May 15, 1951 G. B. LEE 2,552,983

BOTTLE STERILIZER RACK

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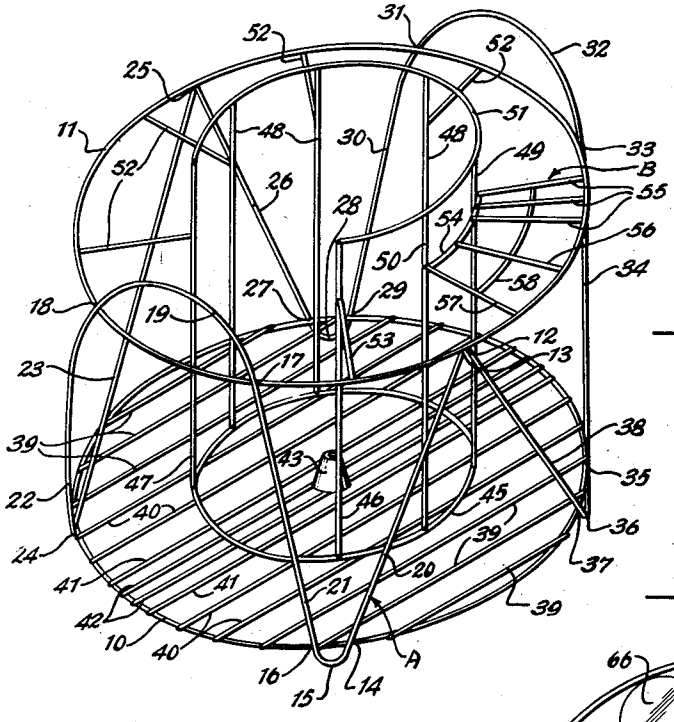


Fig. 1.

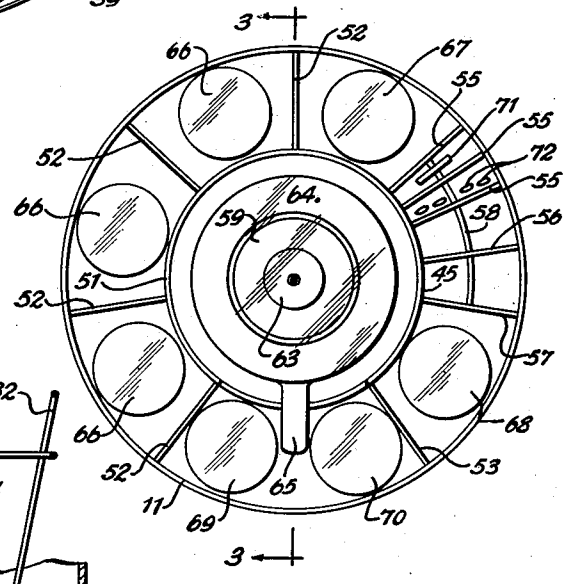


Fig. 2.

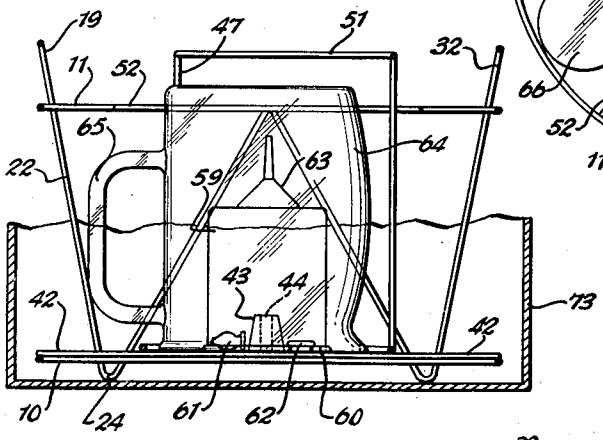


Fig. 3.

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BOTTLE STERILIZER RACK

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5 Claims. (Cl. 21—79)

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The present invention relates to improvements in a bottle sterilizer rack and has for an object to provide a rack in which all of the equipment used in the preparation of a formula for an infant can be properly sterilized in one operation.

Another object of the present invention is to provide an improved structure in which especially designed compartments are formed for the reception of the bottles and other appurtenances employed in the preparation of formulas for babies.

In the present invention, a jar is provided for the nipples and caps so that they cannot contact the bottom of the sterilizer. A perforated cover closes this jar and a spout which is mounted on the bottom of the improved rack extends into the jar through the perforation in its cover for directing steam into the interior of the jar.

A corollary advantage flowing from the structure of this improved rack is that since a specially constructed compartment is provided for each piece of equipment, the elements to be sterilized are easier to handle and this accelerates the entire process.

The sterilizer comprising the present invention is so constructed and designed to provide a central compartment adapted to receive equipment for a sterilizing step. The provision of a central compartment in the sterilizer is very important because, when coupled with the other features of the sterilizer, it permits all the equipment used in the preparation of an infant's formula to be properly sterilized in one operation.

The present invention aims to provide an improved structure in which are incorporated all the features enumerated above without increasing the cost of manufacture.

With the foregoing and other objects in view, the invention will be hereinafter more fully described and more particularly pointed out in the appended claims.

In the drawings, in which the same parts are denoted by the same reference numerals throughout the several views;

Figure 1 is a perspective view of the improved rack constructed in accordance with the present invention;

Figure 2 is a top plan view of the rack shown in Figure 1 and with some of the articles to be sterilized disposed therein; and

Figure 3 is a vertical sectional view on the line 3—3 of Figure 2 showing a portion of the container in which the rack is disposed during the sterilizing operation.

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Referring more particularly to the drawings, 10 indicates a base ring and 11 indicates an upper ring which is of substantially the same diameter as the base ring 10 and is located directly above the base ring. The two rings 10 and 11 are maintained in their spaced apart aligned relation by a continuous piece of wire or the like generally indicated at A.

The opposite free ends of the wire A are secured to the upper ring 11 at the points 12 and 13 by welding or the like. The wire A extends downwardly from the point 13 at an angle of the order of forty-five degrees and is secured to the outer face of the base ring 10 at a point 14 from which point it extends downwardly below the base ring 10 and is then bent upwardly to provide a loop or foot 15. The wire A is then secured by welding or the like to the outer face of the ring 10 at a point 16, from which point it continues upwardly at an angle of the order of forty-five degrees to the upper ring 11 to the outer face of which it is secured at a point 17. From the point 17, the wire A continues in an arcuate path and is secured at a point 18 to the outer face of the ring 11.

The portion of the wire A between the points 17 and 18 provides a handle 19 which extends above the upper ring 11. The portions of the wire A between the points 13 and 14 and between the points 16 and 17 form adjacent diverging connecting braces 20 and 21 for the rings 10 and 11. From the point 18 the wire A continues in the same manner and direction as described in connection with the formation of the braces 20 and 21 and the loop 15 to provide braces 22 and 23 and a loop 24 which are similar to the braces 20 and 21 and the loop 15, respectively. At the upper end of the brace 23 the wire A is connected to the upper ring 11 at the point 25. From this point 25 the wire A continues downwardly at an angle of the order of forty-five degrees to provide a brace 26 similar to the brace 23 and the lower end portion of which is secured to the ring 10 at the point 27.

A loop 28, similar to the loop 15, is then formed. The wire A continues from its point of attachment 29 to the base ring 10 upwardly at an angle of the order of forty-five degrees to the brace 26 to provide a brace 30 similar to the brace 21. The upper end of the brace 30 is secured to the outer face of the upper ring 11 at a point 31.

A second handle 32, similar to the handle 19, is then formed. The lower end of the handle 32 is secured to the outer face of the ring 11 at a point 33 from which point the wire A continues down-

wardly at an angle of the order of forty-five degrees to the brace 30 to provide a brace 34 which is similar to the brace 22. The lower end of the brace 34 is attached to the outer face of the base ring 10 at a point 35. A loop 36, similar to the loop 15, is formed in the wire A. The wire A is connected to the outer face of the base ring 10 at a point 37 from which point the wire extends upwardly at an angle of the order of forty-five degrees to the brace 34 to provide a brace 38 which is similar to the brace 20. The upper end of the brace 38 is connected to the ring 11 at the point 12.

Cross bars 39 have their opposite ends secured to the upper face of the base ring 10 and are equally spaced from one another. Cross bars 40 have their opposite ends secured to the upper face of the base ring 10 and are disposed inwardly of the bars 39 and the space therebetween is the same as that between the bars 39. Intermediate cross bars 41 and 42 have their opposite ends secured to the upper face of the base ring 10 and are equally spaced apart but the distance between adjacent bars 41 and 42 is less than that between adjacent bar 39 and 40. A conical shaped spout 43 having a through passageway 44 is disposed at substantially the center of the base ring 10 and has its base resting upon and secured to the cross bars 42 by welding or the like.

An annulus 45 having a diameter less than that of the base ring 10 rests upon and is secured to the cross bars 40, 41 and 42 by welding or the like. The annulus 45 is disposed concentric with the base ring 10 so that the spout 43 is located at substantially the center of the annulus and extends upwardly above it. A pair of spaced apart vertical end standards 46 and 47 have their lower ends secured to the upper face of the annulus 45. A pair of intermediate spaced apart vertical standards 49 and 50 have their lower ends secured to the upper face of the annulus 45. A partial band 51 has its opposite end portions secured to the upper ends of the standards 46 and 47 and the upper ends of the intermediate standards 48, 49 and 50 are secured to the partial band 51 at points intermediate the ends thereof. The standards are of such a height that the partial band 51 is disposed in a horizontal plane which is higher than and parallel to that in which the upper ring 11 lies.

Partition bars 52 have their opposite ends secured to the inner face of the upper ring 11 and the standards 47 and 48, respectively, at points below the upper ends of the standards. A partition bar 53 has its opposite ends secured to the ring 11 and to the standard 46 at a point below its upper end. A rack generally indicated at B is provided for nipple tongs, spoons and the like and comprises an arcuate rod 54 secured to the standards 49 and 50, equally spaced apart supporting rods 55 having their opposite ends connected to the rod 54 and to the ring 11, a supporting rod 56 has one end secured to the rod 54 and its opposite end secured to the ring 11 and a rod 57 has its opposite ends secured to the rod 54 and the ring 11. The rods 56 and 57 are spaced apart a greater distance than are the rods 55 and the rod 56 is spaced from the adjacent rod 55 substantially the same distance as that between rods 56 and 57. A connecting bar 58 of arcuate shape is secured to the rods 55, 56 and 57 intermediate their ends.

In the use of the device, a jar 59 which may be made of glass or other suitable material having a perforated cover 60 receives the nipples and caps to be sterilized as indicated at 61 and 62. The jar 59 is placed in inverted position in the compartment formed by the annulus 45, the partial band 51 and the standards 46, 47, 48, 49 and 50 with the spout 43 extending through the cover 60 into the jar 59. A funnel 63 is placed upon the bottom of the jar 59 in inverted position so that it rests firmly on the jar. A graduate 64 of glass or other suitable material is placed in inverted position over the jar 59 and the funnel 63 with its handle 65 extending out of the compartment through the space between the standards 46 and 47.

Bottles 66 are placed in inverted position in the compartments formed between the adjacent partition bars 52. Another bottle 67 is placed in inverted position in the compartment formed by the adjacent supporting rod 55 and the partition bar 52, and a bottle 68 is disposed in inverted position in the compartment formed by the partition bar 53 and the supporting rod 57. Other bottles 69 and 70 are placed in inverted position in the compartments formed by the handle 65 of the graduate 64 and the adjacent position bar 52 and the partition bar 53, respectively. The open end portions of the bottles rest upon the cross bars 39, 40, 41 and 42 and the sides of the closed bottom portions of the bottles engage the partial band 51 to provide additional support to prevent tilting of the bottles.

Tongs 71 are inserted between the two end supporting rods 55 with the legs of the tongs in straddling relation to the connecting bar 58 and spoons or the like 72 are disposed in vertical position between the middle supporting rod 55 and the inner rod 55 and their lower end portions rest upon the cross bars 41 and 42. The spaces between the rod 56 and the adjacent rod 55 and between the rods 56 and 57 may be for the reception of other implements used in the preparation of the formula for babies.

After all of the equipment has been properly placed within the rack as described above, the device is then lifted by the handles 19 and 32 and disposed within a suitable container 73 which is adapted to contain boiling water. When the rack is disposed within the container, the loops or feet 15, 24, 28 and 36 will contact the bottom of the container and space the cross bars 39, 40, 41 and 42 thereabove so that the hot water and steam will enter the bottles, the graduate, and the jar 59 through the spout 43.

It will be noted that none of the equipment employed in the preparation of the formula comes into direct contact with the container 73 so that all danger of burning any of the equipment, particularly the nipples and the caps, is eliminated. It will also be noted that the continuous wire A serves a threefold purpose, namely, it acts as a supporting bracing means for the base ring 10 and the upper ring 11, provides the supporting feet for the rack when disposed within the container 73 and provides the handles 19 and 32 by which the rack can be placed within the container and removed therefrom. This provision of a continuous piece of metal for forming the handles, legs and the side supports of the rack reduces the number of places at which rust might appear, thereby assuring longer usefulness.

It is obvious that various changes and modifications may be made in the details of construction and design of the above specifically described

embodiment of this invention without departing from the spirit thereof, such changes and modifications being restricted only by the scope of the following claims.

What I claim is:

1. An improved sterilizer rack comprising a base ring, an upper ring disposed in vertically spaced relation to the base ring, a continuous wire member connected to the base ring and the upper ring at a plurality of spaced apart points, a plurality of cross bars extending across the space defined by said base ring and having their opposite ends attached to said base ring, a wire frame supported by said cross bars and comprising an annulus mounted on said cross bars in concentric relation to said base ring, vertically extending angularly spaced apart bars having their lower ends attached to said annulus, and a spout supported by said cross bars within the space defined by said annulus, said spout having a through passageway therein.

2. An improved sterilizer rack comprising a base ring, an upper ring disposed in vertically spaced relation to the base ring, a continuous wire member connected to the base ring and the upper ring at a plurality of spaced apart points, a plurality of cross bars extending across the space defined by said base ring and having their opposite ends attached to said base ring, a wire frame supported by said cross bars and comprising an annulus mounted on said cross bars in concentric relation to said base ring, vertically extending angularly spaced apart bars having their lower ends attached to said annulus, a spout supported by said cross bars within the space defined by said annulus, said spout having a through passageway therein, and substantially horizontally disposed circumferential spaced apart bars having their opposite ends secured to said upper ring and the vertically extending bars, respectively, to provide spaces for the introduction of articles to be sterilized.

3. An improved sterilizer rack as claimed in claim 2 characterized by the fact that means for vertically supporting other utensils to be sterilized is provided comprising an arcuate rod secured to some of said vertical bars, angularly spaced apart substantially horizontally disposed rods having their opposite ends connected to said arcuate rod and said upper ring, respectively.

4. An improved sterilizer rack comprising a base ring, an upper ring disposed in vertically spaced relation to the base ring, a continuous wire member connected to the base ring and the upper ring at a plurality of spaced apart points, a plurality of cross bars extending across the space defined by said base ring and having their opposite ends attached to said base ring, a wire frame supported by said cross bars and comprising an annulus mounted on said cross bars, vertically extending angularly spaced apart bars having their lower ends attached to said annulus, and a partial ring mounted on the upper ends of said vertical bars, said vertical bars being of such a height that the partial ring is disposed in a horizontal plane which is higher than that in which the upper ring is disposed.

5. An improved sterilizer rack comprising a base ring, an upper ring disposed in vertically spaced relation to the base ring, a continuous wire member comprising a plurality of pairs of diverging portions attached to said base ring and said upper ring, a part of said diverging portions of each pair extending below said base ring to provide supporting feet, the upper part of adjacent diverging portions of adjacent pairs of diverging portions extending upwardly beyond said upper ring to provide handles, a plurality of cross bars extending across the space defined by said base ring and having their opposite ends attached to said base ring, a wire frame supported by said cross bars and comprising an annulus mounted on said cross bars in concentric relation to said base ring, and vertically extending angularly spaced apart bars having their lower ends attached to said annulus.

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