

US 20110126821A1

### (19) United States

# (12) Patent Application Publication Wilson et al.

(10) **Pub. No.: US 2011/0126821 A1** (43) **Pub. Date: Jun. 2, 2011** 

#### (54) AIR ACTIVATED WARMER ASSEMBLY

(75) Inventors: **Jumana Wilson**, Pepper Pike, OH

(US); Lindsay Wilson, Atlanta, GA

(US)

(73) Assignee: **TOASTY BOTTLE, LLC**, Pepper

Pike, OH (US)

(21) Appl. No.: 12/949,468

(22) Filed: Nov. 18, 2010

#### Related U.S. Application Data

(60) Provisional application No. 61/262,699, filed on Nov. 19, 2009.

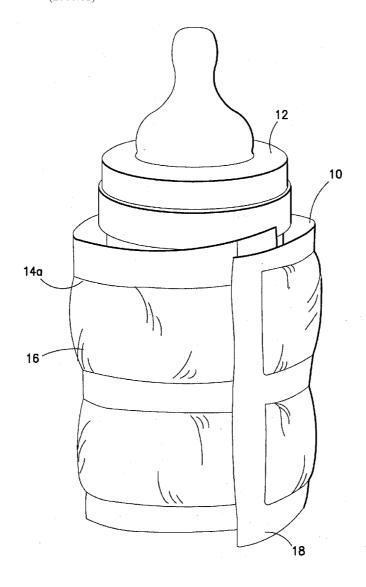
#### **Publication Classification**

(51) **Int. Cl.** F24J 1/00 (2006.01)

(52) U.S. Cl. ...... 126/263.02; 126/263.01

#### (57) ABSTRACT

The present disclosure provides advantageous warmer assemblies. More particularly, the present disclosure provides for improved air activated warmer assemblies and improved methods for rapidly elevating the temperature of a container/vessel and/or the contents therein (e.g., liquids and/or foods in a container or vessel, such as a baby bottle or the like). In exemplary embodiments, the present disclosure provides for improved portable, disposable, cost effective, efficient and/or easy-to-use air activated systems/methods/assemblies for rapidly elevating the temperature of liquids and/or foods in a container or vessel. The improved air activated assemblies and systems of the present disclosure may be utilized by a user essentially anywhere and at any time to rapidly elevate the temperature of the contents of a container or vessel.



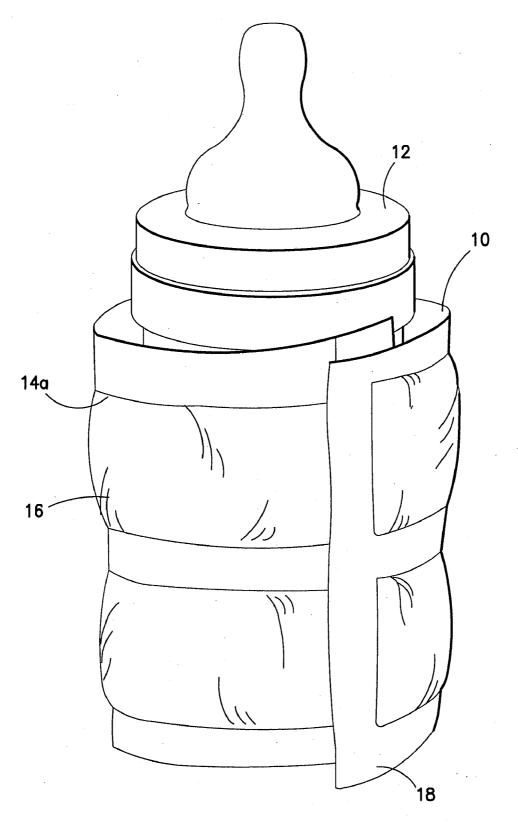
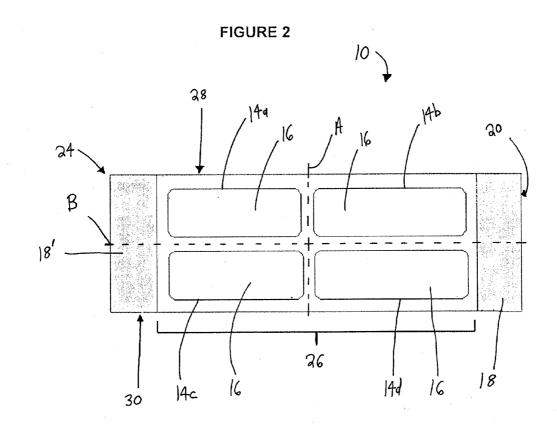
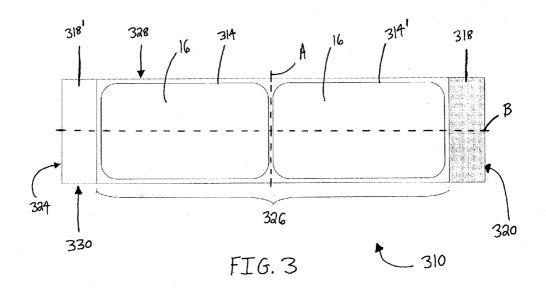
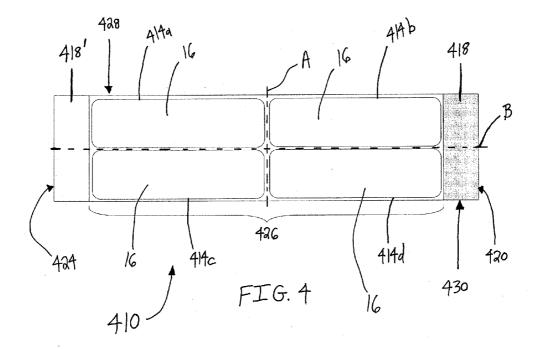


FIG.1







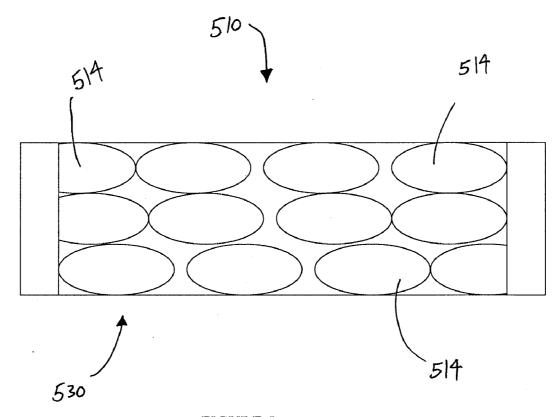
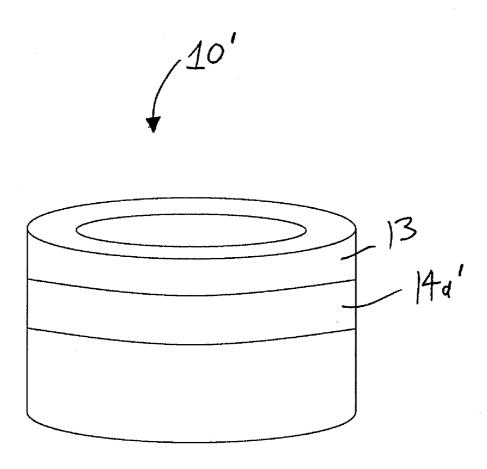
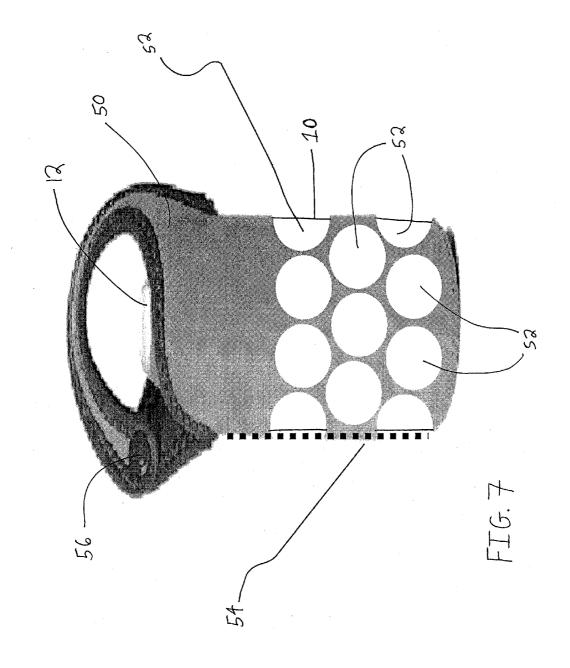


FIGURE 5

FIGURE 6





#### AIR ACTIVATED WARMER ASSEMBLY

## CROSS-REFERENCE TO RELATED APPLICATIONS

[0001] This application claims the benefit of U.S. Provisional App. Ser. No. 61/262,699, filed Nov. 19, 2009, the entire contents of which is herein incorporated by reference in its entirety.

#### BACKGROUND

[0002] 1. Technical Field

[0003] The present disclosure relates to warmer assemblies and, more particularly, to air activated warmer assemblies and methods for warming a container or vessel and/or the contents therein (e.g., baby bottle or the like) utilizing an air activated warmer assembly.

[0004] 2. Background Art

[0005] In general, liquids and foods (e.g., baby foods, formulas, liquids, etc.) are kept cool (e.g., refrigerated) for preservation purposes. However, it is sometimes desired to consume such liquids and foods at an elevated temperature. For example, it is typically preferred to give infants or babies liquid or food at or near body temperature. Moreover, it is typically advantageous to provide liquid or food at the desired temperature, even when one is not near a typical heating source for a container containing liquids and/or foods (e.g., stove, electrical outlet, fuel source, microwave, etc.). Thus, it is desirable to have access to an efficient, effective, easy-touse and portable warming device, apparatus or assembly that is capable of rapidly elevating the temperature of liquids and/or foods (e.g., by transferring heat to a liquid or food container or vessel such as a baby bottle). It is also desirable that such warming device or apparatus be readily disposable after use. Moreover, it is desirable that such warming device, apparatus or assembly be cost-efficient (i.e., inexpensive), as it may be required to provide liquid or food at the desired temperature several times a day.

[0006] In general, warming devices or assemblies for liquid and/or food containers are known. However, many of these devices are not disposable, efficient, effective, rapid, easy-to-use and/or cost-effective. Moreover, these devices typically are not compact, lightweight and/or portable.

[0007] Thus, despite efforts to date, a need remains for improved portable, disposable, cost effective, efficient and/or easy-to-use systems/methods/assemblies for rapidly elevating the temperature of liquids and/or foods in a container or vessel (e.g., to a desired temperature). These and other inefficiencies and opportunities for improvement are addressed and/or overcome by the assemblies, systems and methods of the present disclosure.

#### SUMMARY

[0008] The present disclosure provides advantageous warmer assemblies. More particularly, the present disclosure provides advantageous air activated warmer assemblies and advantageous methods for rapidly elevating the temperature of liquids and/or foods in a container or vessel (e.g., baby bottle or the like). In exemplary embodiments, the present disclosure provides for improved portable, disposable, cost effective, efficient and/or easy-to-use air activated systems/methods/assemblies for rapidly elevating the temperature of liquids and/or foods in a container or vessel. For example, the improved air activated assemblies and systems of the present

disclosure may be utilized by a user essentially anywhere and at any time to rapidly elevate the temperature of the contents of a container or vessel.

[0009] In exemplary embodiments, the assemblies and systems of the present disclosure may be utilized to increase the temperature of the contents of a container or vessel by about 20° F. in about ten (10) minutes after activation. In one embodiment, the assemblies and systems of the present disclosure may be utilized to heat the contents of the container up to a temperature of about 110 to about 120° F. An exemplary exothermic composition utilized in conjunction with the warmer assemblies of the present disclosure is configured to: (i) reach a temperature of about 150° F. after about five minutes after activation, (ii) reach a temperature of about 180° F. after about eight minutes after activation, and (iii) maintain an average temperature of about 175° F. from about eight minutes after activation to about 60 minutes after activation.

[0010] The present disclosure provides for a warmer assembly including a container configured and dimensioned to house liquid or food; a containment member configured and dimensioned to be removable positioned or attached around or against the container, the containment member having a first end and a second with an exothermic region extending between the first end and second end; the exothermic region having at least one containment compartment configured and dimensioned to house an exothermic composition, the exothermic composition configured to produce heat on activation; the first end including at least one attachment member configured and dimensioned to be releasably secured or attached to the second end to removable position or attach the containment member around or against the container; wherein the heat produced by the exothermic composition rapidly heats the liquid or food in the container after activation.

[0011] The present disclosure also provides for a warmer assembly wherein the exothermic composition is an air activated exothermic composition. The present disclosure provides for a warmer assembly wherein the temperature of the liquid or food in the container is increased by about 20° F. in about ten minutes after activation.

[0012] The present disclosure also provides for a warmer assembly wherein the heat produced by the exothermic composition heats the liquid or food up to a temperature of about 110 to about 120° F. The present disclosure also provides for a warmer assembly wherein the exothermic composition: (i) reaches a temperature of about 150° F. after about five minutes after activation; (ii) reaches a temperature of about 180° F. after about eight minutes after activation, and (iii) maintain an average temperature of about 175° F. from about eight minutes after activation to about 60 minutes after activation. The present disclosure also provides for a warmer assembly wherein the positioned or attached containment member has three-dimensional contact with the container. The present disclosure also provides for a warmer assembly wherein there is substantially no exothermic composition positioned or housed within or behind the first and second ends.

[0013] The present disclosure also provides for a warmer assembly wherein the exothermic region includes four separate and distinct containment compartments with: (i) the first and third compartments horizontally extending from about the second end to about the horizontal mid-point of the exothermic region; (ii) the second and fourth compartments horizontally extending from about the first end to about the horizontally extending from about the first end to about the horizontally extending from about the first end to about the horizontally extending from about the first end to about the horizontally extending from about the first end to about the horizontally extending from about the first end to about the horizontal extending from about the first end to about the horizontal extending from about the first end to about the horizontal extending from about the first end to about the horizontal extending from about the first end to about the horizontal extending from about the first end to about the horizontal extending from about the first end to about the horizontal extending from about the first end to about the horizontal extending from about the first end to about the horizontal extending from about the first end to about the horizontal extending from about the first end to about the horizontal extending from about the first end to about the horizontal extending from about the first end to about the horizontal extending from about the first end to about the horizontal extending from about the first end to about the horizontal extending from about the first end to about the horizontal extending from about the first end to about the horizontal extending from about the first end to about the horizontal extending from about the first end to abo

zontal mid-point of the exothermic region; (iii) the first and second compartments vertically extending from about the top side of the containment member to about the vertical mid-point of the exothermic region; and (iv) the third and fourth compartments vertically extending from about the bottom side of the containment member to about the vertical mid-point of the exothermic region. The present disclosure also provides for a warmer assembly wherein the first and second compartments prevent the exothermic composition contained therein from moving past the vertical mid-point of the exothermic region towards the bottom side of the containment member after the containment member is removably positioned or attached around or against the container.

[0014] The present disclosure also provides for a warmer assembly wherein the exothermic region includes two separate and distinct containment compartments. The present disclosure also provides for a warmer assembly further including an outer member, the outer member configured and dimensioned to be positioned at least partially around the containment member once the containment member is removably positioned or attached around or against the container. The present disclosure also provides for a warmer assembly wherein the outer member includes a plurality of air flow regions. The present disclosure also provides for a warmer assembly wherein each air flow region is a hole or opening. The present disclosure also provides for a warmer assembly wherein the plurality of air flow regions extends substantially around at least a portion of the circumference of the outer member

[0015] The present disclosure also provides for a warmer assembly wherein the plurality of air flow regions extends substantially around the lower and mid-section of the circumference of the outer member. The present disclosure also provides for a warmer assembly wherein the outer member is an insulating member. The present disclosure also provides for a warmer assembly wherein the exothermic region includes a plurality of separate and distinct containment compartments, the plurality of containment compartments defining a quilted-like design of the exothermic region. The present disclosure also provides for a warmer assembly wherein the containment member includes a top side and a bottom side; and wherein a majority of the plurality of separate and distinct containment compartments prevents a majority of the exothermic composition of the containment member from moving adjacent to the bottom side of the containment member after the containment member is removably positioned or attached around or against the con-

[0016] The present disclosure also provides for a warmer assembly including a container configured and dimensioned to house liquid or food; a containment member configured and dimensioned to be removable positioned around or against the container, the containment member having an exothermic region; the exothermic region having at least one containment compartment configured and dimensioned to house an exothermic composition, the exothermic composition configured to produce heat on activation; wherein the heat produced by the exothermic composition rapidly heats the liquid or food in the container after activation; wherein the containment member includes a top side and a bottom side; wherein the exothermic region includes a plurality of separate and distinct containment compartments; and wherein a majority of the plurality of separate and distinct containment compartments prevents a majority of the exothermic composition of the containment member from moving adjacent to the bottom side of the containment member after the containment member is removably positioned around or against the container.

[0017] Additional advantageous features, functions and applications of the disclosed assemblies, systems and methods of the present disclosure will be apparent from the description which follows, particularly when read in conjunction with the appended figures.

#### BRIEF DESCRIPTION OF THE DRAWINGS

[0018] To assist those of ordinary skill in the art in making and using the disclosed systems and methods, reference is made to the appended figures, wherein:

[0019] FIG. 1 is a frontal perspective view of a containment member positioned around a container or vessel according to an exemplary embodiment of the present disclosure;

[0020] FIG. 2 is a side view of the containment member of FIG. 1;

[0021] FIG. 3 is a side view of a containment member according to an alternative embodiment of the present disclosure;

[0022] FIG. 4 is a side view of a containment member according to another embodiment of the present disclosure; [0023] FIG. 5 is a side view of a containment member according to another embodiment of the present disclosure; [0024] FIG. 6 is a side powerpostive view of a containment

[0024] FIG. 6 is a side perspective view of a containment member according to another embodiment of the present disclosure; and

[0025] FIG. 7 is a front view of an outer member positioned around a containment member and container according to an exemplary embodiment of the present disclosure.

#### DETAILED DESCRIPTION

[0026] The exemplary embodiments disclosed herein are illustrative of advantageous warmer assemblies and systems of the present disclosure and methods/techniques thereof. It should be understood, however, that the disclosed embodiments are merely exemplary of the present disclosure, which may be embodied in various forms. Therefore, details disclosed herein with reference to exemplary warmer assemblies/systems and associated methods/techniques of assembly and use are not to be interpreted as limiting, but merely as the basis for teaching one skilled in the art how to make and use the advantageous air activated warmer assemblies/systems and/or alternative warmer assemblies of the present disclosure.

[0027] The present disclosure provides advantageous warmer assemblies. More particularly, the present disclosure provides improved air activated warmer assemblies and improved methods for rapidly elevating the temperature of a container or vessel and/or the contents therein (e.g., liquids and/or foods in a container, such as a baby bottle or the like). In exemplary embodiments, the present disclosure provides for portable, disposable, cost effective, efficient and/or easy-to-use air activated systems/methods/assemblies for rapidly elevating the temperature of liquids and/or foods housed and/or contained in a container or vessel. In general, the improved air activated warmer assemblies and systems of the present disclosure may be utilized by a user essentially anywhere and at any time to rapidly elevate the temperature of the contents of a container or vessel.

[0028] In exemplary embodiments, the assemblies and systems of the present disclosure may be utilized to increase the temperature of the contents of a container or vessel by about 20° F. in about ten (10) minutes after activation. In one embodiment, the assemblies and systems of the present disclosure may be utilized to heat the contents of the container up to a temperature of about 110 to about 120° F. An exemplary exothermic composition utilized in conjunction with the warmer assemblies of the present disclosure is configured to: (i) reach a temperature of about 150° F. after about five minutes after activation, (ii) reach a temperature of about 180° F. after about eight minutes after activation, and (iii) maintain an average temperature of about 175° F. from about eight minutes after activation to about 60 minutes after activation.

[0029] Liquids and foods (e.g., baby foods, formulas, liquids, etc.) are typically kept cool (e.g., refrigerated) for preservation purposes. Current practice provides that it is sometimes desired to consume such liquids and foods at an elevated temperature (e.g., it is typically preferred to give infants or babies liquid or food at or near body temperature). Moreover, it is typically desired to quickly and easily provide liquid or food at the desired temperature (e.g., to a hungry baby), even when one is not near a typical heating source for a container or vessel containing liquids and/or foods. In exemplary embodiments, the present disclosure provides for portable, disposable, cost effective, efficient and/or easy-touse air activated systems/methods/assemblies for rapidly elevating the temperature of liquids and/or foods in a container or vessel, thereby providing a significant commercial and manufacturing advantage as a result.

[0030] Referring now to the drawings, like parts are marked throughout the specification and drawings with the same reference numerals, respectively. Drawing figures are not necessarily to scale and in certain views, parts may have been exaggerated for purposes of clarity.

[0031] With reference to FIG. 1, there is illustrated a containment member 10 positioned, secured and/or attached around and/or against a container or vessel 12 according to an exemplary embodiment of the present disclosure. In general, container or vessel 12 is configured and dimensioned to house and/or contain food and/or liquid or the like, and containment member 10 is configured and dimensioned to transfer heat to container 12 and/or the contents therein, upon activation of containment member 10. In one embodiment, container 12 is a baby bottle. However, food and/or liquid containers or vessels are not the only containers or vessels that could be used in accordance with the principles of the present disclosure, as will be readily apparent to persons skilled in the art from the description provided herein. For example, container or vessel 12 may be configured and dimensioned to contain and/or house any fluid, liquid, object and/or material. Alternatively, containment member 10 may be positioned, secured and/or attached around and/or against any other suitable object or part of an object (e.g., an arm, leg, etc.) to transfer heat to that

[0032] In general, container 12 substantially fits inside the attached, secured or positioned containment member 10. In exemplary embodiments and as shown in FIG. 1, the attached secured or positioned containment member 10 substantially surrounds, encircles and/or envelops a substantial portion of container 12. For example, attached, secured or positioned containment member 10 may take the form of a three-dimensional shape, such as, for example, a cylinder, a cube, a

triangular prism, a pentagonal prism, etc. In exemplary embodiments, attached or positioned containment member 10 has three-dimensional contact with container 12. Typically, at least a portion of at least one surface of containment member 10 is gas and/or air permeable. For example, at least one surface of containment member 10 may be fabricated from polyethylene, polypropylene, polyvinylchloride, etc.

[0033] In general, containment member 10 includes at least one containment region or compartment 14a. The at least one containment region or compartment 14a is typically configured and dimensioned to house and/or contain an exothermic composition 16. Exemplary exothermic composition 16 takes the form of an air activated exothermic composition, although the present disclosure is not limited there. Rather, exothermic composition 16 may take a variety of forms. Exemplary exothermic compositions 16 are described and disclosed in U.S. Pat. Nos. 3,976,049; 4,114,591; 4,282,005; 4,366,804; 5,046, 479; 5,042,455; 5,366,492; 5,425,975; 5,879,378; 5,918,590; 5,984,995; 6,099,556; and U.S. Patent Pub. No. 2007/0034202, the entire contents of each being hereby incorporated by reference in their entireties.

[0034] In general, exemplary exothermic composition 16 in containment member 10 produces heat by a chemical reaction (e.g., exothermic reaction) on activation (e.g., air activation) of the exothermic composition 16. For example, prior to use, containment member 10 may be packaged in an air tight package. When a user removes the containment member 10 from the air tight package, this thereby activates the exothermic composition 16 of containment member 10. As noted, at least a portion of at least one surface of containment member 10 is gas and/or air permeable to allow activation of the exothermic composition 16 (e.g., to allow air to enter the containment member 10 upon removal of the containment member 10 from the air tight package). Thus, in exemplary embodiments, the heat production of the containment member 10 is activated by removing the containment member 10 from the air tight package and exposing it to air which initiates the exothermic reaction of the exothermic composition 16. It is noted that other suitable methods for initiating and/or activating the exothermic composition 16 may be utilized as well.

[0035] In exemplary embodiments, exothermic composition 16 includes (by weight): from about 10% to about 85% metal powder (e.g., iron powder); from about 5% to about 50% water; from about 2% to about 50% activated carbon, non-activated carbon (and/or mixtures thereof); from about 2% to about 50% water holding material, wood powder, filler, vermiculite, silicates, etc. or the like (and/or mixtures thereof); and from about 0.5% to about 30% metal salt (e.g., sodium chloride). In one embodiment, exothermic composition 16 includes (by weight): about 60% metal powder (e.g., iron powder); about 10% water; about 10% activated carbon, non-activated carbon (and/or mixtures thereof); about 10% water holding material, wood powder, filler, vermiculite, silicates, etc. or the like (and/or mixtures thereof); and about 10% metal salt (e.g., sodium chloride). It is noted that such exothermic compositions 16 are provided as examples, and other combinations of ingredients and/or other ingredients may be utilized to give exothermic composition 16 the desired effect.

[0036] In exemplary embodiments, containment member 10 is configured and dimensioned to be wrapped and/or positioned around container 12 and releasably secured and/or attached via at least one attachment member or region 18 of

containment member 10. Alternatively, containment member 10 may take the form of a three-dimensional shape, such as, for example, a cylinder, a cube, a triangular prism, a pentagonal prism, etc. For example, instead of containment member 10 being releasably secured and/or attached via at least one attachment member or region 18, the containment member 10' may take the form of a cylinder or the like (e.g., a single substantially cylindrically-shaped containment member 10'—FIG. 6), and the cylindrical containment member 10' may then be positioned or secured around a substantial portion of container 12. For example and as shown in FIG. 6, substantially cylindrically-shaped containment member 10' having at least one containment region or compartment 14a' may include stretchy (e.g., elastic) material 13 or the like to facilitate the placement, securement and/or attachment of the containment member around container 12.

[0037] In one embodiment and as shown in FIG. 2, containment member 10 includes a first attachment member or region 18 at first end 20, and a second attachment member or region 18' at second end 20. In use, containment member 10 may be wrapped and/or positioned around container 12, and attachment member or regions 18, 18' may then be releasably attached or secured to each other and/or to container 12. Stated another way, the at least one attachment member or region 18 may be releasably secured and/or attached to a portion of containment member 10 (e.g., to region 18'), or attachment member or region 18 may be releasably secured and/or attached directly to container 12. Containment member 10 may include any suitable number of attachment members or regions 18, 18'.

[0038] In general, attachment regions 18, 18' do not have exothermic composition 16 positioned or housed within and/or behind these regions of containment member 10. As attachment regions 18, 18' typically do not have exothermic composition positioned or housed within and/or behind these regions, it has been found that this thereby increases and/or enhances the attachment and/or securement of these two regions. For example, if exothermic composition 16 were positioned within and/or behind attachment regions 18, 18', the exothermic composition 16 may reduce the adhesiveness of attachment regions 18, 18' after activation (e.g., once exothermic composition raised temperature).

[0039] In one embodiment, attachment regions 18, 18' both include an adhesive material or the like for attaching/securing purposes. Thus, exemplary attachment members or regions 18, 18' take the form of adhesive materials or regions, although the present disclosure is not limited thereto. Rather, attachment members or regions 18, 18' may take any suitable forms for attachment and/or securement to containment member 10 and/or to container 12 (e.g., Velcro, hook-and-loop fasteners, clips, snaps, etc.).

[0040] Alternatively, containment member 310, 410 may have one attachment region 318, 418 at first end 320, 420 that includes an adhesive material or the like, and a second attachment region 318', 418' at second end 324, 424 that does not include an adhesive material or the like (FIGS. 3 and 4).

[0041] As noted, containment member 10 includes at least one containment region or compartment 14a. In general, the at least one containment region or compartment 14a is positioned in exothermic region 26 of containment member 10. As shown in FIG. 2, exothermic region 26 is typically positioned between first end 20 and second end 24 of containment member 10. In exemplary embodiments, containment member 10 may be about 12 inches in length and about 3 or 4

inches in height. Attachment regions 18, 18' may be about 1 inch in length respectively, with exothermic region 26 positioned therebetween. As such, exemplary exothermic region 26 is about 10 inches in length.

[0042] In exemplary embodiments and as shown in FIGS. 2 and 4, containment member 10, 410 includes four separate and/or distinct containment regions or compartments: 14a, 14b, 14c and 14d in FIG. 2, and 414a, 414b, 414c and 414d in FIG. 4. Typically, each distinct containment region 14a, 14b, 14c, 14d (or 414a, 414b, 414c and 414d) is configured and dimensioned to separately house and/or contain exothermic composition 16. In general, each containment region 14a, 14b, 14c, 14d (or 414a, 414b, 414c and 414d) has about the same length and height, although the present disclosure is not limited thereto.

[0043] In exemplary embodiments and as shown in FIGS. 2 and 4, containment regions 14a, 14c in FIG. 2 (414a, 414c-FIG. 4) horizontally extend from about second end 24 (424– FIG. 4) to about the horizontal midpoint of exothermic region 26, 426 (vertical plane A), and containment regions 14b, 14d (414b, 414d) horizontally extend from about first end 20 (420) to about the horizontal midpoint of exothermic region 26, 426 (vertical plane A). Moreover, containment regions 14a, 14b (414a, 414b-FIG. 4) vertically extend from about the top side 28 (428—FIG. 4) to about the vertical midpoint of exothermic region 26, 426 (horizontal plane B), and containment regions 14c, 14d (414c, 414d) vertically extend from about the bottom side 30, 430 to about the vertical midpoint of exothermic region 26, 426 (horizontal plane B). It has been found that containment member 10, 410 with containment regions 414a, 414b, 414c, 414d (or 414a, 414b, 414c and 414d) advantageously transfers heat efficiently and effectively from activated exothermic compositions 16 contained in containment regions 414a, 414b, 414c, 414d (or 414a, 414b, 414c and 414d) to container 12 once containment member 10, 410 is attached and/or positioned around container 12. as the exothermic compositions 16 are substantially evenly positioned next to container 12 via containment regions 414a, 414b, 414c, 414d (or 414a, 414b, 414c and 414d) after attachment or positioning with respect to container 12 (FIGS. 1-2 and 4). For example, after containment member 10, 410 is attached and/or positioned around container 12 (FIG. 1), the exothermic composition 16 in separate containment regions **14***a* and **14***b* (FIG. **2**) or **414***a* and **414***b* (FIG. **4**) are prevented from moving towards or adjacent to the bottom side 30, 430 of containment member 10, 410.

[0044] It is noted that the containment members of the present disclosure may include any other number of separate containment regions 14a, 14b etc. (414a, 414b, etc.). For example and as shown in FIG. 5, containment member 510 may include a plurality of separate containment regions 514 (e.g., to prevent exothermic composition 16 from moving towards or adjacent to the bottom side 530 of containment member 530). For example, alternative containment member 510 of the present disclosure may include a plurality of separate containment members 514, thereby forming or defining a quilted-like design (e.g., similar to the quilting in a paper towel or bath tissue) of the containment member 510. In this way, the quilted-like design of the separate containment members 514 would advantageously prevent a majority of the exothermic composition 16 of the containment member 510 from moving towards or adjacent to the bottom side 530 of the containment member 510 after the containment member 510 was positioned or secured around container 12.

[0045] In an alternative embodiment and as shown in FIG. 3, containment member 310 includes two separate and/or distinct containment regions or compartments 314, 314'. In general, each containment region 314, 314' has about the same length and height. As shown in FIG. 3, containment region 314 horizontally extends from about second end 322 to about the horizontal midpoint of exothermic region 326 (vertical plane A), and containment region 314' horizontally extends from about first end 320 to about the horizontal midpoint of exothermic region 326 (vertical plane A). Moreover, containment regions 314, 314' vertically extend from about the top side 328 to about the bottom side 330. It has been found that containment member 310 with containment regions 314, 314' advantageously transfers heat efficiently and effectively from activated exothermic compositions 16 contained in containment regions 314, 314' to container 12 once containment member 310 is attached and/or positioned around container 12.

[0046] In exemplary embodiments and as shown in FIG. 7, once containment member 10, 310, 410 is attached and/or positioned around container 12 (FIG. 1), a user may then position an outer member 50 around containment member 10, 310, 410 and/or container 12. Alternatively, a user may first remove containment member 10, 310, 410 from the air tight package, insert containment member 10, 310, 410 at least partially within outer member 50, and then position and/or attach outer member 50 with inserted containment member 10, 310, 410 around container 12. For example, outer member 50 may be configured and dimensioned with pockets, sleeves, or holder members or the like for at least partially containing or housing containment member 10, 310, 410.

[0047] Typically, at least a portion of at least one surface of outer member 50 is gas and/or air permeable (e.g., to allow activation of containment member 10, 310, 410 to initiate and/or continue). For example, at least one surface of outer member 50 may be fabricated from neoprene, polyethylene, polypropylene, polyvinylchloride, etc., although the present disclosure is not limited thereto. Rather, outer member 50 may be fabricated from any suitable material.

[0048] As shown in FIG. 7, outer member 50 includes a plurality of air flow regions 52. In one embodiment, air flow regions 52 are holes or openings configured to allow air to reach containment region(s) 14a, 14, etc. Alternatively, air flow regions 52 may be fabricated from a mesh or perforated fabric material or the like. Typically, air flow regions 52 are positioned on outer member 50 to substantially correspond to containment region(s) 14a, 14, etc. of attached or positioned containment member 10, 310, 410 (e.g., to allow activation of containment member 10, 310, 410 to initiate and/or continue). As shown in FIG. 7, air flow regions 52 may be substantially circular, although the present disclosure is not limited thereto. In exemplary embodiments, air flow regions 52 extend substantially around at least a portion of the circumference of outer member 50. For example and as shown in FIG. 7, air flow regions 52 may be positioned on the lower and mid-sections of outer member 50, and extend substantially around the circumference of the outer member 50 in these regions. Outer member 50 may or may not include air flow regions 52.

[0049] In general, outer member 50 is configured and dimensioned to facilitate keeping containment member 10, 310, 410 in place around container 12. Additionally, outer member 50 generally provides an insulation function to facilitate transferring heat from containment member 10, 310, 410

to container 12. Moreover, outer member 50 typically helps to protect a user's hands or furniture or the like from the heat of activated containment member 10, 310, 410. As shown in FIG. 7, outer member 50 may also include a securement member 54 (e.g., a zipper or the like) and/or a fastening member 56 (e.g., a button, clip or snap or the like).

[0050] Whereas the disclosure has been described principally in connection with warmer assemblies for liquid or food containers/vessels (e.g., baby bottles), such description has been utilized only for purposes of disclosure and is not intended as limiting the disclosure. To the contrary, it is to be recognized that the disclosed warmer assemblies are capable of use with any container/vessel and/or object to raise the temperature of such containers/vessels and/or objects (and/or the contents therein).

[0051] Although the systems and methods of the present disclosure have been described with reference to exemplary embodiments thereof, the present disclosure is not limited to such exemplary embodiments and/or implementations. Rather, the systems and methods of the present disclosure are susceptible to many implementations and applications, as will be readily apparent to persons skilled in the art from the disclosure hereof. The present disclosure expressly encompasses such modifications, enhancements and/or variations of the disclosed embodiments. Since many changes could be made in the above construction and many widely different embodiments of this disclosure could be made without departing from the scope thereof, it is intended that all matter contained in the drawings and specification shall be interpreted as illustrative and not in a limiting sense. Additional modifications, changes, and substitutions are intended in the foregoing disclosure. Accordingly, it is appropriate that the appended claims be construed broadly and in a manner consistent with the scope of the disclosure.

What is claimed is:

- 1. A warmer assembly comprising:
- a container configured and dimensioned to house liquid or food:
- a containment member configured and dimensioned to be removable positioned or attached around or against the container, the containment member having a first end and a second with an exothermic region extending between the first end and second end;
- the exothermic region having at least one containment compartment configured and dimensioned to house an exothermic composition, the exothermic composition configured to produce heat on activation;
- the first end including at least one attachment member configured and dimensioned to be releasably secured or attached to the second end to removable position or attach the containment member around or against the container;
- wherein the heat produced by the exothermic composition rapidly heats the liquid or food in the container after activation.
- 2. The assembly of claim 1, wherein the exothermic composition is an air activated exothermic composition.
- 3. The assembly of claim 1, wherein the temperature of the liquid or food in the container is increased by about  $20^{\circ}$  F. in about ten minutes after activation.
- **4**. The assembly of claim **1**, wherein the heat produced by the exothermic composition heats the liquid or food up to a temperature of about 110 to about 120° F.

- **5**. The assembly of claim **1**, wherein the exothermic composition: (i) reaches a temperature of about 150° F. after about five minutes after activation; (ii) reaches a temperature of about 180° F. after about eight minutes after activation, and (iii) maintain an average temperature of about 175° F. from about eight minutes after activation to about 60 minutes after activation.
- **6**. The assembly of claim **1**, wherein the positioned or attached containment member has three-dimensional contact with the container.
- 7. The assembly of claim 1, wherein there is substantially no exothermic composition positioned or housed within or behind the first and second ends.
- 8. The assembly of claim 1, wherein the containment member includes a top side and a bottom side; and
  - wherein the exothermic region includes four separate and distinct containment compartments with: (i) the first and third compartments horizontally extending from about the second end to about the horizontal mid-point of the exothermic region; (ii) the second and fourth compartments horizontally extending from about the first end to about the horizontal mid-point of the exothermic region; (iii) the first and second compartments vertically extending from about the top side of the containment member to about the vertical mid-point of the exothermic region; and (iv) the third and fourth compartments vertically extending from about the bottom side of the containment member to about the vertical mid-point of the exothermic region.
- 9. The assembly of claim 9, wherein the first and second compartments prevent the exothermic composition contained therein from moving past the vertical mid-point of the exothermic region towards the bottom side of the containment member after the containment member is removably positioned or attached around or against the container.
- 10. The assembly of claim 1, wherein the exothermic region includes two separate and distinct containment compartments.
- 11. The assembly of claim 1 further comprising an outer member, the outer member configured and dimensioned to be positioned at least partially around the containment member once the containment member is removably positioned or attached around or against the container.
- 12. The assembly of claim 11, wherein the outer member includes a plurality of air flow regions.
- 13. The assembly of claim 12, wherein each air flow region is a hole or opening.
- 14. The assembly of claim 12, wherein the plurality of air flow regions extends substantially around at least a portion of the circumference of the outer member.
- 15. The assembly of claim 12, wherein the plurality of air flow regions extends substantially around the lower and midsection of the circumference of the outer member.
- 16. The assembly of claim 11, wherein the outer member is an insulating member.
- 17. The assembly of claim 1, wherein the exothermic region includes a plurality of separate and distinct containment compartments, the plurality of containment compartments defining a quilted-like design of the exothermic region.
- 18. The assembly of claim 17, wherein the containment member includes a top side and a bottom side; and wherein a majority of the plurality of separate and distinct containment compartments prevents a majority of the exothermic composition of the containment member from moving adjacent to

the bottom side of the containment member after the containment member is removably positioned or attached around or against the container.

- 19. A warmer assembly comprising:
- a container configured and dimensioned to house liquid or food:
- a containment member configured and dimensioned to be removable positioned or attached around or against the container, the containment member having a first end and a second with an exothermic region extending between the first end and second end;
- the exothermic region having at least one containment compartment configured and dimensioned to house an air activated exothermic composition, the exothermic composition configured to produce heat on activation;
- the first end including at least one attachment member configured and dimensioned to be releasably secured or attached to the second end to removable position or attach the containment member around or against the container:
- wherein the heat produced by the exothermic composition rapidly heats the liquid or food in the container after activation:
- wherein the containment member includes a top side and a bottom side:
- wherein the exothermic region includes four separate and distinct containment compartments with: (i) the first and third compartments horizontally extending from about the second end to about the horizontal mid-point of the exothermic region; (ii) the second and fourth compartments horizontally extending from about the first end to about the horizontal mid-point of the exothermic region; (iii) the first and second compartments vertically extending from about the top side of the containment member to about the vertical mid-point of the exothermic region; and (iv) the third and fourth compartments vertically extending from about the bottom side of the containment member to about the vertical mid-point of the exothermic region;
- wherein there is substantially no exothermic composition positioned or housed within or behind the first and second ends; and
- wherein the exothermic composition: (i) reaches a temperature of about 150° F. after about five minutes after activation; (ii) reaches a temperature of about 180° F. after about eight minutes after activation, and (iii) maintain an average temperature of about 175° F. from about eight minutes after activation to about 60 minutes after activation.
- **20**. A warmer assembly comprising:
- a container configured and dimensioned to house liquid or food:
- a containment member configured and dimensioned to be removable positioned around or against the container, the containment member having an exothermic region;
- the exothermic region having at least one containment compartment configured and dimensioned to house an exothermic composition, the exothermic composition configured to produce heat on activation;
- wherein the heat produced by the exothermic composition rapidly heats the liquid or food in the container after activation;

wherein the containment member includes a top side and a bottom side;

wherein the exothermic region includes a plurality of separate and distinct containment compartments; and

wherein a majority of the plurality of separate and distinct containment compartments prevents a majority of the exothermic composition of the containment member from moving adjacent to the bottom side of the containment member after the containment member is removably positioned around or against the container.

\* \* \* \* \*