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# United States Patent [19]

**Brady**

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[54] **COOKING VESSEL LID**

[76] Inventor: **John B. Brady**, 19 Pin Oaks Dr., Phoenixville, Pa. 19460

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[51] **Int. Cl.**[6] ..... **B65D 51/16**

[52] **U.S. Cl.** ..... **220/573.1**; 220/23.86; 220/366.1; 220/367.1; 220/374; 220/912

[58] **Field of Search** ..... 220/23.86, 231, 220/366.1, 367.1, 368, 369, 373, 374, 573.1, 573.3, 912

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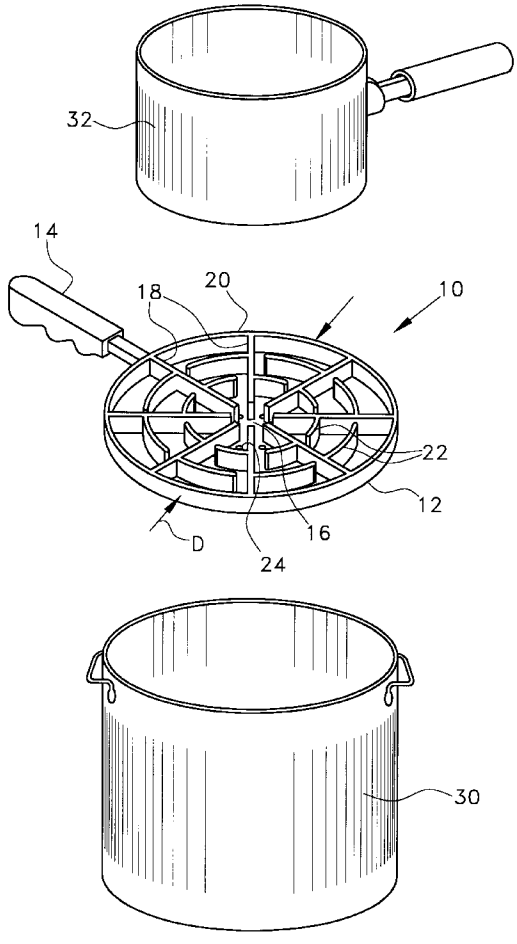
*Primary Examiner*—Stephen K. Cronin
*Attorney, Agent, or Firm*—LaMorte & Associates

[57] **ABSTRACT**

A lid for a cooking vessel such as a pot. The lid is circular and has a central region and a peripheral region. At least one aperture is disposed within the central region of the lid, thereby enabling hot air and steam to pass through the lid. A plurality of rib elements are disposed on the top of the lid, wherein the various rib elements define a pathway from the apertures in the central region to the peripheral region. The rib elements all terminate in the same plane. As such, a cooking vessel can be placed on top of the lid and the rib elements will support that cooking vessel in an even manner. As hot air and steam from a cooking vessel rise up, that hot air and steam passes through the apertures in the lid. The hot air and steam then passes through the pathways on the top surface of the lid, thereby allowing that hot air and steam to heat a second cooking vessel placed on the lid.

**14 Claims, 4 Drawing Sheets**



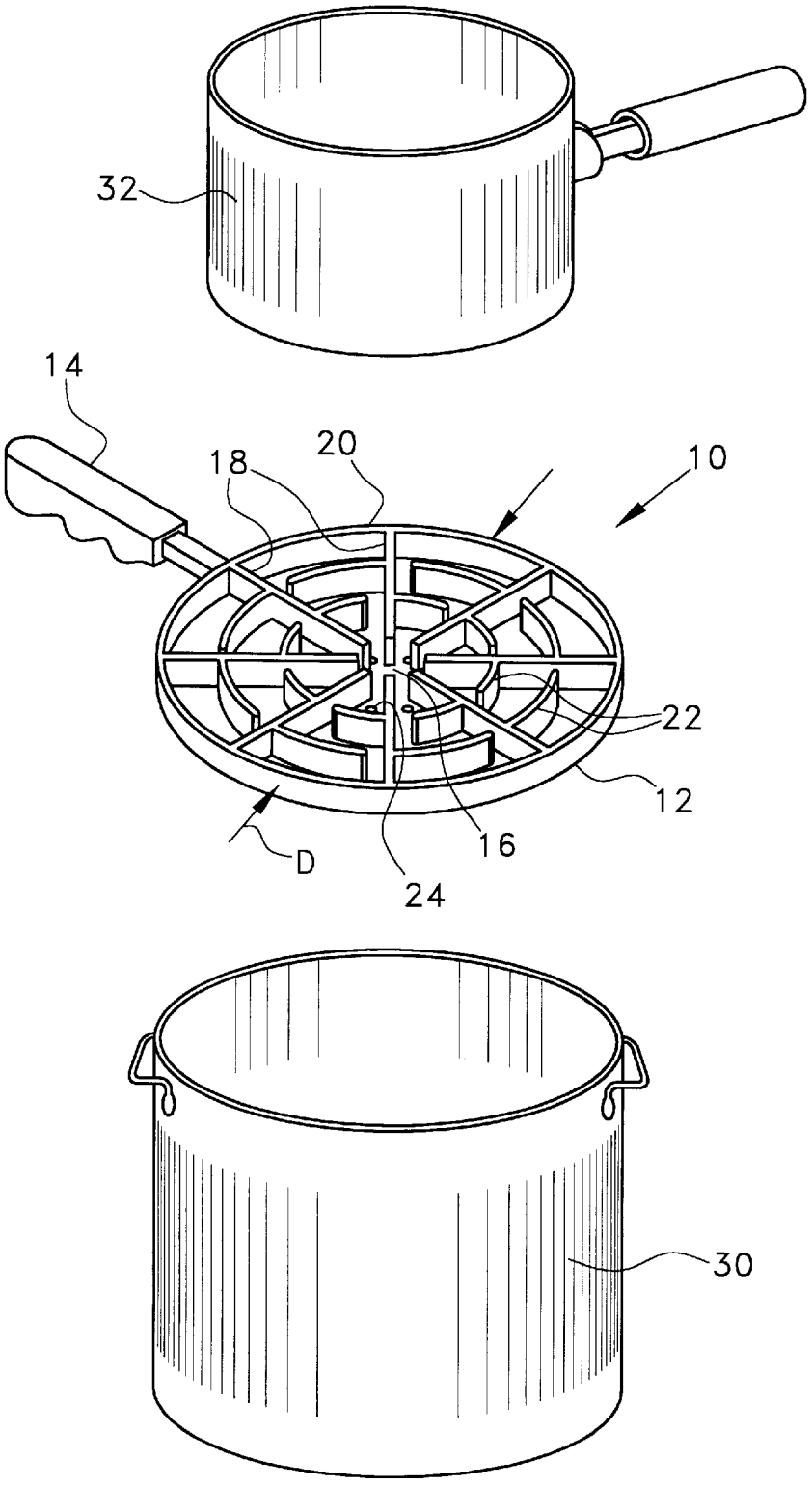



Fig. 1

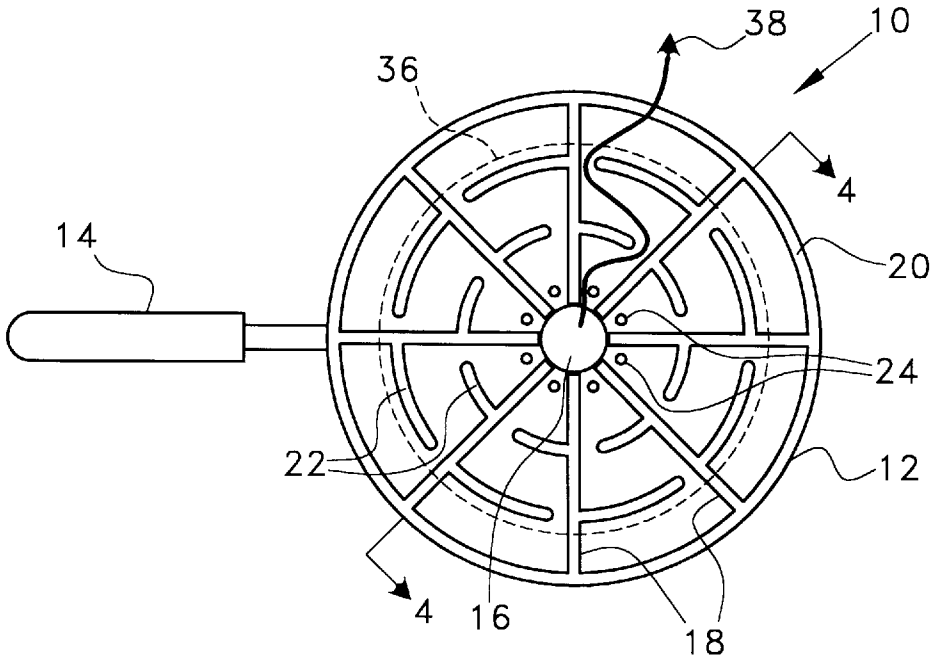



Fig. 2

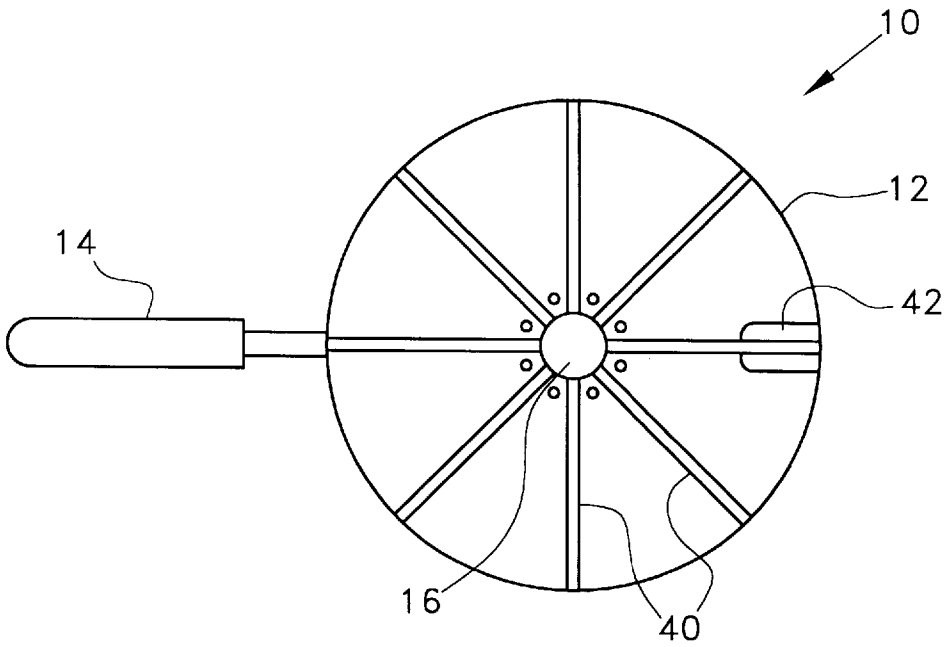



Fig. 3

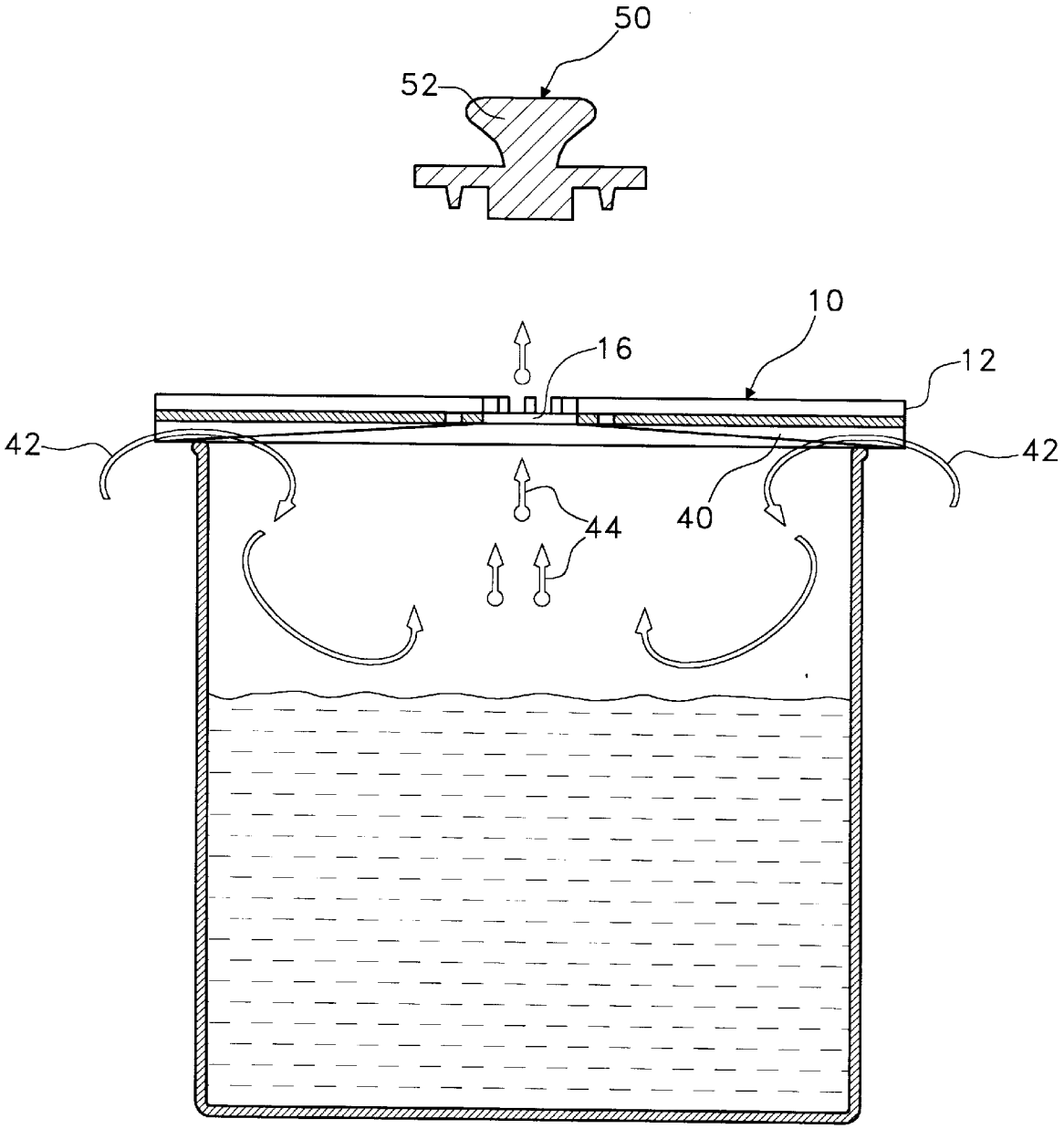



Fig. 4

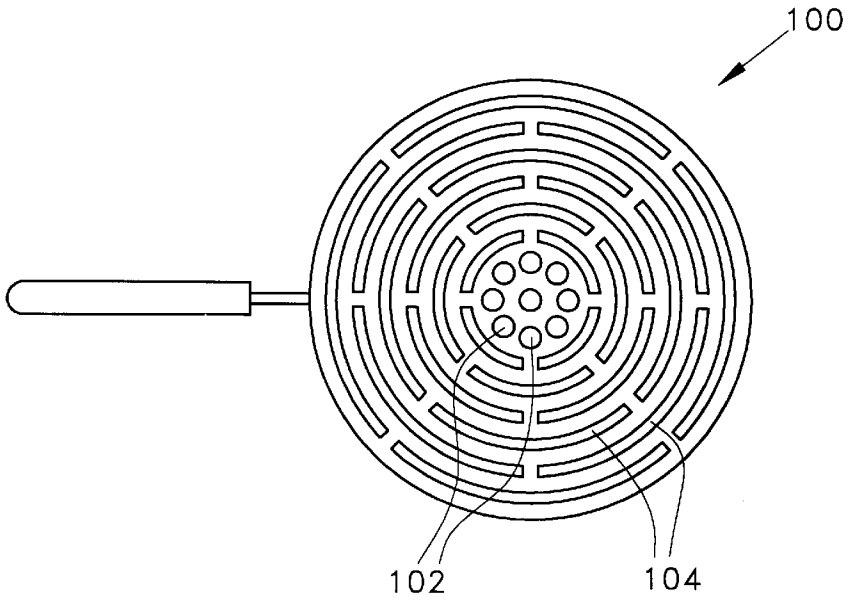



Fig. 5

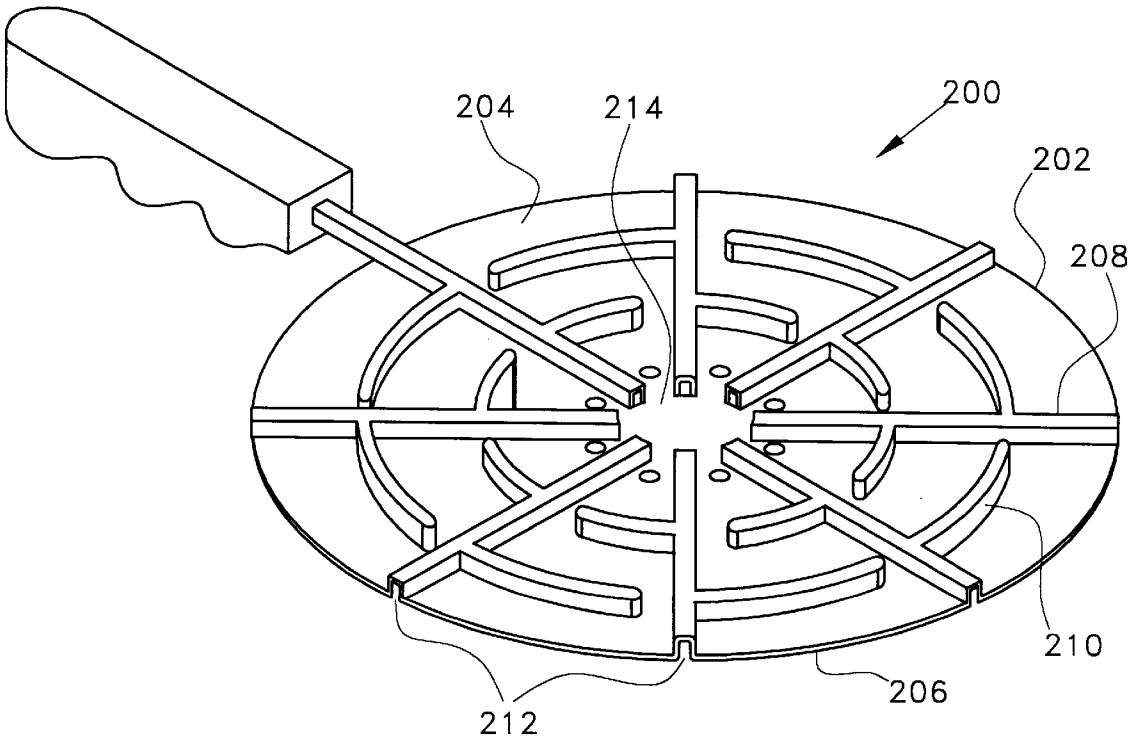



Fig. 6

# COOKING VESSEL LID

## BACKGROUND OF THE INVENTION

1. Field of the Invention

The present invention relates in general to lids and covers for pots, pans and other cooking vessels. More particularly, the present invention relates lids and covers that have area of perforation that enable steam and/or hot air to exit the cooking vessel in a controlled manner, whereby the exiting steam and/or hot air can be used to heat a second cooking vessel.

2. Description of the Prior Art

In the prior art record, there is a wide variety of different cooking vessels and covers for those cooking vessels. A common traditional cooking vessel is a metal pot or pan having a round open top. The traditional lid for such a pot or pan is a metal lid with a handle in it's center. The lid is sized to exactly cover the round open end of the pot or pan. As a result, different sized pots and pans use different sized lids and the lids between different pots and pans are not normally interchangeable.

Traditional lids for pots, pans and other cooking vessels are solid. As a result, when a lid is placed over a pot or pan, the contents of the pot or pan are sealed. If the pot or pan is placed over heat and the contents begin to boil, the resultant steam has no where to go within the sealed confines of the pot or pan. As a result, the pressure of the steam within the pot or pan causes the lid to periodically raise so that steam can escape. The lid, therefore, chatters on the top of the pot or pan until the lid is removed or heat source is removed. A solid lid also traps heat within the confines of a pot or pan. As a result, the contents of the pot or pan do not cool rapidly. As a result, the contents of a covered pot or pan may continue to boil until the contents boiler over and out onto the stove top. By the time a cook sees or hears the chatter of a lid on a pot or pan, some of the contents may have already spilled out past the lid with the escaping steam. This causes the sides of the pot or pan and the stove top to become dirty and require cleaning.

Another disadvantage of traditional pot lids and pan lids is that the presence of the lid handle in the top center of the lid prevents any other pot or pan from being placed onto that lid. Consequently, pots and pans cannot be doubled up on the stove top and each pot or pan must have its own burner on the stove.

A need, therefore, exists in the art for a single pot or pan lid that is capable of covering numerous different sized pots and pans.

A need also exists for a lid that enables steam to escape from a pot or pan in a controlled manner that enables some of the escaping heat to be reused.

Lastly, a need also exists for a lid that is flat and is capable of supporting other pots and pans, thereby enabling pots and pans to be doubled up on a stove top.

These needs are met by the present invention as described and claimed below.

## SUMMARY OF THE INVENTION

The present invention is a lid for a cooking vessel such as a pot or pan. The lid is circular and has a central region and a peripheral region. At least one aperture is disposed within the central region of the lid, thereby enabling hot air and steam to pass through the lid. A plurality of rib elements are disposed on the top of the lid. The various rib elements define a pathway from the apertures in the central region to the peripheral region. The rib elements all terminate in the same plane. As such a cooking vessel can be placed on top of the lid and the rib elements will support that cooking vessel in an even manner. As hot air and steam from a cooking vessel rise up, that hot air and steam pass through the apertures in the lid. The hot air and steam then pass through the pathways on the top surface of the lid, thereby allowing that hot air and steam to heat a second cooking vessel placed on the lid.

The bottom surface of the lid also contains rib elements. The rib elements engage the top of the cooking vessel when the lid is placed over a cooking vessel. The rib elements define gaps through which air can pass under said lid element and into the cooking vessel, thereby creating a flow of air into the cooking vessels that reduces the likelihood that the contents of the cooking vessel will boil over.

## BRIEF DESCRIPTION OF THE DRAWINGS

For a better understanding of the present invention, reference is made to the following description of exemplary embodiments thereof, considered in conjunction with the accompanying drawings, in which:

FIG. **1** is a perspective view of one preferred embodiment of the present invention lid shown in conjunction with two different sized pots to illustrate the intended method of use for the present invention;

FIG. **2** a top view of the embodiment of the lid shown in FIG. **1**;

FIG. **3** is a bottom view of the embodiment of the lid shown in FIG. **1**:

FIG. **4** is a cross-sectional view of the embodiment of the lid shown in FIG. **2** viewed along section line **4—4**, shown in conjunction with an optional pug cap;

FIG. **5** is a top view of an alternate embodiment of the present invention lid; and

FIG. **6** is a perspective view of a second alternate embodiment of the present invention lid having a stamped manufacture.

## DETAILED DESCRIPTION OF THE DRAWINGS

Referring to FIG. **1**, an exemplary embodiment of a lid device **10** is shown in accordance with the present invention. The lid device **10** has a round section **12** that has a preferred diameter D of between six inches and eighteen inches. Such a range of diameters is adequate to cover most common cooking vessels, however, any other diameter can be used. The round section **12** of the lid element **10** is made of metal with a high heat transfer capacity, such as aluminum or aluminum alloy. The round section **12** of the lid device **10** is symmetrically formed. As a result, the round section **12** of the lid device **10** has a center of gravity that acts in the center of the round section **12**.

A handle element **14** radially extends from a point on the periphery of the round section **12**. The handle element **14** enables the lid device **10** to be safely manipulated when hot. The presence of the handle element would normally change the center of gravity for the overall lid device **10** away from the center of the round section **12**. However, as will be later explained, the round section **12** of the lid device **10** includes a counter weight (not shown) that is sized and positioned to counter the weight of the handle element **14**. As a result, the center of gravity for the entire lid device **10** remains proximate the center of the round section **12**.

Referring to FIG. **2** in conjunction with FIG. **1**, it can be seen that the top surface of the round section **12** of the lid

device **10** is neither solid nor flat. A large aperture **16** extends through the round section **12** of the lid device **10** at its center. The aperture **16** preferably has a diameter of between one inch and three inches, however any sized aperture can be used. Rib elements **18** radially extend from the central aperture **16**, wherein each rib element **18** extends from the edge of the central aperture **16** to the peripheral edge **20** of the round section **12** of the lid element **10**. The rib elements **18** share the same height as does the peripheral edge of the round section **12** of the lid device **10**. As a result, the rib elements **18** and the peripheral edge **20** terminate in a common plane. The presence of the rib elements **18** divide the top surface of the round section **12** of the lid device **10** into equal sections. Contained within each of the sections are a plurality of baffle elements **22**. Although only two baffle elements **22** are shown in each section, it should be understood that no baffle elements or any plurality of baffle elements can be used. The baffle elements **22** have the same height as does the rib elements **18** and the peripheral edge **20**, thereby terminating in the same plane as these elements. The purpose of the baffle elements **22** is to create a convoluted path in between the central aperture **16** and the peripheral edge **20** of the round section **12** of the lid device **10**.

Smaller apertures **24** may also be located in each of the different sections proximate the larger central aperture **16**.

Returning to FIG. **1**, it can be seen that the lid device **10** can be placed over a pot **30** or other cooking vessel that has a smaller diameter than that of the round section **12** of the lid device **10**. Since the handle element **14** is balanced by a counter weight, the lid device **10** remains stable on top of the pot **30** when placed over the pot **30**. A second pot **32** can also be placed on top of the round section **12** of the lid device **10**. The rib elements **18**, baffle elements **22** and peripheral edge **20** of the round section **12** of the lid device **10** terminate in a common horizontal plane. As such, a flat surface is provided that is capable of supporting the second pot **32**.

As the contents of the bottom pot **30** heat on a stove, hot air and steam begin to rise out through the central aperture **16** in the middle of the round section **12** of the lid device **10** and the smaller apertures **24** that surround the central aperture **16**. The rising hot air and steam can then be used to heat the contents of the second upper pot **32**. Referring to FIG. **2** the area cover by the base **36** of the second upper pot is shown by a circle made with a broken line. From arrow **38** in FIG. **2**, it can be seen that as hot air and steam rise through the apertures in the round section **12** of the lid device **10**, the hot air and steam travel along a convoluted path below the base **36** of the second pot. The convoluted path is created by the positioning of the various rib elements **18** and the baffle elements **22** that extend from the rib elements **18**.

Since the passing hot air and steam is travelling along convoluted paths, that hot air and steam are exposed to a large area on the base **36** of the second pot. Consequently, a high efficient heat transfer occurs between the passing heat and the second pot. The contents of the second pot therefore are warmed accordingly.

Referring to FIG. **3**, an exemplary embodiment of the bottom surface of the round section **12** of the lid device **10** is shown. The bottom surface of the round section **12** of the lid device **10** also includes a plurality of rib elements **40** that radially extend from the central aperture **16**. From FIG. **3**, the counter weight **42** that counter balances the handle element **14** is also shown as an area of increased rib size directly opposite the handle element **14**.

Referring to FIG. **4**, it can be seen that the various rib elements **40** on the bottom surface of the round section **12** of the lid device **10** are tapered. As a result, the round section **12** of the lid device is thinnest near the central aperture **16**. When the bottom surface of the lid device is placed on a pot, the central aperture **16** is at an elevated position relative the remainder of the lid device structure. As a result, hot air and steam are naturally directed to the central aperture **16** as that hot air and steam rises.

The round section **12** of the lid device **10** does not create an air impervious seal with the pot that it covers. Rather, due to the various rib elements **40** on the bottom surface of the lid device **10**, air is allowed to pass into the pot below the lid device **10**, as is indicated by arrows **42**. As shown by arrows **44**, as hot air and steam rise out of the pot through the lid device **10**, fresh air is drawn into the pot. The flow of fresh air into the pot significantly reduces the likelihood that the contents of the pot will boil over out of the pot when overheated. Rather, the flow of fresh air maintains the contents of the pot near its boiling point and at a controlled simmer.

In FIG. **4** and optional plug cap **50** is shown. In certain situations, a cook may not want excess heat to escape from a pot. As such, a plug cap **50** that fit onto the lid device **10** is provided. The plug cap **50** is shaped to plug the central aperture **16** and the smaller apertures **24** (FIG. **2**) in the lid device **10**. The plug cap **50** also comes with a handle **52** so that the plug cap **50** can be easily maneuvered when hot. When the plug cap **50** is in place, hot air and steam are no longer permitted to pass through the center of the lid device **10**. The lid device **10** therefore functions much in the same manner as a traditional solid lid. When the plug cap **50** is removed, the hot air and steam can pass through the lid device **10** and the lid device **10** returns to the function previously described.

Referring to FIG. **5**, an alternate embodiment of a lid device **100** is shown. The purpose of this alternate embodiment is to illustrate that the apertures and the ribbing on the lid device can have many different configurations in accordance to the present invention. In the shown embodiment, no one large central aperture is used. Rather, the center of the lid device **100** is perforated with a plurality of smaller apertures **102**. Hot air and steam will rise through the plurality of apertures **102** in the same manner that the hot air and steam rose through the single large aperture in the previous embodiment.

Also shown in FIG. **5** is a different pattern of baffle ribs **104**. The baffle ribs **104** create a convoluted pathway for the passing hot air and steam that is more complex that previously described, thereby enabling more heat transfer to occur between the rising heat and a pot placed on top of the lid device **100**.

Referring to FIG. **6**, a second alternate embodiment of a lid device **200** is shown. In this embodiment, the lid device **200** is produced by stamping a flat blank of metal **202**. As such, it should be understood that for every point on the top surface **204** of the lid device **200** that protrudes upwardly, there is a corresponding depression on the bottom surface **206** of the lid device **200**. As a result, for each of the rib elements **208** and baffle elements **210** that are present on the top surface **204** of the lid device **200**, a depression of the same shape is disposed on the bottom surface **208** of the lid device **200**.

Since the lid device **200** is stamped, the ends **212** of the rib elements **208** are open. The rib elements **208** therefore create conduits that permit air to flow under the lid element

200 and into a pot when hot air and steam from that pot are rising through the aperture 214 in the center of the lid element 200. As has been previously described in conjunction with FIG. 4, the flow of fresh air under the lid element 200 maintains the contents of the pot near its boiling point and at a controlled simmer.

It will be understood that the embodiments of the present invention lid device, illustrated and described above, are merely exemplary and many variations and modifications can be made by using functionally equivalent components and/or alternate embodiments. All such variations and modifications are intended to be included within the scope of the invention as defined by the appended claims.

What is claimed is:

1. A device, comprising:

circular lid element having a top surface, a bottom surface, a central region and a peripheral region;

at least one open aperture defined by said lid element solely within said central region, wherein said at least one open aperture extends through said lid element from said top surface to said bottom surface, thereby enabling hot air to pass through only said central region of said circular lid;

a plurality of rib elements disposed on said top surface of said lid element, wherein said rib elements radially extend from said central region to said peripheral region and define pathways for the flow of hot air that extend from said central region to said peripheral region.

2. The device according to claim 1, wherein said plurality of rib elements terminated in a common plane.

3. The device according to claim 1, further including baffle elements that extend from said rib elements and cause said pathways to travel in a non-linear manner from said central region to said peripheral region.

4. The device according to claim 1, wherein said at least one aperture is a single aperture disposed in the center of said lid element having a diameter of between one inch and three inches.

5. The device according to claim 1, further including a handle element extending from said peripheral region of said lid element.

6. The device according to claim 5, wherein said lid element has a center of gravity at a predetermined point in said central region and said lid element contains a counter weight that compensates for said handle element and maintains a center of gravity for said device generally at said predetermined point.

7. The device according to claim 1, wherein said central region on said bottom side of said lid device is elevated relative said peripheral region on said bottom side of said lid element.

8. The device according to claim 1, further including a second plurality of rib elements on said bottom side of said lid element.

9. The device according to claim 8, wherein said second plurality of rib elements radially extend from said central region to said peripheral region.

10. The device according to claim 9, wherein said second plurality of rib elements taper from a first thickness in said peripheral region to a second shorter thickness in said central region.

11. A device for covering a cooking vessel, comprising:

lid element having a top surface, a bottom surface, a central region and a peripheral region;

a plurality of rib elements disposed on said bottom surface of said lid element that engage the cooking vessel, wherein said rib elements radially extend from said central region to said peripheral region and define gaps through which air can pass under said lid element and into the cooking vessel.

12. The device according to claim 11, further including at least one aperture defined by said lid element within said central region, wherein said aperture extends through said lid element from said top surface to said bottom surface and said at least one aperture communicates with gaps between said rib elements.

13. The device according to claim 11, wherein said plurality of rib elements taper from a first thickness in said peripheral region to a second shorter thickness in said central region.

14. A device, comprising:

a circular lid element having a top surface, a bottom surface, a central region and a peripheral region;

an aperture having a diameter between one inch and three inches defined by said lid element within said central region, wherein said aperture extends through said lid element from said top surface to said bottom surface;

a plurality of rib elements disposed on said top surface of said lid element, wherein said rib elements define pathways that extend from said central region to said peripheral region.

* * * * *