An umbrella and umbrella holder combination is provided comprising an umbrella having a canopy, a shaft connected to the canopy, and a handle connected to the shaft, the handle having a first connector portion; and an umbrella holder having a container adapted to receiving the handle, a second connector portion adapted to cooperate with the first connector portion when the handle is received in the container to prevent rotation of the handle relative to the container, and a clamp assembly adapted to connecting the umbrella holder to a frame member on a golf cart. The combination provides a directional locking fit between the umbrella handle and the umbrella holder so that the umbrella canopy cannot rotate relative to the golf cart, and this is advantageous especially when using an asymmetrical umbrella since the combination allows the umbrella canopy to being maintained in a desired orientation.
UMBRELLA HOLDER AND UMBRELLA WITH COMPLEMENTARY HANDLE

BACKGROUND

[0001] 1. Field of the Invention
[0002] The present invention relates to umbrellas and umbrella holders and, more particularly, to umbrellas and umbrella holders that cooperate as an umbrella holding system for use with golf carts or the like.
[0003] 2. Description of the Prior Art
[0004] Golf carts equipped with canopies do not protect the occupants from sun and rain when as they leave the shelter of the canopy to hit a golf ball. When leaving the protection of the canopy, golfers often utilize umbrellas for protection against the sun and rain; this is the ease whether they are standing next to the cart, or they are on the greens, tee boxes or other areas on the golf course where carts are not allowed. When riding in the golf cart in between shots, the golfer must either close the umbrella for storage in the cart or hold the open umbrella manually outside of the golf cart.
[0005] U.S. Pat. No. 5,762,308 to Bryan describes a holder adapted to receive a handle of an umbrella, which is secured to a frame member of a golf cart by a clamp. This design is limited in that it does not allow angle adjustments for golf cart frames that are not vertical. Most if not all recent golf cart designs include angled frame members at the front of the cart, and a variety of shaped and angled frame members at the back of the cart. Should the Bryan device be attached to the angled cart frame member at the front of the cart, the umbrella would be disadvantageously positioned so as catch the wind at an angle that could easily damage the umbrella, the holder, the golf cart or possibly the golfers. If mounted on the rear frame members, the device does not lend itself to the use of two golf umbrellas on a cart, which is desirable since most often there are two golfers per cart, each requiring his or her own umbrella; two umbrellas in these holders will interfere with each other in the constant loading and removal between shots.

With the variety of differently shaped and sized rear frame members that occur among the different makes and models of golf carts, it may not even be possible to mount the prior art device onto a particular golf cart. As well, many modern golf carts are equipped with a folding cover attached to the back of the carts, which is used to protect the golf clubs from the rain. When such cover is attached to back of the carts, the prior art device cannot be used since the folding cover will interfere with the device, and vice versa.

Accordingly, there is a need for an umbrella holder and umbrella combination that enables one umbrella to be connected to each side of a golf cart in a manner that each umbrella provides cover from the elements to the occupant during embarkation and disembarkation of the cart on that side, that makes it easy for the golfer to remove the umbrella from and replace it into the holder as needed, and that maintains the umbrella in orientation that enables the umbrella to be open while the golf cart is moving at its normal operating speed.

SUMMARY OF THE INVENTION

[0007] Accordingly, the present invention provides an umbrella holder and umbrella with complementary handle, which work together to provide secure, convenient access to the umbrella while mounted on a golf cart. The present invention enables one umbrella to be connected to each side of a golf cart in a manner that each provides cover from the elements to the occupant during embarkation and disembarkation of the cart on that side, that makes it easy for the golfer to remove the umbrella from and replace it into the holder as needed by the golfer, and that maintains the umbrella in orientation that enables the umbrella to be open while the golf cart is moving at its normal operating speed.

[0008] An umbrella and umbrella holder combination comprising: an umbrella having a canopy, a shaft connected to the canopy, and a handle connected to the shaft, the handle having a first connector portion; and an umbrella holder having a container adapted to receiving the handle; a second connector portion adapted to cooperate with the first connector portion when the handle is received in the container to prevent rotation of the handle relative to the container; and a clamp assembly adapted to connecting the umbrella holder to a frame member on a golf cart.

[0009] In some embodiments, the container includes an opening at each end adapted for receiving the handle, and each of the openings includes a second connector portion thereon to enable the umbrella holder to being mounted on either side of the golf cart by orienting the container such that the opening which is oriented to face upward for receiving the handle of the umbrella therein is the opening that allows for the clamp assembly to be connected to the desired side of the golf cart.

[0010] In some embodiments, the first connector portion includes a lower portion that defines a first shape, and the second connector portion includes an upper portion that defines a second shape that is complementary to the first shape such that the upper portion of the second connector portion is able to receive the lower portion of the first connector portion when the handle is received in the container to cooperate with the first connector portion to prevent rotation of the handle relative to the container.

[0011] In some embodiments, the container defines an opening and the second connector portion is adjacent the opening.

[0012] In some embodiments, the upper portion of the second connector portion defines a slot, and the lower portion of the first connector portion defines a tab adapted for a close fit within the slot.

[0013] In some embodiments, the slot includes sloped vertical walls that converge towards the bottom of the slot for guiding the tab into the slot as the handle of the umbrella is inserted into the container of the umbrella holder.

[0014] In some embodiments, the canopy is an asymmetric canopy defining a longitudinal axis, and the first connector portion and the second connector portion are adapted to cooperate in manner that maintains the longitudinal axis in a generally parallel orientation to the direction of travel of a golf cart on which the umbrella holder is mounted.

[0015] In some embodiments, the umbrella holder further includes a restrainable swivel connector between the clamp assembly and the container for enabling the umbrella holder to be collapsed for reducing its lateral profile and thereby reduce the lateral space taken up by the golf cart without having to remove the umbrella holder from the golf cart.

[0016] The combination provides a directional locking fit between the umbrella handle and the umbrella holder so that the umbrella canopy cannot rotate relative to the golf cart, and this is advantageous especially when using an asymmetrical umbrella since the combination allows the umbrella canopy to being maintained in a desired orientation.
In some embodiments, the umbrella holder of the present invention has an open-ended, hollow tube designed to receive the handle of the umbrella using a notched shape in the top of the holder (lock), and a matching shape on the top of the grip (key). The lock and key design ensure the umbrella, whether it be round in shape, or asymmetrical, will be held firmly in the desired direction, pointing forward of the cart. The holder tube is affixed to the frame mount and allows angle adjustments of the tube in relation to the frame mount, making it universal for either side of the cart and variable cart frame angles. The frame mount is easily installed and removed from the cart frame through the use of a two-piece assembly clamping around the frame with a manual turn handle.

The present invention provides an umbrella and umbrella holder which attach to the golf cart and which enables the open or closed umbrella to be held therein securely. The present invention also provides convenient access to the umbrella for the golfers directly from inside the cart, without being exposed to the rain or sun.

**BRIEF DESCRIPTION OF THE DRAWINGS**

**[0019]** FIG. 1 is a front view of a golf cart having an umbrella and umbrella holder of the present invention attached to each side of the golf cart;

**[0020]** FIG. 2 is a side view of the golf cart having an umbrella and umbrella holder of the present invention attached to the left side of the golf cart;

**[0021]** FIG. 3 is an exploded view of an umbrella handle and an umbrella holder in accordance with an embodiment of the present invention;

**[0022]** FIG. 4 is a perspective view of an umbrella handle and an umbrella holder in accordance with the embodiment in FIG. 3;

**[0023]** FIG. 5 is a perspective view of an umbrella holder with the umbrella being inserted into the holder;

**[0024]** FIG. 6 is a perspective view of an umbrella holder with the umbrella being inserted into the holder, where the umbrella has been rotated to slide into the umbrella holder;

**[0025]** FIG. 7 is a perspective view of an umbrella holder with the umbrella completely inserted into the holder;

**[0026]** FIG. 8 is a perspective view of an umbrella holder in open position allowing the holder clamp to slide over the golf cart frame, whilst still retaining the umbrella holder tube securely within the assembly;

**[0027]** FIG. 9 is a perspective view of the umbrella holder attached to the left side (driver side) of the golf cart;

**[0028]** FIG. 10 is perspective view of the umbrella holder with an umbrella inserted into the holder;

**[0029]** FIG. 11 is a perspective view of an embodiment of the present invention having a swivel connector; and

**[0030]** FIG. 12 is a perspective view of an embodiment in FIG. 11 shown in a collapsed or folded configuration.

**DETAILED DESCRIPTION OF THE PREFERRED EMBODIMENTS**

For the purposes of promoting an understanding of the principles of the invention, reference will now be made to the exemplary embodiments illustrated in the drawings, and specific language will be used to describe the same. It will nevertheless be understood that no limitation of the scope of the invention is thereby intended. Any alterations and further modifications of the inventive features illustrated herein, and any additional applications of the principles of the invention as illustrated herein, which would occur to one skilled in the relevant art and having possession of this disclosure, are to be considered within the scope of the invention.

With reference to FIGS. 1 and 2, a typical modern golf cart includes a fixed canopy 4 suspended over a seating area by front and rear frame members 6 and 8 respectively. Typically, the front frame member 6 tends to be standard on most makes and models of golf carts, comprising of straight, 1 inch square tubes; whereas, the rear frame members 8 typically vary between makes and models of golf carts in both size and dimension of the tubing, as well as in the shaping of the frame members.

Attached to the front frame members 6 is an umbrella holder 10 in accordance with the present invention. The umbrella holder 10 is adapted to hold an umbrella 12 having a deployable canopy 13, a shaft 14 and an umbrella handle 16 that is adapted for a directionally locking fit with the umbrella holder 10.

Referring to FIGS. 3-6, umbrella holder 10 includes a holder tube or container 20 that is preferably a hollow cylinder or sleeve having inner dimensions sufficient to receive umbrella handle 16. The container 20 has first and second open ends 22 and 24, each of which includes a circumferential lip portion 26 in which is defined a slot 28. The circumferential lip portion 26 and the slot 28 provide a connector portion on the container 20, and the circumferential lip portion 26 provides an upper portion that defines a shape. Both open ends 22 and 24 have a slot 28 and both slots face in the same direction. This enables the umbrella holder 10 to be used on either side of the golf cart by simply positioning the container 10 so that either the end 22 or the end 24 points upwards, whichever results in the slot 28 facing in the desired direction as is explained below. The container 20 is connected to a clamp assembly 30 by a hexagonal shaped arm 32 that is divided into proximal 31 and distal 33 portions by a disc shaped circumferential flange 34.

The clamp assembly 30 comprises first and second halves 40 and 42 that are nearly mirror images of each other, and a threaded screw 44 that connects the first half 40 to the second half 42, and by which the tightening or loosening of the clamp assembly 30 is achieved. The first and second halves 40 and 42 each include a transverse channel or seat 54, a flange 55, a hexagonal female indent 46 and a circular female indent 47 that bisects the hexagonal female indent. The hexagonal female indents 46 are complementary to the hexagonal arm 34, and the location of the circular female indent 47 along the hexagonal female indent 46 corresponds to the location of the circumferential flange 34 along the hexagonal arm 32. The second half 42 has a threaded hole 52 on a protrusion 53 that is complementary to the threads on the screw 44. The first half 40 includes a hole 50 that aligns with the threaded hole 52 on the second half 42. The channel 54 in both first and second halves 40 and 42 in combination with flange 55 on both halves define a space which is adapted to fit around a front frame member 6 on a golf cart. As a screw 44 is tightened it drives the two halves 40 and 42 together, and with continued tightening of the screw 44, the flange portions 55 gradually extend towards each other to enclose frame member 6. Simultaneously, this action also clamps the female hexagonal indent 46 and the female disc shaped indent 47 on members 40 and 42 around hexagonal arm 32 and circumferential flange 34, thereby locking the container 20 in a desired position.
Presently, many if not most of the golf carts in use have front frame members that are 1 inch square in cross-section, hence the clamp assembly of the illustrated embodiment is shaped and dimensioned to fit around such frame members. It will be apparent to a person skilled in the art that the clamp assembly 30 may comprised of parts that are adapted to fit around other shapes and sizes of frame members.

The female indentations 46 and 47 in parts 40 and 42 are shaped to match with the hexagonal arm 32 and circumferential flange 34 on the container 20. The design of these matching shapes allow for different mounting angles of the container 20 in relation to cart frame member 6 on either right or left side of cart 2, making umbrella holder 10 usable on both sides of cart 2, as illustrated in FIGS. 1, 7 and 9.

The umbrella handle 16 comprises an elongated body 80 having a shaft end 82 and a terminal end 84. The terminal end 84 and the elongate body 80 are dimensioned to fit into container 20 such that the handle 16 may be placed into and removed from the container 20 with relative ease, but not so loosely that the handle 16 wobbles significantly within the container.

The shaft end 82 has a laterally projecting tab 86 that is dimensioned to fit closely into slot 28 to provide a stop for limiting the travel of the handle 16 into the container 20 and a directional locking fit between the handle 16 and the container 20 so that the handle cannot rotate relative to the container. Hence the laterally projecting tab 86 provides a connector portion, and this connector portion and the connector portion on the container are adapted to cooperate when the handle is received in the container to prevent rotation of the handle relative to the container. The lower portion of the tab defines a shape which is complementary with the shape defined by the circumferential lip portion 26.

The slot 28 in the illustrated embodiment includes sloped vertical walls that converge towards the bottom of the slot for guiding the tab 86 into the slot as the handle of the umbrella is inserted into the container of the umbrella holder.

Preferably the canopy 13 of the umbrella 12 is asymmetric and includes a semi-spherical canopy portion 17 and an elongated canopy portion 19, and thereby the asymmetric canopy defines a longitudinal axis. The tab 86 on handle 16 is preferably aligned with the elongated canopy portion 19 so that the tab and the elongated canopy portion point in the same direction. Accordingly, when the handle 16 is located within the container 20 and the tab 86 is seated within the slot 28, the elongated canopy portion points in the direction in which the slot 28 faces.

While the locking fit between the umbrella handle and the umbrella holder described in the illustrated embodiments is achieved by tab 86 and complementary slot 28, it will hereinafter be appreciated that a locking fit between the umbrella handle and the umbrella holder may be achieved by other structures that achieve a non-rotating, releasable connection between the handle and holder.

In preferred embodiments of the umbrella holder 10, the hexagonal shape of the female indents 46 and the complementary hexagonal shape of the arm 32 enables the container 20 to be oriented in 60 degree angle increments to achieve a desired angle relative to the clamp assembly 30 (hence the frame member on which the clamp assembly is mounted) so that the angle at which an umbrella is held relative to the golf cart can be adjusted. For example, the aerodynamic drag on an open umbrella generated by a moving golf cart makes it desirable to angle the canopy 12 of the umbrella forwards to prevent lift on the underside of the canopy.

As well, the slot 28 of the end (22 or 24) of the container 20 is oriented to face toward the rear of the golf cart when that end is facing upward, and since the tab 86 of the handle 16 is oriented with the elongate canopy portion 19, this results in the elongate canopy portion 19 facing towards the rear of the cart.

In use, the clamp assembly 30 is clamped to a frame member of a golf cart 2 by locating the frame member within the space defined by channels 54 between the first and second halves 40 and 42 and simultaneously locating the hexagonal arm 32, with circumferential flange 34, within the space defined by hexagonal female indents 46 and circular female indents 47 in a position that yields a desired angle to the container 20 relative to the golf cart, then tightening the screw 44 to tighten the frame member and the arm 32 between the first and second halves 40 and 42. The slot 28 on the particular end (either 22 or 24) of the container 20 that faces upwards will thereby be facing towards the rear of the golf cart. The umbrella handle 16 of a preferably asymmetric umbrella that is provided with such handle is placed into the container 20 and rotated until the tab 86 aligns with the slot 28. The handle 16 is then pushed further into the container until the tab 86 is located within the slot 28. Since the elongate canopy portion 19 faces the same direction as the tab 86, the umbrella is thereby oriented such that the elongate canopy portion faces towards the rear. This not only provides extended cover from the elements for the occupants of the golf cart as they exit, but also increases the aerodynamic efficiency of the canopy 13 to minimize lifting forces on the underside of the canopy while the golf cart is moving. When an occupant exits the cart, he or she reaches over and removes the umbrella from the umbrella holder 10, and the umbrella is available to be moved around as desired. Upon returning to the cart, the user simply replaces the handle 16 of the umbrella into the container 20 such that the tab 86 is received within the slot 28, and climbs back into the cart, all while being under the cover of the elongate canopy portion 19.

Referring to FIGS. 11 and 12, an embodiment of the present invention is shown with a restrainer, or releasably lockable, swivel connector 112 between an embodiment of the clamp assembly 114 and an embodiment of the container 20. This kind of swivel connector is known in the art and generally comprises two disk shaped portions having complementary surfaces that abut each other and are releasably tightened together by a screw knob 116. Other analogous releasable swivel connectors are also known in the art. What is not previously known is the advantage that this type of connector provides in relation to golf cart umbrella holders, namely enabling the umbrella holder to being collapsed or folded (as shown in FIG. 12) for reducing its lateral profile and thereby reduce the lateral space taken up by the golf cart without having to remove the umbrella holder from the golf cart. This is advantageous when storing the golf carts in the evenings after use in facilities where floor space is lacking. Thereafter, the umbrella holder may be extended in preparation for use (as shown in FIG. 11).

While the above description and illustrations constitute preferred or alternate embodiments of the present invention, it will be appreciated that numerous variations may be made without departing from the scope of the invention. It
is intended that the invention be construed as including all such modifications and alterations.

What is claimed is:

1. An umbrella and umbrella holder combination comprising:
   an umbrella comprising: a canopy, a shaft connected to the canopy; and a handle connected to the shaft, the handle having a first connector portion;
   an umbrella holder comprising: a container adapted to receiving the handle; a second connector portion adapted to cooperate with the first connector portion when the handle is received in the container to prevent rotation of the handle relative to the container; and a clamp assembly adapted to connecting the umbrella holder to a frame member on a golf cart.

2. The apparatus of claim 1 wherein the first connector portion includes a lower portion that defines a first shape, and the second connector portion includes an upper portion that defines a second shape that is complementary to the first shape such that the upper portion of the second connector portion is able to receive the lower portion of the first connector portion when the handle is received in the container to cooperate with the first connector portion to prevent rotation of the handle relative to the container.

3. The apparatus of claim 2 wherein the container defines an opening and the second connector portion is adjacent the opening.

4. The apparatus of claim 3 wherein the upper portion of the second connector portion defines a slot, and the lower portion of the first connector portion defines a tab adapted for a close fit within the slot.

5. The apparatus of claim 4 wherein the slot includes sloped vertical walls that converge towards the bottom of the slot for guiding the tab into the slot as the handle of the umbrella is inserted into the container of the umbrella holder.

6. The apparatus of claim 1 wherein the canopy is an asymmetric canopy defining a longitudinal axis, and the first connector portion and the second connector portion are adapted to cooperate in manner that maintains the longitudinal axis in a generally parallel orientation to the direction of travel of a golf cart on which the umbrella holder is mounted.

7. The apparatus of claim 1 wherein the umbrella holder further includes a restrainable swivel connector between the clamp assembly and the container for enabling the umbrella holder to being collapsed for reducing its lateral profile and thereby reduce the lateral space taken up by the golf cart without having to remove the umbrella holder from the golf cart.

8. The apparatus of claim 1 wherein the container includes an opening at each end adapted for receiving the handle, and each of the openings includes a second connector portion thereon to enable the umbrella holder to being mounted on either side of the golf cart by orienting the container such that the opening which is oriented to face upward for receiving the handle of the umbrella therein is the opening that allows for the clamp assembly to be connected to the desired side of the golf cart.

9. The apparatus of claim 8 wherein the first connector portion includes a lower portion that defines a first shape, and each second connector portion includes an end portion that defines a second shape that is complementary to the first shape such that the end portion of one or the other of the second connector portion is able to receive the lower portion of the first connector portion when the handle is received in the container to cooperate with the first connector portion to prevent rotation of the handle relative to the container.

10. The apparatus of claim 9 wherein the end portion of each second connector portion defines a slot, and the lower portion of the first connector portion defines a tab adapted for a close fit within the slot.

11. The apparatus of claim 10 wherein each slot includes sloped vertical walls that converge towards the bottom of the slot for guiding the tab into the slot as the handle of the umbrella is inserted into the corresponding opening of the container.

12. The apparatus of claim 11 wherein the umbrella holder further includes a restrainable swivel connector between the clamp assembly and the container for enabling the umbrella holder to being collapsed for reducing its lateral profile and thereby reduce the lateral space taken up by the golf cart without having to remove the umbrella holder from the golf cart.

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