ADJUSTABLE BREAKAWAY LANYARD

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ABSTRACT

A lanyard device for safely carrying articles alone or in containers suspended from an individual's neck. The lanyard device includes a flexible cord having a first end and a second end where the first and second ends include a retaining means that can be selectively disengaged from the first and second ends when a predetermined force is applied to the retaining means. The lanyard device also includes a coupling means for coupling an object to the flexible cord. The coupling means includes a J-shaped bore, wherein the first end and the second end of flexible cord is insertable through the J-shaped bore.
ADJUSTABLE BREAKAWAY LANYARD
CROSS-REFERENCES TO RELATED APPLICATION

[0001] This application claims the benefit of U.S. Provisional Application No. 60/401,973, filed on Aug. 7, 2002, the entire contents of which are hereby incorporated by reference.

BACKGROUND

[0002] Many people in the workplace perform tasks where both hands are needed, and other items must be kept within easy reach. For example, a nurse or doctor may need both hands to perform an examination, and also need thermometers, catheters or similar devices to be instantly accessible. For others, such as joggers and other athletes that wear athletic attire that lack pockets, storage and security of personal items is an issue. Several prior art devices have been developed to address these needs. While these prior art devices have been useful, there remains a need for an improved carrying device that is suspended from the user’s neck.

SUMMARY

[0003] Exemplary embodiments disclosed herein are directed to adjustable breakaway lanyard devices useful for storing and/or carrying essential items in a secure, accessible location, while providing an improved exterior coating for the lanyard itself, and a more reliable and effective friction device. One exemplary embodiment includes a flexible cord or flat webbing that can form a collar for carrying various objects around the neck. The ends of the flexible cord may be coated with a polymeric material and tapered near the bottom portion of the cord end to substantially reduce the tension needed for separation in case of an emergency. The cord or webbing is in engagement with a curved slideway within a housing, and may be releasably attached to a container by a snap/buckle type fitting. The device may also include either single or dual end clips for protecting the cord ends from fraying and other damage and may further include fasteners for securing the lanyard ends to clothing or protective gear in order to minimize uncontrollable dangling of the lanyard ends. The snap fitting of the lanyard device may also allow a wearer to remove the container without having to remove the entire lanyard. Alternatively, in another exemplary embodiment, the container may include a loop device configured to work in conjunction with a J-hook for holding hanging items such as ID cards.

BRIEF DESCRIPTION OF THE DRAWINGS

[0004] FIGS. 1a-1h show several views of the slideway employed in exemplary embodiments;

[0005] FIGS. 2a-2c show several perspective and cross sectional views of an exemplary embodiment employing rubber dipped free ends;

[0006] FIGS. 3a-3e show perspective and cross sectional views of another exemplary embodiment of the adjustable breakaway lanyard employing dual end clips and tapered ends;

[0007] FIGS. 4a-4e show several perspective and exploded views of an exemplary embodiment of the single clip configuration that includes an attachment member;

[0008] FIGS. 5a-5d depict several perspective and cross sectional views of a hook-compatible embodiment;

[0009] FIGS. 6a-6h depict perspective and cross sectional views of an embodiment employing a snap engagement for connecting the lanyard to a releasable container;

[0010] FIGS. 7a-7f depict various views of an exemplary embodiment of the adjustable breakaway lanyard as configured to support a lighter; and

[0011] FIGS. 8a-8g depict various views of the slideway mechanism used with the lighter embodiment.

DETAILED DESCRIPTION

[0012] The detailed description set forth below in connection with the appended drawings is intended as a description of exemplary embodiments and is not intended to represent the only forms in which the exemplary embodiments may be constructed and/or utilized.

[0013] One exemplary embodiment includes a lanyard 200 with two free ends 202 in engagement with a slideway 201, with an integral container 203. In one exemplary embodiment, the free ends 202 of the lanyard 200 may be attached to an end device (not shown). In an alternative embodiment, the free ends 202 may be dipped in a polymeric material such as a soft rubber in order to provide crimping for the lanyard and/or to add weight to the free ends 202 for stability. The slideway mechanism 201 of the invention is illustrated in FIGS. 1a-1h. Referring to FIG. 1a, a slideway opening 100 is shown as generally elliptical orifice that can accommodate lanyards of various shapes. However, as those skilled in the art will appreciate, the slideway opening 100 may have a plurality of cross-sectional shapes. FIG. 1d shows the slideway 201 in cross-section, and depicts the curved shape of slideway opening 100 in relationship to an exemplary container 203.

[0014] Referring to FIG. 2b, the lanyard 200 is looped, and passed through slideway 201 so that free ends 202 may dangle below container 203. The lanyard 200 may be of a natural or polymeric material, and may be of any cross-sectional shape, such as round, elliptical, rectangular, or any shape that functions adequately with the friction slide. The lanyard 200 may also be in the shape of a substantially flat web.

[0015] As shown in FIGS. 2a-2c, the slideway 201 comprises a protrusion extending from container 203 that defines a slideway opening 100. The opening 100 may be of any shape, and are depicted in an elliptical shape here in order to accommodate lanyards 200 of any cross sectional shape, or of a flat web configuration. The opening 100 is positioned so that the passage follows a curved path resembling the letter “J”. The opening 100 is also sized to provide sufficient friction to the lanyard 200 to hold container 203 in place over a locus of points along the length of the lanyard 200 while permitting ease of movement of the lanyard 200 for adjustment or quick release.

[0016] Also, the container 203 as depicted in FIGS. 2a-2c is cylindrical in shape but may be of any shape, such as, but not limited to, rectangular or conical. The container 203 has an interior wall 101 of cylindrical or elliptical shape designed to frictionally engage the ends of stored objects such as lip balm, pens, markers or other similarly sized items.
In one exemplary embodiment, the free ends 202 of lanyard 200 may be dipped in a soft, pliable rubber material 204 that finishes or crimps the ends of the lanyard, and also provides stability to the lanyard ends. The free ends 202 may also act as stoppers, preventing the friction/slide device or other attachments from sliding off of the free ends of the lanyard. As a safety feature, these coated free ends 204 will pull through the friction/slide device under one pound or more of force in an emergency breakaway situation. For example, if the lanyard 200 became entangled in machinery while being worn by a person, one pound of pressure would be sufficient to pull the lanyard 200 free and to prevent the injury or possible strangulation of the wearer.

Turning to FIG. 3c, another exemplary embodiment of the lanyard 200 may include end clips 400. The end clip 400 may be formed as a single piece or may be constructed of two pieces with snap fittings. The end clip 400 acts as a stabilizing device for the lanyard 200, and also enables a safety breakaway mechanism. The end clip 400 depicted in FIG. 3c includes an outer surface defining a circular bore, but, as those skilled in the art will appreciate, the bore may be shaped to accommodate the shape of the lanyard 200, such as, but not limited to, a flat web lanyard configuration. FIG. 3e shows a cutaway view of end clip 400 and the optional tapered lanyard end 401 which operates similarly to other previously described safety breakaway features. The tapered end 401 is depicted here as conical, but any shape of taper may be suitable so long as the cross-sectional area of the lanyard 200 decreases substantially near its end and then returns to normal size at its end. The effect of this feature is to reduce the force necessary to implement the breakaway feature during an emergency. As with the previous embodiment, the free ends 202 may be coated with polymeric material to prevent fraying, although the coating in this embodiment should be relatively thin.

Another exemplary embodiment utilizes an end clip configuration 400 as illustrated in FIGS. 4a-4c. As shown in FIG. 4a, the end clip configuration 400 comprises female member 402 and male member 403. According to one embodiment, the female member 402 includes at least one, and preferably two openings 404 configured to receive protrusions 405 in locking engagement. As shown in FIGS. 4a-4c, the end clip 400 includes two openings 404.

The members 402, 403 include semicircular depressions 406, which form circular passages when the members are joined, to accommodate round lanyards or any lanyard that will fit within the passages. In an alternate embodiment, the members 402, 403 may have rectangular depressions 407 to accommodate rectangular web lanyards in the same manner. The members 402, 403 are depicted in FIGS. 4a-c in an elliptical shape but may be round, rectangular or polygonal.

Clip member 409, shown in FIG. 4b, may be placed on the outer surface of either member 402 or member 403 but is shown if FIG. 4a-c in an elliptical shape, but may be round, rectangular or polygonal.

The clip member 409 may be placed on the outer surface of either the female member 402 or the male member 403, as shown in FIGS. 4a-c. The clip member 409 comprises a rectangular tab biased to rest against the outer surface of member 403. The bias of the clip member 409 may be accomplished by the curvature of the tab as shown in FIG. 4a-c. Alternatively, the bias may be accomplished by a hinge mechanism, spring mechanism, or any other biasing means known to those skilled in the art.

In use, the clip member 409 secures the dangling ends of the lanyard 200 to the clothing of the wearer. Accordingly, the risk of the lanyard 200 being caught in machinery or interfering with the activity of the wearer may be minimized. This embodiment can also employ a tapered lanyard configuration, or rubber-dipped ends as described above.

In the exemplary embodiment illustrated in FIGS. 5a-5i, the slideway body 500 is configured to engage a hook-type device, such as a “J-hook” for a name tag. As shown in FIG. 5a, the slideway 201 operates as previously described for receiving the lanyard 200. Referring to FIG. 5c, loop 501 protrudes from the slideway body 500 and defines opening 502, which is depicted here as circular but may be triangular, rectangular or polygonal.

In use, a user would attach tools, implements, name tags, or the like configured with attachment devices such as clips, hooks, or the like by inserting the attachment device through opening 502. Such an arrangement allows a user to attach and detach articles without removing the lanyard from the user’s body.

FIGS. 6a-6d illustrate another exemplary embodiment that allows a detachable container 600 to be releasably connected with a lanyard by using a snap-fitting tab 601 similar to a belt buckle. As depicted in FIG. 6b, the slideway 201 operates as previously discussed. The snap-fitting tab 601 protrudes from horizontal surface 602, and may be substantially rectangular or polygonal. The snap-fitting tab 601 includes lip 604, which may be integral to snap-fitting tab 601 as shown in FIG. 6d. The snap-fitting tab 601 as shown in FIG. 6c forming a piece bonded to snap-fitting tab 601 as shown in FIG. 6b. The snap-fitting tab 601 functions as a male member that lockingly engages a female receptor (not shown) incorporated into any of the previously and subsequently disclosed containers or attachments. This exemplary embodiment allows articles of any shape that do not have hook-type attachments to be placed into a container that can be removed without removing the entire lanyard from the wearer’s neck.

FIG. 7 depicts another exemplary embodiment that is configured to support a lighter 701. FIG. 7b depicts lighter 701 and end plug 700. While FIG. 7b shows the end plug 700 as having a substantially flat surface 702 for secure coupling to lighter 701 by pressure, an adhesive or any other suitable fastening method known in the art, or any previously disclosed embodiment such as the buckle of FIG. 6 may be used in this embodiment.

FIG. 8 illustrates an exemplary slideway mechanism 700 that can be used with the lighter embodiment of FIG. 7. Referring to FIGS. 8a-8b, the slideway 100 (as best shown in FIG. 8c) operates as previously described. FIG. 8g shows the surface 702 in greater detail with lip 800 being configured for a semi-permanent connection with a lighter.

While the present invention has been described with regards to particular embodiments, it is recognized that additional variations of the exemplary embodiments may be devised without departing from the inventive concept.
What is claimed is:

1. A lanyard device comprising:
   a flexible cord having a first end and a second end, the first end includes a first protuberance and the second end includes a second protuberance, wherein the first protuberance and the second protuberance are selectively removable from the first end and the second end of the flexible cord when a predetermined force is applied to the first protuberance and the second protuberance; and
   a means for coupling an object to the flexible cord, the coupling means comprising a J-shaped bore through which the flexible cord is insertable.

2. The lanyard device of claim 1 wherein the coupling means comprises a main bore sized to engage the object by a friction fit.

3. The lanyard device of claim 1 wherein the coupling means comprises a loop capable of engaging the object.

4. The lanyard device of claim 1 wherein the coupling means comprises a snap fitting capable of engaging the object.

5. The lanyard device of claim 1 wherein the coupling means comprises a substantially flat base that is sized to engage a base of a cigarette lighter.

6. The lanyard device of claim 1 wherein the first protuberance the second protuberance are made of a resilient material.

7. The lanyard device of claim 1 wherein the first protuberance and the second protuberance comprise a body defining at least one bore sized to engage the first end of the flexible cord, the second end of the flexible cord, or both the first end and the second end of the flexible cord.

8. The lanyard device of claim 7 wherein the at least one bore includes an annular ridge capable of engaging an outer surface of the first end or the second end of the flexible cord.

9. The lanyard device of claim 7 wherein the body further comprises a clip member coupled to the body.

10. A lanyard device comprising:
    a flexible cord having a first end and a second end, wherein the first end and the second end include a means for disengaging the first end and the second end of the flexible cord when a predetermined force is applied to the means; and
    a coupling means for coupling an object to the flexible cord, the coupling means comprising a J-shaped bore.

11. The lanyard device of claim 10 wherein the disengaging means comprises a first protuberance coupled to the first end of the flexible cord and a second protuberance coupled to the second end of the flexible cord.

12. The lanyard device of claim 10 wherein the disengaging means comprises a body defining at least one bore sized to engage the first end of the flexible cord, the second end of the flexible cord, or both the first end and the second end of the flexible cord.

13. The lanyard device of claim 12 wherein the body further comprises a clip member coupled and biased with the body.

14. The lanyard device of claim 12 wherein the body further comprises a clip member coupled and biased with the body.

15. The lanyard device of claim 10 wherein the coupling means comprises a main bore sized to engage the object by a friction fit.

16. The lanyard device of claim 10 wherein the coupling means comprises a loop capable of engaging the object.

17. The lanyard device of claim 10 wherein the coupling means comprises a snap fitting capable of mating with a corresponding fitting engaged to the object.

18. The lanyard device of claim 10 wherein the coupling means comprises a substantially flat base that is sized to engage a base of a cigarette lighter.

19. A lanyard device comprising:
    a flexible cord forming a loop and having a first end and a second end, the first end includes a first protuberance and the second end includes a second protuberance, wherein the first protuberance and the second protuberance are selectively removable from the first end and the second end of the flexible cord when a predetermined force is applied to the first protuberance and the second protuberance; and
    a body slidably engaged with the flexible cord through a J-shaped bore, the body having a means for coupling an object to the body.

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