A chafing dish assembly includes a frame and a chafing dish that is insertable into the frame. The chafing dish comprises a sealed chamber of oil. A heat source is placed below the chafing dish to heat the oil. The oil transfers the heat to food within the chafing dish.
CHAFING DISH THAT USES A SEALED CHAMBER OF OIL AS A HEAT TRANSFER MEDIUM

BACKGROUND

[0001] Chafing dishes are widely used for keeping food warm, typically in connection with buffet-type food service. FIG. 1 illustrates a conventional chafing dish assembly 100, which includes a frame 102, a water pan 104, a chafing dish 106, a lid 108, and heat sources 110a, 110b. In order to use the chafing dish assembly 100 to keep food warm, the water pan 104 is partially filled with water and inserted into the frame 102. The heat sources 110a, 110b are placed below the water pan 104 to heat the water in the pan 104. Food is placed inside the chafing dish 106, and the chafing dish 106 is inserted into the water pan 104. The water in the water pan 104 is used as a medium to transfer heat from the heat sources 110a, 110b to the food within the chafing dish 106. The lid 108 may be used to cover the chafing dish 106, thereby maintaining the heat within the chafing dish 106.

BRIEF DESCRIPTION OF THE DRAWINGS

[0002] FIG. 1 is an exploded view of a conventional chafing dish assembly 100.
[0003] FIG. 2 is a perspective view of a chafing dish assembly 200 in accordance with an embodiment of the invention.
[0004] FIG. 3 is an exploded view of the chafing dish assembly 200.
[0005] FIG. 4A is a side view of a chafing dish 206 in the chafing dish assembly 200.
[0006] FIG. 4B is a cross-sectional view of the chafing dish 206 taken along the line shown in FIG. 4A.
[0007] FIG. 4C is a magnified view of the part of the cross-sectional view that is shown inside the circle in FIG. 4B.
[0008] FIG. 4D is a magnified view of the part of the cross-sectional view that is shown inside the circle in FIG. 4C.
[0009] FIG. 5 is an exploded view of the chafing dish 206, which will be filled with oil 212 and sealed.

DETAILED DESCRIPTION

[0010] A chafing dish assembly 200 in accordance with an embodiment of the invention will be described in connection with FIGS. 2-5. The chafing dish assembly 200 includes a frame 202, a chafing dish 206, and a lid 208. However, unlike the conventional chafing dish assembly 100, the chafing dish assembly 200 uses a sealed chamber of oil 212 (shown in FIGS. 4B and 4C) as the heat transfer medium, instead of the traditional unsheathed water pan 104 with the chafing dish 106 placed over the warm water. The sealed chamber of oil 212 is contained within the chafing dish 206. The sealed chamber of oil 212 can be used to transfer heat from an external heat source 210 to food within the chafing dish 206. Therefore, unlike the conventional chafing dish assembly 100, the chafing dish assembly 200 does not include a water pan 104.

[0011] In order to use the chafing dish assembly 200 to keep food warm, food is placed inside the chafing dish 206, as is conventionally done. However, instead of inserting the chafing dish 206 into a separate water pan 104 within the frame 202 (as would be done with the conventional chafing dish assembly 100), the chafing dish 206 is inserted directly into the frame 202. The heat source 210 is placed below the chafing dish 206 in order to heat the oil 212, which transfers the heat to the food in the chafing dish 206. The lid 208 may be used to cover the chafing dish 206, thereby maintaining the heat within the chafing dish 206.

[0012] The inventors found that the use of oil 212 instead of water as the heat transfer medium produced unexpected results. The inventors tested the chafing dish assembly 200 shown in FIGS. 2-5 against a chafing dish assembly that was similar to the chafing dish assembly 100 shown in FIG. 1. The inventors found that the amount of heat that was required to heat the food in the chafing dish 206 to a desired temperature was significantly less than the amount of heat that was required to heat the food in the conventional chafing dish 106 to the same desired temperature. Consequently, although the conventional chafing dish assembly 100 requires multiple heat sources 110a, 110b to keep the food in the chafing dish warm, the chafing dish assembly 200 shown in FIGS. 2-5 only requires a single heat source 210 to keep the food in the chafing dish 206 warm.

[0013] The elimination of the water pan 104 also has significant advantages. There are at least two problems with a chafing dish assembly 100 that requires the use of a water pan 104. First, water can easily be spilled when the water pan 104 is carried from one place to the next (e.g., from a sink where the water pan 104 is partially filled to a table where the chafing dish assembly 100 is being used). Second, after the chafing dish 106 has been used for some period of time, the water in the water pan 104 needs to be refilled. Both of these problems are eliminated with the chafing dish assembly 200 shown in FIGS. 2-5.

[0014] The inventors have conducted several experiments to determine the optimum type and depth of oil 212 to be contained within the chafing dish 206. The inventors have found that the best results are obtained if the oil 212 in the chafing dish 206 is peanut oil, with a depth between ¼ inch and ½ inch. However, the oil 212 in the chafing dish 206 may be any oil that is approved by the United States Food & Drug Administration (FDA) for use with cooking.

[0015] In the chafing dish assembly 200 shown in FIGS. 2-5, the chafing dish 206 includes a top pan 214 and a bottom pan 216 (shown in FIG. 5) that are sealed together so as to enclose the oil 212. The seal between the top pan 214 and the bottom pan 216 of the chafing dish 206 is shown in detail in FIG. 4D. In order to form this seal, the bottom pan 216 is partially filled with the oil 212. The top pan 214 is then pressed into the bottom pan 216, so that the peripheral rim 218 of the top pan 214 is flush against the peripheral rim 220 of the bottom pan 216. The seal between the top pan 214 and the bottom pan 216 may then be formed via an edge rolling and bonding procedure. Alternatively, the top pan 214 and the bottom pan 216 could be welded together, or they could be bolted together using a seal.

[0016] The size and shape of the chafing dish 206 is similar to the size and shape of the chafing dish 106 that is used in the conventional chafing dish assembly 100. This is advantageous because the chafing dish 206 may be sold individually, without the other components in the chafing dish assembly 200. An owner of a conventional chafing dish assembly 100 may purchase the chafing dish 206 by itself and use it with the other components in the conventional chafing dish assembly 100.

[0017] In the chafing dish assembly 200 that is shown in FIGS. 2-5, the chafing dish 206, the frame 202, and the lid 208 are rectangular. However, in an alternative chafing dish assembly that utilizes the inventive principles described...
herein, the chafing dish, the frame, and the lid may be shaped differently (e.g., they may be round).

[0018] It is to be understood that the claims are not limited to the precise configuration and components illustrated above. Various modifications, changes and variations may be made in the arrangement, operation and details of the apparatus described herein without departing from the scope of the claims.

What is claimed is:

1. A chafing dish that comprises a sealed chamber of oil that transfers heat from an external heat source to food within the chafing dish.

2. The chafing dish of claim 1, wherein the oil is peanut oil.

3. The chafing dish of claim 1, wherein the oil is any oil that is approved by the United States Food & Drug Administration for use with cooking.

4. The chafing dish of claim 1, wherein the oil has a depth between ¾ inch and 1½ inch.

5. The chafing dish of claim 1, wherein the chafing dish comprises a top pan and a bottom pan that are sealed together so as to enclose the oil.

6. A chafing dish assembly, comprising:
   a frame;
   a chafing dish that comprises a sealed chamber of oil and that is insertable into the frame;
   a single heat source that is placed below the chafing dish to heat the oil, wherein the oil transfers the heat to food within the chafing dish; and
   a lid that covers the chafing dish.

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