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Mouth guard case including compartment for storing and dispensing cleaning solution

Abstract

A mouth guard case including a compartment for storing and dispensing a cleaning solution is disclosed. In one example, an apparatus includes a storage compartment sized and shaped to house a mouth guard and a dispensing compartment reversibly coupled to the storage compartment. The dispensing compartment may include a reservoir to hold a quantity of a cleaning solution and a nozzle to dispense the cleaning solution directly into the storage compartment when the storage compartment is coupled to the dispensing compartment.

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References Cited

U.S. PATENT DOCUMENTS

Patent No.	Issued Date	Patentee Name	U.S. Cl.	CPC
5975362	12/1998	West	222/113	B65D 35/285
D876820	12/2019	Griffin	D3/203.1	N/A
11465821	12/2021	Boomsma	N/A	B65D 47/06
2021/0153617	12/2020	Doniga	N/A	B08B 13/00

FOREIGN PATENT DOCUMENTS

Patent No.	Application Date	Country	CPC
2018201713	12/2017	JP	N/A

OTHER PUBLICATIONS

JP2018201713A Machine Translation (Year: 2018). cited by examiner

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Background/Summary

FIELD OF THE INVENTION

(1) The present invention relates generally to sports and dental equipment and relates more specifically to a mouth guard case including a compartment for storing and dispensing cleaning solution.

BACKGROUND OF THE DISCLOSURE

(2) Mouth guards are used in contact sports to prevent trauma to the wearer's teeth and surrounding soft tissue. For instance, mouth guards are commonly used in martial arts, hockey, football, lacrosse, and other sports. However, mouth guards may also be worn for other reasons such as to manage temporomandibular joint (TMJ) disorders or to prevent the wearer from grinding their teeth while sleeping (also known as sleep bruxism). Mouth guards are typically worn over the top teeth and may be fabricated from a variety of materials, with ethylene-vinyl acetate (EVA), silicone, and acrylic being some of the more common materials.

SUMMARY OF THE INVENTION

(3) A mouth guard case including a compartment for storing and dispensing a cleaning solution is disclosed. In one example, an apparatus includes a storage compartment sized and shaped to house a mouth guard and a dispensing compartment reversibly coupled to the storage compartment. The dispensing compartment may include a reservoir to hold a quantity of a cleaning solution and a nozzle to dispense the cleaning solution directly into the storage compartment when the storage compartment is coupled to the dispensing compartment.

(4) In another example, an apparatus includes a storage compartment sized and shaped to house a mouth guard, wherein the storage compartment includes a storage base including an aperture

formed in a planar wall of the storage base and a one-way valve positioned in the aperture and a storage lid joined to the planar wall of the storage base by a hinge. The apparatus further includes a dispensing compartment reversibly coupled to the storage compartment, wherein the dispensing compartment includes a reservoir to hold a quantity of a cleaning solution, wherein the reservoir is formed from a first material that is deformable under manual compression, and a nozzle to dispense the cleaning solution directly into the storage compartment through the aperture when the storage compartment is coupled to the dispensing compartment. The apparatus further includes a squeeze guard comprising a frame that is removably fitted around the dispensing compartment, wherein the squeeze guard is formed from a second material that is more rigid than the first material.

Description

BRIEF DESCRIPTION OF THE DRAWINGS

(1) The teachings of the present disclosure can be readily understood by considering the following detailed description in conjunction with the accompanying drawings, in which:

(2) FIG. **1** illustrates an isometric view of one example of a mouth guard case according to the present disclosure;

(3) FIG. **2** illustrates an exploded view of some of the components of the mouth guard case illustrated in FIG. **1**;

(4) FIG. **3** illustrates side plan views of surfaces of the storage compartment and dispensing compartment of FIGS. **1** and **2**;

(5) FIG. **4** illustrates an isometric view of the fully assembled mouth guard case of FIG. **1** showing the storage compartment in an open position (e.g., as opposed to the closed position illustrated in FIG. **1**);

(6) FIG. **5** illustrates top plan views of the storage base and the storage lid of the storage compartment of FIG. **4** in more detail;

(7) FIG. **6** illustrates an isometric view of one example of the squeeze guard of FIG. **1**;

(8) FIG. **7** illustrates an isometric view of the mouth guard case showing the tab of FIG. **6** engaged with a notch in the underside of the storage base of the storage compartment; and

(9) FIG. **8** is a flow diagram illustrating one example of a method for cleaning a mouth guard, according to embodiments of the present disclosure.

(10) To facilitate understanding, identical reference numerals have been used, where possible, to designate identical elements that are common to the figures.

DETAILED DESCRIPTION

(11) The present disclosure describes a mouth guard case including a compartment for storing and dispensing cleaning solution. As discussed above, mouth guards are used in contact sports to prevent trauma to the wearer's teeth and surrounding soft tissue. For instance, mouth guards are commonly used in martial arts, hockey, football, lacrosse, and other sports. However, mouth guards may also be worn for other reasons such as to manage temporomandibular joint (TMJ) disorders or to prevent the wearer from grinding their teeth while sleeping (also known as sleep bruxism). Mouth guards are typically worn over the top teeth and may be fabricated from a variety of materials, with ethylene-vinyl acetate (EVA), silicone, and acrylic being some of the more common materials.

(12) Because a mouth guard is worn in the mouth, bacteria and other microorganisms may build up on the surface of the mouth guard if the mouth guard is not properly and regularly cleaned. This may be especially true if the mouth guard is placed in a protective case without being cleaned; the bacteria and microorganisms may multiple more quickly in the dark, enclosed space of the mouth guard case. These bacteria and microorganisms may make the wearer sick.

(13) Examples of the present disclosure provide a mouth guard case that includes a compartment

for storing and dispensing a cleaning solution. In one example, the mouth card case comprises three main components that may be assembled to provide a protective enclosure in which a mouth guard may be simultaneously stored and cleaned. The three main components may include a storage compartment for storing a mouth guard, a dispensing compartment for storing and dispensing a cleaning solution, and a squeeze guard.

(14) The storage compartment may be sized and shaped to house a mouth guard. The dispensing compartment may be sized and shaped to hold a quantity of cleaning solution for cleaning the mouth guard. The dispensing compartment may be removably coupled to the storage compartment in order to dispense the cleaning solution directly into the storage compartment. For instance, when compression is applied to the dispensing compartment (e.g., by manually squeezing) while the dispensing compartment is coupled to the storage compartment, the cleaning solution may be expelled from the dispensing compartment and into the storage compartment. When empty, the dispensing compartment may be removed or disconnected from the storage compartment to be refilled with new cleaning solution. The squeeze guard may comprise a rigid frame that fits around at least a portion of the dispensing compartment in order to prevent the dispensing compartment from being compressed accidentally (e.g., during transport, storage, or handling). The squeeze guard may be removed when the mouth guard is to be cleaned.

(15) Although the following discussion makes reference to the storage and cleaning of mouth guards such as those used for contact sports, it will be appreciated that the example cases described herein could also be used to store and clean other types of devices that are removably worn in a user's mouth, such as dental retainers, tray aligners, and dentures. The mouth guard case disclosed herein allows a cleaning solution to be easily stored together with the mouth guard case, such that when a mouth guard is placed inside the mouth guard case, the cleaning solution can be dispensed directly into the storage area, allowing the mouth guard to be cleaned and protected against the growth of bacteria and microorganisms that may make the wearer sick. These and other aspects of the present disclosure are discussed in greater detail below in connection with the examples of FIGS. **1-8**.

(16) FIG. **1** illustrates an isometric view of one example of a mouth guard case **100** according to the present disclosure. The example shown in FIG. **1** illustrates the mouth guard case **100** fully assembled, i.e., with the storage compartment **102** and the dispensing compartment **104** connected to each other and the squeeze guard fitted **106** around the outside of the dispensing compartment **104**. The mouth guard case **100** may be assembled in the manner shown in FIG. **1** when the mouth guard case **100** is being transported, handled, or is simply storing a mouth guard without cleaning the mouth guard. Alternatively, the mouth card case **100** could also be assembled in the manner shown in FIG. **1** after the cleaning solution has been dispensed into the storage compartment **102** and is actively cleaning a mouth guard inside the storage compartment **102**.

(17) FIG. **2** illustrates an exploded view of some of the components of the mouth guard case **100** illustrated in FIG. **1**. More specifically, FIG. **2** illustrates the storage compartment **102** and the dispensing compartment **104** and the mechanisms that help to removably couple the storage compartment **102** to the dispensing compartment **104**. FIG. **3** illustrates side plan views of facing surfaces of the storage compartment **102** and dispensing compartment **104** of FIGS. **1** and **2**.

(18) Referring simultaneously to FIGS. **2** and **3**, the dispensing compartment **104** may generally comprise a reservoir **110** and a nozzle **112**. The reservoir **110** has a hollow interior volume that can store a quantity of cleaning solution for cleaning a mouth guard. In one example, the cleaning solution comprises a liquid cleaning solution, such as mouthwash, a solution of hydrogen peroxide and/or vinegar, a human-safe over the counter chemical cleaner (e.g., such as sodium hypochlorite in a liquid or tablet form that is dissolved in water), or the like. The reservoir **110** may be formed from a semi-flexible, BPA-free plastic or rubber. For instance, the plastic may be deformable under manual compression, such as by a user squeezing the reservoir **110**.

(19) In one example, the reservoir **110** includes at least one flat, planar wall **108**. Positioned

approximately midway along the length custom character.sub.d of the planar wall **108** is the nozzle **112**. The nozzle **112** facilitates dispensing of the cleaning solution from the reservoir **110** when the reservoir **110** is under compression. In one example, the nozzle **112** has a cylindrical shape having a substantially circular cross section. However, as shown more clearly in FIG. **3**, the nozzle **110** may include at least one tab **114** protruding radially outward from the circumference of the circular cross section. The tab(s) **114** may help to couple the dispensing compartment **104** to the storage compartment **102** in a manner that prevents accidental separation, as discussed in further detail below.

(20) The storage compartment **102** may comprise a container that is sized and shaped to hold a mouth guard. In one example, the container comprises a hollow interior volume that is defined between a storage base **116** and a storage lid **118**. Further details of the storage base **116** and the storage lid are illustrated in FIGS. **4** and **5**. FIG. **4** illustrates an isometric view of the fully assembled mouth guard case **100** of FIG. **1** showing the storage compartment **102** in an open position (e.g., as opposed to the closed position illustrated in FIG. **1**). FIG. **5** illustrates top plan views of the storage base **116** and the storage lid **118** of the storage compartment **102** of FIG. **4** in more detail.

(21) As shown in FIG. **5**, the storage base **116** is generally sized and shaped to hold a mouth guard. For instance, the storage base **116** may include at least a first flat, planar wall **122**. The storage base **116** may also include a second flat, planar wall **124**. The length custom character.sub.b1 of the first planar wall **122** may be longer than a length custom character.sub.b2 of the second planar wall **124**. Side walls **126** connecting the first planar wall **122** to the second planar wall **124** may therefore define a tapered shape that is widest at the first planar wall **122** and narrowest at the second planar wall **124**.

(22) As shown in FIG. **5**, an edge of the first planar wall **122** (i.e., the edge that is not connected to a side wall **126** or to the bottom **152** of the storage base **116**) may include a groove **120** formed along at least a portion of the length custom character.sub.b1.

(23) The first planar wall **122** may further include an aperture **126**. As illustrated in FIG. **3** (which illustrates the outside surface of the first planar wall **122**, or the surface of the first planar wall **122** that faces the dispensing compartment **104**), the opening of the aperture **126** may have a generally circular shape. However, the generally circular shape may include at least one notch **130** protruding radially outward from the circular shape and being sized and shaped to accommodate the tab(s) **114**. The notch(es) **130** helps to lock the dispensing compartment **104** to the storage compartment **102** when the dispensing compartment **104** and the storage compartment **102** are coupled, as discussed in further detail below. A one-way valve **142** (e.g., a rubber gasket), illustrated in FIG. **5**, may be positioned within the aperture **126**.

(24) As also illustrated in FIG. **5**, the storage lid **118** has a similar size and shape to the storage base **116**; however, the perimeter of the storage lid **118** may be slightly larger than the perimeter of the storage base **116** (i.e., so that the storage lid **118** can fit and seal over the top of the storage base **116** when the storage compartment **102** is in a fully closed position). In one example, the storage lid **118** comprises a hinged edge **130**, a substantially flat, planar wall **132**, side walls **134**, and a top **154**. The length custom character.sub.b3 of the hinged edge **130** may be longer than a length custom character.sub.b4 of the planar wall **132**. The side walls **134** connecting the hinged edge **130** to the planar wall **132** may therefore define a tapered shape that is widest at the hinged edge **130** and narrowest at the planar wall **132**.

(25) The hinged edge **130** may include a tongue **136**. The tongue **136** may extend along most of the length custom character.sub.b3 of the hinged edge **130**. A lip **138** may be formed at approximately the midpoint of the length custom character.sub.b4 of the planar wall **132**. Additionally, as shown in greater detail in FIG. **4**, the planar wall **132** and each side wall **134** also include an aperture **140** formed therein. In one example, each of the planar wall **132** and the each side wall **134** includes a single aperture **140**; however, in other examples, more or fewer apertures

140 may be included without departing from the scope of the present disclosure. Furthermore, in some examples, the planar wall **132** may include a greater number of apertures **140** than either of the side walls **134**, or the side walls **134** may include greater numbers of apertures than the planar wall **132**. In other examples, the planar wall **132** may include no apertures **140**, or the side walls **132** may include no apertures **140**. In one example, the apertures **140** may have an elongate, elliptical shape. However, in other examples, the apertures **140** may have different shapes.

(26) The storage lid **118** may be attached to the storage base **116** by fitting the tongue **136** on the storage lid **118** into the groove **120** on the storage base **116**, thereby creating a hinge. The hinge may allow the storage compartment **102** to be opened (as shown in FIG. **4**) and closed (as shown in FIG. **1**). Although the figures illustrate a hinge formed by a tongue and groove, other types of hinged mechanisms are also possible.

(27) In one example, the lip **138** on the storage lid **118** may catch on a portion of the second planar surface **124** of the storage base **116** when the storage compartment **102** is in a fully closed position, in order to securely seal the storage compartment **102**. In the fully closed position, the apertures **140** in the storage lid **118** may cover the second planar surface **124** and side walls **126** of the storage base **116**, i.e., such that nothing can pass through the apertures **140** and into or out of the storage compartment **102**. However, the lip **138** may also allow the storage lid **118** to be propped up above the second planar surface **124** of the storage base, which may allow air to pass through the apertures **140** and into or out of the storage compartment **102**. This may be useful for venting a mouth guard (or other apparatus) housed within the storage compartment **102**.

(28) The dispensing compartment **104** may be coupled to the storage compartment **102** by inserting the nozzle **112** of the dispensing compartment **104** through the aperture **126** in the storage base **116** of the storage compartment **102**. For instance, the nozzle **112** may be inserted through the aperture **126** by aligning the tab(s) **114** on the nozzle **112** with the notch(es) **130** of the aperture **126**. The dispensing compartment **104** may then be turned either clockwise or counterclockwise, so that the tab(s) **114** are no longer aligned with the notch(es) **130**, thus reversibly locking the dispensing compartment **104** in place. It will be appreciated, however, that other mechanisms for coupling the dispensing compartment **104** to the storage compartment **102** may be used. For instance, the nozzle **112** may include threads (e.g., similar to a screw), and the aperture **126** may include a threaded passage to engage the threads on the nozzle **112**. In another example, a friction fit may allow the nozzle **112** and aperture **126** to be reversibly engaged. An O-ring or similar type gasket may be installed on the nozzle **112** to ensure a leak-proof connection to the storage compartment **102**.

(29) As discussed above, when a mouth guard housed within the storage compartment **102** is to be cleaned, cleaning solution contained within the dispensing compartment **104** may be dispensed by manually compressing (e.g., squeezing) the dispensing compartment **104**, which forces the cleaning solution through the nozzle **112** and into the storage compartment **102**.

(30) In order to prevent the cleaning solution from being dispensed accidentally (e.g., while the mouth guard case **100** is being transported, or the storage compartment **102** is vented as described above), the squeeze guard **108** may be fitted over the dispensing compartment **104**. In one example, the squeeze guard **108** may comprise a frame that is formed from a material that is more rigid than the material from which the dispensing compartment **104** is formed (e.g., is not easily deformable under manual compression).

(31) FIG. **6**, for instance, illustrates an isometric view of one example of the squeeze guard **108** of FIG. **1**. As illustrated, the squeeze guard **108** may comprise a frame **144** having a substantially rectangular opening **146**. The inner dimensions of the opening may be slightly larger than the outer dimensions of the dispensing compartment **104**, such that the squeeze guard **108** can be fitted around the outside of the dispensing compartment (as shown in FIG. **1**). A depth d of the rectangular opening **146** may be sized such that most of the dispensing compartment **104** will fit within the frame **144**; however, in some examples, the frame **144** does not fit around the storage compartment **102**. However, in one example, the squeeze guard may include a tab **148** which

engages a notch in an underside of the storage compartment's storage base **116**.
(32) FIG. **7**, for instance, illustrates an isometric view of the mouth guard case **100** showing the tab **148** of FIG. **6** engaged with a notch **150** in the underside of the storage base **116** of the storage compartment **102**. When the tab **148** engages the notch **150**, the squeeze guard **108** may be held in place (e.g., so that the squeeze guard **108** does not accidentally slip off the mouth guard case **100**).
(33) In one example, the squeeze guard may be formed of a rigid plastic or other material that is more rigid than the material from which the dispensing compartment is formed (e.g., is not easily deformable under manual compression).
(34) FIG. **8** is a flow diagram illustrating one example of a method **800** for cleaning a mouth guard, according to embodiments of the present disclosure. The method **800** begins in step **802** and proceeds to step **804**.
(35) In step **804**, a dispensing compartment of a mouth guard case, such as the dispensing compartment **104** of the mouth guard case **100** described above, may be filled with a cleaning solution. The cleaning solution may comprise, for example, a liquid cleaning solution such as mouthwash, a solution of hydrogen peroxide and/or vinegar, a human-safe over the counter chemical cleaner (e.g., such as sodium hypochlorite in a liquid or tablet form that is dissolved in water), or the like.
(36) In step **806**, the dispensing compartment of the mouth guard case may be coupled to a storage compartment of the mouth guard case, such as the storage compartment **102** of the mouth guard case **100** described above. In one example, the dispensing compartment and the storage compartment may comprise two separate and separable pieces that can be reversibly coupled. A one-way valve in an aperture of the storage compartment may prevent the cleaning solution from flowing into the storage compartment.
(37) In step **808**, a squeeze guard, such as the squeeze guard **108** of the mouth guard case **100** described above, may be fitted around the dispensing compartment. The squeeze guard may be held in place by a tab on a frame of the squeeze guard that engages a notch in an underside of the storage compartment. The squeeze guard may be formed from a rigid material that does not deform easily under manual compression. Thus, the squeeze guard may prevent accidental compression of the dispensing compartment and dispensing of the cleaning solution into the storage compartment.
(38) In step **810**, a mouth guard may be placed inside the storage compartment of a mouth guard case. The storage compartment may be fully closed after the mouth guard is placed inside, e.g., such that there is no venting of air into or out of the storage compartment.
(39) In step **812**, the squeeze guard may be removed from around the dispensing compartment, and the dispensing compartment may be compressed manually (e.g., squeezed) to dispense the cleaning solution into the storage compartment. Dispensing of the cleaning solution into the storage compartment while a mouth guard is housed within the storage compartment will allow the mouth guard to be soaked in the cleaning solution, thereby removing bacteria and microorganisms that may be present on the surface of the mouth guard. The amount of time for which the mouth guard is soaked in the cleaning solution may vary depending upon the ingredients of the cleaning solution. For instance, a container in which the cleaning solution was contained before the dispensing compartment was filled may provide a recommended time period for soaking the mouth guard in the cleaning solution.
(40) In step **814**, the mouth guard may be removed from the storage compartment, and the cleaning solution that was dispensed into the storage compartment may be discarded.
(41) The method **800** may end in step **816**.
(42) The various components of the mouth guard case (i.e., storage compartment, dispensing compartment, and squeeze guard) may be washed prior to subsequent use. Additionally, the storage compartment may be used (with or without the dispensing compartment and squeeze guard attached) to transport and/or store the clean mouth guard.
(43) Although various embodiments which incorporate the teachings of the present disclosure have

been shown and described in detail herein, those skilled in the art can readily devise many other varied embodiments that still incorporate these teachings. In addition, while various embodiments have been described above, it should be understood that they have been presented by way of example only, and not limitation. Thus, the breadth and scope of a claimed embodiment should not be limited by any of the above-described exemplary embodiments, but should be defined only in accordance with the following claims and their equivalents.

Claims

1. An apparatus, comprising: a storage compartment sized and shaped to house a mouth guard, wherein the storage compartment comprises: a storage base including a circular opening and a notch protruding radially outward from the circular opening; a storage lid joined by a hinge to the storage base, wherein a perimeter of the storage lid is larger than a perimeter of the storage base, and wherein the storage lid comprises: a top; a hinged edge coupled to the top and having a first length; a planar wall coupled to the top, opposite the hinged edge, and having a second length; and two side walls connecting the hinged edge to the planar wall such that the top, the hinged edge, the planar wall, and the two side walls collectively define a tapered shape that is widest at the hinged edge and narrowest at the planar wall; a plurality of apertures formed in the two side walls; and a lip formed in the planar wall, wherein the lip is sized and shaped to selectively engage the storage base in either of a first position that prevents air from passing through the plurality of apertures and a second position that allows air to pass through the plurality of apertures; and a dispensing compartment reversibly coupled to the storage compartment, wherein the dispensing compartment comprises: a reservoir to hold a quantity of a cleaning solution; and a nozzle to dispense the cleaning solution directly into the storage compartment when the storage compartment is coupled to the dispensing compartment, wherein the nozzle further comprises: a cylindrical shape having a circular cross section; and a tab protruding radially outward from the circular cross section, wherein an alignment of the tab with the notch allows the nozzle to be inserted into the circular opening, and a rotation of the dispensing compartment that moves the tab away from the notch locks the dispensing compartment to the storage compartment.
2. The apparatus of claim 1, wherein the storage base comprises: a bottom; a first planar wall coupled to the bottom and having a first length; a second planar wall coupled to the bottom and having a second length that is shorter than the first length of the first planar wall; and two side walls coupled to the bottom and connecting the first planar wall to the second planar wall, such that the first planar wall, the second planar wall, and the two side walls of the storage base collectively define a tapered shape that is widest at the first planar wall and narrowest at the second planar wall.
3. The apparatus of claim 2, wherein the circular opening is formed in an outward facing side of the first planar wall.
4. The apparatus of claim 3, further comprising: a one-way valve positioned in the circular opening.
5. The apparatus of claim 2, wherein an edge of the first planar wall that is opposite the bottom forms part of the hinge.
6. The apparatus of claim 1, wherein the hinged edge forms part of the hinge.
7. The apparatus of claim 1, wherein the planar wall includes the lip that is sized and shaped to engage the storage base to hold the storage compartment in a closed position.
8. The apparatus of claim 1, further comprising: a squeeze guard comprising a frame that is removably fitted around the dispensing compartment.
9. The apparatus of claim 8, wherein the squeeze guard includes a tab sized and shaped to engage a notch in an underside of the storage compartment, wherein the notch in the underside of the storage compartment is separate from the notch protruding radially outward from the circular opening in the storage compartment.
10. The apparatus of claim 1, wherein the reservoir is formed from a material that is deformable

under manual compression.
11. The apparatus of claim 10, wherein the material is one of: rubber or a plastic that is free of Bisphenol A.
12. An apparatus, comprising: a storage compartment sized and shaped to house a mouth guard, wherein the storage compartment comprises: a storage base including an aperture formed in a planar wall of the storage base and a one-way valve positioned in the aperture; and a storage lid joined to the planar wall of the storage base by a hinge and including a plurality of apertures and a lip, wherein the lip is sized and shaped to selectively engage the storage base in either of a first position that prevents air from passing through the plurality of apertures and a second position that allows air to pass through the plurality of apertures; a dispensing compartment reversibly coupled to the storage compartment, wherein the dispensing compartment comprises: a reservoir to hold a quantity of a cleaning solution, wherein the reservoir is formed from a first material that is deformable under manual compression; and a nozzle to dispense the cleaning solution directly into the storage compartment through the aperture formed in the planar wall of the storage base when the storage compartment is coupled to the dispensing compartment; and a squeeze guard comprising a frame that is removably fitted around the dispensing compartment, wherein the squeeze guard is formed from a second material that is more rigid than the first material.
13. The apparatus of claim 12, wherein the squeeze guard includes a tab sized and shaped to engage a notch in an underside of the storage compartment.
14. The apparatus of claim 12, wherein the storage compartment is formed from a plastic.
15. The apparatus of claim 12, wherein the aperture formed in the planar wall of the storage base is sized and shaped to receive the nozzle of the dispensing compartment.
16. The apparatus of claim 15, wherein the nozzle comprises: a cylindrical shape having a circular cross section; and a tab protruding radially outward from the circular cross section.
17. The apparatus of claim 16, wherein the aperture formed in the planar wall of the storage base comprises: a circular opening; and a notch protruding radially outward from the circular opening, wherein the notch is sized and shaped to accommodate the tab, wherein an alignment of the tab with the notch allows the nozzle to be inserted into the aperture formed in the planar wall of the storage base, and a rotation of the dispensing compartment that moves the tab away from the notch locks the dispensing compartment.
18. The apparatus of claim 12, wherein the first material is one of: rubber or a plastic that is free of Bisphenol A.
19. The apparatus of claim 12, wherein the second material is a plastic.
20. The apparatus of claim 12, wherein the reservoir is refillable.