A container arrangement including a box, a removable lid, a hinge connecting the lid and the box, and a latch mechanism. The hinge construction can be spring-biased. There can be a removable tubular sleeve around the box and lid. The sleeve can include a tab in extension therefrom defining a hanghole for display purposes. Methods for storage and use include using arrangements of this type. The container arrangement can hold a variety of items, for example, gaming items, in particular, dice.
STORAGE AND DISPLAY CONTAINER AND METHODS

TECHNICAL FIELD

[0001] This disclosure relates to a container arrangement. In particular implementations, this disclosure relates to a container for storing and displaying small items, such as gaming equipment, e.g. dice.

BACKGROUND

[0002] Packaging and displaying small items in retail settings can be challenging. If items are sold as a set, one wants to have those items packaged and displayed in an attractive form in order to promote more sales. In addition, one wants the packaging to be inexpensive so that it does not drive up the overall price of the items.

[0003] One example of items that are packaged together and sold as a set is gaming equipment, such as dice. Dice are sometimes sold together in a set, wherein each individual die has a different number of sides from the other dice. These are sold together in a set so that in certain games, the selected die with the appropriate number of sides can be used. How these die are packaged together in a set for attractive display in a retail setting can be challenging.

SUMMARY OF THE DISCLOSURE

[0004] In one aspect, this disclosure relates to a container arrangement including a box, a removable lid, a hinge connecting the lid and the box, and a latch mechanism.

[0005] In certain example preferred embodiments, the hinge construction is spring-biased.

[0006] In certain preferred implementations, there is a removable tubular sleeve around the box and lid. In preferred embodiments, the sleeve includes a tab in extension therefrom defining a hanghole.

[0007] In some preferred embodiments, there is additionally a sticker securing the tubular sleeve to either the box or the lid. The sticker can contain printed indicia, such as pricing information.

[0008] In another aspect, the disclosure is related to a method for storing playing dice. The method includes providing a container including a box having a lid, the lid being attached to the box with a spring-biased hinge and a latch. The latch is released to allow the spring-biased hinge to move the lid from the box. At least one die is placed in the box. The lid is oriented to cover the opening in the box, and the latch is engaged to secure the lid to the box. After the latch is engaged, a tubular sleeve is placed around the container. The sleeve can have an extending tab defining a hanghole.

[0009] In preferred implementations, the step of providing a container including a box and a lid includes providing a transparent box and transparent lid.

[0010] In preferred methods, after placing a tubular sleeve around the container, the container is hung on a display rod by orienting a display rod through the hanghole.

[0011] In another aspect, the disclosure relates to a dice container including a box, a removable lid, a hinge construction, a latch mechanism securing the box to the lid, a removable tubular sleeve around the box and lid, and at least one playing die oriented in the box.

BRIEF DESCRIPTION OF THE DRAWINGS

[0012] FIG. 1 is a perspective view of a preferred embodiment of a container arrangement including a box with a removable lid and a removable sleeve, constructed according to principles of this disclosure;

[0013] FIG. 2 is a side elevational view of the box and lid depicted in FIG. 1, with the lid being in an open orientation;

[0014] FIG. 3 is an enlarged front elevational view, fragmented, depicting the latch mechanism in the container arrangement of FIG. 1;

[0015] FIG. 4 is a cross-sectional view taken along the line 4-4 of FIG. 3 showing operation of the latch mechanism;

[0016] FIG. 5 is a perspective view of the removable sleeve depicted in FIG. 1; and

[0017] FIG. 6 is a perspective view of an alternate embodiment of a removable sleeve, which can be used with the box and lid depicted in FIG. 1.

DETAILED DESCRIPTION

[0018] FIG. 1 depicts an embodiment of a container arrangement constructed according to principles of this disclosure. The container arrangement is shown generally at 10. In general, the container arrangement includes a box 12 with a removable lid 14 and a removable sleeve 16 around the box 12 and lid 14. In FIG. 1, it can be seen that, in preferred embodiments, each of the box 12, lid 14, and sleeve 16 is constructed of a transparent material. In order to be able to view the items that are stored in the interior of the container arrangement 10. In FIG. 1, the container arrangement 10 is shown storing and displaying game equipment, in particular, dice 18.

[0019] The box 12 and lid 14 are connected together to allow for selective access to an interior 20 of the box 12. Together, the box 12 and lid 14 form a container 15. In the embodiment shown, the box 12 and lid 14 are secured together with a hinge construction 22. The hinge construction 22 is between the box 12 and lid 14 to provide selective removal of the lid 14 from the box 12. In preferred embodiments, the hinge construction 22 cooperates with a latch mechanism 24 to provide a preferred way of removing the lid 14 from the box 12. This is described further below.

[0020] In reference to FIGS. 1 and 2, the preferred embodiment of the box 12 is shown as defining interior 20 and open mouth 26. The box 12 depicted includes a bottom 28, a front wall 30, a rear wall 32 opposing the front wall 30, and first and second opposing lateral walls 34, 36 extending between the front wall 30 and rear wall 32. Together, the front wall 30, rear wall 32, and first and second lateral walls 34, 36 form a surrounding side wall 38. The surrounding side wall 38 and the bottom 28 together define the interior 20. The open mouth 26 is generally defined in opposing relation to the bottom 28. As can be seen in the particular embodiment of FIGS. 1 and 2, the surrounding side wall 28 consists of the four walls (front wall 30, rear wall 32, first lateral wall 34, and second lateral wall 36 and extends normal or orthogonal) to the bottom 28.
In reference to FIGS. 1 and 2, the removable lid 14 is oriented relative to the mouth 26 such that it can be selectively positioned over or away from the mouth 26 to either permit access to the interior 20 or close access to the interior 20. In the embodiment shown, the lid 14 includes a lid top wall 40. When the lid 14 is in a covering relation to the interior 20, the lid top wall 40 is opposing and parallel to the box bottom 28. In the preferred embodiment shown, the lid 14 also includes a lid hinge wall 42, a lid latch wall 44, and first and second lateral lid walls 46, 48. Each of the lid hinge wall 42, lid latch wall 44, and first and second lateral lid walls 46, 48 is preferably normal or orthogonal to the lid top wall 40.

When the lid 14 is in a closed position relative to the box 12, the lid hinge wall 42 is aligned with and contained in the same plane as the rear wall 32 of the box 12. Similarly, the lid latch wall 44 is aligned with and in the same plane as the box front wall 30. The first lateral lid wall 46 is aligned with and in a same plane as the first lateral wall 34, and the second lateral lid wall 48 is aligned with and in the same plane as the second lateral wall 36 of the box 12.

When the lid 14 is in its closed position relative to the box 12 (FIG. 1), together, the box 12 and lid 14 form a geometric cube 50. That is, the length of each of the sides (taking the lid 14 together with the box 12) has equal dimensions.

In reference now to FIGS. 1 and 2, the preferred embodiment of the hinge construction 22 is illustrated. The hinge construction 22 operates to connect together the lid 14 and box 12 and permits the lid 14 to pivot relative to the box 12 along pivot axis 52. In FIG. 2, the pivot axis 52 is shown as a point, and the axis would be coming out of the page. In the particular one shown, the hinge construction 22 comprises a first hinge plate 54 secured to the lid 14, in particular, along the lid hinge wall 42. The hinge construction 22 also includes a second hinge plate 56 secured to the box 12, in particular, on the rear wall 32. The first hinge plate 54 and second hinge plate 56 can be secured to the respective lid 14 and box 12 by appropriate methods or structures.

In the particular embodiment shown, rivets 58 are depicted as securing the hinge plates 54, 56 to the lid 14 and box 12. The first hinge plate 54 and second hinge plate 56 are pivotally secured together to prevent total separation of the lid 14 from the box 12 and yet permit the lid 14 to pivot toward and away from the box 12.

In preferred arrangements, the hinge construction 22 includes a spring-biased hinge 62. By the term “spring-biased”, it is meant that in a relaxed state, under no force, the hinge has a preferential condition of being in the position shown in FIG. 2. The lid 14 being pivoted away from the box 12. To attain this condition of being spring-biased, in the embodiment shown, the spring-biased hinge 62 includes a spring 60 between the first hinge plate 54 and second hinge plate 56. Under force against the spring 60, the lid 14 is kept in the closed position relative to the box 12, as shown in FIG. 1. The force used, in this embodiment, is the latch mechanism 24.

In reference now to FIGS. 1, 3, and 4, the latch mechanism 24 is now described in further detail. The latch mechanism 24 can take the form of many different embodiments, provided that it functions to selectively lock and release the lid 14 from the box 12. One particularly preferred latch mechanism 24 is depicted as being a push-button latch 70. The push-button latch 70 includes an arm 72 with first and second opposite ends 74, 76, an actuator or push-button 78, and a hook 80. The arm 72 is preferably secured to the front wall 30 of the box 12 adjacent to the first end 74 within the box interior 20. In the embodiment shown, a rivet 82 is depicted as securing the arm 72 to the front wall 30 of the box 12. The push-button 78 preferably extends through a hole in the front wall 30 of the box 12. The hook 80 extends from the second end 76 of the arm 72 and projects in a direction toward the lid 14. The hook 80 is movable laterally from the front wall 30 responsive to force exerted on the push-button 78. That is, by exerting force on the push-button 78 in a direction toward the wall 30, the push-button 78 deflects the arm 72 away from the interior surface of the wall 30 and moves the, unattached, free end 76 away from the direction of the wall 30. To cooperate with the push-button latch, the lid 14 defines a catch 84 to selectively engage the hook 80. In the particular embodiment shown, the catch 84 comprises a cavity 86 defined by the lid latch wall 44 and having a ridge 88 that engages a portion of the hook 80.

It should be appreciated, from the above description, that the latch mechanism 24 preferably operates to selectively lock and release the lid 14 from the box 12. In cooperation with the spring-biased hinge 62, the push-button latch 70 operates to “pop-open” the lid 14 from the box 12. For example, when the button 78 is pressed in a direction of arrow 90, the arm 72 is deflected and moves the hook 80 away from the cavity 86 and out of engagement with the ridge 88 of the lid latch wall 44. The spring 60 is then free to pivot the lid 14 about the pivot axis 52 and away from the box 12 to expose the mouth 26 and allow access to the interior 20 of the box 12. It should be appreciated that the spring-biased hinge 62 in combination with the latch mechanism 24 results in an entertaining, attractive container 10 for items such as dice 18.

In reference now to FIGS. 1 and 5, one example embodiment of a sleeve 16 is depicted. The sleeve 16 is preferably sized to be tight enough to hug the cube 50 and yet be loose enough to allow for conveniently sliding over the cube 50. In the one shown, the sleeve 16 is generally a tubular member 92 with opposite open ends 94, 96 and defining an open interior 98. While the tubular member 92 can be without defined form, in the example embodiment shown, the tubular member 92 has a general cross-section of a square with rounded sides. That is, in the one shown, the square does not have perfectly straight sides, but can be curved in order to permit the sleeve 16 to easily slide over the cube 50.

The sleeve 16 preferably includes a tab 100 in extension therefrom. Preferably, the tab 100 defines a hангle 102. In use, the hangle 102 can receive a rod, permitting the container arrangement 10 to be displayed in a retail environment hanging from a rod. The tab 100 is secured to a remaining portion of the sleeve 16 by way of a living hinge 103, in the embodiment shown.

In FIG. 1, a preferred way of using the sleeve 16 with the box 12 and lid 14 is depicted. In particular, it can be seen that the sleeve 16 covers the front wall 30, rear wall 32, bottom 28, top wall 40, lid latch wall 44, and lid hinge
wall 42. It can also be seen that the first and second lateral walls 34, 36 and the first and second lateral lid walls 46, 48 are free of contact with the sleeve 16. The tab 100 is shown extending at an angle, about 90°, relative to the top wall 40.

[0031] In a further preferred embodiment, the sleeve 16 is secured to the tube 50. In the one shown in FIG. 1, the sleeve 16 is secured to the cube 50 by a way of a sticker 104. The sticker 104 can be a conventional piece of paper with adhesive on one side and carry printed indicia on the opposite side. The printed indicia can include convenient information such as bar coding for product information, including pricing information. In the example shown in FIG. 1, the sticker 104 is secured to a bottom 106 of the sleeve 16, with a portion of it extending beyond the edge of the sleeve 16 and being folded along fold 108 to have portion 110 stuck on second lateral wall 36. To remove the sleeve 16 from the cube 50, the sticker 104 is either peeled from the second lateral wall 36, or the sticker 104 is torn along the fold 108. Of course, it should be appreciated that if sticker 104 is used, sticker 104 can be placed anywhere relative to the sleeve 16 or cube 50.

[0032] An alternate embodiment of a sleeve is shown in FIG. 6 at 16'. The sleeve 16' is constructed identically to the sleeve 16 in FIG. 5, with the exception of the bottom 106'. As such, the sleeve 16' is sized to be tight enough to hug the cube 50 and yet be loose enough to allow for conveniently sliding over the cube 50. The sleeve 16' is generally a tubular member 92 with opposite open ends 94', 96' and defining an open interior 98'. The sleeve 16' also includes tab 100' in extension therefrom, defining hanghole 102'. In the embodiment of FIG. 6, the sleeve 16' includes bottom 106' having non-straight edges 120, 122. In particular, in the specific example illustrated in FIG. 6, the edges 120, 122 are curved to form arced edges 124, 126. This is to allow for exposure of the container 15 relative to the sleeve 16'. By having the exposure to the container 15, the sticker 104' has more surface area that it can attach to on the container 15, than with the embodiment of FIG. 5. In addition, the sticker 104' can be used to secure the sleeve 16' to the container 15 while remaining only on the bottom 28 of the container 15. For example, this means that there would be no portion 110 of the sticker 104' secured to lateral wall 36'. It should be appreciated that the arced edges 124, 126 are examples only. Of course, many other shapes for edges 120, 122 could be used in order to expose surface area of the container 15 to the sticker 104'. As used herein, when the sleeve 16 is referenced in this disclosure, unless specified otherwise, the sleeve 16 shall refer to both the embodiment in FIG. 5 of sleeve 16 and the embodiment in FIG. 6 of sleeve 16'.

[0033] In one typical construction, the cube 50 is made from a rigid, plastic material that is transparent such that the contents of the box 12 can be easily viewed. The sleeve 16 is also made from a plastic material, but is less rigid than the material of the cube 50. The sleeve 16 is also preferably transparent. In some embodiments, the sleeve 16 may also include indicia, such as a logo or information identifying the product.

[0034] The cube 50 can be sized to accommodate a variety of products. Usable ranges include the cube 50 having a volume of 20-500 cm$^3$. One preferred construction has dimensions of each cube side of 4-5 cm. It should be appreciated that other dimensions are usable, including embodiments where the box 12 and lid 14 together do not form a cube, but form another geometric container, such as a non-cubic rectangular box. In one usable construction, the cube 50 is sized to hold at least 6 playing dice, each of the dice having a volume of 1-18 cm$^3$.

[0035] Use of the container arrangement 10 is now described. The container arrangement 10 can be used for storing items, such as playing dice 18. The stored items can be stacked upon each other for display and sale in a retail setting; or alternatively, they may be hung on a rod for display and sale in a retail setting.

[0036] The method includes providing container 15 including box 12 and lid 14, the lid 14 being attached to the box 12 with spring-biased hinge 62 and latch mechanism 24. The latch mechanism 24 is released to allow the spring-biased hinge 62 to move the lid 14 from the opening 26 in the box 12. At least one die 18 is placed in the box 12. The lid 14 is oriented to cover the opening 26 in the box 12. The latch mechanism 24 is engaged to secure the lid 14 to the box 12. Tubular sleeve 16 is then placed around the container 15. The sleeve 16 preferably includes extending tab 100 defining hanghole 102.

[0037] Next, after the tubular sleeve 16 is placed around the container 15, the container 15 can be hung on a display rack by orienting a display rod through the hanghole 102.

[0038] After the sleeve 16 is placed around the container 15, the sticker 104 can be oriented on the sleeve 16 and the container 15 to secure the sleeve 16 to the container 15.

[0039] Preferably, the step of releasing the latch mechanism 24 includes pushing button 78 against the box 12.

[0040] To use the container arrangement 10, the sleeve 16 is removed from the container 15. This can be done by releasing the sticker 104 from the box 12 or by breaking the sticker 104. The latch mechanism 24 is then actuated by pushing the push button 78. This moves the hook 80 from the lid 14 and allows the lid 14 to pop open. In preferred embodiments, the lid 14 moves at a speed away from the box 12 after the latch mechanism 24 has been released. This speed is controlled by the spring 60. The interior 20 of the box 12 is then exposed, allowing the user access to the contents of the box 12. In the example shown, the box contents are dice 18.

I claim:

1. A container arrangement comprising:

(a) a box having a bottom and a surrounding sidewall; the bottom and the surrounding sidewall defining an interior and an open mouth providing access to the interior;

(b) a removable lid in covering relation to the mouth;

(c) a hinge construction between the lid and the box to provide selective removal of the lid from the box;

(d) a latch mechanism securing the box to the lid; and

(e) a removable tubular sleeve around the box and lid;

(i) the sleeve including a tab in extension therefrom; the tab defining a hanghole.

2. A container arrangement according to claim 1 wherein:

(a) said hinge construction is spring-biased.
3. A container arrangement according to claim 2 wherein:
   (a) said surrounding sidewall consists of four walls extending orthogonally to said bottom.
4. A container arrangement according to claim 3 wherein:
   (a) said four walls include a front wall and opposing rear wall; and first and second opposing lateral walls extending between said front wall and rear wall; and
   (b) said lid comprises a top wall and a lid hinge wall, lid latch wall, and first and second lateral lid walls; each of the lid hinge wall, lid latch wall and first and second lateral lid walls being orthogonal to said top wall.
5. A container arrangement according to claim 4 wherein:
   (b) said latch mechanism is mounted on said front wall;
   (c) said hinge construction is mounted on said rear wall.
6. A container arrangement according to claim 5 wherein:
   (a) said latch mechanism comprises an arm with first and second opposite ends, a push button, and a hook;
      (i) said arm being secured to said front wall adjacent to the first end in the box interior;
      (ii) said push button extending through a hole in said front wall;
      (ii) said hook extending from said second end; said second end and said hook projecting toward said lid;
   (A) said hook being moveable laterally from said front wall responsive to force exerted on said push button;
   (b) said lid latch wall defines a catch to selectively engage said hook.
7. A container arrangement according to claim 4 wherein:
   (a) said box and said lid together form a cube.
8. A container arrangement according to claim 4 wherein:
   (a) said tubular sleeve at least partially covers each of said front wall, rear wall, bottom, top wall, lid latch wall, and lid hinge wall; and
   (b) said first and second lateral walls and said first and second lateral lid walls are free of contact with said tubular sleeve.
9. A container arrangement according to claim 8 wherein:
   (a) said tab on said tubular sleeve is connected to a remaining portion of the tubular sleeve by a living hinge.
10. A container arrangement according to claim 8 further comprising:
   (a) a sticker securing said tubular sleeve to one of said box and said lid.
11. A container arrangement according to claim 4 wherein:
   (a) said box, said lid, and said sleeve each comprises a transparent material.
12. A method for storing playing dice; the method comprising:
   (a) providing a container including a box having lid; the lid being attached to the box with a spring-biased hinge and a latch;
   (b) releasing the latch to allow the spring-biased hinge to move the lid from an opening in the box;
   (c) placing at least one die in the box;
   (d) orienting the lid to cover the opening in the box;
   (e) engaging the latch to secure the lid to the box; and
   (f) placing a tubular sleeve around the container;
      (i) the sleeve having an extending tab defining a hanghole.
13. A method according to claim 12 further comprising:
   (a) after the step of placing a tubular sleeve around the container; hanging the container on a display rack by orienting a display rod through the hanghole.
14. A method according to claim 12 further comprising:
   (a) after the step of placing a tubular sleeve around the container; orienting a sticker on the sleeve and container to secure the sleeve to the container.
15. A method according to claim 12 wherein:
   (a) said step of releasing the latch includes pushing a button against the box.
16. A method according to claim 12 wherein:
   (a) said step of providing a container including a box and a lid includes providing a transparent box and transparent lid.
17. A method according to claim 16 wherein:
   (a) said step of providing a container including providing a cube-shaped container.
18. A dice container comprising:
   (a) a box defining an interior and an open mouth; the box having a bottom, a front wall, a rear wall opposing the front wall; first and second opposing lateral walls extending between said front wall and rear wall;
   (b) a removable lid in covering relation to the mouth; the lid including a top wall and a lid hinge wall, lid latch wall, and first and second lateral lid walls; each of the lid hinge wall, lid latch wall and first and second lateral lid walls being orthogonal to said top wall;
   (c) a hinge construction between the lid and the box to provide selective removal of the lid from the box;
      (i) said hinge construction being mounted on said rear wall;
      (ii) said hinge construction being spring-biased;
   (d) a latch mechanism securing the box to the lid;
      (i) said latch mechanism being mounted on said front wall;
      (ii) said latch mechanism comprising an arm with first and second opposite ends, a push button, and a hook;
      (A) said arm being secured to said front wall adjacent to the first end in the box interior;
      (B) said push button extending through a hole in said front wall;
(C) said hook extending from said second end; said second end and said hook projecting toward said lid;

(1) said hook being moveable laterally from said front wall responsive to force exerted on said push button;

(e) a removable tubular sleeve around the box and lid;

(i) the sleeve including a tab in extension therefrom; the tab defining a hanghole;

(ii) said sleeve covering said front wall, rear wall, bottom, top wall, lid latch wall, and lid hinge wall;

(A) said first and second lateral walls and said first and second lateral lid walls being free of contact with said tubular sleeve; and

(f) at least one playing die oriented in the interior of the box.

19. A dice container according to claim 18 wherein:

(a) said box and lid together form a cube having a volume of 20-500 cm$^3$.

20. A dice container according to claim 19 wherein:

(a) said at least one playing die includes at least 6 playing die.

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