A wick assembly for use in a container according to various embodiments includes a wick sustainer configured for placement in the container. A plurality of equally spaced wick carriers are coupled to the wick sustainer. A wax material is formed on an uppermost surface of the wick sustainer and includes a plurality of voids therein. A plurality of wicks are each positioned within one of the plurality of voids formed in the wax ring and coupled to one of the wick carriers. During use the wax material melts into a molten pool of wax contained in the container. To refill the container, the user simply replaces the used wick assembly with a new wick assembly that is configured for that particular container. The wick assembly does not need to be coupled to the container.
FIG. 1

FIG. 2

FIG. 3
wick assembly including wax ring and multi-wick sustainer

field of invention

[0001] The present invention relates to improvements in candles, and more particularly to candle wick assemblies that are adapted for use as refills in current candle systems.

background

[0002] Many consumers are concerned about the quality of indoor air, and more particularly the presence of odors that are present in the environment in which they may live and work. To address this concern, candles have become popular for eliminating odors. Candles come in many different forms, including pillars, votives, and container candles. Of these types of candles, container candles offer the flexibility of being made in numerous sizes, dictated only by the size of the container in which the wax is held. To this end, container candles may include more than one wick. Container candles create a molten pool across the container thereby releasing a greater amount of scent into the air than a standard pillar or votive candle.

[0003] Typically in a container candle, the wick is attached or affixed to the bottom of the container to hold it stationary and not allow any movement of the wick within the wax as the wick burns and the wax melts. One specific container candle presently on the market includes a wick carrier that is held in place relative to the bottom surface of the candle, with a magnetic coupling. Typically, the wick carrier includes a metal piece that aligns with the magnet positioned on the bottom of the container to properly position the wick assembly. A refill assembly is similarly formed. During the refill process, any remaining candle wax that has melted and remains on the magnet in the container may result in a week coupling of the refill wax with the container.

[0004] It should thus be appreciated from the above that it would be desirable to provide a refill wax candle including a wick sustainer that does not require it to be coupled to the bottom surface of the container for optimum wick positioning. Furthermore, other desirable features and characteristics of the present invention will become apparent from the subsequent detailed description of the invention and the appended claims, taken in conjunction with the accompanying drawings and this background of the invention.

summary of the invention

[0005] There has now been developed a wick assembly for use in a container including a wick sustainer, a plurality of wick carriers, a wax material and a plurality of wicks. The wick sustainer is configured for placement in the container. The plurality of wick carriers are equally spaced and coupled to the wick sustainer. The wax material is formed on an uppermost surface of the wick sustainer and includes a plurality of voids therein. The plurality of wicks are each positioned within one of the plurality of voids formed in the wax ring and coupled to one of the wick carriers.

[0006] In yet another embodiment there is provided a wick assembly for use in a container including a wick sustainer ring, including an aperture formed therein a central portion and configured for placement in the container. The assembly further includes a plurality of equally spaced wick carriers coupled to the wick sustainer ring, a wax ring, formed on an uppermost surface of the wick sustainer, and including a plurality of voids therein, and a plurality of wicks. Each of the plurality of wicks is positioned within one of the plurality of voids formed in the wax ring and coupled to one of the wick carriers.

[0007] In a further embodiment, still by way of example only, there is provided a wick assembly for use in a container including a circular wick sustainer including an aperture in central portion configured for placement in the container. The wick assembly further includes a plurality of equally spaced wick carriers coupled to the wick sustainer. A molded wax ring is formed on an uppermost surface of the circular wick sustainer and includes a plurality of voids therein. A plurality of wicks are each positioned within one of the plurality of voids formed in the wax ring and coupled to one of the wick carriers.

[0008] Other independent features and advantages of the improved wick assembly will become apparent from the following detailed description, taken in conjunction with the accompanying drawings which illustrate, by way of example, the principles of the invention.

brief description of the drawings

[0009] The present invention will hereinafter be described in conjunction with the following drawing figure, wherein like numerals denote like elements. Additional embodiments of the invention will become evident upon reviewing the non-limiting embodiments described in the specification in conjunction with the accompanying figures, wherein:

[0010] FIG. 1 is an isometric schematic view of a portion of a wick assembly, illustrating a multi-wick sustainer according to a first embodiment;

[0011] FIG. 2 is a top view of the multi-wick sustainer of FIG. 1;

[0012] FIG. 3 is a cross-section view of the multi-wick sustainer of FIG. 1 taken through line 3-3, and including a wax ring;

[0013] FIG. 4 is an isometric schematic view of a portion of a wick assembly according to another embodiment, illustrating a multi-wick sustainer; and

[0014] FIG. 5 is a top view of a portion of a wick assembly according to yet another embodiment, illustrating a multi-wick sustainer.

detailed description of the invention

[0015] The following detailed description of the invention is merely exemplary in nature and is not intended to limit the invention or the application and uses of the invention. Furthermore, there is no intention to be bound by any theory presented in the preceding background of the invention or the following detailed description of the invention. In this regard, before proceeding with the detailed description, it is to be appreciated that the described exemplary embodiments be not limited to use in conjunction with a specific type, shape, or brand of container candle or method of use. Thus, although the description is explicitly directed toward embodiments that are implemented in a specific type of refillable candle container, it should be appreciated that it can be implemented in many types of candle container systems, including those known now or hereafter in the art.

[0016] The detailed description of exemplary embodiments of the invention herein makes reference to the accompanying figures, which show the exemplary embodiment by way of illustration and its best mode. While the exemplary embodi-
ment is described in sufficient detail to enable one skilled in the art to practice the invention, it should be understood that other embodiments may be realized, and that logical and/or mechanical changes may be made without departing from the spirit and scope of the invention. Thus, the detailed description herein is presented for purposes of illustration only and not by way of limitation.

[0017] The invention includes a wick assembly, including a wax ring and a multiwick sustainer. In an exemplary embodiment, the wick assembly is configured for inclusion with the container at initial consumer purchase and/or as a refill assembly.

[0018] Turning now to the figures, FIG. 1 is an isometric schematic diagram of an exemplary embodiment of wick assembly 100 according to the present invention. The wick assembly 100 is generally comprised of a wick sustainer 102, configured to include a plurality of wick carriers 104 and a wax material (not shown). In this particular embodiment, the wick sustainer 102 is generally in the form of a circular ring 106 and may be formed of a metal material, such as aluminum, tin, steel, or the like. As best illustrated in FIG. 2 in a top view, the wick sustainer 102 has an exterior dimension, X, where X is a dimension configured for positioning within a container (not shown) in which the wick assembly 100 will be positioned. The wick sustainer 102 includes an opening 108 having a dimension, Y, where Y is a dimension less than X, and configured for positioning over a previous wick sustaining means, for example, a magnetic coupling, that may be present on a bottom surface of the container in which the wick assembly 100 is positioned.

[0019] The wick assembly 100 as previously stated includes a plurality of wick carriers 104. In this particular embodiment, the wick assembly 100 includes three wick carriers 104 positioned equidistant about the wick sustainer 102 as indicated in FIG. 2 by dimension Z. The wick carriers 104 are preferably positioned equidistant about the ring 106 to provide for an even burn.

[0020] Referring now to FIG. 3, illustrated in cross-section taken along line 3-3 of FIG. 2 is the wick assembly 100, including a molded wax ring 150. The molded wax ring 150 is formed on an uppermost surface 103 of the wick sustainer 102. The molded wax ring 150 in this preferred embodiment is formed of a clean burning wax, that when melted forms a pool of molten wax in the container in which the wick assembly 100 is positioned. The molded wax ring 150 is configured having a plurality of voids 111 formed therein for positioning of a plurality of wicks 110 that are further held in place by the wick carriers 104. The wick carriers 104 are generally formed having an aperture 114 therein for positioning of the wick 110, as illustrated in FIG. 3. The wick carriers 114, in conjunction with the wick sustainer 102, ensure that a predetermined spacing of the wicks 110 is preserved, as well as the spacing between the wicks 110 and a wall of the container (not shown), when the molded wax ring 150 has melted.

[0021] The wax ring 150 may be formed according to many different methods such as through molding, extruding or compressing the wax into the desired shape. More particularly, the wax ring 150 may be formed by simply pouring molten wax into a mold matching the shape of the wick sustainer 102. The plurality of voids 111 for the placement of the wicks 110 may be drilled subsequent to the molding, or they may be formed during the molding process using pins (not shown). Subsequent to molding, the wax ring 150, the wicks 110 and the sustainer 102 would be assembled to form the wick assembly 100. In an alternative method, the wax ring 150 may be formed by extruding wax through a die of a similar shape to the wick sustainer 102. The wax would be cut to the desired thickness. Similar to the molding process, the plurality of voids 111 may be drilled subsequent to the extrusion process and before assembly of the final wick assembly 100. In yet another alternative method, prilled wax may be compressed into a mold having a similar shape to the sustaining ring 102. The plurality of voids 111 would typically be formed at the time of compressing using pins, or alternatively could be drilled subsequent to compression and prior to assembly into the complete wick assembly 100.

[0022] In this particular embodiment, the wick carriers 104 are formed of a collar 112 into which the wick 110 is positioned. An optional base portion 114 is positioned to affix the collar 112 to the uppermost surface 103 of the wick sustainer 102. The wick 110 is secured within the collar 112 by crimping, close friction fit, or the like. In this exemplary embodiment, the collar 112 may vary in height from approximately 2 mm to approximately 15 mm, although the final height will vary and is design specific. In an alternative embodiment, the wick sustainer 102 may be configured to provide for the attachment of the wick carriers 104 via an underneath side of the wick sustainer 102. In yet further alternative embodiments, the wick sustainer 102 may be configured to provide for attachment of a plurality of commercially available wick clips (not shown) positioned substantially equidistant from one another, or alternatively formed wick carriers 104.

[0023] The wick assembly 101 further includes a plurality of openings 116 formed in the wick sustainer 102, and generally about the wick carriers 104. The plurality of openings 116 provide for the passage therethrough of molten wax so that it may reach the bottom of the wicks 110 for complete burn.

[0024] Referring now to FIG. 4, illustrated in a simplified isometric view is another embodiment of the wick assembly. It should be noted that all components of FIG. 4 that are similar to the components illustrated in FIGS. 1-3, are designated with similar numbers, having a prime added to indicate the different embodiment. The wick assembly 100' is generally comprised of a wick sustainer 102', configured to hold a plurality of wick carriers 104' and a wax material (not shown). Similar to the first embodiment, the wick sustainer 102' is generally in the form of a circular ring 106' configured for positioning within a container (not shown) in which the wick assembly 100' will be positioned. The wick sustainer 102' may include an opening 108' for positioning over a wick sustaining means that may be present on a bottom surface of the container in which the wick assembly 100' is positioned.

[0025] The wick assembly 100' as previously stated holds a plurality of wicks holders 104'. In this particular embodiment, the wick assembly 100' includes two wick carriers 104' positioned equidistant about the ring 106' to provide for an even burn. It should be noted that any number of wick assemblies may be positioned about the ring 106' dependent upon the design of the wick assembly and the container in which it will be used.

[0026] Referring now to FIG. 5, illustrated in simplified isometric view is yet another embodiment of the wick assembly. It should be noted that all components of FIG. 5 that are similar to the components illustrated in FIGS. 1-3, are designated with similar numbers, having a double prime added to indicate the different embodiment. The wick assembly 100'' is generally comprised of a wick sustainer 102'', configured to
hold a plurality of wick carriers $104^{10}$ and a wax material (not shown). In this particular embodiment, the wick sustainer $102^{10}$ is generally in the form of a square ring $106^{10}$ configured for positioning within a container (not shown) in which the wick assembly $100^{10}$ will be positioned. The wick sustainer $102^{10}$ may include an opening $108^{10}$ for positioning over a previous wick sustaining means that may be present on a bottom surface of the container in which the wick assembly $100^{10}$ is positioned.

The wick assembly $100^{10}$ as previously stated holds a plurality of wick holders $104^{10}$. In this particular embodiment, the wick assembly $100^{10}$ includes four wick carriers $104^{10}$ positioned equidistant about the ring $106^{10}$ to provide for an even burn. It should be noted that similar to the previously described embodiments, any number of wick assemblies may be positioned about the ring $106^{10}$ dependent upon the design of the wick assembly and the container in which it will be used.

The wick assembly $100^{10}$ of the present invention is formed as a part of a consumer candle container or as a refill for a candle container. Accordingly, disclosed is an improved wick assembly including a wax ring and a multiwick sustainer. While exemplary embodiments have been presented in the foregoing detailed description of the invention, it should be appreciated that a vast number of variations exist. As detailed, the wick assembly may be in any desired shape to comport with the shape of the container in which it will be used. In addition, any number of wick carriers and wicks may be incorporated dependent upon design. In addition, benefits, other advantages, and solutions to the problem have been described herein with regard to exemplary embodiments. However, the benefits, advantages, solutions to problems, and any element(s) that may cause any benefit, advantage, or solution to occur or become more pronounced are not to be construed as critical, required, or essential features or elements of any or all the claims or the invention. It should also be appreciated that the exemplary embodiments are only examples, and are not intended to limit the scope, applicability, or configuration of the invention in any way. Rather, the foregoing detailed description will provide those skilled in the art with a convenient road map for implementing an exemplary embodiment of the invention. It being understood that various changes may be made in the function and arrangement of elements described in an exemplary embodiment without departing from the scope of the invention as set forth in the appended claims, in which reference to an element in the singular is not intended to mean “one and only one” unless explicitly so stated, but rather “one or more.” All structural, chemical, and functional equivalents to the elements of the above-described exemplary embodiments that are known to those of ordinary skill in the art are expressly incorporated herein by reference and are intended to be encompassed by the present claims.

We claim:

1. A wick assembly for use in a container comprising:
   - a wick sustainer configured for placement in the container;
   - a plurality of equally spaced wick carriers coupled to the wick sustainer;
   - a wax material, formed on an uppermost surface of the wick sustainer, and including a plurality of voids therein; and
   - a plurality of wicks, each positioned within one of the plurality of voids formed in the wax ring and coupled to one of the wick carriers.

2. A wick assembly as claimed in claim 1, wherein the wick sustainer is formed of a metal.

3. A wick assembly as claimed in claim 2, wherein the wax material is formed as a wax ring.

4. A wick assembly as claimed in claim 1, wherein the wick sustainer is formed in a circular shape.

5. A wick assembly as claimed in claim 4, further including an aperture formed therein a central portion.

6. A wick assembly as claimed in claim 1, wherein the wick sustainer is formed in a square shape.

7. A wick assembly as claimed in claim 6, further including an aperture formed therein a central portion.

8. A wick assembly as claimed in claim 1, further including at least one aperture formed in the wick carrier about each of the plurality of equally spaced wick carriers.

9. A wick assembly as claimed in claim 1, wherein the wick sustainers include a collar configured to hold a wick therein.

10. A wick assembly for use in a container comprising:
    - a wick sustainer ring, including an aperture formed therein a central portion and configured for placement in the container;
    - a plurality of equally spaced wick carriers coupled to the wick sustainer ring;
    - a wax ring, formed on an uppermost surface of the wick sustainer, and including a plurality of voids therein; and
    - a plurality of wicks, each positioned within one of the plurality of voids formed in the wax ring and coupled to one of the wick carriers.

11. A wick assembly as claimed in claim 10, wherein the wick sustainer is formed in a circular shape.

12. A wick assembly as claimed in claim 10, wherein the wick sustainer is formed in a square shape.

13. A wick assembly as claimed in claim 10, wherein the wax ring is a molded wax ring.

14. A wick assembly as claimed in claim 10, wherein the wax ring is a compressed wax ring.

15. A wick assembly as claimed in claim 10, wherein the wax ring is an extruded wax ring.

16. A wick assembly as claimed in claim 10, further including at least one aperture formed in the wick carrier about each of the plurality of equally spaced wick carriers.

17. A wick assembly for use in a container comprising:
    - a circular wick sustainer including an aperture in central portion and configured for placement in the container;
    - a plurality of equally spaced wick carriers coupled to the wick sustainer;
    - a molded wax ring, formed on an uppermost surface of the circular wick sustainer, and including a plurality of voids therein; and
    - a plurality of wicks, each positioned within one of the plurality of voids formed in the wax ring and coupled to one of the wick carriers.

18. A wick assembly as claimed in claim 17, wherein the circular wick sustainer is formed of a metal.

19. A wick assembly as claimed in claim 18, further including at least one aperture formed in the circular wick carrier about each of the plurality of equally spaced wick carriers.

20. A wick assembly as claimed in claim 18, wherein the wick sustainers include a collar configured to hold a wick therein.

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