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Umbrella anchoring apparatus

Abstract

A beach umbrella anchoring and stabilizing device configured to stabilize a beach umbrella on a sandy surface includes an elongated support shaft, an anchoring container, and multiple gussets. The support shaft extends along a longitudinal axis between a proximal end and a distal end and includes a hollow interior configured to receive a beach umbrella support post. An anchoring container is coupled to the distal end and includes an open top with an upper perimeter edge substantially surrounding the support shaft, a closed bottom defining a substantially planar surface, and at least one sidewall extending therebetween. Multiple gussets extend radially between the support shaft and the sidewall. Each of the gussets extends from the closed bottom in a proximal direction parallel to the longitudinal axis.

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Background/Summary

CROSS REFERENCE TO RELATED APPLICATIONS (1) The present application is a Continuation-In-Part of U.S. patent application Ser. No. 18/127,152, filed Mar. 28, 2023, which is a Continuation of U.S. patent application Ser. No. 17/832,879, filed Jun. 6, 2022, which is a Continuation of U.S. patent application Ser. No. 17/122,925, filed Dec. 15, 2020 (now issued U.S. Pat. No. 11,377,866), all of which are relied upon and incorporated herein by reference in their entireties. The entire disclosure of any publication or patent document mentioned herein is entirely incorporated by reference.

TECHNICAL FIELD

(1) The present disclosure relates generally to anchoring devices. More particularly, the present disclosure relates to an anchoring device to stabilize a beach umbrella on sand.

BACKGROUND

(2) Beach umbrellas are frequently used by beachgoers to provide an area of shade or shelter to protect them from direct sunrays and provide a somewhat protected area for their various beach items. Conventional beach umbrellas include an elongated, rigid, support post with a pointed lower end including an auger designed to be rotated and driven into the sand by exerting a downward rotational force on the support post. However, horizontal and vertical forces of heavier wind, wind gusts, or subsequent pivotable movement of the umbrella frequently results in the umbrella being completely dislodged from the sand. Indeed, although these augers vertically stabilize the umbrellas by counteracting vertical lifting forces, they do not laterally stabilize the umbrellas from horizontal and angular forces that tend to move the umbrella post laterally, slowly widening the surrounding sand in which the auger has been driven and dislodging it from the sand. This can result in hazardous conditions since the wind, after dislodging the umbrella, will cause the umbrella to roll or tumble along the beach causing an extremely dangerous situation for other beachgoers.

(3) Accordingly, there is a need in the art for an improved beach umbrella anchor which will increase the total static retention forces and the lateral stability of a beach umbrella by alleviating or preventing horizontal or vertical lifting forces, caused by steady winds and/or gusts, from dislodging the beach umbrella from the sand such that a beach umbrella may be used in a more stable, secure, and safe manner.

(4) In the present disclosure, where a document, act or item of knowledge is referred to or discussed, this reference or discussion is not an admission that the document, act or item of knowledge or any combination thereof was at the priority date, publicly available, known to the public, part of common general knowledge or otherwise constitutes prior art under the applicable statutory provisions; or is known to be relevant to an attempt to solve any problem with which the present disclosure is concerned.

(5) While certain aspects of conventional technologies have been discussed to facilitate the present

disclosure, no technical aspects are disclaimed and it is contemplated that the claims may encompass one or more of the conventional technical aspects discussed herein.

BRIEF SUMMARY

(6) According to one aspect of the present disclosure, a beach umbrella anchoring and stabilizing device configured to stabilize a beach umbrella on a sandy surface includes an elongated support shaft, an anchoring container, and multiple gussets. The elongated support shaft extends along a longitudinal axis between a proximal end and a distal end and includes a hollow interior configured to receive a beach umbrella support post. An anchoring container is coupled to the distal end of the elongated support shaft and includes an open top with an upper perimeter edge substantially surrounding at least a portion of the elongated support shaft. The anchoring container further includes a closed bottom defining a substantially planar surface and at least one sidewall extending between the upper perimeter edge and the closed bottom in a direction substantially parallel to the longitudinal axis. Multiple gussets extend radially between the elongated support shaft and the sidewall. Each of the gussets extends from the closed bottom in a proximal direction parallel to the longitudinal axis.

(7) In some embodiments, the proximal end of the elongated support shaft is disposed proximal to the upper perimeter edge of the anchoring container. In some embodiments, the gussets are spaced at equal intervals around the elongated support shaft.

(8) In some embodiments, each of the gussets includes a first side surface, a second side surface, and a top surface. The first side surface and the second side surface may extend between the closed bottom and the top surface. In certain embodiments, the top surface of each gusset is disposed distal to the proximal end of the hollow support shaft and the upper perimeter of the anchoring container. In some embodiments, the top surface is concave between the at least one sidewall and the elongated support shaft. In certain embodiments, each of the gussets includes a depth between the first side surface and the second side surface. The depth may taper from the closed bottom end towards the top surface.

(9) In some embodiments, the beach umbrella anchoring and stabilizing device further includes a reservoir disposed between each of the gussets. The reservoir may be configured to retain a volume of sand. In some embodiments, a portion of the substantially planar surface forms a base of the reservoir.

(10) In certain embodiments, the substantially planar surface includes multiple vaulted portions. Each of the vaulted portions may correspond to each of the gussets. In some embodiments, each of the vaulted portions is configured to accommodate a quantity of sand to anchor the anchoring container relative to the sand. In certain embodiments, the vaulted portions of a first anchoring container are configured to receive the gussets of a second anchoring container when the first anchoring container and the second anchoring container are in a stacked configuration.

(11) According to another aspect of the present disclosure, a beach umbrella anchoring and stabilizing system is presented that includes an elongated support shaft, an anchoring container, a securing element, and a collar. The elongated support shaft extends between a proximal end and a distal end. The proximal end is configured to receive at least a portion of a beach umbrella support post.

(12) The anchoring container includes a center column extending along a longitudinal axis and configured to receive the elongated support shaft therethrough. The anchoring container further includes an open top having an upper perimeter edge circumscribing the center column and a closed bottom defining a substantially planar surface. At least one sidewall extends between the upper perimeter edge and the closed bottom in a direction substantially parallel to the longitudinal axis. Multiple gussets extend radially between the elongated support shaft and the sidewall. Each of the gussets extends from the closed bottom in a proximal direction parallel to the longitudinal axis.

(13) The securing element is configured to couple the center column to the distal end of the elongated support shaft. The collar is coupled to the proximal end of the elongated support shaft

and configured to selectively secure a position of the beach umbrella support post relative to the elongated support shaft.

(14) In some embodiments, the distal end of the elongated support shaft includes a threaded connection feature configured to engage a corresponding feature of the securing element.

(15) In some embodiments, the collar is configured to apply pressure to the beach umbrella support post to secure its position. In certain embodiments, the collar includes an inner circumference and an actuator. The actuator may be configured to selectively reduce the inner circumference. In some embodiments, the collar includes opposing pressure elements configured to selectively extend in a perpendicular direction to engage the beach umbrella support post.

(16) In some embodiments, the open top of the anchoring container comprises dimensions greater than dimensions of the closed bottom.

(17) According to a third aspect of the present disclosure, a beach umbrella anchoring and stabilizing device is presented that includes an elongated support shaft, an anchoring container, and a plurality of hollow stabilizing vanes. The elongated support shaft extends along a longitudinal axis between a proximal end and a distal end. The elongated support shaft includes a hollow interior configured to receive at least a portion of a beach umbrella support post.

(18) The anchoring container is coupled to the elongated support shaft. The anchoring container includes an open top, a closed bottom, and at least one sidewall. The open top includes an upper perimeter edge substantially surrounding at least a portion of the elongated support shaft. The closed bottom is proximal to the distal end, and the sidewall extends around the elongated support shaft between the open top and the closed bottom. The sidewall defines a reservoir configured to receive a volume of sand.

(19) Multiple hollow stabilizing vanes extend radially from the elongated support shaft between the closed bottom of the anchoring container and the distal end of the elongated support shaft. Each of the hollow stabilizing vanes defines an interior trough configured to receive a portion of the volume of sand and an exterior surface configured to engage a surrounding volume of sand.

Description

BRIEF DESCRIPTION OF THE DRAWINGS

(1) In the drawings, like elements are depicted by like reference numerals. The drawings are briefly described as follows.

(2) FIG. 1 is a perspective view of the beach umbrella anchoring and stabilizing device according to one embodiment of the present disclosure;

(3) FIG. 2 is a perspective view of the beach umbrella anchoring and stabilizing device, illustrating the beach accessory tray mounted onto the support shaft of the beach umbrella anchoring and stabilizing device and a beach umbrella support post mounted into the support shaft according to one embodiment of the present disclosure;

(4) FIG. 3 is an exploded view of the bottom end of a beach umbrella support post, the beach accessory tray, and the beach umbrella anchoring and stabilizing device, illustrating one manner in which a beach umbrella support post and beach accessory tray may be mounted onto the beach umbrella anchoring and stabilizing device according to one embodiment of the present disclosure;

(5) FIG. 4 is a cross-sectional view of the beach umbrella anchoring and stabilizing device buried in the sand with a beach accessory tray mounted onto the support shaft and a beach umbrella support post mounted into the support shaft, illustrating one manner in which the anchoring container and stabilizing vanes of the beach umbrella anchoring and stabilizing device may be positioned after being buried under the sand and one manner in which the beach accessory tray and the beach umbrella support post may be positioned on the support shaft according to one embodiment of the present disclosure;

(6) FIG. 5A is a side plan view of the beach umbrella anchoring and stabilizing device according to one embodiment of the present disclosure;

(7) FIG. 5 is a cross-sectional view of the beach umbrella anchoring and stabilizing device across line 5-5 of FIG. 5A, illustrating the configuration of the stabilizing vanes with respect to the support shaft according to one embodiment of the present disclosure;

(8) FIG. 6 is a perspective view of the beach umbrella anchoring and stabilizing device going into a hole dug in the sand, illustrating one manner in which the beach umbrella anchoring and stabilizing device may be inserted into the sand prior to being buried according to one embodiment of the present disclosure;

(9) FIG. 7 is a perspective view of the anchoring container of the beach umbrella anchoring and stabilizing device positioned in a hole dug in the sand, illustrating the anchoring container positioned upwardly with respect to the sand surface before the anchoring container is buried in the sand according to one embodiment of the present disclosure;

(10) FIG. 8 is a perspective view of the anchoring container of the beach umbrella anchoring and stabilizing device positioned in a hole dug in the sand, illustrating the anchoring container filled with sand prior to being buried in the sand according to one embodiment of the present disclosure;

(11) FIG. 9 is a perspective view of the anchoring container of the beach umbrella anchoring and stabilizing device buried in the sand according to one embodiment of the present disclosure;

(12) FIG. 10 is a perspective view of the anchoring container of the beach umbrella anchoring and stabilizing device buried in the sand, illustrating the beach umbrella anchoring and stabilizing device anchoring and stabilizing a beach umbrella mounted into the support shaft thereof according to one embodiment of the present disclosure;

(13) FIG. 11 is a perspective view of another embodiment of a beach umbrella anchoring and stabilizing device in accordance with one embodiment of the present disclosure;

(14) FIG. 12 is a cross-sectional view of the beach umbrella anchoring and stabilizing device of FIG. 11 in accordance with one embodiment of the present disclosure;

(15) FIG. 12A is a cross-sectional view of representative hollow stabilizing vanes of the embodiment of the beach umbrella anchoring and stabilizing device of FIG. 12;

(16) FIG. 13 is a perspective view of one embodiment of an anchoring container in accordance with one embodiment of the present disclosure;

(17) FIG. 14 is a cross-sectional view of the anchoring container of FIG. 13 in accordance with one embodiment of the present disclosure;

(18) FIG. 15 is a cross-sectional plan view of the anchoring container of FIG. 13 in accordance with one embodiment of the present disclosure;

(19) FIG. 16 is a perspective view of multiple of the anchoring containers of FIG. 13 in a stacked configuration in accordance with some embodiments of the present disclosure;

(20) FIG. 17A is a perspective view of another embodiment of an anchoring container in accordance with one embodiment of the present disclosure;

(21) FIG. 17B is a perspective view of still another embodiment of an anchoring container in accordance with one embodiment of the present disclosure; and

(22) FIG. 18 is a cross-sectional view of the anchoring container of FIG. 17B illustrating a beach umbrella support post extending therethrough in accordance with certain embodiments of the present disclosure;

(23) FIG. 19 is a perspective view of multiple of the anchoring containers of FIG. 19 in a stacked configuration in accordance with some embodiments of the present disclosure;

(24) FIG. 20 is an exploded perspective view of a representative embodiment of a beach umbrella anchoring and stabilizing system in accordance with one embodiment of the present disclosure;

(25) FIG. 21 is a perspective view of the beach umbrella anchoring and stabilizing system of FIG. 20 assembled in accordance with some embodiments of the present disclosure;

(26) FIG. 22 is a perspective view of another embodiment of a beach umbrella anchoring and

stabilizing system assembled in accordance with one embodiment of the disclosure; and (27) FIG. 23 is an enlarged perspective view of the collar component of the beach umbrella anchoring and stabilizing system of FIG. 22 in accordance with one embodiment of the present disclosure.

(28) The present disclosure now will be described more fully hereinafter with reference to the accompanying drawings, which show various example embodiments. However, the present disclosure may be embodied in many different forms and should not be construed as limited to the example embodiments set forth herein. Rather, these example embodiments are provided so that the present disclosure is thorough, complete and fully conveys the scope of the present disclosure to those skilled in the art.

DETAILED DESCRIPTION OF THE PREFERRED EMBODIMENTS

(29) As discussed above, known beach umbrellas are susceptible to horizontal and angular forces that tend to move the umbrella post laterally, eventually causing the umbrella to dislodge from the sand. This can result in hazardous conditions caused by the umbrella toppling onto beachgoers and/or rolling or tumbling along the beach. The present disclosure addresses these and other issues.

(30) As used herein, the term “distal” refers to a direction away from a canopy of a beach umbrella and towards an end of an umbrella support post engaged in sand and/or a beach. Similarly, the term “proximal” refers to a direction towards the canopy of a beach umbrella and away from the end of the umbrella support post engaged in sand and/or the beach.

(31) FIG. 1 illustrates a beach umbrella anchoring and stabilizing device **10** comprising an elongated support shaft **12** including a proximal end **12P** and a distal end **12D** opposite the proximal end **12P**, an anchoring container **14** affixed to the support shaft **12**, and a plurality of stabilizing vanes **16** affixed to the support shaft **12**. In some embodiments, the support shaft **12** includes a hollow interior **18** adapted to receive a beach umbrella support post therein. The proximal end **12P** may include an opening **20** providing access to the hollow interior **18**. In some embodiments, the proximal end **12P** may include a fastener **22** for fastening a beach umbrella support post within the hollow interior **18**. The fastener **22** may include, for example, at least one of a screw, a nail, a bolt, a rivet, a grommet, and/or any other suitable fastening device or mechanism.

(32) In some embodiments, the distal end **12D** is pointed to facilitate the penetration of sand, such as the sand defining the surface of a beach.

(33) In some embodiments, the anchoring container **14** includes an open top **24**, a closed bottom **26** opposite the open top **24**, and a sidewall **28** extending around the support shaft **12** from the open top **24** to the closed bottom **26**. In certain embodiments, the anchoring container **14** includes a plurality of partitions **30** extending radially inwardly from the sidewall **28** to the support shaft **12**. The open top **24** may not be affixed to the support shaft **12** while the closed bottom **26** may be affixed to the support shaft **12** adjacent to the distal end **12D** of the support shaft **12**.

(34) In some embodiments, the sidewall **28** defines a reservoir **32** extending between the support shaft **12**, the open top **24**, the closed bottom **26**, and the sidewall **28** that is adapted to receive sand. The sidewall **28** may include an inner surface **28A**, an outer surface **28B**, and an upper perimeter edge **28P** defining an opening **34** providing access to the reservoir **32**. In some embodiments, the sidewall **28** is annular with respect to the support shaft **12** and tapers in diameter from the open top **24** and upper perimeter edge **28P** to the closed bottom **26**, thereby forming a concave bowl-shape.

(35) In some embodiments, the partitions **30** define separate and discrete basins within the reservoir **32** that are individually adapted to receive sand. Each of the partitions **30** may extend vertically upwardly or linearly from the closed bottom **26** toward the open top **24**. In some embodiments, the partition **30** defines a planar member or structure. In some embodiments, each of the partitions **30** also extends perpendicularly with respect to the support shaft **12**. In certain embodiments, each of the partitions **30** extends to the open top **24** such that the partitions **30** are flush with the upper perimeter edge **28P** of the sidewall **28**. The anchoring container **14** may be adapted to be buried under sand to provide lateral support to the support shaft **12**.

(36) Referring now to FIG. 5 and FIG. 5A, in conjunction with FIG. 1, the stabilizing vanes **16** may protrude outwardly from the support shaft **12** and may extend from the closed bottom **26** of the anchoring container **14** to the distal end **12D** of the support shaft **12**. Each of the stabilizing vanes **16** may include a proximal end **16P** affixed to the outer surface **28B** of the sidewall **28** and a distal end **16D** affixed to the distal end **12D** of the support shaft **12**. In some embodiments, each of the stabilizing vanes **16** taper in width from the proximal end **16P** to the distal end **16D** such that the stabilizing vanes **16** also taper in width from the closed bottom **26** of the anchoring container **14** toward the distal end **12D** of the support shaft **12**, thereby defining an arcuate shape.

(37) The stabilizing vanes **16** may be spaced at equal intervals around the support shaft **12** to provide equal support on all sides of the support shaft **12**. In some embodiments, each of the stabilizing vanes **16** defines a broad surface **16S** adapted to engage sand when a rotational force is exerted onto the support shaft **12**. In this way, the stabilizing vanes **16** may prevent rotation of the support shaft **12** about a longitudinal axis of the support shaft **12** when the anchoring container **14** is buried under the sand. In some embodiments, the stabilizing vanes include four stabilizing vanes **16A**, **16B**, **16C**, **16D**, each protruding orthogonally outwardly with respect to the support shaft **12**. In other embodiments, the stabilizing vanes **16** are aligned with the partitions **30** of the anchoring container **14**.

(38) Referring now to FIG. 2, FIG. 3, and FIG. 4, the fastener **22** of the support shaft **12** may include an aperture **22A** and a hand knob **22B**. The aperture **22A** may be adapted to receive the hand knob **22B** therethrough such that the hand knob **22B** may extend through the aperture **22A** into the hollow interior **18** to engage a beach umbrella support post **40** mounted into the support shaft **12**. In certain embodiments, the aperture **22A** is threaded so as to threadably engage the hand knob **22B** and provide a means for securing the hand knob **22B** in position within the hollow interior **18**.

(39) In operation, in some embodiments, the beach umbrella **38** is supported by the beach umbrella anchoring and stabilizing device **10** by mounting the beach umbrella support post **40** into the hollow interior **18** of the support shaft **12**. Note, the hollow interior **18** includes a universally sized diameter that is larger than a diameter of the beach umbrella support post **40** such that the support shaft **12** may receive the beach umbrella support post of any variety of beach umbrellas therein. Once mounted into the support shaft **12**, the beach umbrella support post **40** may slide longitudinally along the length of the hollow interior **18** to enable the height of the beach umbrella **38** to be adjusted relative to the sand **41** as desired by a user. In some embodiments, the beach umbrella support post **40** is secured in position by rotating the hand knob **22B** through the aperture **22A** and into the hollow interior **18** to engage the beach umbrella support post **40**. The hand knob **22B** may be tightened against the beach umbrella support post **40** to fasten the beach umbrella support post **40** in position within the support shaft **12**.

(40) In embodiments, the beach umbrella anchoring and stabilizing device **10** further includes a beach accessory tray **42** that is removably attachable to the support shaft **12**. The beach accessory tray **42** may include a planar member having a central opening **44** for mounting the beach accessory tray **42** onto the support shaft **12** and/or a second fastener **46** for fastening the beach accessory tray **42** to the support shaft **12**. In some embodiments, the central opening **44** includes a perimeter edge **48** having a collar **50** including the second fastener **46**. In embodiments, the second fastener **46** comprises an aperture **46A** extending through the collar **50** and a hand knob **46B**. The aperture **46A** may be adapted to receive the hand knob **46B** therethrough such that the hand knob **46B** may extend through the aperture **46A** into the collar **50** to engage the support shaft **12** when the beach accessory tray **42** is mounted thereon. In some embodiments, the aperture **46A** is threaded such that it threadably engages the hand knob **46B** and provides a means for securing the hand knob **46B** in position within the hollow interior **18**. The beach accessory tray **42** may slide longitudinally along the length of the support shaft **12** to adjust the height of the beach accessory tray **42** relative to the sand **41**.

(41) Referring now to FIG. 6, FIG. 7, FIG. 8, FIG. 9, and FIG. 10, in one operation of the beach umbrella anchoring and stabilizing device **10**, a user first digs a hole **52** in the sand **41** large enough to accommodate the anchoring container **14** and the stabilizing vanes **16**. The user may place the anchoring container **14** into the hole **52**, orienting the support shaft **12** in a vertical upright orientation. While maintaining the support shaft **12** in the vertical upright orientation, the user may fill and pack the reservoir **32** with sand and, in some embodiments, may also fill and pack the area between the sidewall **28** and the hole **52** with sand until the anchoring container **14** and stabilizing vanes **16** are completely buried underneath the sand **41**. The user may mount the beach umbrella **38** into the hollow interior **18** of the support shaft **12** and may secure the beach umbrella **38** at a desired height with respect to the sand **41** by fastening the beach umbrella support post **40** within the support shaft **12** using, for example, the fastener **22**.

(42) Referring now to FIGS. 11, 12, and 12A, in some embodiments, a beach umbrella anchoring and stabilizing device **10** is presented that includes an elongated support shaft **12**, an anchoring container **14**, and one or more hollow stabilizing vanes **80**. The beach umbrella anchoring and stabilizing device **10** may be configured to receive and support a personal or commercial beach umbrella having a diameter or span of eight (8) feet, nine (9) feet, or ten (10) feet, for example.

(43) The beach umbrella anchoring and stabilizing device **10** may have a substantially rigid structure including one or more metals or metal alloys, plastics, and/or other suitable rigid materials. In certain embodiments, for example, the beach umbrella anchoring and stabilizing device **10** includes acrylonitrile butadiene styrene (“ABS”), polycarbonate (“PC”), polyphenylene oxide (“PPO”), polyphenylene ether (“PPE”), polyamide (“PA”), polybutylene terephthalate (“PBT”), acrylic, or the like.

(44) In some embodiments, the anchoring container **14** is coupled to a distal end **18** of the elongated support shaft **12**. In some embodiments, the elongated support shaft **12**, anchoring container **14**, and/or hollow stabilizing vanes **80** may be molded or otherwise monolithically formed as a single unit. In other embodiments, the elongated support shaft **12** and the anchoring container **14** may be coupled together via one or more mechanical fasteners and/or connecting mechanisms such as bolts, rivets, grommets, threads, a press fit, and/or any other suitable fastener or fastening mechanism.

(45) In some embodiments, the elongated support shaft **12** extends along a longitudinal axis **36** between a proximal end **12P** and the distal end **12D**. The elongated support shaft **12** may have a hollow interior **18** configured to receive at least a portion of a beach umbrella support post **40**. The elongated support shaft **12** and/or hollow interior **18** may be circular, elliptical, rectangular, triangular, square, polygonal, or may include any other suitable shape. In some embodiments, the hollow interior **18** includes a diameter or width greater than a diameter or width of the beach umbrella support post **40**. In one embodiment, the hollow interior **18** includes a diameter of about two (2) inches. In another embodiment, the hollow interior **18** includes a diameter between about two (2) and about two and a half (2.5) inches.

(46) The anchoring container may include an open top **24**, a closed bottom **26**, and at least one sidewall **28**. One or more sidewalls **28** may extend around the elongated support shaft **12** between the open top **24** and the closed bottom **26**. In some embodiments, the sidewall **28** may include an arcuate and/or tapered shape. In some embodiments, the sidewall **28** may define a reservoir **90** configured to receive a volume of sand. In some embodiments, the one or more sidewalls **28** may be oriented such that the open top **24** and/or upper perimeter edge **68** includes a diameter or width greater than a diameter or width of the closed bottom **26**.

(47) In some embodiments, the open top **24** includes an upper perimeter edge **68** substantially surrounding at least a portion of the elongated support shaft **12**. For example, in some embodiments, the upper perimeter edge **68** is substantially circular and spaced apart from the elongated support shaft **12**. In some embodiments, the upper perimeter edge **68** substantially surrounds the elongated support shaft **12** at a position distal to a midpoint between the proximal

end **12P** and the distal end **12D**. In certain embodiments, the upper perimeter edge **68** substantially surrounds the elongated support shaft **12** at a position at or distal to approximately one-third of a height of the elongated support shaft **12** measured from the distal end **12D**. In these and other embodiments, the closed bottom **26** may be disposed distal to the upper perimeter edge **68** and/or may contact the distal end **12D** of the elongated support shaft **12**.

(48) In some embodiments, one or more hollow stabilizing vanes **80** extend radially from the elongated support shaft **12** between the closed bottom **26** of the anchoring container **14** and the distal end **12D** of the elongated support shaft **12**. In certain embodiments, the hollow stabilizing vanes **80** extend in a distal direction **88** between at least a portion of the sidewall **28** of the anchoring container **14** and the distal end **12D** of the elongated support shaft **12**.

(49) In these and other embodiments, each of the hollow stabilizing vanes **80** defines an interior trough **82** configured to receive a portion of the volume of sand and an exterior surface **84** configured to engage a surrounding volume of sand. In some embodiments, the hollow stabilizing vane **80** and interior trough **82** include an elongate arcuate shape having a depth that tapers from the distal end **12D** of the elongated support shaft **12** toward the sidewall **28** and/or closed bottom **26** of the anchoring container **14**. In this manner, the interior trough **82** may maximize a volume of sand retained by the anchoring container **14**, thereby optimizing beach umbrella stability.

(50) Additionally, the tapered shape of the hollow stabilizing vanes **80** may contribute to an overall tapered shape of an exterior of the anchoring container **14**, thereby facilitating excavation of surrounding sand and burying the anchoring container **14** therein. In some embodiments, the surrounding sand accumulates within the spaces between each hollow stabilizing vane **80**, thereby further stabilizing the anchoring container **14** and preventing its lateral movement and/or disengagement relative to the sand or beach.

(51) In some embodiments, a collar **50** is coupled to the proximal end **12P** of the elongated support shaft **12** and configured to selectively secure a position of the beach umbrella support post **40** relative to the elongated support shaft **12**. The collar **50** may be constructed of one or more metals or metal alloys, plastics, and/or other suitable rigid materials. In some embodiments, the collar **50** is configured to apply pressure to the beach umbrella support post **40** to secure its position relative to the elongated support shaft **12**.

(52) In one embodiment, the collar **50** includes, for example, a cylindrical or substantially cylindrical clamp configured to encircle or substantially encircle a perimeter of the beach umbrella support post **40**. In some embodiments, the collar **50** includes a hole **52** having dimensions sufficient to accommodate the beach umbrella support post **40** therethrough. In some embodiments, the collar **50** includes a fastener **22** configured to reduce a size of the hole **52** such that actuating the fastener **22** causes the collar **50** to tighten around the beach umbrella support post **40**, thereby constraining its movement and maintaining its alignment with the elongated support shaft **12**. In some embodiments, the fastener **22** includes a screw, post, bar, or other suitable mechanical tightening element **114** coupled to a hand knob **22B** or other actuator to facilitate tightening and/or loosening the collar **50** relative to the beach umbrella support post **40**.

(53) Referring now to FIGS. **13**, **14** and **18**, in some embodiments, the beach umbrella anchoring and stabilizing device **10** includes an elongated support shaft **12** and an anchoring container **14** having one or more gussets **60**. In some embodiments, the anchoring container **14** includes an open center column **58** formed therein. In certain embodiments, the elongated support shaft **12** extends from and/or includes the center column **58**. In other embodiments, the center column **58** is separate from the elongated support shaft **12** but configured to receive and/or couple to the elongated support shaft **12**.

(54) The elongated support shaft **12** may extend along a longitudinal axis **36** between a proximal end **12P** and a distal end **12D**. The elongated support shaft **12** may be open at its proximal end **12P** and may include a hollow interior **18** configured to receive at least a portion of a beach umbrella support post **40**. In some embodiments, as shown in FIGS. **14** and **15**, while still referring to FIGS.

13 and **18**, the proximal end **12P** of the elongated support shaft **12** is disposed at a position proximal to the upper perimeter edge **68** of the anchoring container **14**.

(55) In some embodiments, the elongated support shaft **12** includes an open distal end **12D** such that the beach umbrella support post **40** extends partially or fully through the distal end **12D**. For example, the beach umbrella support post **40** may include a pointed distal end **12D**, auger **100**, or other tool coupled to its distal end **12D**. In some embodiments, the pointed distal end **12D** or auger **100** may extend beyond the closed bottom **26** the anchoring container **14** to facilitate a user's ability to excavate surrounding sand and thereby securely anchor the beach umbrella anchoring and stabilizing device **10** relative to the beach or sandy surface.

(56) The anchoring container **14** may include a closed bottom **26** defining a substantially planar surface **94** to facilitate increased contact between the anchoring container **14** and the beach or sandy surface on which it is disposed. In this way, the planar surface **94** further stabilizes the beach umbrella anchoring and stabilizing device **10** with respect to lateral forces and protects against unintended disengagement with the anchoring surface.

(57) At least one sidewall **28** may extend between the upper perimeter edge **68** and the closed bottom **26**. In some embodiments, at least a portion of the upper perimeter edge **68** includes a lip **98** extending therefrom. In some embodiments, the closed bottom **26** includes a substantially planar surface **94**. In these and other embodiments, the one or more sidewalls **28** may extend in a direction substantially parallel to the longitudinal axis **36** to form an angle of between about ninety degrees (90°) and about forty-five degrees (45°) relative to the closed bottom **26** and/or planar surface **94**.

(58) In some embodiments, a reservoir **90** configured to retain a volume of sand may be formed between the sidewall **28**, the closed bottom **26** and adjacent gussets **60**. In some embodiments, at least a portion of the planar surface **94** forms a base of the reservoir **90**. In some embodiments, the reservoir **90** includes at least one corner including the angle between about ninety degrees (90°) and about forty-five degrees (45°) between the sidewall **28** and the closed bottom **26** and/or planar surface **94**. In this manner, stability of the beach umbrella anchoring and stabilizing device **10** may be maximized with respect to the anchoring surface.

(59) In some embodiments, one or more gussets **60** extend radially from the elongated support shaft **12**, between the elongated support shaft **12** and the sidewall **28**. In some embodiments, the gussets **60** are spaced at substantially equal intervals around the elongated support shaft **12**. In some embodiments, each of the gussets is substantially contiguous with the elongated support shaft **12**, the sidewall **28**, and/or the closed bottom **26**. In other embodiments, at least a portion of one or more of the gussets **60** may be spaced apart from the elongated support shaft **12**, the sidewall **28**, and/or the closed bottom **26**.

(60) Referring now to FIG. **15**, while still referring to FIGS. **13** and **14**, one or more of the gussets **60** may extend in a proximal direction **78** from the closed bottom **26** such that a height **118** of the gusset **60** is substantially parallel to the longitudinal axis **36** and a width **102** of the gusset **60** is substantially perpendicular relative to the longitudinal axis **36**. In certain embodiments, as shown in FIG. **17B**, the height **118** of the gusset **60** is at least twice the width **102** of the gusset **60**. In some embodiments, the height **118** of the gusset **60** is at least greater than the width **102** of the gusset **60**. In other embodiments, as shown in FIG. **17A**, for example, the height **118** of the gusset **60** is equal to or less than the width **102** of the gusset **60**.

(61) In some embodiments, each of the gussets **60** includes a first side surface **62**, a second side surface **64**, and a top surface **66**. The first side surface **62** and the second side surface **64** may extend between the closed bottom **26** and the top surface **66**. In certain embodiments, the top surface **66** of each gusset **60** is disposed distal to the proximal end **12P** of the hollow support shaft **12** and the upper perimeter edge **68** of the anchoring container **14**.

(62) In some embodiments, as shown in FIG. **13** while still referring to FIG. **15**, the top surface **66** of the gusset **60** is concave between the at least one sidewall **28** and the elongated support shaft **12** such that a midpoint of the top surface **66** is positioned distal to a height **118** of the gusset **60** at

either the sidewall **28** or the elongated support shaft **12**. In other embodiments, as shown in FIG. **15**, the height **118** of the gusset **60** tapers from the sidewall **28** to the elongated support shaft **12** such that the top surface **66** is inclined from the closed bottom **26** to the sidewall **28**.

(63) In certain embodiments, as shown in FIGS. **17A** and **17B** while still referring to FIG. **15**, each of the gussets **60** includes a depth **120** between the first side surface **62** and the second side surface **64**. The depth **120** may taper from the closed bottom **26** towards the top surface **66** such that the top surface **66** is more narrow than a distance between the first side surface **62** and the second side surface **64** at the closed bottom **26**. In other embodiments, the depth **120** may be substantially consistent along the height **118** of the gusset **60**.

(64) Referring now to FIGS. **16** and **19**, in certain embodiments, the substantially planar surface **94** includes multiple vaulted portions **70**. Each of the vaulted portions **70** may correspond to each of the gussets **60**. In certain embodiments, an exterior surface disposed opposite the top surface **66** of the gusset forms the vaulted portion **70**. In these and other embodiments, the vaulted portion **70** is disposed proximal to, or elevated, relative to the closed bottom **26**. In some embodiments, each of the vaulted portions **70** is configured to accommodate surrounding sand, thereby further securing the anchoring container **14A—14K** relative to the sand and/or beach.

(65) In certain embodiments, the vaulted portions **70** of a first anchoring container **14a** are configured to receive the gussets **60** of a second anchoring container **14b** when the first anchoring container **14a** and the second anchoring container **14b** are in a stacked configuration. Similarly, in some embodiments, the center column **58** of the first anchoring container **14a** is configured to align with the center column **58** of the second anchoring container **14b** in a stacked configuration. Further, in certain embodiments, the sidewalls **28** of the first anchoring container **14a** are configured to fit within the sidewalls **28** of the second anchoring container **14b** with only the upper perimeter edges **68** of each of the first and the second anchoring containers **14a**, **14b** being exposed.

(66) In this manner, two or more anchoring containers **14A—14K** may fit tightly together in a stacked arrangement such that multiple anchoring containers **14A—14K** occupy minimal space. As a result, the disclosed embodiments may minimize an amount of packing material needed for marketing and/or transporting more than one beach umbrella anchoring and stabilizing device **10** while also minimizing associated costs.

(67) Referring now to FIGS. **20** and **21**, a beach umbrella anchoring and stabilizing system **110** may include multiple components that may be assembled to anchor and/or support a beach umbrella. In some embodiments, the beach umbrella anchoring and stabilizing system **110** includes an elongated support shaft **12**, an anchoring container **14**, a securing element **104**, and a collar **50**. The elongated support shaft **12** may extend along a longitudinal axis **36** between a proximal end **12P** and a distal end **12D**. When assembled, the anchoring container **14** may be coupled to the elongated support shaft **12** such that the elongated support shaft **12** is maintained in a substantially centered, upright position along the longitudinal axis **36**. In some embodiments, at least a portion of the elongated support shaft **12** is hollow. The elongated support shaft **12** may include an inner diameter sufficient to accommodate an outer diameter of a beach umbrella support post **40** as shown in dotted lines in FIG. **18**. The proximal end **12P** may be open such that the elongated support shaft **12** may receive the beach umbrella support post **40** therein.

(68) In some embodiments, the anchoring container **14** includes a hollow center column **58**. Upon assembly, the center column **58** may align with the longitudinal axis **36**. In some embodiments, the center column **58** is substantially cylindrical. In some embodiments, the center column **58** is configured to receive at least a portion of the elongated support shaft **12** therethrough. In these and other embodiments, the center column **58** is configured to couple to at least a portion of the elongated support shaft **12**.

(69) In one embodiment, the elongated support shaft **12** is configured to extend through the center column **58** such that the distal end **12D** and/or ancillary stabilizing feature **108** is maintained at a

position distal to the center column **58**. In some embodiments, the elongated support shaft **12** includes a connection feature **106** disposed proximal to the distal end **12D**. The connection feature **106** may include, for example, a threaded connection configured to couple to a corresponding securing element **104** to couple the center column **58** to the distal end **12D** of the elongated support shaft **12**. Upon assembly, in some embodiments, the connection feature **106** may be accessible at a position proximal to the center column **58** of the anchoring container **14**.

(70) In certain embodiments, the securing element **104** may be configured to engage the connection feature **106** and/or the center column **58** of the anchoring container **14**. The securing element **104** may include, for example, a ring having an inner diameter greater than an outer diameter of the elongated support shaft **12** such that the securing element **104** may be introduced over the elongated support shaft **12** to engage the connection feature **106**. In some embodiments, the securing element **104** includes threads configured to engage the threaded connection of the connection feature **106**. In these and other embodiments, the securing element **104** may include a profile or other feature configured to engage or fit over the center column **58** to secure a position of the securing element **104** relative to the center column **58**.

(71) Referring now to FIG. **20**, in some embodiments, the distal end **12D** of the elongated support shaft **12** may include an ancillary stabilizing feature **108** to support the elongated support shaft **12** in the upright position when the elongated support shaft **12** and the anchoring container **14** are in an assembled configuration, as shown in FIG. **21**. In one embodiment, the ancillary stabilizing feature **108** includes one or more projections or feet to stabilize a position of the distal end **12D** relative to an inside surface of the anchoring container **14** or center column **58**. In one embodiment, the projections of the ancillary stabilizing feature **108** extend into each of the gussets **60** extending radially from the center column **58**, thereby preventing rotational and/or lateral movement of the elongated support shaft **12** relative to the anchoring container **14**. The ancillary stabilizing feature **108** may also facilitate maintaining the elongated support shaft **12** in a secure upright position relative to the anchoring container **14**.

(72) Referring now to FIGS. **21** and **22**, in some embodiments, the anchoring container **14** includes an open top **24** having an upper perimeter edge **68** circumscribing the center column **58**. The anchoring container **14** may further include a closed bottom **26** defining a substantially planar surface **94**. At least one sidewall **28** may extend between the upper perimeter edge **68** and the closed bottom **26** in a direction substantially parallel to the longitudinal axis **36** in an assembled configuration. In some embodiments, multiple gussets **60** extend radially between the elongated support shaft **12** and the sidewall **28**. As illustrated in FIG. **15**, a width of each of the gussets **60** may extend in a perpendicular direction relative to the longitudinal axis **36**. In some embodiments, a height of each of the gussets **60** extends upward from the closed bottom **26** in a proximal direction parallel to the longitudinal axis **36**.

(73) Referring now to FIG. **23** while still referring to FIGS. **20**, **21**, and **22**, in some embodiments, the collar **50** is configured to couple to a proximal end **12P** of the elongated support shaft **12**. The collar **50** may couple to the elongated support shaft **12** via a threaded connection, a press fit, one or more mechanical fasteners, and/or the like. In some embodiments, the collar **50** includes a hole **52** corresponding to the hollow interior **18** of the elongated support shaft **12**. One or more pressure elements **114** may hole **52** coupled to the collar **50** and may communicate with the hole **52** to selectively apply pressure to the beach umbrella support post **40** (shown in FIG. **18**) to secure its position relative thereto.

(74) In certain embodiments, as shown in FIGS. **20** and **21**, the hole **52** includes an inner circumference **56**. An actuator **74** may be coupled to the collar **50** and configured to selectively reduce the inner circumference **56** of the hole **52** to secure a position of the beach umbrella support post **40** (shown in FIG. **18**) relative thereto.

(75) In other embodiments, as shown in FIGS. **22** and **23** while also referring to FIG. **18**, the collar **50** includes opposing pressure elements **114** extending in opposing perpendicular directions

therethrough such that the pressure elements **114** engage the beach umbrella support post **40** via the hole **52**. In one embodiment, the opposing pressure elements **114** include screws, posts, and/or other suitable mechanical elements to apply pressure to the beach umbrella support post **40** through the hole **52**. In some embodiments, the pressure element **114** is coupled to a rigid, resilient, or flexible bar **116**, ring, or other suitable element configured to contact the beach umbrella support post **40** through the hole **52**. Extending at least one pressure element **114** in a perpendicular direction through the hole **52** may apply pressure and/or other forces to the beach umbrella support post **40** via the bar **116**. In certain embodiments, one end of the pressure element **114** is coupled to a hand knob **22B** or other suitable mechanism to facilitate extending the pressure element **114** with respect to the collar **50** and/or hole **52**.

(76) It is understood that when an element is referred hereinabove as being “on” another element, it can be directly on the other element or intervening elements may be present therebetween. In contrast, when an element is referred to as being “directly on” another element, there are no intervening elements present.

(77) Moreover, any components or materials can be formed from a same, structurally continuous piece or separately fabricated and connected.

(78) It is further understood that, although ordinal terms, such as, “first,” “second,” “third,” are used herein to describe various elements, components, regions, layers and/or sections, these elements, components, regions, layers and/or sections should not be limited by these terms. These terms are only used to distinguish one element, component, region, layer or section from another element, component, region, layer or section. Thus, “a first element,” “component,” “region,” “layer” or “section” discussed below could be termed a second element, component, region, layer or section without departing from the teachings herein.

(79) Spatially relative terms, such as “beneath,” “below,” “lower,” “above,” “upper” and the like, are used herein for ease of description to describe one element or feature's relationship to another element(s) or feature(s) as illustrated in the figures. It is understood that the spatially relative terms are intended to encompass different orientations of the device in use or operation in addition to the orientation depicted in the figures. For example, if the device in the figures is turned over, elements described as “below” or “beneath” other elements or features would then be oriented “above” the other elements or features. Thus, the example term “below” can encompass both an orientation of above and below. The device can be otherwise oriented (rotated 90 degrees or at other orientations) and the spatially relative descriptors used herein interpreted accordingly. The term “substantially” is defined as at least 95% of the term being described and/or within a tolerance level known in the art and/or within 5% thereof.

(80) Example embodiments are described herein with reference to cross section illustrations that are schematic illustrations of idealized embodiments. As such, variations from the shapes of the illustrations as a result, for example, of manufacturing techniques and/or tolerances, are to be expected. Thus, example embodiments described herein should not be construed as limited to the particular shapes of regions as illustrated herein, but are to include deviations in shapes that result, for example, from manufacturing. For example, a region illustrated or described as flat may, typically, have rough and/or nonlinear features. Moreover, sharp angles that are illustrated may be rounded. Thus, the regions illustrated in the figures are schematic in nature and their shapes are not intended to illustrate the precise shape of a region and are not intended to limit the scope of the present claims.

(81) In conclusion, herein is presented a beach umbrella anchoring and stabilizing device. The disclosure is illustrated by example in the drawing figures, and throughout the written description. It should be understood that numerous variations are possible, while adhering to the inventive concept. Such variations are contemplated as being a part of the present disclosure.

(82) The description of the present disclosure has been presented for purposes of illustration and description, but is not intended to be exhaustive or limited to the disclosure in the form disclosed.

Many modifications and variations will be apparent to those of ordinary skill in the art without departing from the scope and spirit of the disclosure. The embodiment was chosen and described in order to best explain the principles of the disclosure and the practical application, and to enable others of ordinary skill in the art to understand the disclosure for various embodiments with various modifications as are suited to the particular use contemplated.

Claims

1. A beach umbrella anchoring and stabilizing device configured to stabilize a beach umbrella with respect to an anchoring surface, comprising: an elongated support shaft extending along a longitudinal axis between a proximal end and a distal end, wherein the elongated support shaft comprises a hollow interior configured to receive at least a portion of a beach umbrella support post; an anchoring container coupled to the elongated support shaft, the anchoring container comprising an open top having an upper perimeter edge substantially surrounding at least a portion of the elongated support shaft and a closed bottom proximal to the distal end, the anchoring container further comprising at least one sidewall extending around the elongated support shaft between the open top and the closed bottom, the at least one sidewall defining a reservoir configured to receive a volume of sand; and a plurality of hollow stabilizing vanes extending radially from the elongated support shaft between the closed bottom of the anchoring container and the elongated support shaft, each of the plurality of hollow stabilizing vanes defining an interior trough in the closed bottom of the anchoring container configured to receive a portion of the volume of sand and an exterior surface protruding outwardly from the closed bottom of the anchoring container configured to engage a surrounding volume of sand.
 2. The beach umbrella anchoring and stabilizing device of claim 1, wherein the proximal end of the elongated support shaft is disposed proximal to the upper perimeter edge of the anchoring container.
 3. The beach umbrella anchoring and stabilizing device of claim 1, wherein the plurality of hollow stabilizing vanes are spaced at equal intervals around the elongated support shaft.
 4. The beach umbrella anchoring and stabilizing device of claim 1, wherein each of the plurality of hollow stabilizing vanes extend in a distal direction between at least a portion of the at least one sidewall and the distal end of the elongated support shaft.
 5. The beach umbrella anchoring and stabilizing device of claim 1, wherein the interior troughs include an elongate arcuate shape having a depth that tapers from the distal end of the elongated support shaft toward the at least one sidewall.
 6. The beach umbrella anchoring and stabilizing device of claim 1, wherein the interior troughs include an elongate arcuate shape having a depth that tapers from the distal end of the elongated support shaft toward the closed bottom.
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