédé comprend en outre les étapes suivantes:

- faire venir en butée une partie de bord du moyen de support (92) faisant face à l'ouverture (10) lorsque le moyen de support (92) est reçu dans l'ouverture (10), le moyen de butée (16) ayant une surface de butée (16') faisant face à la partie de bord du moyen de support (92), s'étendant de façon à former un angle avec le plan prédéterminé et à une distance prédéterminée du plan, et
- une étape de libération comprenant le dépla-

cement de la partie de bord du moyen de support (92) à l'écart du plan au moins de la distance prédéterminée

5 13. Un procédé selon la revendication 12, dans lequel l'étape de maintien comprend la sollicitation du moyen de support contre une ou plusieurs parties de surface du distributeur, la (les) partie(s) de surface définissant le plan prédéterminé.

10 14. Un procédé selon la revendication 13, dans lequel la partie de bord de butée s'étend à l'écart de la (des) partie(s) de surface de la distance prédéterminée.

15 15. Un procédé selon la revendication 13 ou la revendication 14, dans lequel l'étape de déplacement comprend le déplacement de la partie de bord au moins de la distance prédéterminée à l'écart de la (des) partie(s) de surface.

20 16. Un procédé selon la revendication 13, la revendication 14 ou la revendication 15, dans lequel les moyens de déplacement sont agencés dans une partie du distributeur définissant également la (les) partie(s) de surface, l'étape de déplacement comprenant le déplacement de la partie de bord dans une direction formant un angle avec le plan prédéterminé.

25 30 17. Un procédé selon la revendication 16, dans lequel l'étape de déplacement implique un utilisateur réalisant le déplacement depuis une partie de surface externe du distributeur.

35 18. Un procédé selon la revendication 17, dans lequel le déplacement est réalisé par l'utilisateur déformant ou déplaçant la partie d'extrémité du moyen de support en déformant ou en déplaçant un élément élastique ou déformable prévu dans la partie du distributeur définissant la (les) partie(s) de surface.

40 45 19. Un procédé selon l'une quelconque des revendications 13 à 18, dans lequel la partie de surface prédéterminée du moyen de support fait face à (aux) partie(s) de surface.

20. Un procédé selon l'une quelconque des revendications 13 à 19, dans lequel la partie de bord du moyen de support est une partie de bord externe du moyen de support

50 55 21. Un procédé selon l'une quelconque des revendications 13 à 20, dans lequel les moyens d'engagement sont déplacés selon une direction située au moins sensiblement le long du plan prédéterminé, de telle façon qu'une partie du moyen de support adjacente de la partie de bord se courbe à l'écart du plan prédéterminé suite à la sollicitation

22. Un procédé selon l'une quelconque des revendications 12 à 21, dans lequel le plan prédéterminé a une forme incurvée.
23. Un distributeur destiné à soutenir un moyen de support (92) pour distribution d'unités, 5
- le moyen de support (92) comprenant une pluralité d'unités devant être distribuées depuis une surface prédéterminée de celui-ci, 10
 - le distributeur comprenant :
 - o une fente (12) ayant une ouverture destinée à recevoir le moyen de support, 15
 - o des moyens (20) empêchant l'accès aux unités depuis la surface prédéterminée lorsque le moyen de support (92) est reçu dans la fente, 20
 - o des moyens permettant d'engager le moyen de support (92) lorsque le moyen de support (92) est reçu dans la fente (12), et
 - o des moyens (54, 75, 82) permettant de libérer les moyens d'engagement, 25
- caractérisé en ce que** les moyens d'engagement comprennent des moyens de sollicitation pouvant être libérés (50, 70, 80) destinés à exercer une force de friction sur une surface du moyen de support afin d'empêcher ou de rendre difficile le retrait de celui-ci du distributeur. 30
24. Un distributeur selon la revendication 23, dans lequel le moyen de sollicitation pouvant être libéré peut exercer une première friction lors du mouvement du moyen de support dans le distributeur et une seconde friction plus importante lors du retrait du moyen de support du distributeur, lorsque le moyen de libération n'est pas actionné. 35
25. Un distributeur selon la revendication 24, dans lequel le moyen de libération permet au moyen de sollicitation d'exercer une troisième friction lors du retrait du moyen de support du distributeur, lorsque le moyen de libération est actionné, la troisième friction étant plus faible que la seconde friction. 40 45
26. Un distributeur selon l'une quelconque des revendications 23 à 25, dans lequel le moyen de sollicitation pouvant être libéré comprend au moins un ressort à lames ayant deux extrémités, l'une des extrémités venant au contact du distributeur et l'autre extrémité étant agencée de façon à venir au contact du moyen de support lorsque celui-ci est reçu dans le distributeur, le ressort étant agencé de façon que la première des extrémités soit positionnée plus près de l'ouverture que l'autre extrémité. 50 55
27. Un distributeur selon la revendication 26, l'au moins un ressort à lames ayant une direction longitudinale située entre la première extrémité et l'autre extrémité, la direction longitudinale étant au moins sensiblement parallèle à une direction de mouvement du moyen de support lors de la réception dans la fente.
28. Un distributeur selon l'une quelconque des revendications 26 ou 27, dans lequel le moyen de libération peut mettre hors de contact le ressort à lames et le moyen de support.
29. Un distributeur selon la revendication 28, dans lequel les moyens de libération peuvent déplacer l'autre extrémité du ressort à lames dans une direction à l'écart du moyen de support.
30. Un distributeur selon la revendication 29, dans lequel le moyen de libération peut subir une translation selon une direction longitudinale du ressort, le moyen de libération ayant des moyens permettant d'engager le ressort et de maintenir au moins une partie du ressort à l'écart du moyen de support.
31. Un distributeur selon l'une quelconque des revendications 23 à 30, dans lequel le moyen de sollicitation pouvant être libéré comprend un élément pouvant pivoter autour d'un axe prédéterminé et ayant une partie pouvant exercer la force de friction lorsque l'élément est pivoté dans une première position, le moyen de libération étant prévu pour faire pivoter l'élément vers une seconde position dans laquelle une friction plus faible est exercée par l'élément.
32. Un distributeur selon la revendication 31, dans lequel le moyen de sollicitation pouvant être libéré comprend en outre des moyens pour solliciter l'élément en direction du moyen de support lorsque l'élément est dans la première position.
33. Un distributeur selon la revendication 31 ou la revendication 32, dans lequel l'élément comprend une ou plusieurs parties de bord prévues pour venir au contact du moyen de support lorsque l'élément est dans la première position.
34. Un distributeur selon l'une quelconque des revendications 31 à 33, dans lequel l'axe prédéterminé est au moins sensiblement perpendiculaire à une direction de mouvement du moyen de support lors de la réception dans la fente.
35. Un distributeur selon la revendication 34, dans lequel l'axe de rotation est positionné plus près de l'ouverture que la partie pouvant exercer la friction.
36. Un procédé de fonctionnement d'un distributeur destiné à soutenir un moyen support (92) pour distribution d'unités,

- le moyen de support (92) comprenant une pluralité d'unités devant être distribuées depuis une surface prédéterminée de celui-ci,
- le distributeur comprenant :

- o une fente (12) ayant une ouverture (10) destinée à recevoir le moyen de support (92),
- o des moyens (20) empêchant l'accès aux unités depuis la surface prédéterminée lorsque le moyen de support (92) est reçu dans la fente (12),
- o des moyens permettant d'engager le moyen de support (92) lorsque le moyen de support (92) est reçu dans la fente (12), et
- o des moyens (54, 75, 82) permettant de libérer les moyens d'engagement,

caractérisé en ce que le procédé comprend l'étape consistant à faire exercer une force de friction par un moyen de sollicitation pouvant être libéré du moyen d'engagement (50, 70, 80) sur une surface du moyen de support (92) afin d'empêcher ou de rendre difficile le retrait de celui-ci du distributeur

37. Un procédé selon la revendication 36, dans lequel le moyen de sollicitation pouvant être libéré exerce une première friction lors du mouvement du moyen de support dans le distributeur et une seconde friction plus forte lors du retrait du moyen de support du distributeur, lorsque le moyen de libération n'est pas actionné
38. Un procédé selon la revendication 37, dans lequel le moyen de sollicitation exerce une troisième friction lors du retrait du moyen de support du distributeur, lorsque le moyen de libération est actionné, la troisième friction étant plus faible que la seconde friction.
39. Un procédé selon l'une quelconque des revendications 36 à 38, dans lequel le moyen de sollicitation pouvant être libéré comprend au moins un ressort à lames ayant deux extrémités, l'une des extrémités venant au contact du distributeur et l'autre extrémité venant au contact du moyen de support lorsque celui-ci est reçu dans le distributeur, le ressort étant agencé de façon que la première des extrémités soit positionnée plus près de l'ouverture que l'autre extrémité.
40. Un procédé selon la revendication 39, l'au moins un ressort à lames ayant une direction longitudinale située entre la première extrémité et l'autre extrémité, la direction longitudinale étant au moins sensiblement parallèle à une direction de mouvement du moyen de support lors de la réception dans la fente.

41. Un procédé selon l'une quelconque des revendications 39 ou 40, comprenant en outre une étape de libération dans laquelle le moyen de libération peut mettre hors de contact le ressort à lames et le moyen de support.
42. Un procédé selon la revendication 41, dans lequel les moyens de libération déplacent l'autre extrémité du ressort à lames dans une direction à l'écart du moyen de support.
43. Un procédé selon la revendication 42, dans lequel les moyens de libération subissent une translation selon une direction longitudinale du ressort, les moyens de libération ayant des moyens permettant d'engager le ressort et de maintenir au moins une partie du ressort à l'écart du moyen de support.
44. Un procédé selon l'une quelconque des revendications 36 à 43, dans lequel les moyens de sollicitation pouvant être libérés sont pivotés autour d'un axe prédéterminé et ont une partie exerçant la force de friction lorsque l'élément est pivoté dans une première position, le moyen de libération faisant pivoter l'élément vers une seconde position dans laquelle une friction plus faible est exercée par l'élément.
45. Un procédé selon la revendication 44, dans lequel le moyen de sollicitation pouvant être libéré comprend en outre des moyens pour solliciter l'élément en direction du moyen de support lorsque l'élément est dans la première position.
46. Un procédé selon la revendication 44 ou la revendication 45, dans lequel l'étape d'engagement comprend la mise en contact d'une ou plusieurs parties de bord du moyen de sollicitation pouvant être libéré avec le moyen de support lorsque l'élément est dans la première position.
47. Un procédé selon l'une quelconque des revendications 44 à 46, dans lequel la rotation est effectuée autour d'un axe prédéterminé qui est au moins sensiblement perpendiculaire à une direction de mouvement du moyen de support lors de la réception dans la fente.
48. Un procédé selon la revendication 47, dans lequel l'axe de rotation est positionné plus près de l'ouverture que la partie pouvant exercer la friction.
49. Un distributeur selon l'une quelconque des revendications 1 à 11 ou 23 à 35, comprenant en outre un moyen de sollicitation pouvant être sollicité par le moyen de support lorsque celui-ci est reçu dans la fente et qui peut déplacer le moyen de support dans une direction extérieure à la fente lorsque les moyens de libération sont actionnés.

50. Un distributeur selon l'une quelconque des revendications 1 à 11 ou 23 à 35, dans lequel le moyen de libération comprend un ou plusieurs boutons-poussoirs, le fait de pousser l'un ou plusieurs des boutons vers ou dans le distributeur libérant les moyens d'engagement ou de sollicitation 5
51. Un distributeur selon l'une quelconque des revendications 1 a 11 ou 23 a 35, dans lequel le moyen de libération comprend un ou plusieurs éléments pouvant pivoter, la rotation de l'élément (des éléments) pouvant pivoter libérant les moyens d'engagement ou de sollicitation. 10
52. Un procédé selon l'une quelconque des revendications 12 à 22 ou 36 à 48, comprenant en outre l'étape de sollicitation d'un moyen de sollicitation lors de l'insertion du moyen de support dans la fente, une étape de sortie comprenant l'étape de sollicitation comprenant l'étape de poussée du moyen de support dans une direction extérieure à la fente par les moyens de sollicitation, suite à l'actionnement des moyens de libération. 15
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53. Un procédé selon l'une quelconque des revendications 12 à 22 ou 36 à 48, dans lequel l'étape de libération comprend le fait de pousser un ou plusieurs boutons vers ou dans le distributeur afin de libérer les moyens d'engagement ou de sollicitation. 25
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54. Un procédé selon l'une quelconque des revendications 12 à 22 ou 36 à 48, dans lequel l'étape de libération comprend la rotation d'un ou plusieurs éléments pouvant pivoter afin de libérer les moyens d'engagement ou de sollicitation. 35

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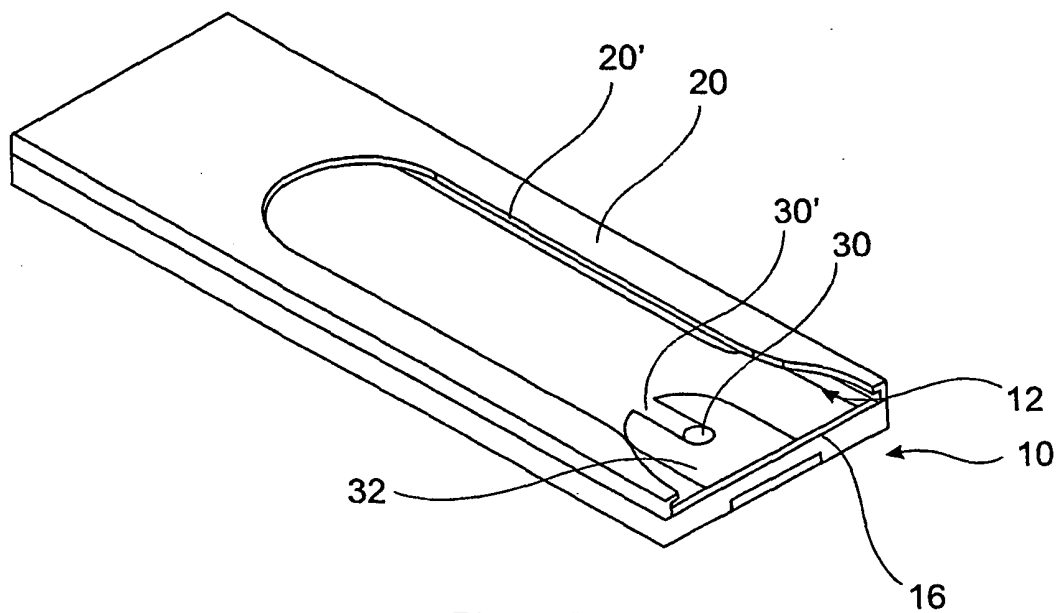


Fig. 1

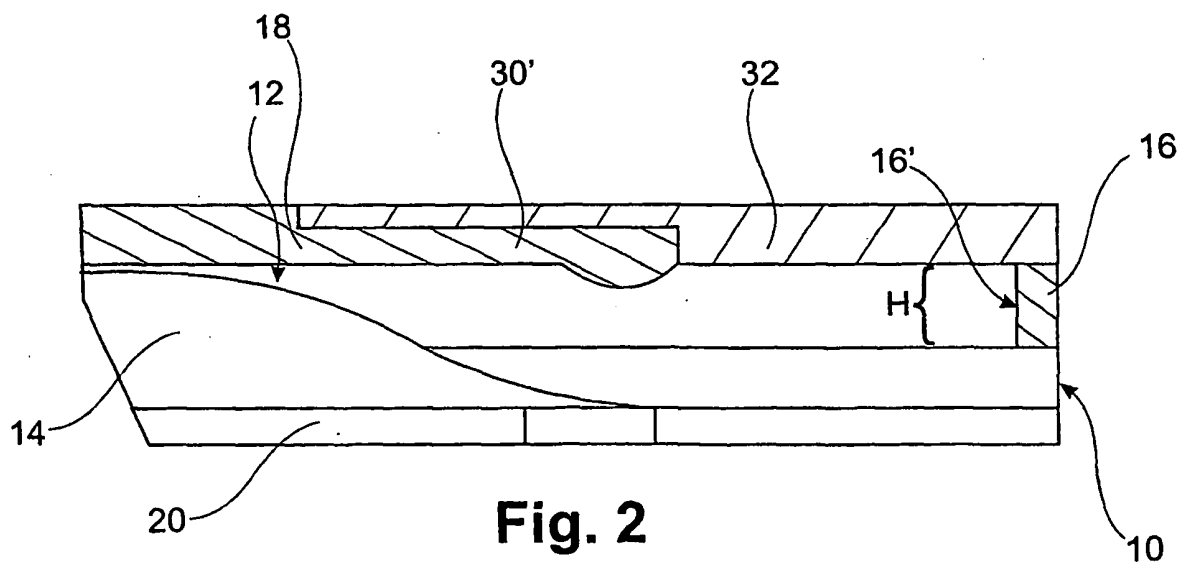


Fig. 2

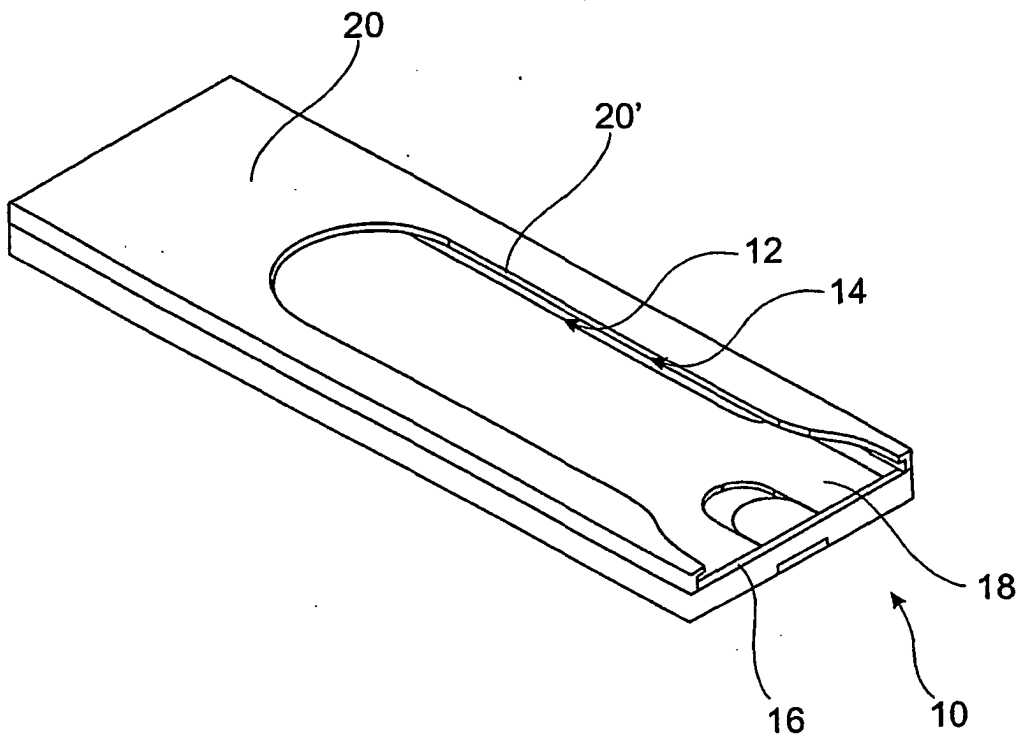


Fig. 3

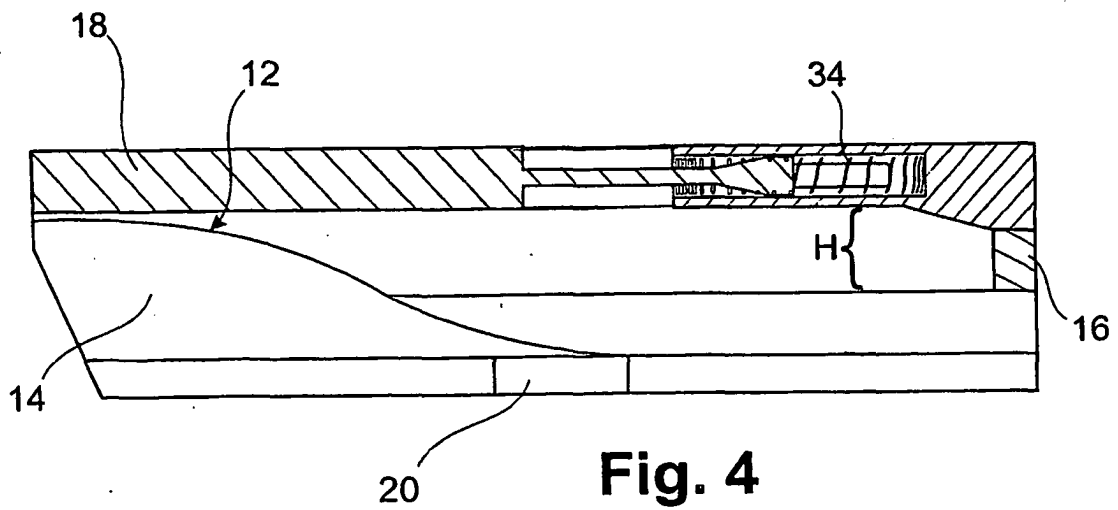


Fig. 4

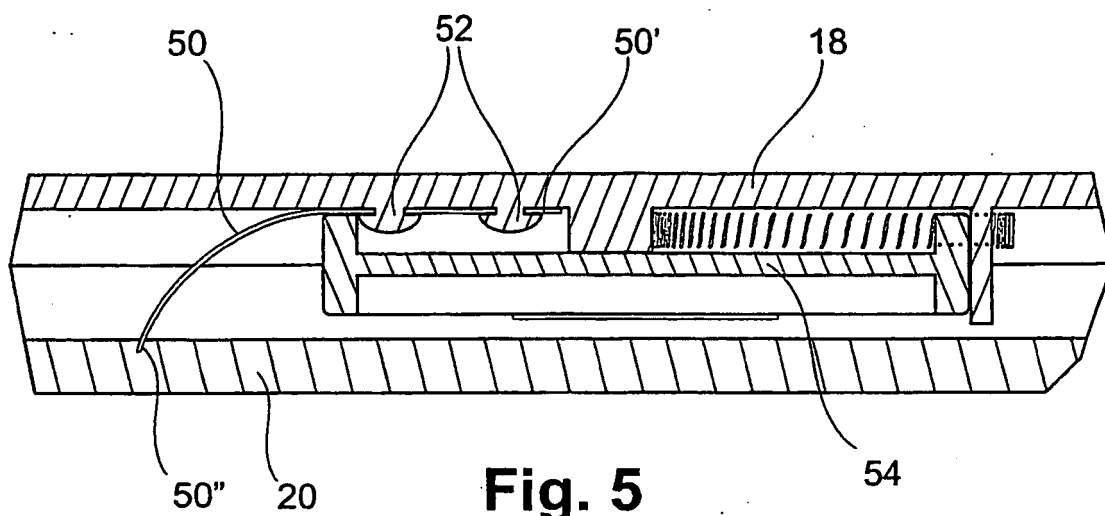


Fig. 5

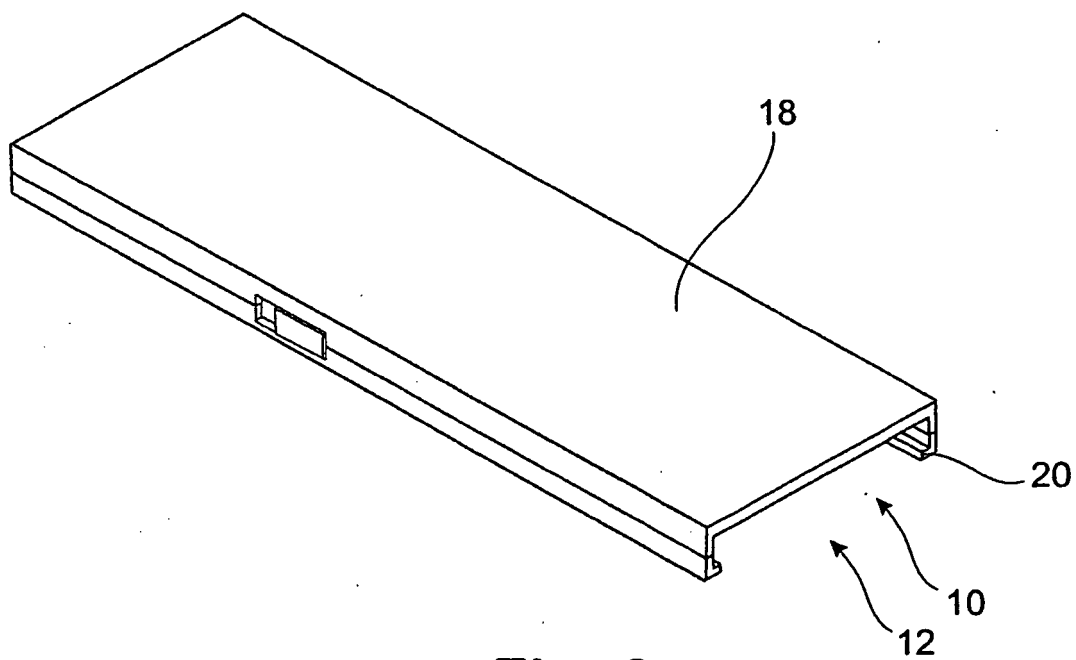


Fig. 6

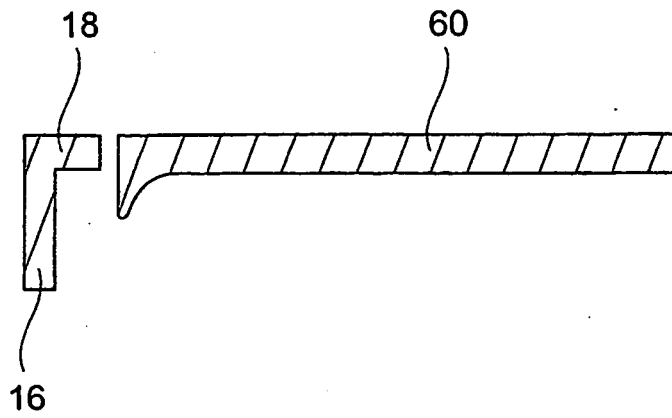


Fig. 7A

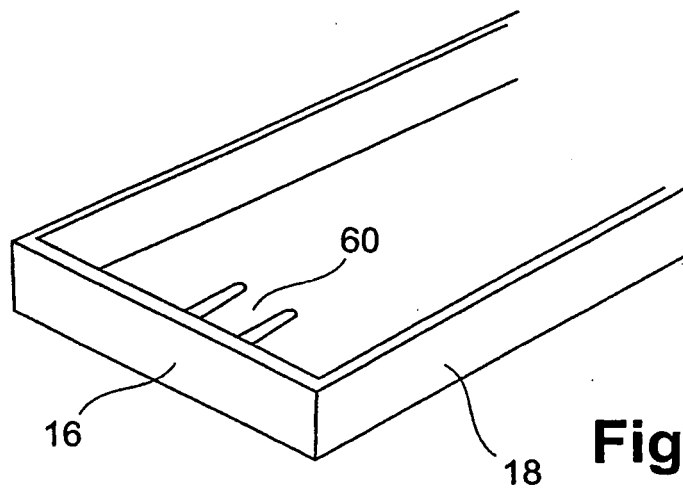


Fig. 7B

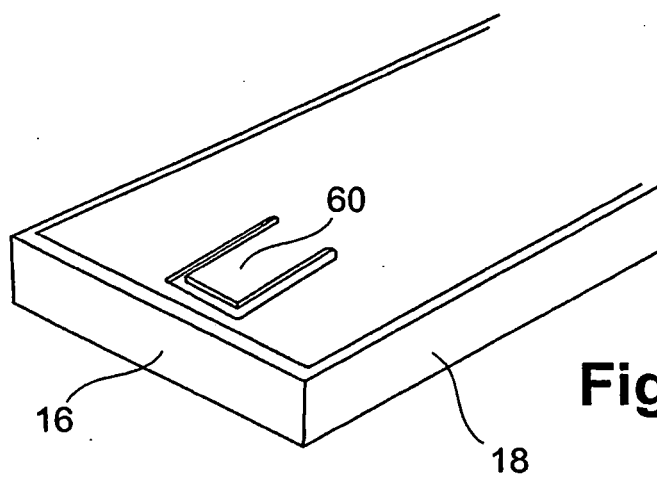


Fig. 7C

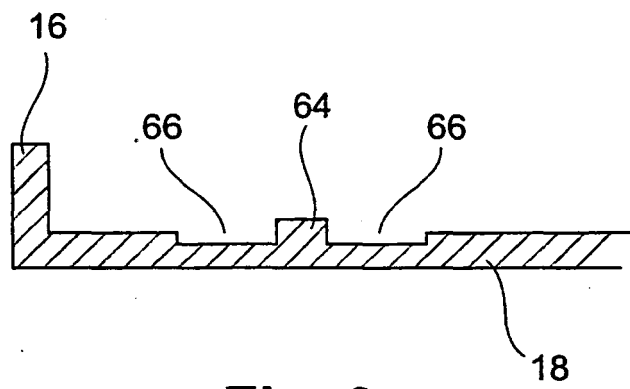
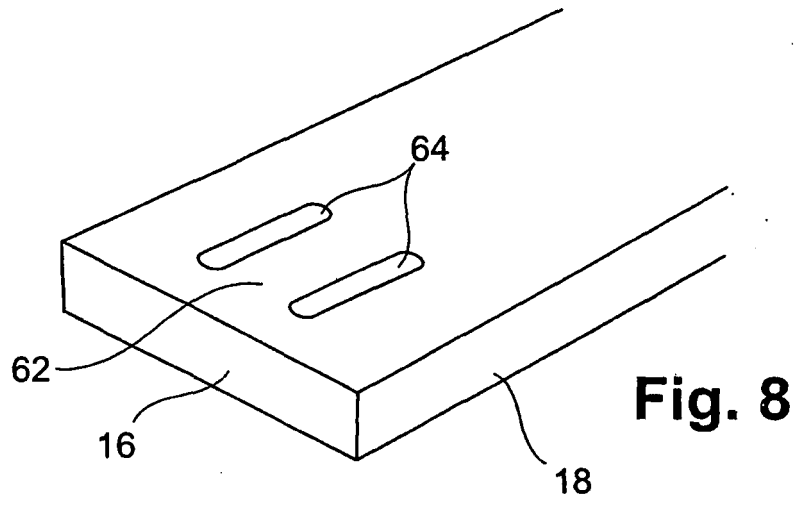
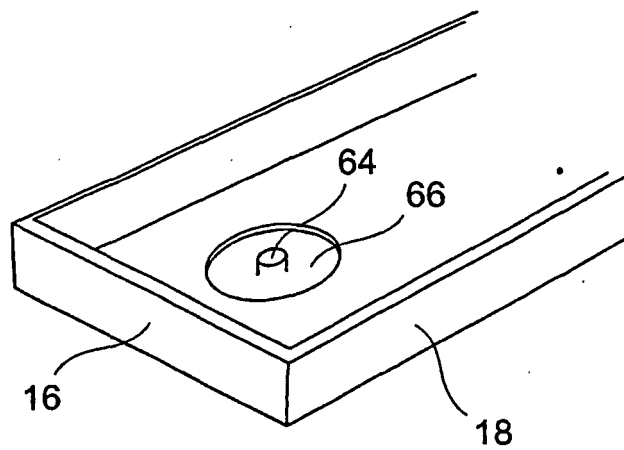


Fig. 9



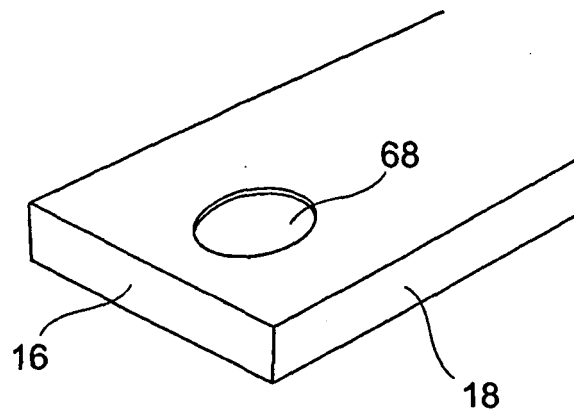


Fig. 10

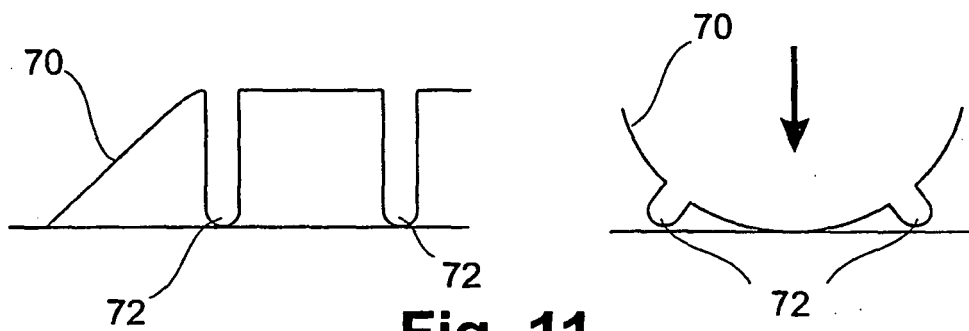


Fig. 11

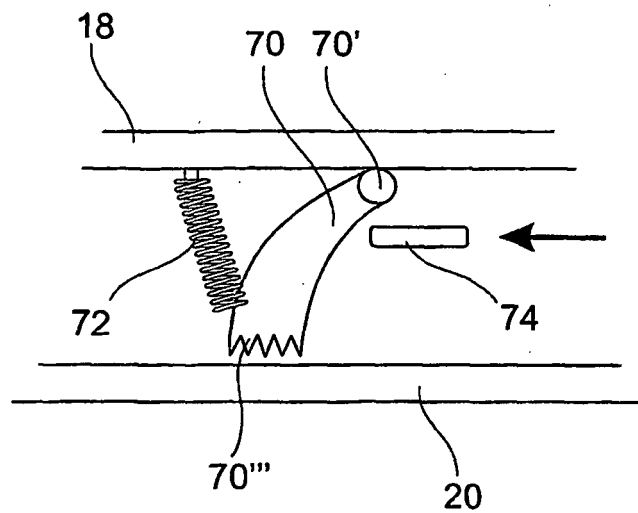


Fig. 12

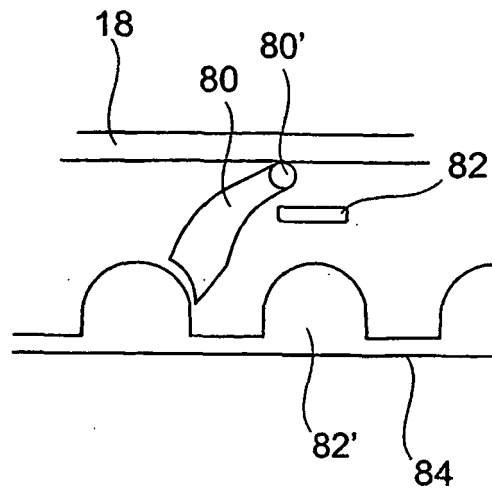


Fig. 13

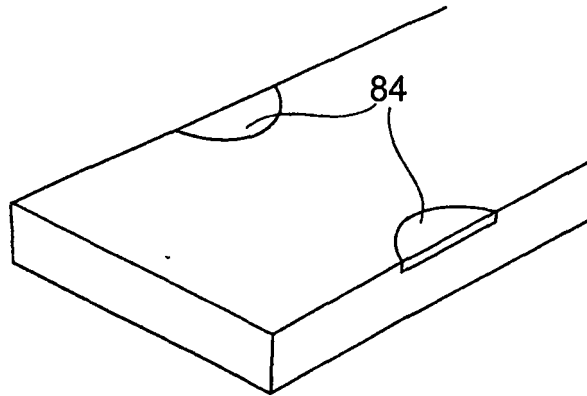
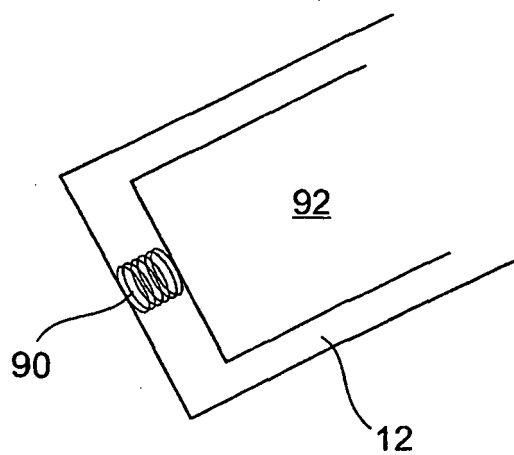


Fig. 14



REFERENCES CITED IN THE DESCRIPTION

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