Abstract

An umbrella mount, and optional adaptor, a receiver for an umbrella pole and at least two pressure points that at least one strap and fastener can urge against a base support to securely position the mount.
FIG. 5
FIG. 27A

375° threaded hole for thumb screw (2 places)

1/4" x 1" bent around and welded to the 2" tube
1/8" x 5" bent around and welded to the 1" wide bent piece

FIG. 27B

FIG. 27C

FIG. 27D

2" x 1/16" wall sq. tube

FIG. 27E

FIG. 27F

2" x 1/16" wall sq. tube

5" x 40mm ID

Cap on bottom
FIG. 30A
Telescoping Nut
- Bottom Pole

FINGERS (Bottom Pole)
FIG. 38
FIG. 39
VARIABLY MOUNTABLE UMBRELLA


FIELD OF THE INVENTION

[0002] The present invention relates to umbrella mounts capable of stable and releasable attachment to a variety of base structures and associated umbrellas and pole assemblies capable of varied positioning to achieve a desired orientation.

BACKGROUND OF THE INVENTION

[0003] Umbrellas are widely used to provide protection from the sun or the elements. Since umbrellas are nearly invariably used outside, it is desirable that the umbrella mounts be stable in at least light winds and breezes. Many bases have been designed to provide such stability and most commonly such bases are very heavy and the weight of the base stabilizes the umbrella mounted therein, as in U.S. Pat. No. 5,354,031. While heavy bases are useful for mounting stationary umbrellas, it is also desirable that umbrellas be movable from one location to another. One technique to provide such mobility has been to equip a heavy mounting base with wheels as in U.S. Pat. No. 7,641,175. While equipping the base with wheels provides the ability to move the base across a generally planar surface, it is still not practical to routinely lift and transport a heavy base from place to place.

[0004] Because it is often desirable to utilize an umbrella for shade in connection with a vehicle, another alternative that has been proposed is to provide a vehicle anchored mount for an umbrella as in U.S. Pat. No. 5,911,399. While such a mounting system is useful in connection with the vehicle, it does not provide a satisfactory solution in other locations. Similarly, some clamping arrangements have been devised that are suitable for mounting an umbrella to a properly positioned structure as in U.S. Pat. No. 7,040,593 or which include a clamping element as in the case of U.S. Pat. Nos. 6,401,736 and 5,836,327. Again, these clamps are only suitable for attachment to base structures of particular positions, sizes, or shapes. Two other alternatives that have been utilized are a very large base as in U.S. Pat. No. 7,264,218 or the permanent attachment of a mounting base as in U.S. Pat. No. 5,680,517 and U.S. Published Patent Application No. 2002/0053631. Permanent mounting of the umbrella base can provide excellent stability but is not suitable for mobility.

[0005] Several alternative techniques for utilizing umbrellas in connection with vehicles have been proposed, including trailer hitch attachments such as are disclosed in U.S. Pat. Nos. 7,819,128 and 8,123,190 or particularly designed mounting structures that are fixed to the vehicle as in U.S. Published Patent Application No. 2010/0096876 and U.S. Pat. No. 5,529,368. These attachments are only suitable for use on a particular vehicle and do not provide the ability to releasably attach the umbrella to a variety of different base structures. An improved umbrella mount is still needed can be mounted to a wide variety of base structures, while providing variable umbrella positioning and being simple and inexpensive to make and use.

BRIEF SUMMARY OF THE INVENTION

[0006] Novel umbrella mounts and adapters are provided for fixed or releasable attachment to a base structure or fixation to the ground. The base structure may commonly be a table or a truck tailgate, but may also be a deck or other permanent fixture. In addition, a pole and beam adapter is provided to allow the mount to be releasably attached to poles, trees, beams, rectangular truck bumpers, and similar base structures, most typically, but not necessarily, in vertical or horizontal orientations. The mount and adapter are releasably secured in place through the use of a strap or straps that encircle the base structure and can be tightened with a fastener, such as a ratchet, to hold the mount securely in place. The mount can be designed to permit the umbrella post to be fixed in a variety of orientations when utilized with a either a straight or angled base pole and a tilting head umbrella. If the angled base pole can be rotated through a variety of orientations with respect to the base, the umbrella canopy can be positioned in almost any desired position to provide shelter from sun or the elements.

[0007] These and other aspects of the novel umbrella mount will become apparent in view of the drawings and detailed description of the invention.

BRIEF DESCRIPTION OF THE DRAWINGS

[0008] FIG. 1 is a top plan view of an umbrella mount according to the invention.

[0009] FIG. 2 is a perspective view of the mount of FIG. 1.

[0010] FIG. 3 is a left plan view of the umbrella mount of FIG. 1, the right plan view being substantially identical.

[0011] FIG. 4 is a front plan view of the mount of FIG. 1, the back view being substantially identical.

[0012] FIG. 5 is a side plan view of a tilt head umbrella positioned on a 45° angle base pole.

[0013] FIG. 6 is a side plan view of the umbrella of FIG. 5 in a mount, with the 45° angle base pole also shown in isolation.

[0014] FIG. 7 is a side plan view of an umbrella with a straight base pole in a mount, with the straight base pole also shown in isolation.

[0015] FIG. 8 is an elevation view of the components of an exemplary umbrella and mount system including tilt head umbrella, a 45° angle base pole, straight base pole, mount with pins, adapter, and strap with fastener.

[0016] FIG. 9 is a side plan view of the umbrella of FIG. 6 utilizing the tilt head feature to position the umbrella canopy horizontally, vertically, and at an intermediate angle.

[0017] FIG. 10 is a top plan view of four umbrellas, each utilizing an angled base pole but positioned at different orientations relative to their mounts.

[0018] FIG. 11 is a top plan view of a mount on an adapter and secured about a pole with a strap and fastener.

[0019] FIG. 12A is a perspective view of an adapter with a smooth mounting surface.

[0020] FIG. 12B is a perspective view of an adapter with a notched mounting surface.

[0021] FIG. 13A is an exploded perspective view of the mount of FIG. 1 and adapter of FIG. 12B positioned to attach to a vertical pole.

[0022] FIG. 13B is an exploded perspective view of the mount with 45° angle base pole and adapter for attachment to a 2×6 inch beam.

[0023] FIG. 13C is an exploded perspective view of the mount with 45° angle base pole and adapter for attachment to a 4×4 inch mounting beam.

[0024] FIG. 13D is an end plan illustration showing exemplary dimensions for the notched mounting surface of the adapter of FIG. 12B.
FIG. 14 is a perspective view of the mount and adapter of FIG. 13A with an umbrella and 45° angle base pole.

FIG. 15 is a side plan illustration of the umbrella mount and adapter of FIG. 14 secured about the vertical pole with strap and fastener.

FIG. 16 is a perspective view of a portion of a 45° angle base pole that is received in the mount.

FIG. 17 is a top plan view of a mount illustrating the laterally aligned apertures for rotational alignment with base pole apertures.

FIG. 18 is a perspective view of a mount with an insert to accommodate smaller diameter base poles.

FIG. 19 is a perspective view of a mount secured by strap to a truck tailgate shaped base structure.

FIG. 20 is a perspective illustration of the secured mount of FIG. 19 with an umbrella having a straight base pole received in the mount.

FIG. 21 is a perspective illustration of the base of FIG. 19 with an umbrella having an angled base pole received in the mount.

FIG. 22 is an end view of a mount attached with a strap to a pickup truck tailgate utilizing a 45° angle base pole at full extension over three chairs.

FIG. 23 is an end view of a mount attached with a strap to a pickup truck tailgate utilizing a 45° angle base pole at full extension over a single chair.

FIG. 24 is an end view of a mount attached with a strap to a pickup truck tailgate utilizing a 45° angle base pole at reduced extension over a single chair.

FIG. 25 is a side view of a mount attached with a strap to a table top and an umbrella canopy on a straight base pole.

FIG. 26 is a side view of a mount attached with a strap to a table top and an umbrella with a 45° angle base pole extending laterally over two chairs.

FIG. 27A is a perspective view of an adaptable two inch pipe mount.

FIG. 27B is a perspective view of the corner sleeve of the pipe mount of FIG. 27A.

FIG. 27C is an end view of the pipe mount of FIG. 27A.

FIG. 27D is a top plan view of the square tube and receiver of the pipe mount of FIG. 27A.

FIG. 27E is a side plan view of the square tube and receiver of the pipe mount of FIG. 27A.

FIG. 27F is a perspective view of the receiver of the pipe mount of FIG. 27A.

FIG. 27G is an alternative construction of an adaptable two-inch pipe mount.

FIG. 27H is a perspective illustration of an adaptable two-inch pipe mount.

FIG. 27I-K illustrate attachment of the pipe mount to a two inch trailer hitch.

FIG. 27J-N illustrate attachment of the pipe mount to a four inch bumper.

FIG. 28A is a perspective view of the pipe mount of FIG. 27A positioned in a two inch receiver hitch.

FIG. 28B is a perspective view of the pipe mount of FIG. 27A positioned on a four inch square tube trailer bumper.

FIG. 28C is a perspective view of an umbrella with a 45° angled base tube mounted in the receiver of the pipe mount positioned on the rear trailer bumper of FIG. 28B and oriented forward at a 45° angle from the bumper.

FIG. 28D is a perspective view of an umbrella with a 45° angled base tube mounted in the receiver of the pipe mount positioned on the rear trailer bumper of FIG. 28B and oriented rearward at a 90° angle from the bumper.

FIG. 29A is a perspective view of an extended pin umbrella mount according to the invention.

FIG. 29B is a left plan view of the extended pin umbrella mount of FIG. 29A, the right plan view being substantially identical.

FIG. 29C is a top plan view of the extended pin umbrella mount of FIG. 29A.

FIG. 29D is a front plan view of the extended pin umbrella mount of FIG. 29A, the back plan view being substantially identical.

FIG. 29E is a perspective view of the extended pin umbrella mount of FIG. 29A fitted with extended pins and two straps securing the mount to a base structure.

FIG. 29F is a perspective view of the extended pin umbrella mount of FIG. 29A fitted with four nails placed for counterclockwise insertion to secure the mount to the ground.

FIG. 29G is a back perspective view of the extended pin umbrella mount of FIG. 29A.

FIG. 30A is an end piece of an umbrella canopy connector used to create a preferred tilt mechanism.

FIG. 30B is an umbrella pole end piece to mate with the connector end piece of FIG. 30A.

FIG. 30C shows the tilt mechanism with the end piece of FIG. 30B.

FIG. 30D shows the tilt mechanism with the end piece of FIG. 30A.

FIGS. 31A-D depict the use of a telescoping nut to join base and upper pole sections.

FIGS. 32A-E illustrate the use of a single strap and ratchet to secure an umbrella mount.

FIGS. 33A-E illustrate the sequential assembly of a single strap embodiment on an umbrella mount.

FIGS. 33F-I illustrate the assembly of two ratchet straps on an umbrella mount.

FIGS. 34A-H depict the application of both single and double strap mounting of an umbrella mount.

FIGS. 35A-D depict the use of an adapter to secure an umbrella mount to a vertical pole.

FIG. 36A depicts the direct mounting of an umbrella mount to a concrete base.

FIG. 36B depicts the direct mounting of an umbrella mount to a wooden base.

FIG. 37 depicts the use of ground anchors to secure an umbrella mount on a turf surface.

FIG. 38 illustrates an exemplary umbrella kit with adaptable mount with a single strap.

FIG. 39 depicts an alternative umbrella kit with adaptable mount configured for use with two straps and ratchets.

DETAILED DESCRIPTION OF THE DRAWINGS

Turning first to FIGS. 1 through 4, an exemplary umbrella mount 10 useful in practicing the invention is illustrated. The mount 10 consists of a generally planar base 11, corner supports 12 that support generally upright pole receiver such as cylindrical tube 16, normal to the base. Tube 16 is a four-sided piping having a height from base
11 to upper edge 16a of about 6 inches. The pole receiver, and its interior opening, can have a variety of sectional shapes so long as the interior opening will accommodate the associated base poles. While a circular sectional opening 19 is illustrated, the use of polygons, and particularly triangles and pentagons, are also suitable so long as the associated base poles have similar shapes.

[0075] The planar base 11 also has a plurality of apertures 13 that may be utilized with threaded fasteners such as screws or bolts, or even unthreaded fasteners such as nails, to more permanently position the base in a selected location. The cylindrical tube 16 also has intermediate openings 17a in lateral alignment on opposed sides so that a pin can be passed through openings 17a across a diameter of the tube 16. The openings 17a may appear on each quadrant of the tube 16 or only on two opposed quadrants. As reflected in FIG. 18, additional openings 17b may be positioned at a different vertical distance from the base 11 along the cylindrical tube 16.

[0076] Central to the operation of the mount 10, are the presence of at least two strap pressure points where a strap cooperating with base 10 can exert downward pressure on the base 10 against a fixed base structure such as a table or tailgate, or horizontal pressure against a vertical base structure. In the illustrated embodiment, the strap pressure structures are formed of risers 14 with right castellation 14a and left castellation 14b in the shape of a cleft aisle and creating a channel. A pin 15 is journaled across openings in castellations 14a and 14b so that right pin end 15a and left pin end 15b are visible on the exterior of the riser 14 while the central portion of pin 15 may hold a strap in position. The strap may have a fixed loop end that the pin 15 is positioned through into place on the riser 14, or the strap may be passed under and around the pin 15 already mounted in the riser 14 and then to a buckle or fastener. FIGS. 19 through 21 illustrate a strap 30 in position on riser-type pressure points.

[0077] A modified mount 110 is illustrated in FIGS. 29A through 29E. The mount 110 consists, again, of a generally planar base 111, corner supports 112 that support generally upright pole receivers such as cylindrical tube 116, normal to the base. Tube 116 has an opening 19 to receive the external diameter of an umbrella base pole and preferably has a height from base 111 to upper edge of the cylindrical tube 116 of about six inches. The planar base 111 also has a plurality of apertures 113 that may be utilized with fasteners such as screws, bolts, or nails to more permanently position the mount 110 in a selected location. Of particular interest are the holes 119 at the base of each of the corner supports 112. Openings 119 are angled at approximately 45° relative to the surface of the planar base 111 and each of the openings 119 is angled in the same direction, either clockwise or counterclockwise relative to the central tube 116a. In FIG. 29F, the openings 119 have been filled with ground anchors such as nails 137, typically of approximately 6 to 10 inches in length. In the illustrated embodiment of FIG. 29F, the openings 119 are angled at approximately 45° to the surface of the planar base 111 so that the openings pass through the base in a generally counterclockwise direction. Thus the nails 137 can be readily hammered though openings 119 into ground, preferably a grass covered area and thereby secure the mount 110 in place. The root system of the grass combined with the resistance of the earth into which the nails have penetrated can provide a very steady base in appropriate circumstances. When it is desired to remove the mount 110 from the ground, it is only necessary to tap the corner supports 112 in a generally clockwise direction, opposite the direction in which the nails were inserted into the ground, and the mount 110 readily loosens and can be removed.

[0078] An additional modification is the addition of shoulders 114 on the left and right sides of the mount 110 intermediate the corner supports 112. An aperture 131 passes through the corner supports 112 and shoulders 114 from front to rear. These openings 131, and the space between the shoulders 114 on the left and right sides of the mount 110, allow the use of an extended pin 115. An illustrated embodiment the extended pin is comprised of a rear bolt 134 with a flange or projecting edge such as head 135 and an opposite threaded end that is received in coupler 132. In addition, forward bolt 133, also with head 135 has an opposite threaded end that is received in the forward side of coupler 132. The composite structure of the bolts 133, 134 and coupler 132 create the extended pin 115. Loops on straps 130 are then fitted over each protruding end, interior of the bolt heads 135 and passed around the base support to similar extended pin ends on the opposite side of the mount 110 and the straps 130 are tightened and secured with buckles 136. This structure is particularly advantageous in that it allows securing straps 130 to be fastened both front and rear to the cylindrical tube 116 holding the umbrella base tube and thereby provides improved support and stability. Certainly even greater support and stability could be obtained by elongating the mount 110 in the front and rear direction and spacing a strap pressure point further forward and another strap pressure point further rearward from the umbrella base mount a few tubes 116 though this would entail additional materials and cost.

[0079] Turning then to FIGS. 5 through 8, the component elements of the umbrella utilized with mount 10 are illustrated. These components consist of the umbrella assembly 60, and angled base pole 40 shown in FIG. 5. A straight base pole 50 shown in FIG. 7 is also provided. The umbrella assembly 60 consists of the actual canopy or awning 65, canopy connector 64, swivel joint 63, and pole 61 with end 62 (shown in FIG. 8). The end 62 is received within top end 44 of angled base pole 40 in FIG. 5. The angled base pole 40 has a main shaft 41, a 45-degree angle 43 and a base 46 extending to end 42. The base 46 has openings 45a that allow a pin to be passed through a diameter of base 46. It can be seen in FIG. 6 that the base end 46 of angled base pole 40 is received within the opening 19 (shown in FIG. 1) of mount 10. This causes the canopy 65 to be offset from the base. In order for the canopy 65 to be parallel to the ground, the swivel joint 63 is adjusted at a 45-degree angle opposite to the 45-degree angle 43 of pole 40. The extension distance provided by poles 61 and 41 can be adjusted in any of several well-known fashions by controlling the length of pole 61 that is received within the end 44 of angled base pole 40. Often, a series of apertures is provided on the larger pole 41 and a spring-loaded button mechanism is provided near the end 62 of the umbrella pole 61. The buttons can be depressed and released to interfit in apertures at an appropriate point along pole 41 to obtain a desired length.

[0080] FIG. 7 illustrates the alternative straight base pole 50 comprised of main shaft 51, base end 52 that is received within the opening 19 of the mount 10 with aligned openings 55a on opposed sides to permit a pin to pass through the diameter of the shaft 51. Pole 50 also has an opposite upper end 54 that will receive base 62 of main umbrella pole 61. When utilizing the straight base pole 50, the canopy 65 is
located directly above the mount 10 and there is no need to utilize the tilt mechanism 63 to keep the canopy parallel to the surface below.

The base 46 of base pole 40 and base 52 of straight base pole 50 are illustrated with circular sectional profiles for use with tubular pole receiver 16. When using a circular sectional profile, it may be necessary to use locking pins to fix an angled base pole in the desired orientation. An alternative is to use a pole receiver and base with a polygon shaped sectional profile, and preferably an equilateral triangle or pentagon. When a triangular profile is used with a symmetrical mount, a total of six different orientations for an angled base pole are possible, providing a possible fixed location at every 60° of rotation. This is accomplished with the mount in a first position and the triangular profile permitting the angled base pole to extend at three locations that can be represented as 0°, 120°, and 240°. To obtain the other three possible positions, the mount is rotated through 180° so that the triangular profile of the pole receiver faces in the opposite direction and the angled base pole can extend at 60°, 180°, and 300°. When a pentagon shaped profile is used, the angled base pole can be positioned at every 36° around the circle.

FIG. 8 shows a complete set of components that can be provided in kit form or a carrying bag to allow this adjustable mount and umbrella to be carried and used in many various locations. The elements include the umbrella assembly 60, straight base pole 50, angled base pole 60, mount 10, pins 15, adaptor 20, and strap 30 with fastener 36.

Turning next to FIGS. 9 and 10, exemplary configurations of the umbrella, and mount utilizing angled base pole 40 are shown. In FIG. 9, the mount 10 is in a horizontal position, the base end 46 of angle base pole 40 is received in the opening 19 of the cylindrical tube 16 of the mount 10; the bottom end 62 of umbrella pole 61 is received within the top end 44 of the angled base pole 40, and the tilt mechanism 63 is shown in solid holding canopy 65 in horizontal position and in phantom at 45° and 90° angles from the horizontal. FIG. 10 is a representation of four horizontally positioned mounts 10 with angled base poles 41 extending canopies 65 outward from a central position. Canopies 65 are typically about 6 to 10 feet in diameter, and preferably about 7 to 9 feet.

While it is possible to use an angled base pole 40 that has a less than 45° angle from the vertical, the 45° angle is preferred since it maximizes the potential offset of the umbrella canopy 65 from the mount 10. Most umbrella tilt mechanisms extend through an arc of no more than about 30° in either direction, and the tilt mechanisms are relatively fragile and may break when subjected to stress by stiff breezes. Accordingly, it has proved preferable to design an improved tilt mechanism utilizing end caps 164, 161 shown in FIGS. 30A-30D on the distal end of canopy support 64 and pole 61. It can be seen that the swivel mechanism piece 164 has an opening 165 at a first end to receive the distal end of canopy connector 64 and an opposite curved end 168. This piece also has an interior surface with castellations 167 and an opposite surface through which an opening 166 passes. The counterpart piece 161 has an opening 162 to receive umbrella pole 61 and an interior curved surface 169 that matches the curved end 168 of the other swivel connector piece. End cap 161 also has a castellated 167 interior surface and an aperture 163 passing through. In operation the castellated surfaces 167 mate and the end caps 161, 164 are bolted together as shown in FIGS. 30C, 30D. The castellations are preferably about 0.04-0.1 inches in height and may be sized to permit only rotation in increments of 45°, or alternatively in increments of 22.5° or even 15°. To operate the swivel mechanism, the bolt 120 passing through apertures 163 and 166 is loosened, the canopy connector 64 is rotated with respect to the umbrella pole 61 to a desired angular orientation, and the bolt is refastened to lock the end caps 161, 164. A particularly advantageous bolting mechanism is an Allen bolt that has a recess 121 to receive an Allen wrench to rotate the bolt 120. The distal end 122 of the bolt then cooperates with nut 125 (held in position by the hexagonal shape of opening 166) to tighten or loosen the end caps 161, 164. The Allen wrench 127 preferably has an opening 128 or other attachment point so that it can be connected by flexible line 129 to the umbrella pole or head.

Although the operation of a bolting mechanism is not as simple as the usual push button tilt mechanism, the additional strength and stability provided by the interlocking castellations, the convenience of incremental locking positions, and the additional arc of rotation, extending at least 45° in either direction, provides significant benefits. The 45° arc of rotation in each direction is preferably obtained by two increments of 22.5° but may also be achieved by one increment of 45° or three increments of 15°. With additional 22.5° or 15° increments, it is possible to obtain movement of 60° or even 67.5° in each direction so that the umbrella canopy is moveable through a total arc of 120° or 135°, which allows the canopy to entirely offset a 45° angle of the base pole and provide additional tilt to the canopy.

An additional feature of the umbrella mount is an adaptor component that is particularly useful in allowing the mount 10 to be secured to a pole or rectangular member. Such an adaptor 20 for use in mounting on rounded members such as poles or trees up to about eight inches in diameter is shown in FIGS. 12A, 12B and 13D in isolation and in FIGS. 11 and 13A-13C in place on pole 29 or rectangular member 28b, 28b. The adaptor has a planar top 21 surrounded by flange 22 sized to receive the base 11 of mount 10 as shown in FIG. 13A. Opposite the planar top 21 is a generally arcuate surface 23a. In a particularly preferred embodiment, this arcuate surface is not smooth but notched. Arcuate surface 23a is notched with spaced notches 27 to particularly match common widths of rectangular members such as 2x4 and 2x6 lumber, or rectangular metal bumper attachments for vehicles.

In FIG. 11, the mount 10 is shown with strap 30 attached to risers 14 and extending around adaptor 20 and generally round pole 29 and tightened in place by fastener 36 which may be a buckle or cinch, but preferably is a ratchet type mechanism. The strap is typically made from a durable fabric such as nylon, polypropylene or polyester, but other materials are possible. FIGS. 13B and 13C show the adaptor 20 positioned on rectangular support base members 28b, 28b. FIG. 13B illustrates the notching of the interior generally curved surface 23b. It can also be seen that the profile of adaptor 20 on the curved side extends back from the edges of a generally curved surface 23b at an angle 25 and then nearly normal to the planar top along section 26.

FIG. 14 shows an exploded view of the attachment of mount 10 to adaptor 20 in position on a vertical pole 29 with an angled base pole 40 received in the mount 10 and connected to the umbrella portion 60 with canopy 65. A side plan view of that assembly with strap 30 secured around pole 29 in connection with risers 14 on mount 10 is shown in FIG. 15. The end points of the strap 30 are looped over pins 15 held by risers 14, thus each pin 15 applies pressure through riser 14
to press the mount 10 against the adapter 20 and in turn against the pole 29. It can be seen that a strap or straps must pull at least two pressure points on the mount 10 against the base structure. The pressure points should be disposed on opposite sides of the pole receiver. FIG. 15 also illustrates angle base pole 40 orienting the shaft of the umbrella upwards at a 45° angle and the swivel mechanism 63 reversing the 45° angle to hold the canopy 65 in a horizontal position.

[0089] FIGS. 16 through 18 illustrate particularly preferred embodiment of the mounting section 46 of base pole 40, and a cylindrical tube 16 is used on mount 10 receiving the base pole section. Specifically, the base section 46 of angled base pole 40 is shown in isolation in FIG. 16 with lower apertures 45a and upper apertures 45b. There are four apertures 45a, each offset 90° from one another so that a pin can pass through opposed apertures across the diameter of section 46. The upper apertures 45b are similarly offset from one another by 90° and are also offset from the apertures 45a by 45°. Thus, when the base section 46 is placed in the opening 19 of tube 16 of mount 10, as shown in FIG. 18, locking pin 76 can be passed through lower opening 17a or upper opening 17b to correspond with openings 45a or 45b in the bottom section of 46 thereby permitting the angled base pole 45 to be rotated to any 45° angle and locked in place by passing pin shaft 76 through the apertures and attaching a fastener 80 to end 77. While angle 70 keeps the gripping end 79 of the pin 76 on the opposite side of tube 16. The openings 17a, 17b in tube 16 are preferably offset from risers 14 so that there is ample space to easily insert and lock pin 76.

[0090] Because the straight base pole 50 does not need to be rotated, it is not necessary that it be provided with apertures like the bottom section 46 of angled base pole 40. Similarly, if the profile of the receiver and pole base are a matching polygonal shape, such as a triangular section or a pentagon, there is no necessity for apertures and a locking pin since the interfitting profiles will not rotate with respect to one another. In addition, the mount 10 can be configured to accept smaller diameter base poles by the addition of a keyed insert 70. In this case the top edge 16a of tube 16 of mount 10 has a keyway 18 to mate with a key 74 on the insert 70. The tubular portion 71 of the insert 70 is sized to fit the opening 19 in tube 16 and the keyway 18 ensures that apertures 75a and 75b of the insert 70 will align with apertures 17a and 17b on tube 16. The upper end 73 of the insert 70 will be nearly flush with the upper end 16a of the mount and lower end 72 will extend to the base 11 of mount 10. The use of the insert 70 facilitates the situation where the mount is used on a table and the additional height or offset of a base pole 40, 50 is not needed. In that case, the end 62 of umbrella pole 61 may be fitted directly into the insert 70 within the pole receiver. The tube 16 can also be provided with a small drain hole 90 at its lower end where it joins the base to prevent the accumulation of any moisture.

[0091] FIGS. 19 and 20 illustrate the attachment of the mount to a base structure in the shape of a pickup truck tailgate 80. The mount 10 is secured in place by strap 30 connected to downward pressure positions on opposite sides of the umbrella pole mounting receiver 16, and held tightly in place by fastener 36. In FIG. 20, a straight base pole 50 is inserted in the cylindrical tube portion 16 of base 10 holding the canopy 65 of the umbrella directly above the mount 10. In FIG. 21, the straight base pole 50 has been replaced by the angled base pole 40 which results in the canopy 65 being offset from the mount 10 at is located on the tailgate 80. As best illustrated in the wide field of view illustration of FIG.

[0092] As mentioned above, it is known to utilize trailer receiver hitch openings for securing mounting structure for umbrellas to vehicles. Illustrated in FIGS. 27 and 28 is a novel adaptable square pipe mount that is designed, in one application, to be received within a trailer hitch receiver and another application to be received on the corner of a metal base, typified by a 4″ square tube bumper commonly found on trailers and motorhomes. The adjustable mount 170 has a 2″ square tube 171 that is joined to a cylindrical umbrella base pole receiver 172. The base pole receiver 172 has an open end 179 and may advantageously have a cap 180 on the opposite end. The adjustable pipe mount includes a corner sleeve 173 as shown in isolation in FIG. 27B. The corner sleeve 173 is illustrated as a sleeve element in the form of a bent sheet of metal of preferably about 1/8″ thickness 178 and that sleeve element is welded to the 2″ square tube 171 and spaced apart at one end by a 1/4″ thick spacer 174. In this fashion, an L-shaped gap 177 exists between the forward end of the sleeve element 178 and the 2″ square tube 171 to which it is mounted. Threaded openings 175 are located on the corner sleeve 173 and also another threaded opening 183 is located exterior of the square pipe 171 as may be formed by welding nut 176 to the pipe.

[0093] In use, the adaptable pipe mount 170 may be placed within a trailer receiver as illustrated in FIG. 28A and releasably secured as by adjustable screw such as Allen-head cap screw 184 that may be threaded through opening 183 to bias the pipe 171 against the interior of the trailer hitch receiver and securely hold the adaptable pipe mount 170 in place. An alternative utilization of the adaptable pipe mount 170 is shown in FIG. 28B where the gap 177 between corner sleeve 173 and square pipe 171 has been received over a corner of a 4″ square pipe bumper 190 at the rear of a trailer. After the corner of the bumper 190 is received in the gap 177, screws 185 are tightened to secure the adaptable pipe mount 170 in place. Screws may be recessed Allen head types as in FIGS. 27H and 27I, of provided with T-handles as in FIG. 28A. Then an umbrella having an angled base pole 40 may have its base end 46 inserted within the cylinder 172 and a lateral pin placed through aperture 181 or 182 to appropriately position the supported umbrella canopy 65. Because of the offset provided by the angled base pole 40, the umbrella may extend from the trailer bumper 190 through an arc of approximately 180°. In FIG. 28C, the umbrella is oriented at an angle extending forward at approximately 45° from the axial orientation of bumper 190. In FIG. 28D, the umbrella is rotated approximately 135° to the rear so that it extends rearward at an angle approximately normal from the axial orientation of the bumper 190 and the umbrella could be positioned even further through the same arc by approximately another 45°. This provides easily movable shade adjacent to the trailer.
[0094] FIGS. 25 and 26 illustrate attachment of the mount 10 to another base support which in this case is the top 86 of a picnic table 85. In FIG. 25, the mount 10 is secured by strap 30 about the table top support 86 and the straight base pole 50 elevates the canopy to a height not greatly above the length of the base pole 50 because a substantial portion of umbrella pole 61 has been received within the base pole 50. In this particular illustration, the umbrella is not provided with a swivel joint and the umbrella canopy 65 is horizontal and directly above the picnic table 85 and mount 10. In FIG. 26, the mount 10 is again secured by strap 30 to base support 86 but the angle base pole 40 is utilized to offset the canopy 65 at a 45 degree angle. Again, the umbrella pole 61 is largely received within pole 41 so that the canopy is not extended to its maximum distance away from the mount 10. However, it can be seen that the canopy completely covers two chairs 82, 83 positioned laterally to the side of the picnic table 85. By utilizing the many adjusting features of the illustrated embodiment of the invention, the canopy 65 can be securely positioned in numerous locations and orientations. Versatility is provided by the ability of mount 10, with or without adapter 20, to be secured to many different stationary objects. The selection of straight or angled base poles provides additional versatility as does the ability to rotate the angled base pole to four or preferably eight different angular orientations with regard to the position of the mount 10. The ability to adjust the length of the umbrella pole by receiving a portion of that pole within the angled base pole or straight base pole provides additional adaptability as does the swivel joint 63.

[0095] As illustrated in FIGS. 38 and 39, an umbrella mount 10 of the present invention can be provided with a variety of accessories to enable its effective deployment. Such accessories may include a carrying case, a parts bag, a strap mounting axles in the form of bolt connectors, concrete anchors, washers, lag screws, ground spikes, ratchet straps and buckles, adaptable two inch mount, straight and angled base poles, and of course, the umbrella canopy.

[0096] As reflected in FIG. 31, the base pole 40, 50 may be joined to the upper canopy pole 60 utilizing a telescoping nut 57. The telescoping nut 57 rests over end fingers 56 on the base pole when stored. To join the upper canopy pole 60 to the base pole 50, the telescoping nut 57 is removed from the end of the base pole 50 and placed over the end 62 of the upper canopy pole 60. Then the end 62 of the upper canopy pole 60 is inserted within the fingers 56 on the base pole 50 before the telescoping nut is slid down over the fingers. Then as reflected in FIG. 31D, the poles 50, 60 may be adjusted relative to one another and fixed in place by tightening the telescoping nut 57.

[0097] As shown in FIGS. 32A-E, a mount 10 can be attached using a single strap 30 and ratchet 36 by placing an L bolt 104 through a riser 114 on either side of the tube 16 and securing that strap around a base structure 86 and operating the ratchet to tighten the mount to the base structure. As illustrated in FIG. 32B, an L bolt 104 is inserted through an opening 131 in shoulder 114 of corner support 112. One end of strap 30 is slipped on the L bolt 104 which is then slipped into the adjacent corner support opening 131 and a lock pin 105 inserted. The same process is repeated with a second L bolt 104 on the opposite side of the mount 110 except the ratchet buckle 36 is attached. Then the free end of the strap 30 is inserted into the slit on the ratchet buckle 36 and the strap 30 is tightened in the ratchet against the mounting surface. Then the umbrella base pole 50 can be inserted in the cylindrical tube 116 of the mount 110 and another L bolt 104 and latching pin 105 pin placed to secure the base pole in position.

[0098] FIGS. 33A-E depict the assembly of an extended bolt through side riser positions 114 on either side of the cylindrical tube 116 while FIGS. 33F-I depict the use of extended bolts to facilitate the use of two ratchet straps. FIG. 33A shows the insertion of a forward bolt 133 through an opening 131 in a shoulder 114 of a corner support 112 to a central area between corner supports. A hex nut 132 serves as a bolt coupler and has the strap 30 placed on it as it is attached to the forward bolt 133. Then a rear bolt 134 is inserted through the corresponding opening 131 on the adjacent shoulder 114 and secured in the other side of the hex nut 132 and the bolts 133, 134 are tightened. This process of inserting two bolts into a hex nut is repeated to attach the ratchet 36 on the other side of the cylinder 116. To install two ratchet straps 130, 136 FIG. 33F shows the insertion of a forward bolt 133 through an opening 131 in a shoulder 114 of a corner support 112 to a central area between corner supports. A hex nut 132 serves as a bolt coupler and the bolts 133, 134 are tightened. In this case, however, it is desirable for attaching to vertical surfaces, the strap 130 and ratchet 136 are slipped over the ends of the bolts rather than being placed in the center. The base 110 can then be fitted to the adapter 20 and attached to a vertical pole 29 and the straps 130 tightened.

[0099] FIGS. 34A-H also depict the use of the extended bolt configuration 115 with either one or two straps. A single strap is often adequate when the umbrella mount is used on a horizontal surface, while two straps are preferred for mounting to a vertical surface or in instances where stability is more critical. It can be seen that the extended bolts 115 are formed by joining first and second bolts 133, 134 with hex nut 132. One or two straps are attached, the base 110 is positioned and the straps 130 tightened, and the umbrella pole is installed in cylinder 116 and bolted and lock pinned in place.

[0100] FIGS. 35A-D depict an adapter and its use with an umbrella mount to attach the umbrella mount to both vertical round, FIG. 35C, and square, FIG. 35D, surfaces.

[0101] FIGS. 36A-B depict the umbrella mount 10 with concrete anchors or with lag bolts for mounting on concrete or wood surfaces. For semi-permanent mounting on concrete such as poolside, patio or driveway, first pre-drill holes and tap in concrete anchors. Then place the base 110 and install anchor bolts 6 and washers and fasten to the anchors. For semi-permanent mounting on a wooden base such as decks or docks, place the base 110 and fasten by screwing in lag bolts 7.

[0102] FIG. 37 depicts the umbrella mount 110 with ground anchors or spikes 137 that are driven clockwise into a turf surface such as a soccer field, campground, or park. Ten inch spikes can be used and driven at a 45° angle through openings 119 as shown in FIGS. 29A and 29F. The mound may be easily removed by reverse twisting in a counter clockwise direction, as by wiggling or hitting any of the four support fins 112 in that direction.

[0103] Numerous alterations of the structure herein disclosed will suggest themselves to those skilled in the art. However, it is to be understood that the present disclosure relates to the preferred embodiment of the invention which is for purposes of illustration only and not to be construed as a limitation of the invention. All such modifications which do not depart from the spirit of the invention are intended to be included within the scope of the appended claims.
I claim:
1. A mount for holding an umbrella in position on a base support comprising:
a base having a top side and a bottom side;
a pole receiver connected to and extending from the top side normal to the base; and
an angled base pole having a base portion received in the pole receiver and a pole section extending upward from the base portion at an angle of between 30° and 60°.
2. The mount of claim 1 further comprising an umbrella pole interfitting with the pole receiver, a lockably adjustable swivel joint, and a canopy.
3. The mount of claim 2 wherein the swivel joint is set at an angle opposite the angle of the angled base pole.
4. The mount of claim 1 wherein the angled base pole can be fixed in at least four different positions to change the outward angular orientation of the pole section.
5. The mount of claim 2 wherein the swivel joint is lockably adjustable in at least two increments of 22.5° in either direction.
6. The mount of claim 2 wherein the swivel joint is lockably adjustable in at least three increments of 15° in either direction.
7. The mount of claim 2 wherein the swivel joint is lockably adjustable in at least one increment of 45° in either direction.
8. A mount for holding an umbrella in position on a base support comprising:
a base having a top side and a bottom side;
a pole receiver connected to and extending from the top side normal to the base;
a plurality of openings passing through the base; fasteners extending through the plurality of openings into the base support;
a base pole having a base portion received in the pole receiver and a pole section extending upward from the base portion;
an umbrella pole interfitting with the pole section; an adjustable lockable swivel joint on the umbrella pole; and
a canopy connected thereto.
9. The mount of claim 8 wherein the plurality of openings pass vertically through the base and the fasteners extending through the plurality of openings are threaded.
10. The mount of claim 8 wherein the plurality of openings pass through the base at clockwise angles of approximately 45° relative to the bottom side of the base and the pole receiver and the fasteners extending through the plurality of openings are ground anchors.
11. The mount of claim 10 wherein the base support is grass covered ground.
12. The mount of claim 8 wherein the plurality of openings pass through the base at counterclockwise angles of approximately 45° relative to the bottom side of the base and the pole receiver and the fasteners extending through the plurality of openings are ground anchors.
13. An umbrella and mount in combination comprising:
a canopy;
alockably adjustable swivel joint connected thereto;
an angled base umbrella pole extending from the swivel joint to a pole receiver;
the pole receiver being connected to a pipe mount having a reception end for reception in and fastening to a trailer hitch;
wherein a base portion of the angled base umbrella pole is received in the pole receiver.
14. The umbrella and mount of claim 13 wherein the angled base umbrella pole can be fixed in at least four different positions to change the outward angular orientation of the umbrella pole.
15. The umbrella and mount of claim 13 wherein the swivel joint is set at an angle opposite the angle of the angled base umbrella pole.
16. The umbrella and mount of claim 13 wherein the swivel joint is lockably adjustable in at least two increments of 22.5° in either direction.
17. The umbrella and mount of claim 13 wherein the pipe mount is a square pipe with a corner sleeve proximate to the reception end and spaced outwardly by proximately 0.25 inches from the square pipe to create an L shaped gap between the square pipe and corner sleeve.
18. The umbrella and mount of claim 17 wherein the angled base umbrella pole can be fixed in at least four different positions to change the outward angular orientation of the umbrella pole.
19. The umbrella and mount of claim 17 wherein the swivel joint is set at an angle opposite the angle of the angled base umbrella pole.
20. The umbrella and mount of claim 17 wherein the swivel joint is lockably adjustable in at least two increments of 22.5° in either direction.

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