Modular Composting Garden Container, System, and Method of Use

CROSS-REFERENCE TO RELATED APPLICATIONS

[0001] The present application claims priority to, incorporates herein by reference, and is a non-provisional of co-pending U.S. Patent Application No. 62/024,741, filed 07/15/2014. The present application also incorporates herein by reference U.S. Patent Application No. 13/606,803, filed 09/07/2012.

FEDERALLY SPONSORED RESEARCH OR DEVELOPMENT

[0002] None.

TECHNICAL FIELD

[0003] This invention relates to gardening, and in particular, to container gardening in the form of a garden tower planter with an internal vertical composting tube.

BACKGROUND

[0004] Container gardening is well known. Almost any plant can be grown in a container when proper growing conditions are provided. Plants can be grown in anything that will hold soil and allow proper drainage. The criteria used for selecting containers typically include making sure that the container has a hole for adequate drainage and that the container is large enough to hold the minimum amount of soil required for mature plants to grow in. The biggest disadvantages to growing plants in containers are the maintenance requirements of watering and fertilizing.

SUMMARY

[0004a] An aspect of the present disclosure provides a method of using a modular composting garden container system, comprising the steps of:

providing a modular composting garden container system, comprising:

a base;

a bottom ring sized and shaped to be removably mounted above the base;

a plurality of stackable rings sized and shaped to be removably assembled into a tower of selectable height and mounted above the bottom ring, the plurality of stackable rings each comprising a generally cylindrical body having an outer diameter, open top, a bottom with a centrally located first aperture having a size that is at least 75% of the outer diameter, and one or more sidewalls extending from said bottom to said top, said one or more sidewalls defining a plurality of generally circumferential, outwardly-extending protrusions along a top edge of said one or more

sidewalls, the tower comprising a first interior sized, shaped, and positioned to hold soil introduced from a top of the tower, and a first exterior surface defining second apertures between successively stacked ones of said stackable rings, the second apertures sized, shaped, and positioned to facilitate the growth of plants there through from the first interior, said second apertures having outer edges defined by said outwardly-extending protrusions;

the plurality of stackable rings each comprising a plurality of first connecting members each positioned on said bottom centrally below one of the outwardly-extending protrusions of the stackable ring, and a plurality of second connecting members each positioned on said top centrally between adjacent outwardly-extending protrusions of the stackable ring, the first and second connecting members configured to rotationally orient and removably connect successively stacked ones of said stackable rings such that when the stackable rings are stacked and connected together, the outwardly-extending protrusions of each stackable ring are positioned centrally between the outwardly-extending protrusions of adjacent stackable rings;

a plurality of stackable tube sections sized and shaped to be removably assembled into a hollow compost tube assembly of selectable height and mounted within the first interior of the tower and above the base, the hollow compost tube assembly comprising a second interior sized, shaped, and positioned to hold compost material introduced from a top of the compost tube assembly, and a second exterior surface defining second apertures therein sized, shaped, and positioned to facilitate the passage of worms there-through from the second interior;

wherein the base is sized, shaped, and positioned to receive, store, and provide access to nutrient-rich drainage from the soil or the compost material or both;

removably assembling the plurality of stackable rings into a tower of selectable height;

removably assembling the plurality of stackable tube sections into a compost tube assembly of selectable height and mounting the compost tube assembly within the first interior of the tower and above the base; and

removably connecting the compost tube assembly with the tower.

[0004b] Another aspect of the present disclosure provides a method of using a modular composting garden container system, comprising the steps of:

providing a modular composting garden container system, comprising:

a base;

a bottom ring sized and shaped to be removably mounted above the base;

a plurality of stackable rings sized and shaped to be removably assembled into a tower of selectable height and mounted above the bottom ring, the plurality of stackable rings each comprising a generally cylindrical body having an outer diameter, open top, a bottom with a centrally located first aperture having a size that is at least 75% of the outer diameter, and one or more sidewalls extending from said bottom to said top, said one or more sidewalls defining a plurality of generally circumferential, outwardly-extending protrusions along a top edge of said one or more sidewalls, the tower comprising a first interior sized, shaped, and positioned to hold soil introduced from a top of the tower, and a first exterior surface defining second apertures between successively stacked ones of said stackable rings, the second apertures sized, shaped, and positioned to facilitate the growth of plants there through from the first interior, said second apertures having outer edges defined by said outwardly-extending protrusions;

the plurality of stackable rings each comprising a plurality of first connecting members each positioned on said bottom centrally below one of the outwardly-extending protrusions of the stackable ring, and a plurality of second connecting members each positioned on said top centrally between adjacent outwardly-extending protrusions of the stackable ring, the first and second connecting members configured to rotationally orient and removably connect successively stacked ones of said stackable rings such that when the stackable rings are stacked and connected together, the outwardly-extending protrusions of each stackable ring are positioned centrally between the outwardly-extending protrusions of adjacent stackable rings;

a plurality of stackable tube sections sized and shaped to be removably assembled into a hollow compost tube assembly of selectable height and mounted within the first interior of the tower and above the base, the hollow compost tube assembly comprising a second interior sized, shaped, and positioned to hold compost material introduced from a top of the compost tube assembly, and a second exterior surface defining second apertures therein sized, shaped, and positioned to facilitate the passage of worms there-through from the second interior;

wherein the base is sized, shaped, and positioned to receive, store, and provide access to nutrient-rich drainage from the soil or the compost material or both, and the base comprises:

a drawer to provide access to the nutrient-rich drainage from the soil or the compost material or both; and an upper portion with an upward-facing annular groove formed therein proximate an outer perimeter of said upper portion;

the bottom ring comprising a lower portion with a downward-facing annular groove formed therein proximate an outer perimeter of said lower portion;

a plurality of rotatable bearings positioned between and adjacent the downward-facing annular groove and the upward-facing annular groove;

wherein the plurality of stackable rings, the bottom ring, and the plurality of stackable tube sections are configured to rotatably rest on the base, such that the plurality of stackable rings, the bottom ring, and the plurality of stackable tube sections are all able to rotate together relative to the base about a common longitudinal axis when the modular composting garden container system is assembled and the plurality of stackable rings are filled with soil, all without changing the position of the base or the drawer;

removably assembling the bottom ring to the base;

removably assembling the plurality of stackable rings into a tower of selectable height;

removably assembling the tower to the bottom ring;

removably assembling the plurality of stackable tube sections into a compost tube assembly of selectable height and mounting the compost tube assembly within the first interior of the tower and above the base;

removably connecting the compost tube assembly with the tower;

substantially filling the first interior with soil;

placing compost material in the second interior;

placing worms in the second interior;

planting a plurality of plants in the soil through the second apertures;

adding water to the soil or the compost material or both; and

rotating the plurality of stackable rings, the bottom ring, and the plurality of stackable tube sections together relative to the base about a common longitudinal axis.

[0005] Provided is a novel gardening planter that elegantly overcomes the problems of the prior art and provides other advantages in the form of an expandable, modular tower planter having an internal vertical composting capability. Provided in various example embodiments is a hollow, vertical, outer cylindrical barrel with a plurality of openings formed about its cylindrical side. Also provided in various example embodiments is a hollow inner cylindrical tube having a plurality of perforations formed in its cylindrical wall. The space between the inner tube and barrel wall may be sized, shaped, and positioned to be filled with growing medium such as

CLAIMS

1. A method of using a modular composting garden container system, comprising the steps of:

providing a modular composting garden container system, comprising:

a base;

a bottom ring sized and shaped to be removably mounted above the base;

a plurality of stackable rings sized and shaped to be removably assembled into a tower of selectable height and mounted above the bottom ring, the plurality of stackable rings each comprising a generally cylindrical body having an outer diameter, open top, a bottom with a centrally located first aperture having a size that is at least 75% of the outer diameter, and one or more sidewalls extending from said bottom to said top, said one or more sidewalls defining a plurality of generally circumferential, outwardly-extending protrusions along a top edge of said one or more sidewalls, the tower comprising a first interior sized, shaped, and positioned to hold soil introduced from a top of the tower, and a first exterior surface defining second apertures between successively stacked ones of said stackable rings, the second apertures sized, shaped, and positioned to facilitate the growth of plants there through from the first interior, said second apertures having outer edges defined by said outwardly-extending protrusions;

the plurality of stackable rings each comprising a plurality of first connecting members each positioned on said bottom centrally below one of the outwardly-extending protrusions of the stackable ring, and a plurality of second connecting members each positioned on said top centrally between adjacent outwardly-extending protrusions of the stackable ring, the first and second connecting members configured to rotationally orient and removably connect successively stacked ones of said stackable rings such that when the stackable rings are stacked and connected together, the outwardly-extending protrusions of each stackable ring are positioned centrally between the outwardly-extending protrusions of adjacent stackable rings;

a plurality of stackable tube sections sized and shaped to be removably assembled into a hollow compost tube assembly of selectable height and mounted within the first interior of the tower and above the base, the hollow compost tube assembly comprising a second interior sized, shaped, and positioned to hold compost material introduced from a top of the compost tube assembly, and a second exterior surface defining second apertures therein sized, shaped, and positioned to facilitate the passage of worms there-through from the second interior;

wherein the base is sized, shaped, and positioned to receive, store, and provide access to nutrient-rich drainage from the soil or the compost material or both;

removably assembling the plurality of stackable rings into a tower of selectable height;

removably assembling the plurality of stackable tube sections into a compost tube assembly of selectable height and mounting the compost tube assembly within the first interior of the tower and above the base; and

removably connecting the compost tube assembly with the tower.

2. The method of using a modular composting garden container system of claim 1, further comprising the steps of:

connecting the bottom ring to the base;

connecting the tower with the bottom ring.

3. The method of using a modular composting garden container system of claim 1, further comprising the steps of:

substantially filling the first interior with soil;

placing compost material in the second interior;

placing worms in the second interior;

planting a plurality of plants in the soil through the second apertures; and

adding water to the soil or the compost material or both.

4. The method of using a modular composting garden container system of claim 3, further comprising the steps of:

removing from the base nutrient-rich drainage from the soil or the compost material or both; and

adding the nutrient-rich drainage back to the soil or the compost material or both.

5. The method of using a modular composting garden container system of claim 3, further comprising the steps of:

removing a screen element from the base; and

causing at least a portion of the compost material to exit the compost tube assembly through a bottom of the compost tube assembly.

6. A method of using a modular composting garden container system, comprising the steps of:

providing a modular composting garden container system, comprising:

a base;

a bottom ring sized and shaped to be removably mounted above the base;

a plurality of stackable rings sized and shaped to be removably assembled into a tower of selectable height and mounted above the bottom ring, the plurality of stackable rings each comprising a generally cylindrical body having an outer diameter, open top, a bottom with a centrally located first aperture having a size that is at least 75% of the outer diameter, and one or more sidewalls extending from said bottom to said top, said one or more sidewalls defining a plurality of generally circumferential, outwardly-extending protrusions along a top edge of said one or more sidewalls, the tower comprising a first interior sized, shaped, and positioned to hold soil introduced from a top of the tower, and a first exterior surface defining second apertures between successively stacked ones of said stackable rings, the second apertures sized, shaped, and positioned to facilitate the growth of plants there through

from the first interior, said second apertures having outer edges defined by said outwardly-extending protrusions;

the plurality of stackable rings each comprising a plurality of first connecting members each positioned on said bottom centrally below one of the outwardly-extending protrusions of the stackable ring, and a plurality of second connecting members each positioned on said top centrally between adjacent outwardly-extending protrusions of the stackable ring, the first and second connecting members configured to rotationally orient and removably connect successively stacked ones of said stackable rings such that when the stackable rings are stacked and connected together, the outwardly-extending protrusions of each stackable ring are positioned centrally between the outwardly-extending protrusions of adjacent stackable rings;

a plurality of stackable tube sections sized and shaped to be removably assembled into a hollow compost tube assembly of selectable height and mounted within the first interior of the tower and above the base, the hollow compost tube assembly comprising a second interior sized, shaped, and positioned to hold compost material introduced from a top of the compost tube assembly, and a second exterior surface defining second apertures therein sized, shaped, and positioned to facilitate the passage of worms there-through from the second interior;

wherein the base is sized, shaped, and positioned to receive, store, and provide access to nutrient-rich drainage from the soil or the compost material or both, and the base comprises:

a drawer to provide access to the nutrient-rich drainage from the soil or the compost material or both; and an upper portion with an upward-facing annular groove formed therein proximate an outer perimeter of said upper portion;

the bottom ring comprising a lower portion with a downward-facing annular groove formed therein proximate an outer perimeter of said lower portion;

a plurality of rotatable bearings positioned between and adjacent the downward-facing annular groove and the upward-facing annular groove;

wherein the plurality of stackable rings, the bottom ring, and the plurality of stackable tube sections are configured to rotatably rest on the base, such that the plurality of stackable rings, the bottom ring, and the plurality of stackable tube sections are all able to rotate together relative to the base about a common longitudinal axis when the modular composting garden container system is assembled and the plurality of stackable rings are filled with soil, all without changing the position of the base or the drawer;

removably assembling the bottom ring to the base;

removably assembling the plurality of stackable rings into a tower of selectable height;

removably assembling the tower to the bottom ring;

removably assembling the plurality of stackable tube sections into a compost tube assembly of selectable height and mounting the compost tube assembly within the first interior of the tower and above the base;

removably connecting the compost tube assembly with the tower;

substantially filling the first interior with soil;

placing compost material in the second interior;

placing worms in the second interior;

planting a plurality of plants in the soil through the second apertures;

adding water to the soil or the compost material or both; and

rotating the plurality of stackable rings, the bottom ring, and the plurality of stackable tube sections together relative to the base about a common longitudinal axis.

7. The method of using a modular composting garden container system of claim 6, further comprising the steps of:

removing from the base nutrient-rich drainage from the soil or the compost material or both; and

adding the nutrient-rich drainage back to the soil or the compost material or both.

8. The method of using a modular composting garden container system of claim 6, further comprising the steps of:

removing a screen element from the base; and

causing at least a portion of the compost material to exit the compost tube assembly through a bottom of the compost tube assembly.