COLLAPSIBLE PORTABLE TABLE

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ABSTRACT

An improved collapsible portable table suitable for use in both outdoor and indoor environments and on both regular and irregular surfaces, having a tabletop and a two-part support leg comprised of a main support shaft and a stake in telescopic relationship to each other, and an optional stabilization base removably attachable to the stake. The improved collapsible portable table is easily disassembled for transport and storage with components which can be conveniently stored within themselves, is both light weight and durable, comprises safety features to prevent injury to users, and is easy and inexpensive to manufacture.
COLLAPSIBLE PORTABLE TABLE

BACKGROUND OF THE INVENTION

[0001] 1. Technical Field

The invention relates generally to portable tables suitable for use in outdoor environments as well as indoor use and more particularly to collapsible tables which may be easily stored and transported.

[0002] Description of Prior Art

Portable tables are well-known in the art. Basic designs include the pedestal table, having a tabletop, a single support leg, and a base. Pedestal tables work well in indoor environments but are relatively unstable in outdoor environments. They also are unsuitable where the surface upon which they are placed is somewhat irregular. Another common portable table design is a stacked table, having a tabletop and a single support leg which terminates in a pointed end which can be inserted into the ground. Stacked tables work well in outdoor environments, though they often experience lateral instability, especially if the pointed end of the support leg is not inserted very deep into the ground. Stacked tables, however, are unsuitable for indoor use or for use in outdoor environments having a hard ground surface.

[0003] Collapsible tables are also well-known in the art. They are useful in that they can be more easily stored and transported than non-collapsible tables. Many different mechanisms for collapsing tables are known in the art, including disassembly of components, folding of components, telescoping components into each other, and the like.

[0004] While various configurations of portable tables and collapsible tables are known, there is no known portable, collapsible table that is suitable for use in both indoor and outdoor environments on both regular and irregular surfaces. There exists a need for such tables, especially in the fields of recreation and entertainment, such as for hunting, camping, sporting events, and the like.

[0005] It is therefore an objective of this invention to provide an improved collapsible portable table which is suitable for use in both outdoor and indoor environments.

[0006] It is a further objective of this invention to provide an improved collapsible portable table which is suitable for use on regular and irregular surfaces and which is stable on a wide variety of surfaces.

[0007] It is yet a further objective of this invention to provide an improved collapsible portable table which can be easily disassembled for transport and storage.

[0008] It is yet a further objective of this invention to provide an improved collapsible portable table having components which can be conveniently stored within themselves.

[0009] It is yet a further objective of this invention to provide an improved collapsible portable table which is both light weight and durable.

[0010] It is yet a further objective of this invention to provide an improved collapsible portable table which comprises safety features to prevent injury to users.

[0011] It is yet a further objective of this invention to provide an improved collapsible portable table which is easy and inexpensive to manufacture.

SUMMARY

[0014] Other objectives of this invention will be evident from the following disclosure.

[0015] The present invention is directed to an improved collapsible portable table. The primary components of the table are a tabletop and a two-part support leg comprised of a main support shaft and a stake in telescopic relationship to each other. In addition, the table comprises a stub for removably attaching the tabletop to the support leg and an optional stabilization base having a collar to removably attach the stabilization base to the stake. The stake has a pointed end, located distal from the tabletop, which is suitable for inserting into a ground surface to secure the table, or which can be fully retracted when the stabilization base is used. Alternately, the stake can be used in conjunction with the stabilization base, with the pointed end of the stake inserted into the ground and the stabilization base flush with the ground for added stability of the table. The height of the table can be changed by telescoping or extending the main support shaft and the stake.

[0016] The removable stabilization base provides increased flexibility to the table of the present invention. When the table is used on substantially flat, soft outdoor surfaces, such as grassy lawns or sandy beaches, the combined use of the stake and the stabilization base provide the table with maximum stability. However, on steeply sloped or irregular terrain, such as where there are close set rocks, the stabilization base can be removed and the table remains stable solely by use of the staked end. On hard surfaces or indoor environments, the stake is retracted and the stabilization base allows the table to be used.

[0017] The components of the table are designed to be easily assembled and disassembled, without tools, so that the table can be easily moved and stored. This feature is particularly useful when the table is being used at outdoor events. The components are further designed such that when disassembled many of the components fit securely within each other, thereby increasing the convenience of storing and transporting the table. All of the components of the table may be constructed of high strength, light weight non-corrosive material, such as aluminum or composite materials, making the table ideal for outdoor use.

[0018] The ease of assembly and disassembly of the table of the present invention also lends itself to the table having interchangeable parts, such as different sized or shaped tabletops, thereby increasing the purposes for which the table may be used. A single table with a large sized tabletop and a small sized tabletop can be used by large groups on some occasions and then by an individual on other occasions. Additionally, different sized or shaped stabilization bases may be used for different types of terrain. This is especially useful for hunters and campers.

[0019] The components of the table of the present invention can be easily and inexpensively manufactured. For example, a single length of metal tubing can be sectioned into the main support shaft and the collar, while another single length of solid metal rod can be sectioned into the stake and the stub. The fasteners can be uniform set screws, and the planar pieces (the tabletop and the stabilization base) can be purchased in bulk with predrilled central threaded apertures. Those skilled in the art will be able to ascertain many other manufacturing efficiencies inherent in the design of the present invention.
[0020] Other features and advantages of the invention are described below.

DESCRIPTION OF THE DRAWINGS

[0021] FIG. 1 is a perspective view of the tabletop and the stub, with a directional arrow depicting how the stub is inserted into the tabletop.

[0022] FIG. 2 is a perspective view of the main support shaft and the interrelation of the main support shaft and the stub, with a directional arrow depicting how the stub is inserted into the main support shaft.

[0023] FIG. 3 is a perspective view of the stake and the interrelation of the stake and the main support shaft, with a directional arrow depicting how the stake is inserted into the main support shaft.

[0024] FIG. 4A is a perspective view of the stabilization base and the collar, with a directional arrow depicting how the collar is inserted into the stabilization base.

[0025] FIG. 4B is a perspective bottom view of the stabilization base, depicting the circumferential rim.

[0026] FIG. 5A is an exploded plan view of the table depicting all of the table components.

[0027] FIG. 5B is a plan view of the table showing the use of the stabilization base with the stake extending below the bottom surface of the stabilization base, with ghost lines depicting the location of the stake within the main support shaft and collar.

[0028] FIG. 5C is a plan view of the table showing the use of the stabilization base with the stake fully retracted within the main support shaft and collar, with ghost lines depicting the location of the stake within the main support shaft and collar.

[0029] FIG. 5D is a plan view of the table showing the use of the stabilization base with the stake extending below the bottom surface of the stabilization base and the main support shaft positioned relatively higher on the stake to extend the height of the table, with ghost lines depicting the location of the stake within the main support shaft and the collar.

[0030] FIG. 6A is a perspective view of the table as used on a substantially soft and level surface, showing the use of the stabilization base with the stake extending below the bottom surface of the stabilization base and inserted into the surface, with ghost lines depicting the location of the second end of the stake as inserted into the surface.

[0031] FIG. 6B is a perspective view of the table as used on a substantially sloped and rocky surface, showing the use of the stake without using the stabilization base, the stake inserted into the surface between the rocks, with ghost lines depicting the location of the second end of the stake as inserted into the surface.

[0032] FIG. 6C is a perspective view of the table as used on a substantially hard surface, showing the use of the stabilization base with the stake fully retracted within the main support shaft and collar, with ghost lines depicting the location of the stake within the main support shaft and collar.

[0033] FIG. 7 is a perspective view of the table having been collapsed and reassembled for storage, with ghost lines depicting the location of the stake and stub within the main support shaft and collar.

DETAILED DESCRIPTION OF THE INVENTION

[0034] The present invention comprises an improved collapsible table 1, suitable for indoor and outdoor use. The table 1 comprises a tabletop 10, a main support shaft 20, a stub 30, a stabilization base 50, and a collar 60. See FIG. 5A. The main support shaft 20 in combination with the stake 40, and optionally in combination with the stabilization base 50, supports the tabletop 10 in a substantially upright orientation. The stub 30 removably secures the tabletop 10 to the main support shaft 20. The collar 60 removably secures the stabilization base 50 (when used) to the stake 40. The main support shaft 20 and the stake 40 are telescopically engaged such that the height of the table 1 may be adjusted. The stabilization base 50 may be used to further stabilize the table 1, or it may be removed from the table 1 during use, as further described below.

[0035] The tabletop 10 is substantially planar and may have any suitable size and shape. In one embodiment the tabletop 10 is substantially circular. See FIG. 1. In another embodiment the tabletop 10 is substantially square. Other regular and irregular geometric shapes are also contemplated for the tabletop 10. The tabletop 10 may be substantially solid, or it may contain apertures, vents, or other decorative openings. Multiple interchangeable tabletops 10 may be included with the table 1, each having a unique size and/or shape and/or surface design, giving the table 1 added flexibility of use. The tabletop 10 is constructed of any suitable rigid material, such as aluminum, stainless steel, wood, or plastic. Where the table 1 is intended to be used primarily outdoors, the tabletop 10 should be constructed of a material which is substantially non-corrosive.

[0036] The main support shaft 20 is substantially cylindrical and hollow. See FIG. 2. It has a first end 21, a second end 22, an outer wall 24, and an inside diameter 26. The main support shaft 20 is opened at both its first end 21 and its second end 22. The main support shaft 20 is constructed of any suitable rigid material, such as aluminum, stainless steel, wood, or plastic. Where the table 1 is intended to be used primarily outdoors, the main support shaft 20 should be constructed of a material which is substantially non-corrosive.

[0037] The first end 21 of the main support shaft 20 is removably secured to the tabletop 10 by the stub 30. In one embodiment the tabletop 10 comprises a central threaded aperture 13 into which the stub 30 may be inserted. In this embodiment the stub 30 is substantially cylindrical and has a first end 31, a second end 32, and an outside diameter 35. The first end 31 of the stub 30 is threaded and suitably adapted to be threaded into the central threaded aperture 13 of the tabletop 10. See FIG. 1. The outside diameter 35 of the stub 30 is just slightly less than the inside diameter 26 of the main support shaft 20, such that the second end 32 of the stub 30 may be at least partially inserted into the main support shaft 20 at the first end 21 of the main support shaft 20 and removably secured thereto. See FIG. 2.

[0038] The present invention contemplates various configurations for removably securing the stub 30 to the main support shaft 20, such as by cooperating threads located on the second end 32 of the stub 30 and the first end 21 of the main support shaft 20, or by the second end 32 of the stub 30 being frictionally secured into the first end 21 of the main support shaft 20. In the preferred embodiment the stub 30 is removably secured to the main support shaft 20 by a first threaded set screw 71. In this embodiment the main support shaft 20 further comprises an upper threaded aperture 27 located at the first end 21 of the main support shaft 20. The upper threaded aperture 27 is substantially perpendicular to the outer wall 24 of the main support shaft 20 and passes
The first threaded set screw 71 is suitably adapted to be threaded into the upper threaded aperture 27 of the main support shaft 20 completely through the outer wall 24 of the main support shaft 20, such that the first threaded set screw 71 when threaded into the upper threaded aperture 27 of the main support shaft 20 engages the stub 30 proximate to the second end 32 of the stub 30. In other embodiments, the stabilization base 50 may have different regular and irregular geometric shapes. The stabilization base 50 may be substantially solid, or it may contain apertures, vents, or other decorative openings. The stabilization base 50 is constructed of any suitable rigid material, such as aluminum, stainless steel, wood, or plastic. Where the table 1 is intended to be used primarily outdoors, the stabilization base 50 should be constructed of a material which is substantially non-corrosive.

[0043] The stabilization base 50 has a top surface 51 and a bottom surface 52, and the bottom surface 52 of the stabilization base 50 has a circumferential rim 54. The top surface 51 of the stabilization base 50 is oriented upward, and the bottom surface 52 is oriented downward. The circumferential rim 54 serves to raise the bottom surface 52 of the stabilization base 50 off the surface 100 onto which the table 1 is placed, creating a void under the stabilization base 50. This configuration permits the stabilization base 50 to provide better stability to the table 1 when the surface 100 is somewhat irregular.

[0044] The stabilization base 50 is removably secured to the stake 40 by the collar 60. In one embodiment, the stabilization base 50 comprises a central threaded aperture 53 into which the collar 60 may be inserted. In this embodiment, the collar 60 is substantially cylindrical and hollow, and has a first end 61, a second end 62, an inside diameter 66, and an outer wall 64. The first end 61 of the collar 60 is threaded and suitably adapted to be threaded into the central threaded aperture 53 of the stabilization base 50. See FIG. 4. The inside diameter 66 of the collar 60 is just slightly larger than the outside diameter 45 of the stake 40, such that the second end 62 of the stake 40 may be at least partially inserted into and optionally through the collar 20 and removably secured thereto. See FIGS. 5B-D.

[0045] The present invention contemplates various configurations for removably securing the collar 60 to the stake 40, such as by the stake 40 being frictionally secured within the collar 60. In the preferred embodiment, the collar 60 is removably secured to the stake 40 by a third threaded set screw 73. In this embodiment, the collar 60 further comprises a threaded aperture 67 located at the second end 62 of the collar 60. The threaded aperture 67 is substantially perpendicular to the outer wall 64 of the collar 60 and passes completely through the outer wall 64 of the collar 60. The third threaded set screw 73 is suitably adapted to be threaded into the threaded aperture 67 of the collar 60 completely through the outer wall 64 of the collar 60, such that it is adapted to be threaded into the threaded aperture 67 of the collar 60. This arrangement is shown in FIGS. 4 and 5B-D.

[0046] The table 1 of the present invention is designed to be collapsible for easy storage and transportation. The table 1 is collapsed by disassembling one or more of its components. In the embodiments using threaded apertures and set screws to secure the components, no tools are required to disassemble the table 1. In the preferred embodiment, all of the components are disassembled. In the most preferred embodiment the combined length of the stake 40 and the stub 30 is slightly greater than the length of the main support shaft 20 and the combined length of the stake 40 and the stub 30 is slightly less than the combined length of the main support shaft 20 and the collar 60. After disassembly, the stake 40 and the stub 30 are both inserted into the main support shaft 20 such that only a part of either of the stake 40 or the stub 30 (but not both)
extends beyond one end of the main support shaft 20, and the collar 60 is then placed over the extending part, such that no part of the stake 40 or the stub 30 extends beyond the main support shaft 20 and the collar 60. The set screws are then used to secure the stake 40 and the stub 30 within the main support shaft 20 and the collar 60 to the end of either the stake 40 and the stub 30 (whichever extends beyond the end of the main support shaft 20). See FIG. 7. This configuration causes all of the cylindrical components of the table 1 to be stored as a single unit, taking up a minimal amount of storage space. It also safely contains the pointed second end 42 of the stake 40 within the main support shaft 20 or collar 60, thereby preventing a user from being injured by the pointed second end 42 of the stake 40 when handling the table 1 during storage or transport. The planar elements (tabletop 10 and stabilization base 50) are not attached to the cylindrical components or to each other during storage, but may be stored together with them, for example, within a tote bag.

The table 1 may be positioned on a surface 100 in one of three ways. Where the surface 100 is substantially hard, such as the floor of a building, a concrete patio, or rocky ground, the stabilization base 50 is used, being secured to the stake 40 by the collar 60. The stake 40 is retracted within the main support shaft 20 such that the second end 42 of the stake 40 extends beyond the second end 22 of the main support shaft 20 sufficiently to be secured to the collar 60 but not enough to extend beyond the second end 62 of the collar 60. The circumferential rim 54 of the stabilization base 50 is oriented downward and is placed onto the surface 100. See FIG. 6C. This arrangement is similar to that of a standard pedestal table.

Where the surface 100 onto which the table 1 is to be positioned is soft, such as a grassy lawn or a beach, and uneven, such as a sloped lawn or a rocky beach, the stabilization base 50 is not used, being removed from the stake 40. The stake 40 extends beyond the second end 22 of the main support shaft 20 sufficiently to reveal the blunted point of the second end 42 of the stake 40. The second end 42 of the stake 40 is then inserted into the surface 100, thereby securing the table 1 to the surface 100. See FIG. 6D. This arrangement is similar to that of a standard staked table.

Where the surface 100 onto which the table 1 is to be positioned is soft and substantially even, such as a level lawn or a sandy beach, the stabilization base 50 is used, being secured to the stake 40 by the collar 60. The stake 40 extends beyond the second end 22 of the main support shaft 20 sufficiently to allow the blunted point of the second end 42 of the stake 40 to extend beyond the second end 62 of the collar 60. The second end 42 of the stake 40 is then inserted into the surface 100 to a sufficient depth to cause the stabilization base 50 to contact the surface 100, thereby securing the table 1 to the surface 100. See FIG. 6A.

Other possible arrangements of the table 1 may be used to position the table 1 on a variety of surfaces 100.

Modifications and variations may be made to the disclosed embodiments of the present invention without departing from the subject or spirit of the present invention as defined in the following claims.

I claim:

1. A table, comprising:
   a tabletop, said tabletop being substantially planar and being constructed of a rigid material, said tabletop having any suitable size and shape;
   a main support shaft, said main support shaft being substantially cylindrical and hollow, having a first end, a second end, an outer wall, and an inside diameter, said main support shaft being constructed of a rigid material;
   a stub, said stub suitably adapted to removably secure the tabletop to the first end of the main support shaft;
   a stake, said stake being substantially cylindrical and having a first end and a second end and an outside diameter, said outside diameter of said stake being just slightly less than the inside diameter of the main support shaft, said stake suitably adapted to be at least partially inserted into the main support shaft at the second end of the main support shaft and removably secured thereto, with the second end of said stake being tapered to a blunted point, with said stake being constructed of a rigid material;
   a stabilization base, said stabilization base being substantially planar and being constructed of a rigid material, said stabilization base having a top surface and a bottom surface, said bottom surface of said stabilization base having a circumferential rim; and
   a collar, said collar suitably adapted to removably secure the stabilization base to the stake;
   whereby the main support shaft in combination with the stake inserted at least partially into the main support shaft and secured thereto, and optionally in combination with the stabilization base, is suitably adapted to support the table in a substantially upright orientation.

2. The table of claim 1 wherein the tabletop comprises a central threaded aperture; and
   the stub is substantially cylindrical and has a first end, a second end, and an outside diameter,
   said first end being threaded and suitably adapted to be threaded into the central threaded aperture of the tabletop thereby removably securing said first end of the stub to the tabletop, and
   said outside diameter of the stub being just slightly less than the inside diameter of the main support shaft,
   said second end of the stub suitably adapted to be at least partially inserted into the main support shaft at the first end of the main support shaft and removably secured thereto.

3. The table of claim 2 further comprising:
   a first threaded set screw; and
   the main support shaft further comprising an upper threaded aperture at the first end of the main support shaft, said upper threaded aperture being substantially perpendicular to the outer wall of the main support shaft and passing completely through the outer wall of the main support shaft;
   wherein the first threaded set screw is suitably adapted to be threaded into the upper threaded aperture of the main support shaft completely through the outer wall of the main support shaft, such that the first threaded set screw when threaded into the upper threaded aperture of the main support shaft engages the stub proximate to the second end of the stub when the stub is at least partially inserted into the main support shaft, thereby removably securing the stub to the main support shaft.

4. The table of claim 1 further comprising:
   a second threaded set screw; and
   the main support shaft further comprising a lower threaded aperture at the second end of the main support shaft, said lower threaded aperture being substantially perpendicular...
lar to the outer wall of the main support shaft and passing completely through the outer wall of the main support shaft;

wherein the second threaded set screw is suitably adapted to be threaded into the lower threaded aperture of the main support shaft completely through the outer wall of the main support shaft, such that the second threaded set screw when threaded into the lower threaded aperture of the main support shaft engages the stake when the stake is at least partially inserted into the main support shaft, thereby removably securing the stake to the main support shaft.

5. The table of claim 1 wherein the stabilization base comprises a central threaded aperture; and the collar is substantially cylindrical and hollow, having a first end, a second end, an outer wall, and an inside diameter, said first end of the collar being threaded and suitably adapted to be threaded into the central threaded aperture of the stabilization base thereby removably securing said first end of the collar to the stabilization base, and said inside diameter of the collar being just slightly larger than the outside diameter of the stake; whereby the stake is suitably adapted to be at least partially inserted into the collar and removably secured thereto.

6. The table of claim 5 further comprising a third threaded set screw; and the collar further comprising a threaded aperture at the second end of the collar, said threaded aperture being substantially perpendicular to the outer wall of the collar and passing completely through the outer wall of the collar, wherein the third threaded set screw is suitably adapted to be threaded into the threaded aperture of the collar completely through the outer wall of the collar, such that the third threaded set screw when threaded into the threaded aperture of the collar engages the stake when the stake is at least partially inserted into the collar, thereby removably securing the collar to the stake.

7. The table of claim 1 wherein the stake may be completely contained within the main support shaft and secured therein.

8. The table of claim 1 wherein the tabletop, the main support shaft, the stub, the stake, the stabilization base, and the collar are constructed of one of the following group of materials: aluminum, stainless steel, wood, plastic.

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