Sept. 20, 1966 TOHCHUNG WEI 3,273,739

DOUBLE STACKED ROCKET FOOD DISHES

Filed Aug. 5, 1963 2 Sheets-Sheet 1

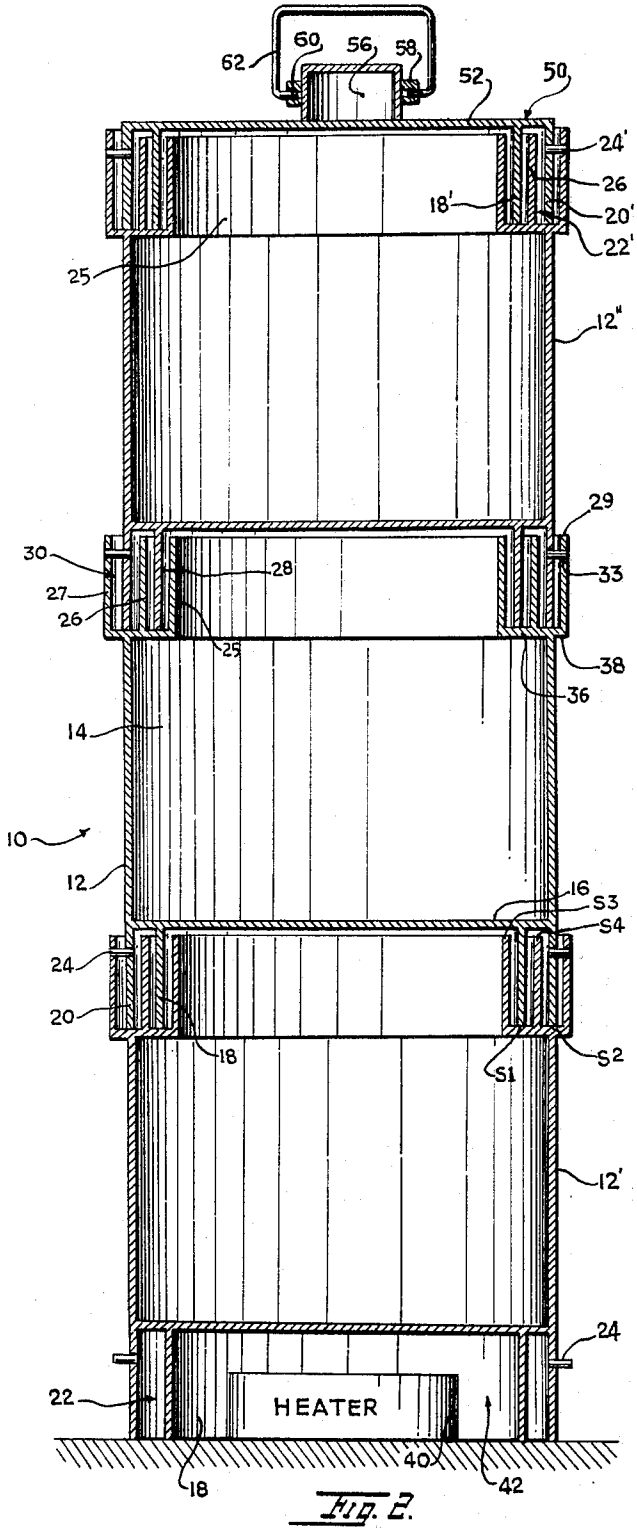


Fig. 2.

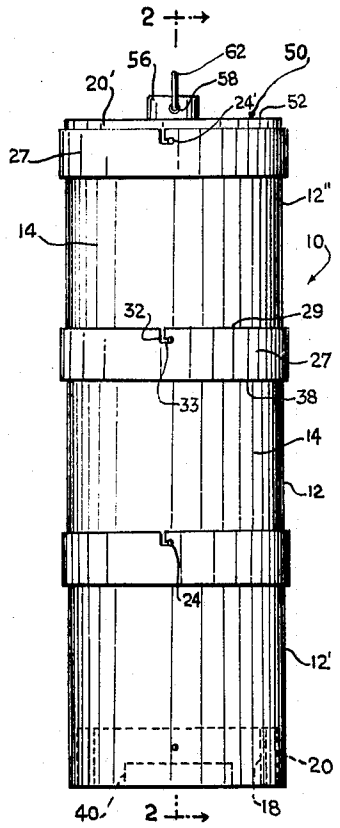


Fig. 1.

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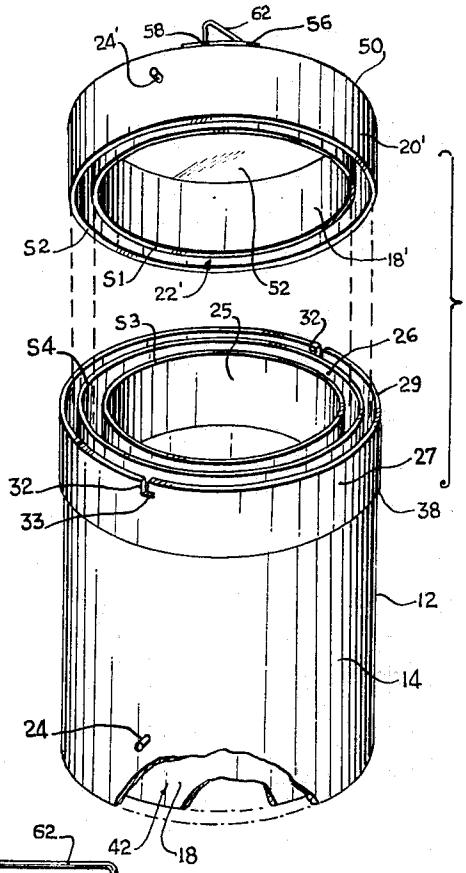


Fig. 3.

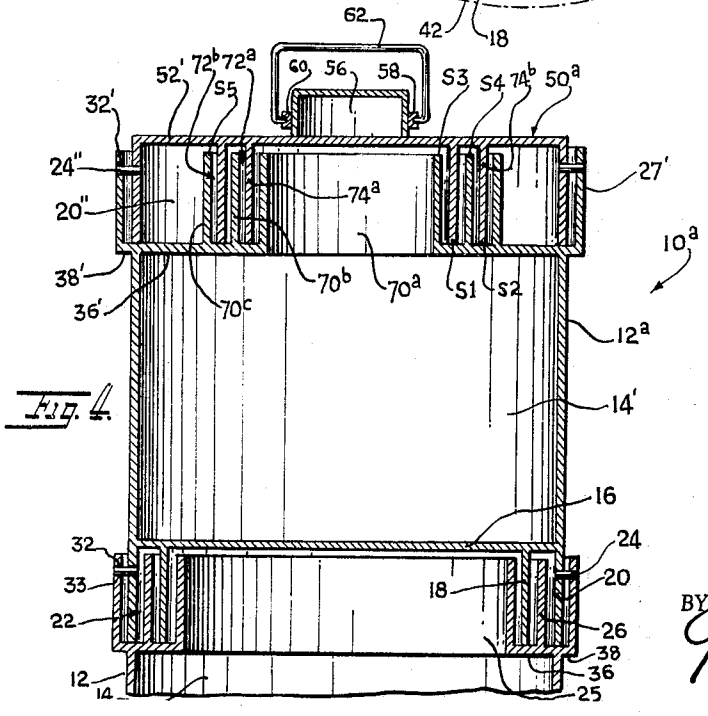


Fig. 4.

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DOUBLE STACKED ROCKET FOOD DISHES

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13 Claims. (Cl. 220—4)

This invention relates to the art of food containers and more particularly concerns containers having means for stacking and sealing a plurality of cylindrical containers.

According to the invention there is provided a cylindrical container having a closed bottom and open top. At the top and bottom of the container are annular, spaced, concentric flanges. The flanges of one container can interfit in sealing relationship with the flanges of another container to form an axially aligned stack of containers. A cover having annular, spaced, concentric flanges is provided to close and seal the open top of a container.

It is therefore one object of the invention to provide a cylindrical container having an open top with concentric flanges at the top to receive interfitting concentric flanges of a sealing cover for the container.

Another object is to provide a stack of cylindrical containers in which each container has an open top and closed bottom, with each container having concentric annular flanges at the top and bottom so that each container interfits in sealing relationship with an adjacent container in the stack.

A further object is to provide a stack of containers as described with a cover having concentric flanges interfitting with the flanges at the open top of the uppermost container in the stack.

For further comprehension of the invention, and of the objects and advantages thereof, reference will be had to the following description and accompanying drawings, and to the appended claims in which the various novel features of the invention are more particularly set forth.

In the accompanying drawings forming a material part of this disclosure:

FIG. 1 is a side elevational view of a container stack according to the invention.

FIG. 2 is a sectional view on an enlarged scale taken on line 2—2 of FIG. 1.

FIG. 3 is an exploded perspective view of a container and cover.

FIG. 4 is a sectional view similar to a part of FIG. 2, showing another container and cover construction.

Refering to FIGS. 1–3, there is shown a stack **10** of cylindrical cans or containers **12** each made of sheet metal. Each container **12** has a cylindrical wall **14** and transverse, closed circular bottom wall **16**. The top of each container **12** is open. At the bottom of each container extending axially below bottom wall **16** is a pair of concentric flanges **18, 20** defining an annular space **22** therebetween. Flange **20** may be integral with wall **14** and may be an extension of this wall below bottom wall **16**.

A pair of axially aligned bayonet pins **24** extend outwardly of flange **20** at diametrically opposed positions of the flange. These pins are located just below the horizontal plane of bottom wall **16**.

At the top of each container are three concentric annular or cylindrical flanges **25, 26, 27** axially aligned with the axis of cylindrical wall **14** and annular or cylindrical flanges **18, 20**. Between flanges **25, 26** is defined an annular space **28** axially aligned with flange **18**. Between flanges **26, 27** is defined an annular space **30** axially aligned with flange **29** and wall **14**. A pair of L-shaped bayonet slots **32** are formed in flange **27**. The slots are located at diametrically opposed positions in the flange. The slots extend axially downward from the top free edge **29** of flange **27** and then circumferentially at **33** from the bottom ends of slots **32**. The slot portions **33** are disposed in a horizontal plane parallel to edge **29**. Slots **32** receive pins **24** and detachably secure the several cans or containers together in axial alignment.

When the cans or containers are secured together by the bayonet joints **24, 32** the bottom flanges **18, 20** of each upper can or container fit into the spaces **28, 30** defined between upper flanges **25–27** of the next lower can or container, as clearly shown in FIG. 2.

Radial inner annular wall **36** and radial outer annular wall **38** joins the flanges **25–27** to the upper end of wall **14** of each container. The bottom ends of flanges **18, 20** rest on the upper sides of walls **36, 38**. The flanges **25–27** of each container may be extended so that they make contact with the underside of bottom wall **16** of the next higher container in the stack.

It will be apparent that the interior of each container may thus be sealed or closed off from the exterior of each container at not less than two annular sealing surfaces **S1, S2** at the bottom end of each container resting on a lower container. Two additional sealing surfaces **S3, S4** can be provided at the upper ends of each pair of flanges **25, 26** extending upwardly against the underside of bottom wall **16** of the next higher container.

A suitable heating device **40** can be provided in the circular chamber **42** defined by annular wall **18** of the lowermost container **12'** as shown in FIG. 2 for keeping the contents of all containers in a heated condition.

A cover **50** is provided for the open top of container **12**. This cover has a flat circular top wall **52** with two depending concentric cylindrical flanges **18', 20'**.

Between flanges **18', 20'** is defined an annular space **22'** which receives intermediate flange **26** of the uppermost container **12''** of the stack **10** or of any other container **12**, such as shown in FIG. 3. Bayonet slots **32** of the uppermost container **12''** receive bayonet pins **24** for removably securing the cover to the container.

On the circular top **52** of cover **50** is centrally located a round hollow knob **56** provided with outwardly extending eyes **58** for engaging bent ends **60** of a looped handle **62**. The handle can be used to carry the entire stack of interfitted or nested attached containers or to carry a single container provided with cover **50**. Cover **50** closes and seals the container **12** or **12''** along four annular sealing surfaces **S1–S4**.

In FIG. 4 is shown a modification of the invention in which container 12^a of stack 10^a has flange **27'** displaced radially outward of the cylindrical wall **14'** of the container, and supported by outer annular radial wall **38'**. Inner annular radial wall **36'** of the container has three concentric annular flanges 70^a, 70^b and 70^c defining two annular spaces 72^a, 72^b therebetween.

Cover 50^a has a cylindrical outer flange **20''** provided with pins **24''** for engaging in bayonet slots **32'** in flange **27'**. Depending from the flat top **52'** of the cover are two cylindrical, concentric flanges 74^a, 74^b which are with pins **24''** for engaging in bayonet slots **32'** in flange 70^a, 70^b and 70^b, 70^c, respectively. Two annular sealing surfaces **S1, S2** are provided at the bottom ends of flanges 74^a, 74^b where they rest on the upper side of wall **36'**. Three additional sealing surfaces **S3, S4, S5** may be provided at the upper edges of flanges 70^a–70^c where these flanges may abut the underside of the cover top **52'**. The container 12^a fits on top of container **12** in the same manner as illustrated for container **12''** in FIG. 2. Other parts of stack 10^a including cover 50^a which are similar to stack **10** and cover **50** are identically numbered.

It will be noted that both covers **50** and 50^a effect sealing of the open tops of the containers along four or five concentric sealing surfaces. Also each container in a stack seals the open top of the next lower container along

two to four annular, concentric surfaces. This structure insures that the containers are hermetically sealed so that outside air cannot enter and vapors, heat and juices cannot escape from the containers when they are closed. The stack containers provide a convenient, easily transported and stored assembly.

The several covers and containers are preferably made of sheet metal which can be produced by mass production, low cost methods on known types of can-making machinery. The several flanges of the containers and covers can be welded to their supports or otherwise integrally formed therewith.

The covers and containers can be made of stainless steel, copper, brass or other suitable metals. If desired, they can be made wholly or partly of plastic or other sheet materials.

While I have illustrated and described the preferred embodiments of my invention, it is to be understood that I do not limit myself to the precise constructions herein disclosed and that various changes and modifications may be made within the scope of the invention as defined in the appended claims.

Having thus described my invention, what I claim as new, and desire to secure by United States Letters Patent is:

1. A sealed stacked container assembly, comprising a plurality of cylindrical containers disposed in an axially aligned stacked array, each of said containers having a cylindrical wall with a closed circular bottom wall and open top, a first two cylindrical, radially spaced, concentric, cylindrical flanges depending from said bottom wall, three radially spaced concentric other flanges disposed at the open top of each container, and a radial annular wall supporting and securing said other flanges to the cylindrical wall of the container, all of said flanges being axially aligned with each other and with the axis of said cylindrical wall, the first two flanges of each upper container in said array interfitting in and between the three spaced other flanges at the top of the next lower container in said array to define four annular sealing surfaces between said flanges, the bottom wall of the upper container and the radial, annular wall of the lower container.

2. A sealed stack container assembly, comprising a plurality of cylindrical containers disposed in an axially aligned stacked array, each of said containers having a cylindrical wall with a closed circular bottom wall and open top, a first two cylindrical, radially spaced, concentric, cylindrical flanges depending from said bottom wall, three radially spaced concentric other flanges disposed at the open top of each container, a radial annular wall supporting and securing said other flanges to the cylindrical wall of the container, all of said flanges being axially aligned with each other and with the axis of said cylindrical wall, the first two flanges of each upper container in said array interfitting in and between the three spaced other flanges at the top of the next lower container in said array to define four annular sealing surfaces between said flanges, the bottom wall of the upper container and the radial, annular wall of the lower container, and bayonet joint means on adjacent flanges of stacked containers detachably securing the stacked containers together.

3. A sealed stack container assembly, comprising a plurality of cylindrical containers disposed in an axially aligned stacked array, each of said containers having a cylindrical wall with a closed circular bottom wall and open top, a first two cylindrical, radially spaced, concentric, cylindrical flanges depending from said bottom wall, three radially spaced concentric other flanges disposed at the open top of each container, a radial annular wall supporting and securing said other flanges to the cylindrical wall of the container, all of said flanges being axially aligned with each other and with the axis of said cylindrical wall, the first two flanges of each upper container in said array interfitting in and between the three spaced other flanges at the top of the next lower container in said array to define four annular sealing surfaces between said flanges, the bottom wall of the upper container and the radial, annular wall of the lower container, and quick detachable joining means securing the stacked containers together.

4. A sealed stacked container assembly, comprising a plurality of cylindrical containers disposed in an axially aligned stacked array, each of said containers having a cylindrical wall with a closed circular bottom wall and open top, a first two cylindrical, radially spaced, concentric, cylindrical flanges depending from said bottom wall, three radially spaced concentric other flanges disposed at the open top of each container, a radial annular wall supporting and securing said other flanges to the cylindrical wall of the container, all of said flanges being axially aligned with each other and with the axis of said cylindrical wall, the first two flanges of each upper container in said array interfitting in and between the three spaced other flanges at the top of the next lower container in said array to define four annular sealing surfaces between said flanges, the bottom wall of the upper container and the radial, annular wall of the lower container, and a cover on the open top of the uppermost one of the containers in said array, said cover comprising a circular top wall, and two concentric, radially spaced annular flanges depending from said top wall and fitting between said three other radially spaced concentric flanges of the uppermost one of the containers to define four other annular sealing surfaces between said top wall and the radial wall of the uppermost one of the containers.

5. A sealed stacked container assembly, comprising a plurality of cylindrical containers disposed in an axially aligned stacked array, each of said containers having a cylindrical wall with a closed circular bottom wall and open top, a first two cylindrical, radially spaced, concentric, cylindrical flanges depending from said bottom wall, three radially spaced concentric other flanges disposed at the open top of each container, a radial annular wall supporting and securing said other flanges to the cylindrical wall of the container, all of said flanges being axially aligned with each other and with the axis of said cylindrical wall, the first two flanges of each upper container in said array interfitting in and between the three spaced other flanges at the top of the next lower container in said array to define four annular sealing surfaces between said flanges, the bottom wall of the upper container and the radial, annular wall of the lower container, a cover on the open top of the uppermost one of the containers in said array, said cover comprising a circular top wall, and two concentric, radially spaced annular flanges depending from said top wall and fitting between said three other radially spaced concentric flanges of the uppermost one of the containers to define four other annular sealing surfaces between said top wall and the radial wall of the uppermost one of the containers, quick detachable joining means securing the stacked containers together and securing the cover to the uppermost one of the containers, and handle means on the top wall for supporting the stacked array while being transported.

6. A sealed stacked container assembly, comprising a plurality of cylindrical containers disposed in an axially aligned stacked array, each of said containers having a cylindrical wall with a closed circular bottom wall and open top, a first two cylindrical, radially spaced, concentric, cylindrical flanges depending from said bottom wall, three radially spaced concentric other flanges disposed at the open top of each container, a radial annular wall supporting and securing said other flanges to the cylindrical wall of the container, all of said flanges being axially aligned with each other and with the axis of said cylindrical wall, the first two flanges of each upper container in said array interfitting in and between the three spaced other flanges at the top of the next lower container in said array to define four annular sealing surfaces between said flanges, the bottom wall of the upper container and the

radial, annular wall of the lower container, and a cover on the open top of the uppermost one of the containers in said array, said cover comprising a circular top wall, two concentric radially spaced annular flanges depending from said top wall and fitting between said three radially spaced concentric other flanges of the uppermost one of said containers to define four other sealing surfaces between said top wall and the radial wall of the uppermost one of the containers, and a further cylindrical flange carried by the top wall of the cover, said further flange defining another sealing surface with said radial wall of the uppermost one of said containers.

7. A sealed stacked container assembly, comprising a plurality of cylindrical containers disposed in an axially aligned stacked array, each of said containers having a cylindrical wall with a closed circular bottom wall and open top, a first two cylindrical, radially spaced, concentric, cylindrical flanges depending from said bottom wall, three radially spaced concentric other flanges disposed at the open top of each container, a radial annular wall supporting and securing said other flanges to the cylindrical wall of the container, all of said flanges being axially aligned with each other and with the axis of said cylindrical wall, the first two flanges of each upper container in said array interfitting in and between the three spaced other flanges at the top of the next lower container in said array to define four annular sealing surfaces between said flanges, the bottom wall of the upper container and the radial, annular wall of the lower container, and a cover on the open top of the uppermost one of the containers in said array, said cover comprising a circular top wall, two concentric radially spaced annular flanges depending from said top wall and fitting between said three radially spaced concentric other flanges of the uppermost one of said containers to define four other sealing surfaces between said top wall and the radial wall of the uppermost one of the containers, and a further cylindrical flange carried by the top wall of the cover, said further flange defining another sealing surface with said radial wall of the uppermost one of said containers, quick detachable joining means securing the stacked containers together and securing the cover to the uppermost one of the containers, and handle means on the top wall for supporting the stacked array while being transported.

8. A sealed stacked container assembly comprising a plurality of cylindrical containers disposed in an axially aligned stacked array, each of said containers having a cylindrical wall with a closed circular bottom wall and open top, a first two cylindrical, radially spaced, concentric, cylindrical flanges depending from said bottom wall, three radially spaced concentric other flanges disposed at the open top of each container, a radial annular wall supporting and securing said other flanges to the cylindrical wall of the container, all of said flanges being axially aligned with each other and with the axis of said cylindrical wall, the first two flanges of each upper container in said array interfitting in and between the three spaced other flanges at the top of the next lower container in said array to define four annular sealing surfaces between said flanges, the bottom wall of the upper container and the radial, annular wall of the lower container, a cover on the open top of the uppermost one of the containers in said array, said cover comprising a circular top wall, two concentric radially spaced annular flanges depending from said top wall and fitting between said three radially spaced concentric other flanges of the uppermost one of said containers to define four other sealing surfaces between said top wall and the radial wall of the uppermost one of the containers, and a further cylindrical flange carried by the top wall of the cover, said further flange defining another sealing surface with said radial wall of the uppermost one of said containers, another flange carried by said radial wall of the uppermost container disposed adjacent to said further flange of said cover, bayonet joint means securing adjacent flanges of the uppermost container and cover together, and further bayonet joint means securing adjacent flanges of stacked containers in said array together.

9. A sealed container assembly, comprising a container having a cylindrical wall with a closed circular bottom wall, open top, first and second cylindrical, radially spaced concentric flanges depending from said bottom wall and defining a circular chamber for receiving a heater therein, three radially spaced concentric, cylindrical other flanges at the open top of the container, a radial annular wall supporting and securing said three other flanges to the cylindrical wall of said container, and a cover on the open top of said container, said cover comprising a circular top wall and two concentric radially spaced annular flanges depending from said top wall and fitting between said three other flanges to define four annular sealing surfaces between said top wall and said radial wall.

10. A sealed container assembly, comprising a container having a cylindrical wall with a closed circular bottom wall, open top, first and second cylindrical, radially spaced concentric flanges depending from said bottom wall and defining a circular chamber for receiving a heater therein, three radially spaced concentric, cylindrical other flanges at the open top of the container, a radial annular wall supporting and securing said three other flanges to the cylindrical wall of said container, a cover on the open top of said container, said cover comprising a circular top wall and two concentric radially spaced annular flanges depending from said top wall and fitting between said three other flanges to define four annular sealing surfaces between said top wall and said radial wall, quick detachable joint means securing the cover and container together, and handle means on said cover for carrying said assembly.

11. A sealed container assembly, comprising a container having a cylindrical wall with a closed circular bottom wall, open top, first and second cylindrical, radially spaced concentric flanges depending from said bottom wall and defining a circular chamber for receiving a heater therein, three radially spaced concentric, cylindrical other flanges at the open top of the container, a radial annular wall supporting and securing said three other flanges to the cylindrical wall of said container, a cover on the open top of said container, said cover comprising a circular top wall and two concentric radially spaced annular flanges depending from said top wall and fitting between said three other flanges to define four annular sealing surfaces between said top wall and said radial wall, and a further cylindrical flange carried by the top wall of said cover and defining another sealing surface with said radial wall.

12. A sealed container assembly, comprising a container having a cylindrical wall with a closed circular bottom wall, open top, first and second cylindrical, radially spaced concentric flanges depending from said bottom wall and defining a circular chamber for receiving a heater therein, three radially spaced concentric, cylindrical other flanges at the open top of the container, a radial annular wall supporting and securing said three other flanges to the cylindrical wall of said container, a cover on the open top of said container, said cover comprising a circular top wall and two concentric radially spaced annular flanges depending from said top wall and fitting between said three other flanges to define four annular sealing surfaces between said top wall and said radial wall, a further cylindrical flange carried by the top wall of said cover and defining another sealing surface with said radial wall, an outer cylindrical flange carried by said radial wall, and means detachably securing said outer and further flanges together to hold the cover on the container.

13. A sealed container assembly, comprising a container having a cylindrical wall with a closed circular bottom wall, open top, first and second cylindrical, radially spaced

concentric flanges depending from said bottom wall and defining a circular chamber for receiving a heater therein, three radially spaced concentric, cylindrical other flanges at the open top of the container, a radial annular wall supporting and securing said three other flanges to the cylindrical wall of said container, a cover on the open top of said container, said cover comprising a circular top wall and two concentric radially spaced annular flanges depending from said top wall and fitting between said three other flanges to define four annular sealing surfaces between said top wall and said radial wall, a further cylindrical flange carried by the top wall of said cover and defining another sealing surface with said radial wall, an outer cylindrical flange carried by said radial wall, means detachably securing said outer and further flanges together to hold the cover on the container,

and handle means on said top wall of the cover for supporting the assembled container and cover during transportation of the same.

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