A dispensing assembly adapted to dispense gloves is provided, which includes a dispenser configured to hold a cartridge, and a cartridge. The dispenser may include a housing with an exit port, or a bracket. The cartridge includes a housing comprising a plurality of walls which cooperate to form an inner surface and an internal compartment. The cartridge is configured to hold a stack of gloves and the cartridge includes a dispensing opening. The cartridge includes a stack of gloves positioned in a sloping stack and positioned against a sloping means which is positioned at least partially in the internal compartment of the cartridge at least when the cartridge is positioned in a dispensing position. The sloping means and the sloping stack form a trapezoidal cross-sectional internal compartment of the cartridge. The sloping means is configured to hold the sloping stack in an alignment within the internal compartment of the cartridge to prevent gloves from moving out of the stack and to keep at least one glove positioned against a dispensing opening of the cartridge to permit easy and reliable withdrawal of the gloves therefrom.
FIG. 13

FIG. 14
DISPENSER ASSEMBLY FOR DISPENSING GLOVES INCLUDING A CARTRIDGE AND A DISPENSER

CROSS-REFERENCE TO RELATED APPLICATIONS

[0001] This application claims priority to U.S. Provisional Application No. 60/743,571, filed Mar. 20, 2006, entitled “Dispenser Assembly For Dispensing Gloves Including A Cartridge And A Dispenser” by Paul Francis Tramontina.

BACKGROUND OF THE INVENTION

[0002] This invention relates to a dispenser or holder adapted to hold a cartridge or container containing a plurality of gloves. Laboratory or industrial glove dispensing systems typically consist of quantities of gloves that are contained in a corrugated box with a perforated region. When the perforated region is removed, an opening is provided through which gloves are withdrawn by a user. Problems exist with this system. The opening is sized such that gloves often partially protrude therethrough. The size of the opening may permit the gloves adjacent thereto and/or protruding therethrough to become contaminated. Alternatively, when the box becomes nearly empty, such a large opening permits uncoated particles, contaminants, and the like to enter the box. When the box is full, it may be difficult for a user to withdraw one glove at a time, because multiple gloves may block the opening. In this instance, when attempting to withdraw a single glove, additional gloves may inadvertently be withdrawn or fall out of the box, resulting in waste. When the box becomes nearly depleted, a user may need to put his/her hand into the box to withdraw one or more gloves. This action may introduce contamination into the box as well.

[0003] Accordingly, there is a need for a dispenser assembly which desirably includes a dispenser or holder for a cartridge or container holding a plurality of gloves. Such a dispenser assembly desirably permits a plurality of gloves to be easily dispensed one at a time. The opening to the cartridge or container is desirably configured and positioned such that little surface area of the glove adjacent the opening is exposed. The gloves are desirably positioned in such a cartridge or container so that only one glove is positioned adjacent the opening, and the opening is positioned by the dispenser such that contaminants are not readily received through the opening or on the glove adjacent the opening.

[0004] Such a dispenser assembly would be easily assembled and easily mounted for use on a surface. Such a dispenser would desirably be made from a material which would provide some resistance to liquid and/or solid contaminants.

SUMMARY OF THE INVENTION

[0005] In response to the difficulties and problems discussed herein, a dispensing assembly adapted for dispensing gloves is provided. The dispensing assembly comprises a dispenser which includes a housing configured to hold a cartridges of different sizes. The housing includes an exit port and a spacer for holding a cartridge in a position over the exit port. The dispensing assembly also comprises a cartridge comprising a plurality of walls which cooperate to form an inner surface and an internal compartment. The cartridge is configured to hold a stack of gloves and a stack of gloves is disposed in the cartridge. The cartridge includes a dispensing opening. The stack of gloves is positioned on a base of a biasing platform such that at least the stack of gloves form a trapezoidal cross-section within the internal compartment of the cartridge. The biasing platform holds the stack of gloves biased against the dispensing opening such that the biasing platform controls the stack of gloves and space in the internal compartment of the cartridge to prevent gloves from moving out of the stack and into the space. The stack of gloves is biased against the opening of the cartridge to permit easy and reliable withdrawal of the gloves therefrom.

[0006] In another aspect of the invention, a dispensing assembly adapted for dispensing gloves is provided. The dispensing assembly comprises a dispenser configured to hold a cartridge, and a cartridge. The cartridge includes a plurality of walls which cooperate to form an inner surface and an internal compartment. The cartridge is configured to hold a stack of gloves and a stack of gloves is disposed in the cartridge. The cartridge includes a dispensing opening. The stack of gloves is positioned on a base of a biasing platform such that at least the stack of gloves form a trapezoidal cross-section within the internal compartment of the cartridge. The biasing platform holds the stack of gloves biased against the dispensing opening such that the biasing platform controls the stack of gloves and space in the internal compartment of the cartridge to prevent gloves from moving out of the stack and into the space. The stack of gloves is biased against the opening of the cartridge to permit easy and reliable withdrawal of the gloves therefrom.

[0007] In yet another aspect of the invention, a cartridge adapted to dispense gloves is provided. The cartridge comprises a housing comprising a plurality of walls which cooperate to form an inner surface and an internal compartment. The cartridge is configured to hold a stack of gloves and a stack of gloves is disposed in the cartridge. The cartridge includes a dispensing opening. The stack of gloves is positioned on a base of a biasing platform such that at least the stack of gloves form a trapezoidal cross-section within the internal compartment of the cartridge. The biasing platform holds the stack of gloves biased against the dispensing opening such that the biasing platform controls the stack of gloves and space in the internal compartment of the cartridge to prevent gloves from moving out of the stack and into the space. The stack of gloves is biased against the opening of the cartridge to permit easy and reliable withdrawal of the gloves therefrom.

[0008] In still yet another aspect of the invention, a cartridge adapted to dispense gloves is provided. The cartridge comprises a housing comprising a plurality of walls which cooperate to form an inner surface and an internal compartment. The cartridge also includes a dispensing opening. The cartridge is configured to hold a stack of gloves. A stack of gloves is disposed therein in a sloping stack and positioned against a sloping means. The sloping means is positioned at least partially in the internal compartment of the housing when the cartridge is disposed in a dispensing position such that the sloping means and the sloping stack form a trapezoidal cross-section in the internal compartment of the cartridge. The sloping means is configured to hold the sloping stack in a sloping alignment within the internal compartment of the cartridge to prevent gloves from moving out of the stack and to keep at least one glove positioned
against a dispensing opening of the cartridge to permit easy and reliable withdrawal of the gloves therefrom.

[0009] In yet a further aspect of the invention, a dispensing assembly adapted to dispense gloves is provided. The dispensing assembly comprises a dispenser configured to hold a cartridge and a cartridge adapted to dispense gloves. The cartridge includes a housing comprising a plurality of walls which cooperate to form an inner surface and an internal compartment. The cartridge also includes a dispensing opening. The cartridge is configured to hold a stack of gloves and a stack of gloves is disposed therein. The stack of gloves forms a sloping stack positioned against a sloping means. The sloping means is positioned at least partially in the internal compartment of the housing when the cartridge is positioned in a dispensing position such that the sloping means and the sloping stack form a trapezoidal cross-section in the internal compartment of the cartridge. The sloping means is configured to hold the sloping stack of gloves in an alignment within the internal compartment of the cartridge to prevent gloves from moving out of the stack and to keep at least one glove positioned against the dispensing opening of the cartridge to permit easy and reliable withdrawal of the gloves therefrom.

Definitions

[0010] As used herein, the term “glove” or “plurality of gloves” refers to a covering for a user’s hand, and desirably, but not by way of limitation, includes a palm and a back of a user’s hand, as well as a cuff positioned generally around a user’s wrist. Each glove may be constructed from one or more materials. Such materials may include, for example, but not by way of limitation, a woven material, a nonwoven material, a knitted material, and so forth. In addition, as a further example only, each glove may be constructed from one or more natural or synthetic materials such as latex, nitrile, and so forth.

[0011] As used herein, the terms “comprise”, “comprises”, “comprising” and other derivatives from the root term “comprise” are intended to be open-ended terms that specify the presence of any stated features, elements, integers, steps, or components, but do not preclude the presence or addition of one or more other features, elements, integers, steps, components, or groups thereof. Similarly, the terms “include”, “includes”, “has” and/or “have”, and derivatives thereof, are intended to be interpreted as the word “comprise”, and are intended to be open-ended terms that specify the presence of any stated features, elements, integers, steps, or components, but do not preclude the presence or addition of one or more other features, elements, integers, steps, components, or groups thereof.

[0012] As used herein, the terms “resilient”, “resilience” and/or “resiliency” and any derivatives thereof mean something which has an original form and/or shape which returns to its original form, shape and/or position after being bent, compressed or stretched.

[0013] As used herein, the terms “contaminate”, “contaminant” and/or “contamination” mean to make unclean or impure by contact. Such contact may be by liquid, solid and/or gas. For example, but not by way of limitation, mud that belies or shoes; noxious fumes that foul the air; bodily fluids that foul clean diapers.

[0014] As used herein, the term “exit port” is the opening in a dispenser for the passage of one or more gloves therethrough.

[0015] As used herein, the term “fasteners” means devices that fasten, join, connect, secure, hold, or clamp components together. Fasteners include, but are not limited to, screws, nuts and bolts, rivets, snap-fitst, tacks, nails, loop fasteners, and interlocking male/female connectors, such as fishhook connectors, a fish hook connector includes a male portion with a protrusion on its circumference. Inserting the male portion into the female portion substantially permanently locks the two portions together.

[0016] As used herein, the term “couple” includes, but is not limited to, joining, connecting, fastening, linking, or associating two things integrally or interstitially together.

[0017] As used herein, the term “configuration” or “derivation” or derivations thereof means to design, arrange, set up, or shape with a view to specific applications or uses. For example: a military vehicle that was configured for rough terrain; configured the computer by setting the system’s parameters.

[0018] As used herein, the term “substantially” refers to something which is done to a great extent or degree; a significant or great amount; for example, as used herein “substantially” as applied to “substantially” covered means that a thing is at least 90% covered.

[0019] As used herein, the term “alignment” refers to the spatial property possessed by an arrangement or position of things in a straight line or in parallel lines.

[0020] As used herein, the terms “orientation” or “position” used interchangeably herein refer to the spatial property of a place where or way in which something is situated; for example, “the position of the hands on the clock.”

[0021] As used herein, the term “about” refers to an amount that is plus or minus 10 percent of a stated or implied range.

[0022] These terms may be defined with additional language in the remaining portions of the specification.

BRIEF DESCRIPTION OF THE DRAWINGS

[0023] FIG. 1 is a perspective view of a top of a dispensing assembly of the present invention showing a dispenser having a cartridge (illustrated partially by phantom lines) disposed therein, one glove of a plurality of gloves in the cartridge shown by phantom lines for illustrative purposes only;

[0024] FIG. 2 is an upper perspective view of a lower wall (inverted for illustrative purposes) of the cartridge of FIG. 1;

[0025] FIG. 3 is a perspective view of a top of the cartridge of FIGS. 1 and 2, but showing the upper wall and front wall partially cut away for illustrative purposes only to illustrate the columns, ramp and a plurality of stacked and aligned gloves, aligned cuff to cuff;

[0026] FIG. 4 is a perspective view of the top of the dispenser, but showing the dispenser without a cartridge disposed therein;

[0027] FIG. 5 is a perspective view of the bottom of the dispenser of FIG. 1, but showing the dispenser with the cartridge (shown in phantom lines) disposed therein, and showing the alignment of the exit port of the dispenser, the opening of the cartridge and the wrist area and cuff of the glove positioned against the opening;

[0028] FIG. 6 is a sectional view of FIG. 5 taken along lines 6-6, showing a cuff portion of a glove and a finger of a user pulling the glove via the cuff portion from the dispenser and cartridge;
FIG. 7 is a top plan view of a cartridge similar to the cartridge of FIG. 3, but showing a pair of spaced-apart triangular columns (illustrated by phantom lines);

FIG. 8 is a top plan view of the cartridge similar to the cartridge of FIG. 7, but showing a pair of spaced-apart vertical columns (illustrated by phantom lines);

FIG. 9 is a perspective view of a top of another embodiment of the dispenser of the present invention, but showing a ramp formed in the dispenser;

FIG. 10 is a perspective view of a bottom of another cartridge used with the dispenser of FIG. 9, showing additional perforations on the lower wall of the cartridge;

FIG. 11 is a perspective view of the dispenser and cartridge of FIGS. 9 and 10, respectively;

FIG. 12 is a sectional view of FIG. 11 taken along lines 12-12, showing the displacement of a portion of the lower wall of the cartridge when the perforations are separated and the cartridge is positioned against the ramp of the dispenser, and also showing the gloves aligned wrist area to wrist area next to the opening and one being partially withdrawn by being grasped between a thumb and forefinger of a user;

FIG. 13 is a sectional view similar to the view shown in FIG. 11 but showing another embodiment of a dispenser having an alternate ramp, the dispenser illustrated without a cartridge positioned therein, the ramp comprising a series of spaced-apart vertically-oriented ribs which extend upward from the lower wall of the dispenser;

FIG. 14 is a perspective view of a lower wall of yet another cartridge, showing another perforated region defined by perforation lines;

FIG. 15 is a perspective view of the lower wall of the cartridge of FIG. 14, showing the perforated region removed, the stack of a plurality of gloves aligned cuff to cuff and flanges positioned around at least a portion of the stack to hold the stack in a position in the cartridge for dispensing when the cartridge is turned over for insertion into the dispenser;

FIG. 16 is a sectional view of the dispenser assembly which includes the dispenser of FIG. 13 and the cartridge of FIG. 14, illustrating the orientation of the stack of gloves relative to the ramp;

FIG. 17 is a perspective view of another embodiment of the dispenser assembly of the present invention, showing a cartridge disposed in the dispenser and a spacer which has moved the cartridge into a dispensing alignment with the dispenser;

FIG. 18 is a perspective view of the dispenser assembly similar to FIG. 17, but showing a large-sized cartridge disposed in the dispenser such that the spacer has moved back flush with the side wall to permit the cartridge to fit into a compartment of the dispenser and to be aligned in a dispensing alignment with the dispenser;

FIG. 19 is an upper perspective view of the biasing platform, showing resilient blocks positioned on one side of a base;

FIG. 20 is an upper perspective view of the biasing platform, showing a stack of gloves aligned on an opposite side of the base;

FIG. 21 is sectional view of FIG. 18 taken along lines 21-21, showing the cartridge filled with gloves and the gloves aligned in a stack on the biasing platform, with the resilient blocks compressed;

FIG. 22 is a sectional view similar to FIG. 21, but showing the biasing blocks in a substantially uncompressed position, holding the stack of gloves against the dispensing opening of the cartridge; and

FIG. 23 is a sectional view similar to FIG. 22, but showing the biasing platform as a single resilient block which holds the stack of gloves against the dispensing opening of the cartridge.

DETAILED DESCRIPTION

Reference will now be made in detail to one or more embodiments of the invention, examples of which are illustrated in the drawings. Each example and embodiment is provided by way of explanation of the invention, and is not meant as a limitation of the invention. For example, features illustrated or described as part of one embodiment may be used with another embodiment to yield still a further embodiment. It is intended that the invention include these and other modifications and variations as coming within the scope and spirit of the invention.

Referring now to FIGS. 1-23 in general, and 1-8 in particular, the present invention provides a dispensing assembly 10 including a holder or dispenser 12 and a container or cartridge 14 which desirably holds a plurality of gloves 16, as shown in FIGS. 1-6. Each glove 16 desirably, but not by way of limitation, includes a wrist area 17 which is positioned around a user’s wrist, which may, by way of example, be turned over around the portion of the glove 16 to provide a cuff 18. The plurality of gloves 16 are desirably aligned and stacked so that the wrist area 17 and cuff 18 (if present) of one glove 16 is positioned next to and against the wrist area 17 and cuff 18 of the glove 16 positioned directly above and/or below and against it (FIG. 6) in the cartridge 14.

The cartridge 14 in the present embodiment may include a housing which includes an upper wall 24 and a lower wall 26. The cartridge 14 desirably includes a front wall 28, a back wall 30, and a pair of spaced-apart side walls 32. The front wall 28, back wall 30, and side walls 32 each cooperate with the upper wall 24 and lower wall 26 to provide an inner surface 34 which defines an internal compartment 35 configured to hold the plurality of gloves 16. It will be appreciated that the configuration of the cartridge 14 is non-limiting, and the cartridge 14 may assume any configuration or combination of configurations.

The cartridge 14 desirably includes a perforated area 36 which may be positioned on a wall, such as the lower wall 26. When the perforations 38 are separated and the perforated area 36 is removed, an opening 40 is provided in the cartridge 14 which permits the plurality of gloves 16 to be withdrawn from the cartridge 14 one at a time, as illustrated in FIGS. 5 and 6. The opening 40 may be provided in any wall or combination of walls. In the present embodiment, however, the opening 40 is provided in the lower wall 26. The dispensing assembly 10 is desirably, but not by way of limitation, oriented as a gravity-feed dispensing assembly 10. That is, the dispenser 12 and cartridge 14 are desirably oriented so that each of the plurality of gloves 16, in a dispensing position, is desirably dispensed through the lower wall of the cartridge 14 and dispenser 12 through the opening 40 in the cartridge 14 and an exit port 42 in the dispenser 12. This orientation is provided to permit gravity to assist in positioning the first of the plurality of gloves 16 to the last glove 16 in the cartridge 14 next to the opening...
Further, this orientation makes it less likely for contaminants to fall on one or more gloves or to be introduced into the cartridge 14 such that gloves or the internal compartment 35 of the cartridge become contaminated.

The plurality of gloves 16 are desirably stacked one on top of another in a general alignment with the finger and thumb portions adjacent each other and the wrist area 17 having, desirably, but not by way of limitation, a cuff 18 formed therein and positioned next to and against each other. A pair of spaced-apart centering columns 44 may be positioned on each side of the stack 45 along the wrist area 17 or cuff 18 of each glove 16, so that the wrist area 17 or cuff 18 is centered or positioned directly over the opening 40 of the cartridge 14. The spaced-apart columns 44 may, for example, but not by limitation, be square (FIG. 3), triangular (FIG. 7), or may simply provide a vertical column (FIG. 8). The spaced-apart columns 44 may assume any configuration(s) and may be formed from any material which permits the columns 44 to operate as shown and/or described herein. The columns 44 operate to hold the wrist area 17 or cuff 18 of a stack 45 of gloves 16 in a dispensing orientation or position so that the wrist area 17 and/or cuff 18 is exposed through the opening 40 and exit port 42 and each glove 16 may be withdrawn one at a time from the opening by a user via the wrist area 17 (FIG. 12) or cuff 18 (FIG. 6). Such positioning limits the exposure of the remaining portion of the glove 16 next to the opening 40 as well as the plurality of gloves 16 in the stack 45 to contaminants.

The dispenser 12 desirably may include a housing 50 having a lower wall 52 which includes the exit port 42 which is positioned to cooperate and align with the opening 40 provided in the cartridge 14. The dispenser 12 may include a front wall 54, a back wall 56 and a pair of side walls 58, which cooperate to provide an inner surface 60 and a cartridge compartment 62 configured to hold the cartridge 14. Alternatively, the housing 50 may instead comprise one or more L or U-shaped brackets (not shown). Accordingly, the configuration of the housing 50 of the dispenser 12 is non-limiting, and may include any shape(s) and/or configuration(s). Desirably, the cartridge compartment 62 of the housing 50 is generally a configuration which will cooperate with at least a portion of an outer surface 64 of the cartridge 14, in order to hold or support the cartridge 14.

The back wall 56 may include a wall extension 66 which may include one or more opening(s) 67, hooks, brackets, fasteners, and so forth, thereby permitting the dispenser 12 to be coupled to a surface. Desirably, the dispenser 12 is coupled to a generally vertical surface. However, the surface to which the dispenser 12 may be disposed or coupled to may be provided at an orientation other than generally vertical. The orientation of the dispenser 12 is desirably non-limiting, so long as the dispensing assembly 10 operates as shown and/or described herein.

The dispenser 12 and/or cartridge 14 may be formed from any material or combination of materials which permit the dispenser 12 and/or cartridge 14 to operate as shown and/or described herein. Desirably, however, the dispenser 12 is formed from a material which is liquid resistant such that the dispenser 12 may be readily cleaned by an appropriate cleaning solution. Therefore, the dispenser 12 may desirably be formed from materials such as metal, plastic, and so forth. The cartridge 14 is desirably, but not by way of limitation, a non-reusable, disposable cartridge which may be formed from a light weight material, such as, for example, cardboard, paper board, light weight plastic, polymer film, and so forth.

In a method of use, as shown in FIGS. 1-6, a dispensing assembly 10 is provided. The dispensing assembly 10 desirably includes a dispenser 10 and a cartridge 14 filled with a plurality of gloves 16 in a stack 45 and aligned via the wrist area 17 and/or cuff 18 of the gloves 16. The perforated area 36 is desirably removed from the lower wall 26 of the cartridge 14 to provide the opening 40 before the cartridge 14 is turned 180 degrees and inserted into the cartridge compartment 62 of the dispenser 12. The cartridge 14 is then desirably disposed in the cartridge compartment 62 such that the outer surface 64 of the lower wall 26 of the cartridge 14 is positioned against the inner surface 60 of the lower wall 52 of the dispenser 12. Desirably, the opening 40 in the cartridge 14 is aligned with the exit port 42 in the dispenser 12, as illustrated in FIGS. 5 and 6. The plurality of gloves 16 are positioned in an aligned stack 45 and are held in a dispensing position by the columns 44 and the ramp 46 as well as the orientation of the gloves 16 in the stack 45 such that the wrist area 17 and cuffs 18 of the gloves 16 are positioned against each other in the stack 45. Therefore, the wrist area 17 and cuffs 18 are positioned along an axis 68 (FIG. 6) in an alignment with the opening 40 and exit port 42 in a dispensing position. Such an orientation and alignment permits exposure of only the wrist area 17 or cuff 18 of the glove 16 for withdrawal from the opening 40 and exit port 42. This orientation also reduces or eliminates contami-
nants from entering the cartridge 14 and contaminating additional gloves 16 in the stack 45. Further, the orientation of the gloves 16 permits one at a time dispensing of gloves 16, because only a portion of one glove 16 is presented at the opening 40 and exit port 42 for withdrawal by a user. Therefore, a user may withdraw a glove by pinching or grasping a portion of the wrist area 17 or cuff 18 of the glove 16 between, for example, a thumb and forefinger (FIG. 12), and so forth, to withdraw the glove 16. Alternatively, when a cuff 18 is provided, a user may position a finger into the cuff 18 and use the overlapped material of the glove forming the cuff to withdraw the glove 16 from the opening 40 and exit port 42 (FIG. 6). Such dispensing permits rapid and easy withdrawal of a glove 16 since only a single finger is needed to withdraw a single glove 16 through the opening 40 and exit port 42. Dispensing one glove 16 at a time, while maintaining the remaining plurality of gloves 16 in a dispensing alignment reduces waste of gloves via inadvertent excessive withdrawal of too many gloves. The orientation of the portion of the glove 16 against the opening 40 and the exit port 42 greatly reduces or eliminates contamination of the plurality of gloves 16 in the cartridge 14.

[0057] In another embodiment of the invention, the dispensing assembly 110 shown in FIGS. 9-16 is substantially similar to the dispensing assembly 10 shown in FIGS. 1-8 and described in detail herein, except that the dispenser 112 includes a lower wall 52 having a ramp 146 provided therein. The ramp 146 may be provided as a solid sloping wall, supported by one or more support ribs 170, and a pair are illustrated in FIG. 9. An alternative dispenser 112 may also be provided which includes a different ramp 150 as shown in FIGS. 13 and 15. This alternative ramp 150 has a plurality of spaced-apart vertical ribs 172 of graduated height positioned generally transversely across a portion of the lower wall 52 if the dispenser 112.

[0058] The cartridge 114 illustrated in FIGS. 10-12 is also similar to cartridge 14, except that it may be formed to include an additional area of perforations 174 in the lower wall 26. These perforations 174 may be positioned near at least a portion of the front wall 28, back wall 30 and/or one side wall 32. Before the cartridge 114 is positioned in the dispenser 112, the perforated area 36 is removed to provide the opening 40. The lower wall 26 of the cartridge 114 is desirably positioned against the inner surface 60 of the lower wall 52 of the dispenser 112 so that the opening 40 in the cartridge 114 is aligned with the exit port 42 of the dispenser 112. The cartridge 114 is then desirably pressed against the dispenser 112 or the dispenser 112 such that the perforations 174 of the lower wall 26 of the cartridge 114 separate when pressed against the ramp 146 or the ramp 150 of the dispenser 112 or dispenser 112, respectively. Desirably, at least a portion of the ramp 146 of dispenser 112 or the ramp 150 of dispenser 112 lifts the separated portion 180 of the lower wall 26 of the cartridge 114 and the plurality of gloves 16 therein to again provide the alignment and dispensing position of the plurality of gloves 16 as previously described herein. This desirably alignment is shown in FIG. 12.

[0059] Another cartridge 114, illustrated in FIG. 14-16 and substantially similar to the cartridge 114 shown in FIGS. 10-12 and described in detail previously herein, may also be used with either dispenser 112 or dispenser 112. The cartridge 114 includes a removable region 188 having perforations 190 which are desirably positioned near at least a portion of the front wall 28, the back wall 30 and/or one side wall 32. When the removable region 188 is removed, the resulting opening provides for dispensing as well. When the perforations 190 (FIG. 14) are separated so that the removable region 188 may be removed, a large opening 192 is provided (FIG. 15). In addition, a plurality of flanges 194 are desirably provided as well. The flanges 194 desirably extend a short distance from each wall. The flanges 194 are configured to hold the longitudinal edges of the stack 45 of gloves 16 in the cartridge 114 while the cartridge 114 is positioned in the dispenser 112. The cartridge 114 is oriented in the dispenser 112 such that the lower end 196 of the stack 45 of gloves 16, exposed after the removal of the removable region 188, are positioned at least partially against the ramp 150 and the wrist area 17 and cuffs 18 of the gloves 16 are oriented in the dispenser such that the wrist area 17 or cuffs 18 of the gloves 16 are positioned at the exit port 42 of the dispenser 112, for dispensing therefrom as generally previously shown and described in detail herein.

[0060] It will be appreciated that either cartridge 114 or 114 may be used with either dispenser 112 or 112. It will be appreciated that the ramps 146 and 150 provided in the dispenser or the ramp in the cartridge are non-limiting and intended as an illustration of several desirable embodiments only. It will be understood that other embodiments of ramps and/or columns are possible as well. In addition, it will be understood that the ramp and/or columns may be formed integrally with the dispenser or cartridge. Alternatively, the ramp and/or columns may be formed separately and coupled to the dispenser and/or cartridge.

[0061] In yet another embodiment of the invention, the dispensing assembly 210 shown in FIGS. 17-23 is similar to the dispensing assembly 10 and 110 shown in FIGS. 1-8 and 9-16 and described in detail herein, except that the dispenser 212 includes one side wall 58 having an opening 250 therein and a movable spacer 252 hingeably coupled to the side wall 58. The lower wall 52 of the dispenser 210 is configured to have a length 251 which permits different sizes of cartridges 214 to fit within the compartment of the dispenser 212. A largest size cartridge 214 may be disposed therein, as shown in FIG. 18. However, a smallest size cartridge 214 may be disposed in the dispenser 212 as well, as illustrated in FIG. 17. The spacer 252, which is biased inward, toward the compartment 62, pushes less than largest-sized cartridge 214 over and holds the cartridge 214 in an alignment such that the opening 40 in the cartridge 214 is in alignment with the exit port 42 of the dispenser 212.

[0062] The spacer 252 is illustrated as a swinging door 254 which includes a spring-biased hinge (not shown) which biases the spacer 252 toward the inner surface 60 and the compartment 62 of the dispenser 212. When a large-sized cartridge 214 is disposed in the dispenser 212, as illustrated in FIG. 18, the swinging door 254 folds flush into the opening 250 in the side wall 58, or extends to the outer surface 64 of the dispenser 212 (not shown). The door 254 of the spacer 252 swings inward when a less than full-sized cartridge 214 is disposed in the dispenser 212 to position it properly for dispensing, as illustrated in FIG. 17. It will be appreciated that the spacer 252 may be biased via a spring hinge, a spring, O-ring, rubber band, elastic (not shown), and so forth. Further, the spacer 252 may be provided as blocks of foam rubber and/or sponge (not shown) provided in the compartment 62 of the dispenser 212 (not shown).
The cartridge 214 is similar to the cartridge 14, 114 and 114', except that the cartridge 214 does not include columns or a ramp. The cartridge 214 includes a biasing platform 256 which includes a base 258 and at least one resilient block 260 (FIG. 23). The stack 45 of gloves 16 is aligned on one side 262 of the base 258 cuff 18 to cuff 18. One or more resilient materials or blocks 260 are positioned on the opposite side 264 of the base 258. The resilient blocks extend between at least one wall of the cartridge 214 and the base 258. The resilient blocks act to bias the gloves 16 on the base 258 to hold the gloves 16 in an alignment and to hold the gloves 16 against the dispensing opening 40 of the cartridge 214. The resilient blocks 260 may be formed from foam rubber and/or sponge, either of which may comprise natural and/or synthetic material(s).

In this manner, the biasing platform 256 acts to control space 266 in the cartridge 214 so that gloves 16 do not fall out of alignment and/or out of the stack 45 and into the space 266. Therefore, at least one glove 16 is continuously present against the dispensing opening 40 until all gloves 16 in the stack 45 are withdrawn from the cartridge 214. Alternatively, the base 258 may not include resilient blocks, and may be biased toward the dispensing opening 40 by other resilient apparatus, such as springs, O-rings, rubber bands, elastic, and so forth (not shown). In another alternative, as illustrated in FIG. 23, the resilient blocks 260 comprise one block which provides a base and therefore provides the complete biasing platform 256.

One problem in dispensing gloves which is aligned and stacked wrist-to-wrist or cuff-to-cuff is that the stack 45 is not parallel to the base 258. Rather, the stack 45, as shown in FIGS. 21 and 22 in cross-section, is thicker and therefore higher in the wrist or cuff 18 area and thinner or lower in the finger end 19, which results in a stack 45 which is sloped. This sloped stack 45 forms a trapezoidal shape in cross-section, as shown in FIGS. 21-23 (and in previous embodiments in FIGS. 3, 6, 12, 16). It is desirable to control the space 266 created due to this trapezoidal shape formed by the stack 45 within the internal compartment 35 of the generally rectangular cartridge 214 (as well as 14, 114 and 114'). When the space 266 is controlled, the gloves 16 are continuously positioned against the dispensing opening 40, and do not become misaligned or fall out of the stack. Therefore, the gloves 16 are readily available to be withdrawn by a user. Further, controlling the space 266 prevents contaminants from entering the internal compartment 35 of the cartridge 214.

The boundaries of this trapezoidal shape or cross-section are formed in the present embodiment, by the stack 45, the base 258, the wall of the cartridge 214 having the dispensing opening 40, in this instance, the lower wall 26, as well as the side walls 32 of the cartridge 214. The space 266 is formed generally between the upper wall 24 of the cartridge 214 and base 258 of the biasing platform 256 as well as the side walls 32 of the cartridge. This space 266 is also trapezoidal in cross-section, since it is also formed within a rectangular cartridge 214 as well. As illustrated generally by FIG. 21, the stack 45 of gloves 16 when the stack is nearly full provides a large trapezoidal cross-section of the stack 45, and a small trapezoidal cross-section of the space 266. However, when the stack 45 is reduced in size due to withdrawal of a plurality of gloves 16 from the stack 45, as shown by FIG. 22, the size of the trapezoidal cross-section changes and becomes smaller, while the size of the trapezoidal shape forming the space 266 becomes larger. Only when all gloves 16 are withdrawn from the cartridge 214 is the base 258 positioned in a generally parallel position relative to the upper and or lower walls 24, 26 of the cartridge 214. By controlling the space 266 as well as the stack positioned on the biasing platform 258, since each initially forms a trapezoidal shape in cross-section, proper dispensing of the gloves 45 is controlled and waste is prevented.

The dispensing assembly is adapted to dispense gloves. The dispensing assembly desirably includes a dispenser having a housing configured to hold a cartridge. The dispensing assembly also desirably includes a cartridge configured to hold a plurality of gloves. A plurality of gloves is desirably provided disposed in the cartridge. The cartridge may contain columns and/or sloping means or biasing means such as a ramp and/or a biasing platform. If the cartridge does not contain columns and/or a ramp and/or a biasing platform, the dispenser desirably contains columns and/or a ramp and/or a biasing platform. In this instance, the cartridge desirably contains perforated areas or areas of weakness which permit the introduction of the columns and/or the ramp and/or biasing platform from the dispenser into at least a portion of the internal compartment, to hold or assist in holding the plurality of gloves in an alignment and in a dispensing position. In this manner, the cartridge and dispenser are configured to interact together such that the plurality of gloves in the dispensing assembly are held in a dispensing position adjacent an opening in the cartridge, an exit port in the dispenser, or desirably both to facilitate one at a time dispensing of each glove through the dispensing assembly. The plurality of gloves are positioned in a stack and aligned in a dispensing position such that a user may access at least the wrist area or cuff of the glove positioned against the opening and/or the exit port. The opening and exit port are configured to expose only a portion of the wrist area and/or cuff of each glove positioned against the opening and/or exit port, to limit contamination to it as well as the remaining gloves in the stack. The ramp shown and described in the embodiments herein is used to hold the generally sloped stack of gloves in a gravity-oriented dispensing alignment. The ramp provides a trapezoidal cross-section and acts to control space and the stack of gloves for dispensing within the cartridge.

It will be appreciated that if a bracket is used as a dispenser, the bracket may not require an exit port. That is, the bracket may be formed to only have the necessary components to hold the cartridge against a surface. Examples of such brackets include an L-shaped, U-shaped or any shape or connecting apparatus, such as a hook, fastener, and so forth which extends into an opening in a portion of the cartridge. Alternatively, a dispenser formed by a bracket may have one or more elements shown and/or described herein for a dispenser and/or a cartridge, in any combination thereof.

While the present invention has been described in connection with certain preferred embodiments, it is to be understood that the subject matter encompassed by way of the present invention is not to be limited to those specific embodiments. On the contrary, it will be appreciated that some elements and/or articles may be used with other elements or articles. It is intended for the subject matter of
the invention to include all alternatives, modifications and equivalents as can be included within the spirit and scope of the invention.

What is claimed is:

1. A dispensing assembly adapted for dispensing gloves, the dispensing assembly comprising:
   a dispenser having a housing configured to hold a cartridge of different sizes, the housing including an exit port, the housing including a spacer for holding a cartridge in a position over the exit port; and
   a cartridge comprising a plurality of walls which cooperate to form an inner surface and an internal compartment, the cartridge configured to hold a stack of gloves and a stack of gloves disposed in the cartridge, the cartridge including a dispensing opening, the stack of gloves positioned on a base of a biasing platform such that at least the stack of gloves form a trapezoidal cross-section within the internal compartment of the cartridge, the biasing platform holding the stack of gloves biased against the dispensing opening such that the biasing platform controls the stack of gloves and space in the internal compartment of the cartridge to prevent gloves from moving out of the stack and into the space, the stack of gloves biased against the opening of the cartridge to permit easy and reliable withdrawal of the gloves therefrom.

2. The dispensing assembly of claim 1, wherein the spacer is configured to align dispensing openings of cartridge with exit port of dispenser.

3. The dispensing assembly of claim 1, wherein the cartridge is rectangular and the stack of gloves defines one trapezoidal cross-section within the internal compartment and the base holding the stack of gloves on one side and having at least one resilient material positioned on an opposite side thereof which extends to a wall of the cartridge to bias the base against the wall and control the space within the internal compartment.

4. The dispensing assembly of claim 1, wherein the base of the biasing platform comprises at least one resilient material.

5. The dispensing assembly of claim 1, wherein the biasing platform comprises at least one resilient material.

6. A dispensing assembly adapted for dispensing gloves, the dispensing assembly comprising:
   a dispenser configured to hold a cartridge; and
   a cartridge comprising a plurality of walls which cooperate to form an inner surface and an internal compartment, the cartridge configured to hold a stack of gloves and a stack of gloves disposed in the cartridge, the cartridge including a dispensing opening, the stack of gloves positioned on a base of a biasing platform such that at least the stack of gloves form a trapezoidal cross-section within the internal compartment of the cartridge, the biasing platform holding the stack of gloves biased against the dispensing opening such that the biasing platform controls the stack of gloves and space in the internal compartment of the cartridge to prevent gloves from moving out of the stack and into the space, the stack of gloves biased against the opening of the cartridge to permit easy and reliable withdrawal of the gloves therefrom.

7. The dispensing assembly of claim 6, wherein the dispenser comprises a bracket.

8. The dispensing assembly of claim 6, wherein the cartridge is rectangular and the stack of gloves defines one trapezoidal cross-section within the internal compartment and the base holding the stack of gloves on one side and having at least one resilient material positioned on an opposite side thereof which extends to a wall of the cartridge to bias the base against the wall and control the space within the internal compartment.

9. The dispensing assembly of claim 6, wherein the base of the biasing platform comprises at least one resilient material.

10. The dispensing assembly of claim 6, wherein the biasing platform comprises at least one resilient material.

11. A cartridge adapted to dispense gloves, the cartridge comprising:
   a housing comprising a plurality of walls which cooperate to form an inner surface and an internal compartment, the cartridge configured to hold a stack of gloves and a stack of gloves disposed in the cartridge, the cartridge including a dispensing opening, the stack of gloves positioned on a base of a biasing platform such that at least the stack of gloves form a trapezoidal cross-section within the internal compartment of the cartridge, the biasing platform holding the stack of gloves biased against the dispensing opening such that the biasing platform controls the stack of gloves and space in the internal compartment of the cartridge to prevent gloves from moving out of the stack and into the space, the stack of gloves biased against the opening of the cartridge to permit easy and reliable withdrawal of the gloves therefrom.

12. The cartridge of claim 11, wherein the cartridge is rectangular and the stack of gloves defines one trapezoidal cross-section within the internal compartment and the base holding the stack of gloves on one side and having at least one resilient material positioned on an opposite side thereof which extends to a wall of the cartridge to bias the base against the wall and control the space within the internal compartment.

13. The cartridge of claim 11, wherein the base of the biasing platform comprises at least one resilient material.

14. The cartridge of claim 11, wherein the biasing platform comprises at least one resilient material.

15. A cartridge adapted to dispense gloves, the cartridge comprising:
   a housing comprising a plurality of walls which cooperate to form an inner surface and an internal compartment, the cartridge including a dispensing opening and the cartridge configured to hold a stack of gloves and a stack of gloves disposed therein in a sloping stack and positioned against the sloping means which is positioned at least partially in the internal compartment of the housing when the cartridge is disposed in a dispensing position such that the sloping means and the sloping stack form a trapezoidal cross-section in the internal compartment of the cartridge, the sloping means configured to hold the sloping stack in a sloping alignment within the internal compartment of the cartridge to prevent gloves from moving out of the stack and to keep at least one glove positioned against a dispensing opening of the cartridge to permit easy and reliable withdrawal of the gloves therefrom.

16. The cartridge of claim 15, wherein the sloping means is a ramp.
17. The cartridge of claim 15, wherein the sloping means is a biasing platform.

18. The cartridge of claim 17, wherein the biasing platform comprises at least one resilient material.

19. The cartridge of claim 17, wherein the biasing platform comprises a base.

20. The cartridge of claim 15, wherein the cartridge is rectangular and the stack of gloves defines a trapezoidal cross-section within the internal compartment and the sloping means holds the stack of gloves such that the stack of gloves continues to form a trapezoidal cross-section until all of the gloves are withdrawn from the cartridge.

21. A dispensing assembly adapted to dispense gloves, the dispensing assembly comprising:

   a dispenser configured to hold a cartridge; and

   a cartridge adapted to dispense gloves, the cartridge including a housing comprising a plurality of walls which cooperate to form an inner surface and an internal compartment, the cartridge including a dispensing opening and the cartridge configured to hold a stack of gloves and a stack of gloves is disposed therein, the stack of gloves forming a sloping stack positioned against a sloping means which is positioned at least partially in the internal compartment of the housing when the cartridge is positioned in a dispensing position such that the sloping means and the sloping stack form a trapezoidal cross-section in the internal compartment of the cartridge, the sloping means configured to hold the sloping stack of gloves in an alignment within the internal compartment of the cartridge to prevent gloves from moving out of the stack and to keep at least one glove positioned against the dispensing opening of the cartridge to permit easy and reliable withdrawal of the gloves therefrom.

22. The dispensing assembly of claim 21, wherein the sloping means is a ramp.

23. The dispensing assembly of claim 22, wherein the ramp is provided by the dispenser.

24. The dispensing assembly of claim 22, wherein the ramp is formed in the cartridge.

25. The dispensing assembly of claim 21, wherein the sloping means is a biasing platform.

26. The dispensing assembly of claim 25, wherein the biasing platform comprises at least one resilient material.

27. The dispensing assembly of claim 25, wherein the biasing platform comprises a base.

28. The dispensing assembly of claim 21, wherein the cartridge is rectangular and the stack of gloves defines a trapezoidal cross-section within the internal compartment and the sloping means holds the stack of gloves such that the stack of gloves continues to form a trapezoidal cross-section until all of the gloves are withdrawn from the cartridge.

29. The dispensing assembly of claim 21, wherein the dispenser comprises a spacer.

30. The dispensing assembly of claim 21, wherein the dispenser comprises a spacer.