A bottle docking device, to attach a bottle to an object, such as a garment or a carried personal possession. The bottle docking device includes a base plate, a clasp assembly to grip a bottle, a hinge assembly to pivotably connect the clasp assembly to a distal side of the base plate, and a clip mechanism operatively connected to a proximal side of the base plate, to attach the bottle docking device to an object. A method of attaching a bottle to an object, including the steps of sliding the clip of a bottle docking device over the object, attaching the bottle docking device to the object, pivoting a bottle clasp of the bottle docking device from a resting position against a base plate of the bottle docking device to an open position perpendicular to the base plate, and inserting a bottle into the bottle clasp. A docking device to attach an item to an object, including a base plate, an attachment device for attaching the item, a hinge assembly to pivotably connect the attachment device to a distal side of the base plate, and a clip mechanism operatively connected to a proximal side of the base plate, to attach the docking device to an object.
BOTTLE DOCKING DEVICE

BACKGROUND OF THE INVENTION

[0001] Technical Field

The present invention relates to a bottle carrier. More particularly, this invention relates to a bottle carrier attachable to a person's belt, garment waist, or to a carried or worn object such as a carrying bag.

[0002] Background Art

Plastic beverage bottles, such as water bottles and soft drink bottles, are often carried on one's person. Bottles are personally carried in many situations, such as hiking, gardening, and traveling from a vehicle to a recreational area. Bottles can be carried in handbags, backpacks, and similar containers, but people unequipped with these items are faced with the tiresome task of continually grasping a bottle by hand. A hands-free bottle carrying device is disclosed by Cacciolino, et al. (U.S. Patent Application Publication US 2013/0008958, 2013). It includes a holder into which the cap of a beverage bottle is inserted. A cord loop running through the holder permits a bottle to hang from a waist or belt loop. The device disclosed by Cacciolino, et al. is inconvenient and unsafe, as a user must continuously monitor a bottle that swings uncontrollably from a loop of cord. Another device for carrying bottles is disclosed by Dorfman, et al. (Canadian Patent Application Publication CA2093993, 1993). It includes a pouch in which a bottle is secured with elastic bands, and a shoulder sling attachable to the pouch. The device disclosed by Dorfman, et al. is also inconvenient and unsafe, since the bottle not only swings freely from the sling, but is incompletely secured in a pouch.

[0005] There is a need for a bottle docking device that secures a beverage bottle to an article of clothing, such as a user's belt, or to the waist of a pair of pants or a skirt, or to a carried or worn object of a user, such as the strap of a carrying bag.

SUMMARY OF THE INVENTION

The present invention provides a bottle docking device, including a rigid base plate, a clasp assembly to grip a bottle, a hinge assembly to pivotally connect the clasp assembly to a distal side of the base plate, and a clip mechanism operatively connected to a proximal side of the base plate, to attach the bottle docking device to an object. The present invention further provides a method of attaching a bottle to an item of clothing or other object, including the steps of sliding the clip of a bottle docking device over an item of clothing or other object, attaching the bottle docking device to the item of clothing or other object, pivoting a bottle clasp of the bottle docking device from a resting position against a base plate of the bottle docking device to an open position perpendicular to the base plate, and inserting a bottle into the bottle clasp. The present invention also provides a docking device to attach an item to an object, including a base plate, attachment means for attaching an item, a hinge assembly to pivotally connect the attachment means to a distal side of the base plate, and a clip mechanism operatively connected to a proximal side of the base plate, to attach the docking device to an object.

DESCRIPTION OF THE DRAWINGS

Other advantages of the present invention are readily appreciated as the same becomes better understood by reference to the following detailed description when considered in connection with the accompanying drawings wherein:

[0008] FIG. 1A is a back perspective view of a bottle docking device according to the present invention;
[0009] FIG. 1B is a front perspective view of the bottle docking device;
[0010] FIG. 1C is an oblique perspective view of an exemplary bottle clasp assembly of the bottle docking device;
[0011] FIG. 2A is a bottom plan view of another exemplary bottle clasp assembly;
[0012] FIG. 2B is a side plan view of the bottle clasp assembly;
[0013] FIG. 2C is a bottom oblique perspective view of the bottle clasp assembly (right panel);
[0014] FIG. 2D is an oblique perspective view of a bottle docking device engaged with a bottle;
[0015] FIG. 3A is a bottom view photograph of a bottle clasp assembly including a solid core bottle clasp and a solid core hinge barrel;
[0016] FIG. 3B is a bottom view photograph of a bottle clasp assembly including a hollow clasp core;
[0017] FIG. 3C is a top view photograph of a bottle clasp assembly including a hollow clasp core and a hollow hinge barrel core, and
[0018] FIG. 3D is a bottom view photograph of a bottle clasp assembly including a hollow clasp core and a hollow hinge barrel core.

DETAILED DESCRIPTION OF THE INVENTION

A bottle docking device 10 according to the present invention, as shown in FIGS. 1A-1C, includes a rigid base plate 12 operatively connected on a distal side 16 to a clasp assembly 14 for gripping a bottled beverage, and additionally operatively connected on a proximal side 20 to a clip mechanism 19 for attaching the docking device 10 to an item of clothing or other object. Attachment to an item of clothing typically entails attaching the clip mechanism to a thin, clip-pable portion of a garment, such as a waistband, a pocket, a shoulder strap, and the like. Other objects to which the bottle docking device 10 can be attached include, but are not limited to, tote bags, suitcases golf bags, computer bags, and lunch containers.

The base plate 12 is generally flat and thin and can be in any shape that can support the clasp assembly 14 and the clip mechanism 19. Preferably, the base plate 12 is in the shape of a bottle and can include logos and designs. The base plate 12 can also include a biner hole 22 for receiving a carabiner clip for additional clipping functionality (such as to a handbag, purse, or backpack).

The clasp assembly 14 is pivotally attached by a hinge assembly 25 to the distal side 16 of the base plate 12. The clasp assembly 14 includes a bottle clasp 26 to grip the neck of a bottle. Preferably, the clasp assembly 14 also includes an extension member 30 to attach the bottle clasp 26 to the hinge assembly 25, and to distance the bottle clasp 26 from the base plate 12. Alternatively, the bottle clasp 26 can be attached directly to the hinge assembly 25.

The bottle clasp 26 is generally C-shaped. It includes two opposing arms 35 defining a clasp space 27 therebetwen, and an open end 52 to admit a bottle into the clasp space 27. Preferably, the bottle clasp 26 grips the neck of a bottle, with the neck of the bottle enclosed within the clasp space 27 and the rim of the bottle resting on an upper
surface 54 of the bottle clasp 26, as shown in FIG. 2C. Less preferably, the bottle clasp 26 grasps the neck of a bottle (not shown).

Preferably, the bottle clasp 26 further includes at least two bump-like projections 32 that extend from an inner circumference 34 of the bottle clasp 26 into the clasp space 27, as best shown in FIG. 2A. The projections 32 stabilize the necks of bottles retained within the bottle clasp 26. The projections 32 can be placed at any appropriate locations around the inner diameter 34, but preferably towards the outer end of each arm 35. The projections 32 permit the accommodation of a range of bottle sizes and shapes, including bottles whose necks are more slender than their rims. The projections 32 also aid in preventing breakage of the bottle clasp 26 when using different sized bottles.

The bottle clasp 26 can be of any diameter that fits the majority of bottled beverages on the market. An exemplary bottle clasp 26 is approximately one inch in diameter at its widest point.

The bottle clasp 26 can have a solid core, that is, a solid cross section, as shown in FIG. 3A. Preferably the bottle clasp 26 includes a hollow clasp core 36 that advantageously allows for better plastic flow during production and thus can be fabricated with less plastic and at lower cost than a solid core embodiment. The hollow clasp core 36 also increases the mechanical strength of the bottle clasp 26, thereby preventing breakage under load. The hollow clasp core 36 can be completely enclosed within the material of the bottle clasp 26 (not shown), but preferably it is partially enclosed. An exemplary partially enclosed hollow clasp core 36 is defined by two clasp flanges 56 extending downward from the bottle clasp 26, as shown in FIGS. 2A and 3C.

The bottle clasp 26 joins the extension member 30 at a point opposite the open end 52 of the bottle clasp 26. The extension member 30 can be a solid elongated body interconnecting the bottle clasp 26 and the hinge barrel 28, but preferably it is a fork 30 including at least two prongs 58. The point at which each prong 58 joins with the bottle clasp 26 can be broadened into a strengthened point 62 to increase breakage resistance, as best shown in FIG. 3D. Alternatively, the extension member 30 can include any number or pattern of prongs, struts, mesh, or other supporting structure that can effectively connect the bottle clasp 26 with the hinge assembly 25.

The hinge assembly 25, in the preferred embodiment, includes the generally cylindrical hinge barrel 28 rotatably engaged in at least two cup shaped retention clips 24, which project distally from the distal side 16 of the base plate 12. The shapes and diameters of the hinge barrel 28 and retention clips 24 are such that the hinge barrel 28 is gripped securedly within the retention clips 24 while still being rotatable within the retention clips 24. Alternatively, any hinge assembly known in the art can connect the bottle clasp 26 to the base plate 12.

Preferably, the hinge barrel 28 also includes a hinge stop 38, to limit the rotation of the clasp assembly to a range of from zero degrees to ninety degrees, relative to the distal side 16 of the base plate 12. The ninety degree position is defined as the open position, wherein the arms 35 of the bottle clasp 26 are perpendicular to the base plate 12, and ready to receive a bottle, as shown in FIG. 2D. The zero degree position of the bottle clasp 26, with the upper surface 55 of the bottle clasp 26 in contact with the distal side 16 of the base plate 12, is defined as the folded position (not shown). In other words, the hinge stop 38 allows the hinge barrel 28 to rotate in the retention clips 24 through a 90 degree arc, from the folded position against the base plate 12 to the open position perpendicular to the base plate 12. The hinge stop 38 is preferably a flattened region of the hinge barrel 28, located generally opposite the bottle clasp 26, and situated so as to contact the base plate 12 when the bottle clasp 26 is in its open position. Alternatively, the hinge stop 38 can include a prong (not shown) or any projection that arrests the rotation of the bottle clasp 26 at its open position. The hinge barrel 28 need not be integrated with the hinge stop 38. Instead, the hinge barrel 28 can be fabricated as two separate cylindrical barrels interconnected by the hinge stop 38 (not shown), with the interconnection accomplished by adhesive joining, melt joining, or any other interconnection means known in the art.

The hinge barrel 28 can have a solid core, that is, a solid cross section, as shown in FIG. 3A. More preferably, the hinge barrel 28 includes a hollow barrel core 40. The inclusion of a hollow barrel core 40 allows for better plastic flow during production of the bottle docking device 10, reduces the amount of plastic material and cost of production, and offers a more consistent barrel shape for ease of assembly and operation. The hollow barrel core 40 also increases the resistance of the hinge barrel 28 to breakage during use. The hollow barrel core 40 can be completely enclosed within the material of the hinge barrel 28 (not shown), but preferably it is partially enclosed. An exemplary partially enclosed hollow barrel core 40 is defined by two barrel flanges 60 extending downward from the hinge barrel 28, as shown in FIGS. 2A and 3C.

The clip mechanism 18, situated on a proximal side 20 of the base plate 12 includes a clip 19 that is preferably elongated and both narrower and shorter that the base plate 12. The clip mechanism 18 also includes a clip connector 42 to operatively attach the clip 19 to the base plate 12. The clip 19 has a free end 50, and is pivotable about the base clip connector 42 against a resistant force that tends to keep the free end 50 of the clip 19 biased toward the proximal side 20 of the base plate 12. That is, the resistant force tends to keep the free end 50 of the clip 19 in a closed condition in which it grips the item to which the bottle docking device 10 is secured.

The resistant force is preferably provided by a resilient but flexible material of which the clip mechanism 18 is constructed. Alternatively, resistant force can be provided by a metallic or plastic spring (not shown) operatively interconnecting the clip 19 to either the base clip connector 42 or the base plate 12. The clip mechanism 18 preferably includes a belt lock 48 or a similar distally projecting flange (not shown) situated at the free end 50 of the clip 19, to aid in securely gripping the item.

The clip mechanism 19 also preferably includes a finger grip 44 on a top portion 46 of the clip 19, opposite the free end 50 of the clip 19. The finger grip 44 is a lever depressible to pivot the clip mechanism 19 against the resistant force to open the free end 50 of the clip 50, that is, to raise the free end 50 away from the proximal side 20 of the base plate 12. The finger grip 44 facilitates the toggling of the clip 19 between open and closed conditions, and thereby facilitates the attachment of the bottle docking device 10 to an article of clothing or other object, as well as the removal of the bottle docking device 10 from the article of clothing or other object.
The combination of the resilient clip mechanism 18 and a rigid base plate 12, with the clip mechanism biased against the rigid base plate 12, provides a more stable and reliable anchorage upon a garment or carried object than any personal bottle holder previously known in the art. The attachment of the clasp assembly 14 to the rigid base plate 12 provides additional stability to a carried bottle, reducing the chance that it can be jarred out of the bottle clasp 26 by a sudden shock or acceleration.

Each component of the bottle docking device 10 can be fabricated of plastic, such as standard polycarbonate plastic. Preferably, either Sabic Lexan—PC,141 R-112 or Samsung SC-1220R (22 melt) Water Clear are used. Less preferably, any other suitable material can be used, including but not limited to a metal such as stainless steel aluminum, or a copper alloy, and wood. The bottle docking device 10 can be made by any manufacturing method known in the art.

The present invention also provides a method of attaching a bottle to an item of clothing or other object, by toggling the clasp assembly 14 of the bottle docker 10 to the open position, attaching the bottle docking device 10 to an item with the clip mechanism 18, and inserting a bottle into the bottle clasp 26.

More specifically, the clasp assembly 14 is moved from the folded position to the open position by rotating the hinge barrel through the retention clips and stopping the clasp assembly with the hinge stop at the open position. The user depresses the finger grip to open the clip mechanism and slide it or over an item to be clipped at a desired position, such as, but not limited to, pockets, purses, bags, shorts, skirts, pants, jeans, workout wear, tankini bottoms, golf bags, book bags, or suitcases. Once the finger grip is released, the clip mechanism securely clips the item. A bottle can be inserted in the clasp assembly either before or after clipping on the item.

The bottle docking device 10 need not be clipped directly to an object. A carabiner (not shown) can be inserted through the biner hole 22 and the carabiner can be clipped on any object desired. In this case, the bottle docking device can also be used upside down and the bottle remains secure.

The bottle docking device is readily adapted, with little structural alteration, for securing any item to an article of clothing or to any object carried or worn by a user. Items other than bottles can be secured by substituting for the bottle clasp 26 any suitable attachment means for attaching an object. Exemplary attachment means include but are not limited to a C-clamp, a ring clamp, a spring-loaded clamp, a hook, and a carabiner clip (not shown).

The invention has been described in an illustrative manner, and it is to be understood that the terminology, which has been used is intended to be in the nature of words of description rather than of limitation.

Obviously, many modifications and variations of the present invention are possible in light of the above teachings. It is, therefore, to be understood that within the scope of the appended claims, the invention can be practiced otherwise than as specifically described.

The invention claimed is:

1. A bottle docking device, including: a rigid base plate, a clasp assembly to grip a bottle, a hinge assembly to pivotably connect said clasp assembly to a distal side of said base plate, and a clip mechanism operatively connected to a proximal side of said base plate, to attach said bottle docking device to an object.

2. The bottle docking device of claim 1, wherein said clasp assembly includes a bottle clasp having two opposing arms defining a clasp space therebetween to accommodate a neck of a bottle.

3. The bottle docking device of claim 1, wherein said bottle clasp additionally includes a hollow clasp core.

4. The bottle docking device of claim 2, wherein said bottle clasp additionally including at least one bump-like projection extending from each of said opposing arms into said clasp space, to stabilize the neck of the bottle and to prevent breakage of said bottle clasp.

5. The bottle docking device of claim 2, wherein said clasp assembly additionally includes an extension member interconnecting said clasp mechanism with said hinge assembly.

6. The bottle docking device of claim 1, wherein said hinge assembly includes a cylindrical hinge barrel connected to said extension member, and at least two retention clips projecting from said distal side of said base plate, to rotateably retain said hinge barrel and to permit said clasp assembly to pivot relative to said base plate.

7. The bottle docking device of claim 6, wherein said hinge barrel additionally includes a hinge stop to limit the pivoting of said clasp mechanism to an arc of ninety degrees, from an open position to a folded position.

8. The bottle docking device of claim 6, wherein said hinge barrel additionally includes a hollow barrel core.

9. The bottle docking device of claim 1, wherein said clasp mechanism includes a clip operatively connected to said proximal side of said base plate by a clip connector, said clip being pivotable about said clip connector against a resistant force tending to bias a free end of said clip into a closed condition.

10. The bottle docking device of claim 9, wherein said clip additionally includes a finger grip opposite said free end of said clip, said finger grip being depressible to pivot said clip against the resistant force, to toggle said free end of said clip between said closed condition and an open condition.

11. The bottle docking device of claim 9, wherein said free end of said clip additionally includes a distally projecting flange to aid in gripping an object.

12. The bottle docking device of claim 1, wherein said base plate additionally defines a biner hole to receive a carabiner clip to attach said bottle docking device to an object.

13. A method of attaching a bottle to a garment or other object, including the steps of:

   a. sliding the clip of a bottle docking device over a garment or other object;
   b. attaching the bottle docking device to the garment or other object;
   c. pivoting a bottle clasp of the bottle docking device from a resting position against a base plate of the bottle docking device to an open position perpendicular to the base plate;
   d. inserting a bottle into the bottle clasp; and
   e. attaching the bottle to the garment or other object.

14. A docking device to attach an item to an object, including: a base plate, attachment means for attaching an item, a hinge assembly to pivotably connect said attachment means to a distal side of said base plate, and a clip mechanism operatively connected to a proximal side of said base plate, to attach said docking device to an object.
15. The docking device of claim 15, wherein said attachment means includes a C-clamp, a ring clamp, a spring-loaded clamp, a hook, and a carabiner clip.

* * * * *