US 20070051647A1

(19) **United States**

(12) **Patent Application Publication** (10) **Pub. No.: US 2007/0051647 A1**

Lee (43) **Pub. Date: Mar. 8, 2007**

(54) **PULL-UP TRAY CONTAINER**

(75) Inventor: **Jae Woo Lee**, Flower Mound, TX (US)

Correspondence Address:
James E. Bradley
P.O. Box 61389
Houston, TX 77208-1389 (US)

(73) Assignee: **Bao Sheng Corporation**

(21) Appl. No.: **11/592,934**

(22) Filed: **Nov. 3, 2006**

Related U.S. Application Data

(63) Continuation-in-part of application No. 10/901,535, filed on Jul. 29, 2004.

(60) Provisional application No. 60/490,730, filed on Jul. 29, 2003.

Publication Classification

(51) **Int. Cl.**
B65D 83/10 (2006.01)

(52) **U.S. Cl.** **206/362**; 206/804

(57) **ABSTRACT**

A cosmetic brush container has a cylindrical sidewall, a closed bottom, and an open top. A tray is carried within the container for axial movement relative to a longitudinal axis of the container from a lower storage position. A lid releasably fits over the top of the container. A lifting member, preferably an elongated telescoping assembly, extends between the tray and the lid. Brushes are carried in the container, with lower ends supported on the tray and bristles supported by the sidewall of the container. Lifting the lid causes the tray to move upward and the bristles of the brushes to move above the top of the container for access by a user.

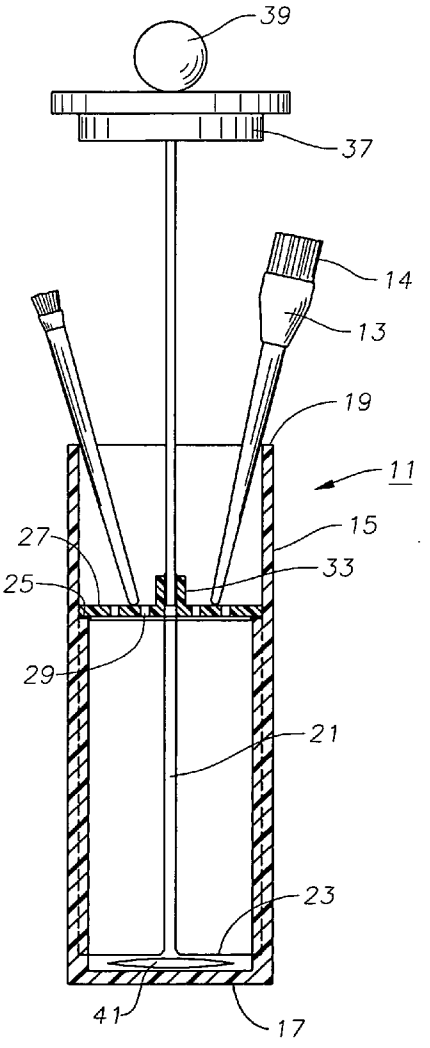


Fig. 1

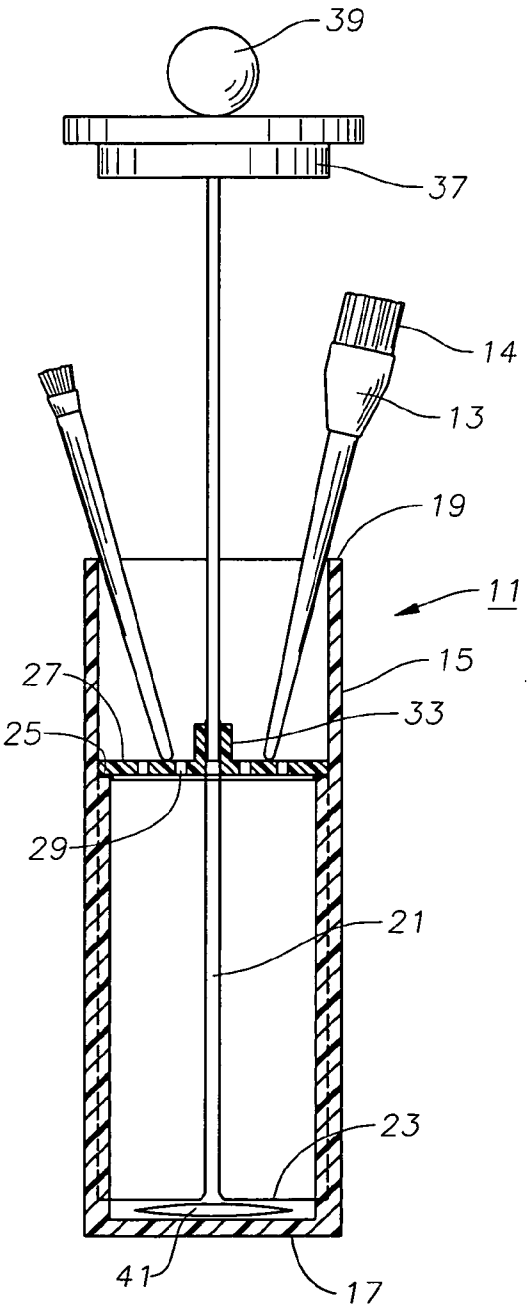
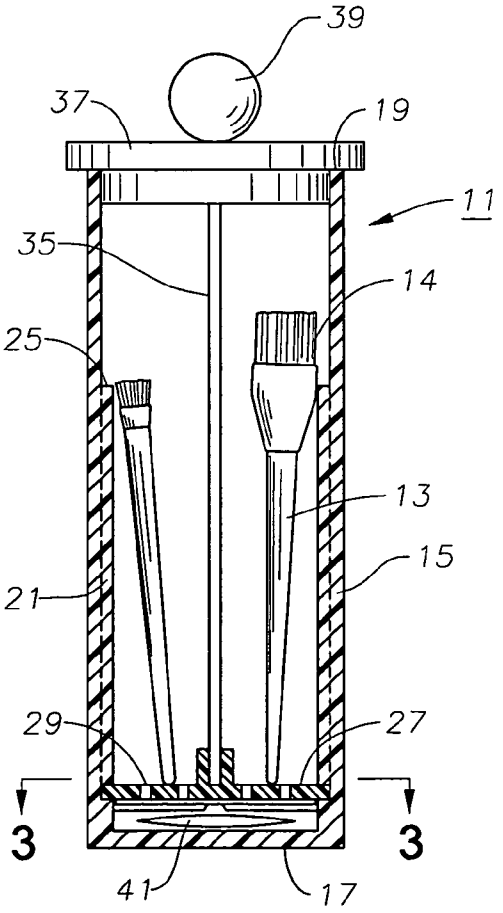

39
37
14
13
19
11
27
15
25
33
29
21
23
41
17

Fig. 2


39
37
19
11
35
14
25
13
15
21
29
27
3
3
41
17

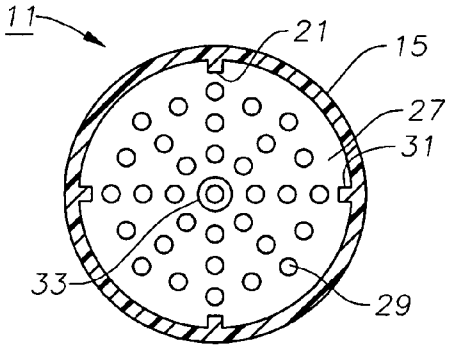


Fig. 3

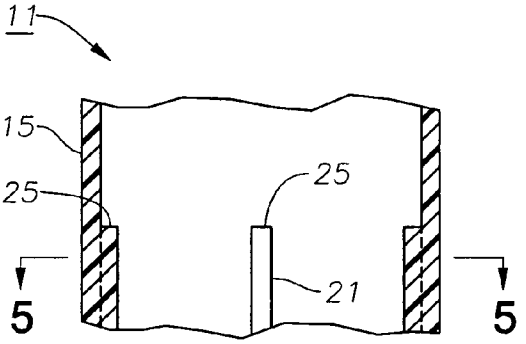


Fig. 4

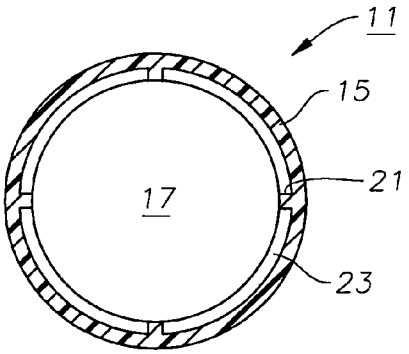


Fig. 5

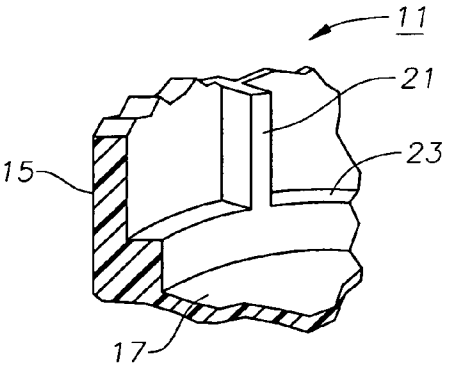


Fig. 6

Fig. 7

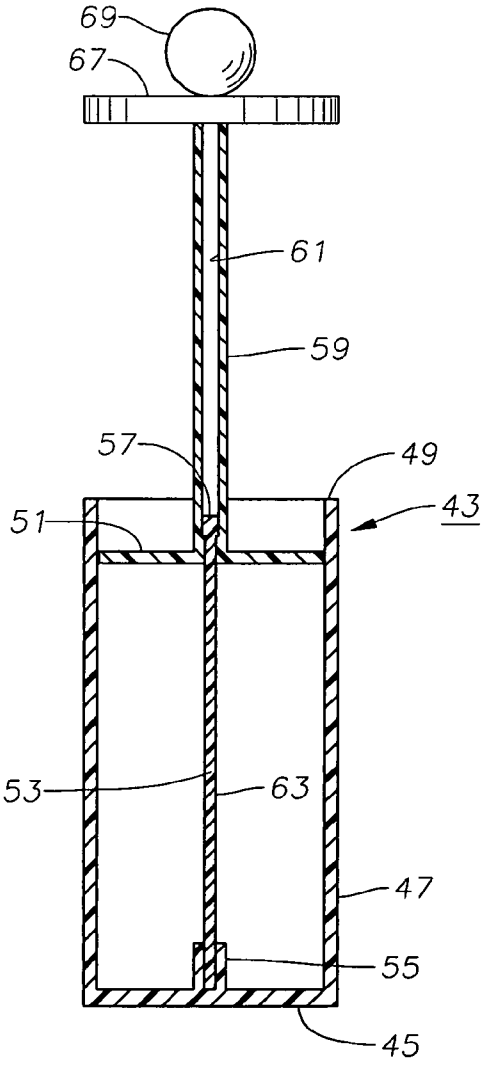
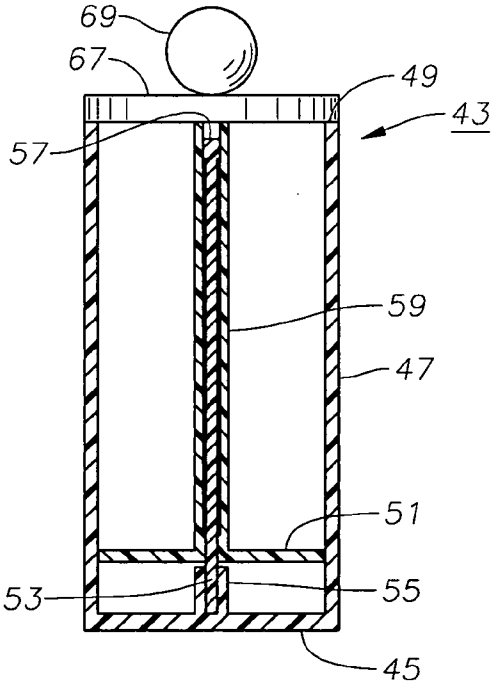


Fig. 8



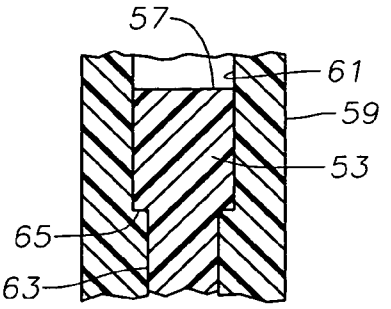


Fig. 9

PULL-UP TRAY CONTAINER

CROSS-REFERENCE TO RELATED APPLICATION

[0001] This application is a continuation-in-part of Ser. No. 10/901,535, filed Jul. 29, 2004, which claims the benefit of U.S. Provisional application 60/490,730 filed Jul. 29, 2003.

FIELD OF THE INVENTION

[0002] This invention relates in general to containers for holding loose items, and in particular to a container with a pull-up tray for holding cosmetic brushes.

BACKGROUND OF THE INVENTION

[0003] Often, a person will use a variety of sizes of cosmetic brushes for applying cosmetics. The brushes apply both powdered cosmetics as well as cosmetics in a liquid or paste form. One way to keep the brushes organized and neat in appearance while not in use is to place them in an open-topped container. The lower ends of the brushes are supported on the bottom of the container and the bristles extend above the top.

[0004] While workable, other objects or part of the clothing of the user might contact the exposed bristles, causing residual cosmetics on the brushes to transfer to the clothing or other objects. Also, in some cases, bacteria may grow in the residual cosmetics left on the bristles.

SUMMARY OF THE INVENTION

[0005] In this invention, an apparatus for storing articles is provided that is particularly appropriate for storing cosmetic brushes. The apparatus includes a container having a sidewall, a closed bottom, and an open top. A tray is carried within the container for axial movement along a longitudinal axis of the container. A lifting member is secured to the tray and extends upward to at least the top of the container.

[0006] In use, the brushes are placed in the container with lower ends resting on the tray. When the tray is in the lower position, the bristles of the brushes are supported by the sidewalls of the container below the top. Lifting the lifting member pulls the tray upward and exposes the bristles of the brushes.

[0007] Preferably a lid connects to the lifting member for movement therewith. When the tray is in a lower position, the lid will engage the top of the container. Also, preferably, the tray has an upper self-supporting position that allows the user to release the lifting member with the bristles of the brushes being exposed above the top of the container. In one embodiment, an upper shoulder supports the tray to provide this self-supporting position. In this example, mating guides are formed on the interior sidewall of the container and the tray. The upper ends of the guides on the sidewall terminate at the upper shoulder. While the tray is below the upper shoulder, the mating guides prevent rotation of the tray. While above, the user can rotate the tray slightly to misalign the mating guides so that the upper shoulder will support the tray.

[0008] In another embodiment, the lifting member comprising a telescoping assembly with frictional walls that will support the tray at any elevation within the container. In the embodiment shown, the telescoping assembly comprises a mandrel that is fixed to the closed bottom of the container and has an upper end near the open end of the container. A sleeve slides over the mandrel and moves from a contracted position to an extended position. The tray is secured to a lower end of the sleeve, and the lid is secured to an upper end of the sleeve. The friction between the sleeve and the mandrel will support the tray at any elevation within the container.

[0009] Optionally, a chemical treatment material, such as an anti-microbial agent may be located in the container. Preferably, the tray is located above the bottom a selected distance while in a lower position, defining a lower compartment. Also, the tray preferably has perforations. The chemical treatment material is located in the lower compartment and communicates with the brushes via the perforations.

BRIEF DESCRIPTION OF THE DRAWINGS

[0010] FIG. **1** is a sectional view of a brush container constructed in accordance with this invention and shown in the open position.

[0011] FIG. **2** is a sectional view of the container of FIG. **1**, shown in the closed position.

[0012] FIG. **3** is a sectional view of the container of FIG. **1**, taken along the line **3-3** of FIG. **2**.

[0013] FIG. **4** is a sectional view of a portion of the container of FIG. **1**, with the tray shown removed.

[0014] FIG. **5** is a sectional view of the container of FIG. **1**, taken along the line **5-5** of FIG. **1**.

[0015] FIG. **6** is a fragmentary perspective view of a lower portion of the container of FIG. **1**.

[0016] FIG. **7** is a sectional view of another embodiment of a brush container in accordance with the invention and showing the tray in an upper position.

[0017] FIG. **8** is a sectional view of the container of FIG. **7**, but showing the tray in a lower position.

[0018] FIG. **9** is an enlarged portion of the telescoping assembly of the container of FIG. **7**.

DETAILED DESCRIPTION OF THE INVENTION

[0019] Referring to FIG. **1**, container **11** is particularly used for holding cosmetic brushes **13**, however, it could be used for holding other items as well. Cosmetic brushes **13** are conventional, each having a handle and a set of bristles **14**. Container **11** has a cylindrical sidewall **15** that is preferably of clear plastic material, such as acrylic. Container **11** has a bottom **17** and an open upper end **19**.

[0020] A plurality of guides or splines **21** are integrally formed in the inner diameter of sidewall **15**. Each spline **21** extends longitudinally, parallel with an axis of cylindrical sidewall **15**. Each spline **21** protrudes a short distance radially inward from the inner diameter of sidewall **15** and has a narrow width. The number of splines **21** could vary and in the preferred embodiment there are four, each spaced 90° from the other, as shown in FIG. **3**. Splines **21** could optionally extend to bottom **17**, but preferably terminate at

an annular ledge **23**, shown in FIG. **6**. Ledge **23** is located a short distance above bottom **17** and has the same radial dimension as each spline **21**. Ledge **23** extends circumferentially around the inner diameter of sidewall **15**.

[**0021**] The upper end **25** of each spline **21**, as shown in FIG. **4**, is preferably contained in a plane perpendicular to the axis of sidewall **15**, defining an upper shoulder. The upper ends **25** of splines **21** are positioned a selected distance below container upper end **19**, this distance being selected so that the longest brushes **13** for storage in container **11** will not fall laterally out of container **11**, rather their handles will be supported by the open upper end **19** while container **11** is in the open position. The position of the upper ends **25** of splines **21** is also selected so that the tips of the shortest brushes **13** for storage in container **11** will be above upper end **19** while container **11** is in the open position.

[**0022**] Container **11** also includes a tray **27** that supports the lower ends of the handles of brushes **13**. Tray **27** is a circular flat disc that has an outer diameter slightly smaller than the inner diameter of sidewall **15**. Tray **27** could optionally have a circular wall extending upward a short distance. The outer diameter of tray **27** is larger than the distance between two of the splines **21** located 180° apart from each other. That is, a diameter measured at the inner surfaces of splines **21** is less than the outer diameter of tray **27**. Optionally, tray **27** has a plurality of perforations or apertures **29** (FIG. **3**) that are spaced throughout for ventilation. However, apertures **29** could be eliminated if desired.

[**0023**] Tray **27** also has a plurality of guides or notches **31** formed in its outer diameter, notches **31** being 90° apart. Each notch **31** has a width slightly greater than the width of one of the splines **21** so that tray **27** will slide freely over splines **21**, when registered as shown in FIG. **2**. When notches **31** are in registry with splines **21**, tray **27** cannot rotate relative to container **11**. Because the outer diameter of tray **27** is greater than the inner diameter of splines **21**, when tray **27** is above splines **21** and notches **31** are misaligned with splines **21**, as shown in FIG. **1**, tray **27** can rest on upper ends **25** of splines **21**, which serve as a self-supporting shoulder.

[**0024**] A receptacle **33** is formed on the upper side of tray **27** for securing tray **27** to the lower end of an elongated lifting member, such as rod **35**. Receptacle **33** is preferably threaded, but rod **35** could be fastened in other ways. Rod **35** extends substantially the length of container **11** and secures to a lid **37** at its upper end. Lid **37** fits within or over container upper end **19** to close container **11**. Lid **37** may be a variety of types and may have a knob **39** for manually grasping to lift lid **37**. When lid **37** is in the closed position of FIG. **2**, tray **27** will be closely spaced to or contacting ledge **23** (FIG. **6**). While in the closed position, tray **27** is preferably spaced above container bottom **17**, leaving a space or compartment below tray **27** for optionally depositing a chemical material such as an antimicrobial bag **41**. Antimicrobial bag **41** is a porous bag having a conventional chemical material that dissipates into the atmosphere within container **11** and retards the growth of bacteria on brushes **13**. The chemical agent of antimicrobial bag **41** communicates with bristles **14** via apertures **29**.

[**0025**] In operation of the first embodiment, container **11** is shown in the closed position in FIG. **2** with brushes **13** located inside and being supported on tray **27**. Bristles **14** are below container upper end **19** and typically touching the interior of sidewall **15**. Lid **37** closes upper end **19** of container **11**. If used, anti-microbial material in bag **41** communicates with any cosmetic residue on brushes **13** via apertures **29** in tray **27**.

[**0026**] To access brushes **13**, the user grasps knob **39** and lifts rod **35** and lid **37** upward to expose bristles **14**. The user could simply hold knob **39** while picking out one of the brushes **13**, then lowering lid **37** back on top of container **11**. Alternately, the user can place tray **27** in a self-supporting upper position, which leaves bristles **14** of brushes **13** exposed after the user releases knob **39**. To do so, the user lifts knob **39** to a point where tray **27** is above upper ends **25** of splines **21**. The user then rotates knob **39** and tray **27** an increment less than 90° to misalign tray notches **31** with splines **21**. The user then lowers tray **27** until it rests on spline upper ends **25** as shown in FIG. **1**. Tray **27** is spaced a significant distance above container bottom **17** in this upper position. At least bristles **14** of the brushes **13** protrude above container upper end **19**. Typically the upper portions of at least some of brushes **13** will tilt laterally outward past sidewall **15**. Lid **37** remains attached to rod **35** in this embodiment and is spaced above open end **19** a distance proportional to the distance from the closed position of FIG. **1** to the open position of FIG. **2**.

[**0027**] In the embodiment of FIGS. **7-9**, container **43** resembles container **11** of the first embodiment in that it has a closed bottom **45**, a cylindrical sidewall **47**, and an open top **49**. A tray **51** is carried within container **43** for movement from a lower position shown in FIG. **8** to an upper position shown in FIG. **7**. Container **43**, however, does not have a supporting shoulder nor splines within its interior similar to shoulder **25** and splines **21** (FIG. **4**). Rather a telescoping lifting assembly is employed for lifting tray **51** as well as serving as means for supporting tray **51** in any upper position.

[**0028**] The telescoping lifting assembly in this embodiment is similar to a conventional radio antenna. A fixed rod or mandrel **53** is rigidly secured to bottom **45** by a mounting boss **55**. Mandrel **53** is cylindrical and has an upper end **57** spaced below the open top **49**. Mandrel **53** may be tubular or a solid rod. A sleeve **59** slides over mandrel **53** and has an inner cylindrical wall **61** (FIG. **9**) that frictionally engages an outer cylindrical wall **63** of mandrel **53**. Sleeve **59** and mandrel **53** may be formed of metal and constructed in the same manner as a telescoping section of a radio antenna. Mating stop shoulders **65** (FIG. **9**) may be formed on walls **61**, **63** to provide a limit for the amount of extension of sleeve **59** relative to mandrel **57**. The friction between sleeve **59** and mandrel **53** is sufficient to support tray **51** and a typical set of brushes in any elevated position above boss **55**.

[**0029**] Tray **51** is secured to a lower end sleeve **59** for movement therewith. A lid **67** is secured to an upper end of sleeve **59**. Lid **67** optionally may have a knob **69**. The distance between tray **51** and lid **67** is less than the height of container **43** and selected to place tray **51** slightly above boss **55** when lid **67** engages upper end **49**, as shown in FIG. **8**.

[**0030**] In the operation of the second embodiment, to access brushes from container **43**, the user grasps knob **69** and pulls upward an amount sufficient to expose the bristles of the brushes. The user may release knob **69**, and the

friction between sleeve **59** and mandrel **53** will retain tray **51** in that position. It is not necessary to rotate sleeve **59** relative to container **43** in this embodiment. To close container **43**, the user simply pushes downward on lid **67** with enough force to overcome the frictional resistance between mandrel **53** and sleeve **59**.

[**0031**] The invention has significant advantages. The container retains brushes in an attractive, neat-appearing manner. The container prevents any cosmetic residue from smearing onto other objects while the brushes are stored. The tray can easily be maintained in a self-supporting upper position. The lid and lower compartment allow the use of an anti-microbial agent to retard bacteria growth in the cosmetic residue on the brushes.

[**0032**] While the invention has been shown in only one of its forms, it should be apparent to those skilled in the art that it is no so limited, but is susceptible to various changes without departing from the scope of the invention. For example, rather than being attached to lid **37**, rod **35** could optionally be shorter, with knob **39** located below and separated from lid **37** while in the closed position. In this alternate arrangement, the user accesses brushes **13** by first removing lid **37**, setting it aside, then grasping knob **39** to pull up rod **35** and tray **27**. Other types of retention mechanisms could be used to hold tray **27** in the upper position rather than upper ends of splines **21**. For example, a hook could extend from one side of tray **27** for hooking over container upper end **19**. The anti-microbial pad arrangement of the first embodiment could also be employed in the second embodiment.

1. An apparatus for storing articles, comprising:

a container having a sidewall, a closed bottom, and an open top;

a tray carried within the container for axial movement along a longitudinal axis of the container; and

a lifting member secured to the tray and extending upward to at least the top of the container, wherein articles placed on the tray may be accessed by lifting the lifting member and the tray.

2. The apparatus according to claim 1, further comprising a lid that releasably fits on the top of the container and is secured to the lifting member for movement therewith.

3. The apparatus according to claim 1, further comprising means for releasably retainining the tray in an upper position relative to the container.

4. The apparatus according to claim 1, wherein the lifting member comprises an elongated telescoping assembly.

5. The apparatus according to claim 1, the sidewall of the container is cylindrical, and the tray has a circular periphery.

6. The apparatus according to claim 1, wherein the tray has a lower self-supporting position above the closed bottom and an upper self-supporting position below the open top.

7. The apparatus according to claim 1, wherein the lifting member comprises:

an elongated mandrel having a lower end mounted to the base; and

a sleeve telescopingly received over the mandrel, the tray being mounted to the sleeve.

8. The apparatus according to claim 1, wherein the tray has plurality of perforations and the apparatus further comprises:

a lower compartment in the container spaced below the tray;

a quantity of a chemical treatment material located in the compartment for communicating with the articles via the perforations in the tray.

9. An apparatus for applying cosmetics, comprising:

a container having a cylindrical sidewall, a closed bottom, and an open top;

a tray carried within the container for axial movement along a longitudinal axis of the container from a lower position;

a lid that releasably fits over the top;

a lifting member secured to the tray and to the lid; and

a plurality of brushes removably carried in the container, each brush having a handle with an end that is supported on the tray and a set of bristles that is supported by the sidewall of the container while the tray is in the lower position, whereby lifting the lid causes the lifting member to lift the tray, pushing the bristles of the brushes above the top of the container for access by a user.

10. The apparatus according to claim 9, wherein the lifting member comprises:

an elongated telescoping assembly having a contracted and an extended position, the telescoping assembly having inner and outer wall surfaces that frictionally engage each other to retain the tray in an upper position within the container.

11. The apparatus according to claim 9, wherein the lifting member comprises:

an elongated mandrel having a lower end mounted to the base;

a sleeve telescopingly received over the mandrel for movement between contracted and extended positions, the tray being mounted to a lower portion of the sleeve and the lid being mounted to an upper portion of the sleeve; and

wherein the mandrel and the sleeve frictionally engage each other to retain the tray at any desired elevation relative to the container.

12. The apparatus according to claim 11, further comprising:

mating stop shoulders on the sleeve and the mandrel for defining a fully extended position, the tray being at an elevation below the open top and above the closed bottom while the sleeve is in the fully extended position.

13. The apparatus according to claim 11, wherein the sleeve has a length less than a distance from the closed bottom to the open top of the container.

14. The apparatus according to claim 9, further comprising:

a plurality of perforations in the tray;

an anti-microbial agent located between the bottom of the container and tray while the tray is in the lower position for communicating with the brushes via the perforations in the tray.

15. A method of storing articles, comprising:

(a) providing a container having a sidewall, a closed bottom, and an open top;

(b) securing an elongated lifting member to a tray;

(c) placing articles on the tray and lowering the tray into the container with the lifting member to a lower position; and to access the articles,

(d) lifting the tray with the lifting member.

16. The method according to claim 15, wherein step (d) further comprises supporting the tray within the container in an upper position above the lower position and releasing the lifting member.

17. The method according to claim 15, further comprising:

providing the tray with a plurality of perforations; and

placing a chemical material in the container below the tray while the tray is in the lower position, and treating the articles with the chemical material via the perforations in the tray.

18. The method according to claim 15, further comprising:

securing a lid to the lifting member; and wherein step (c) further comprises

landing the lid on the top of the container when the tray is in the lower position.

* * * * *