

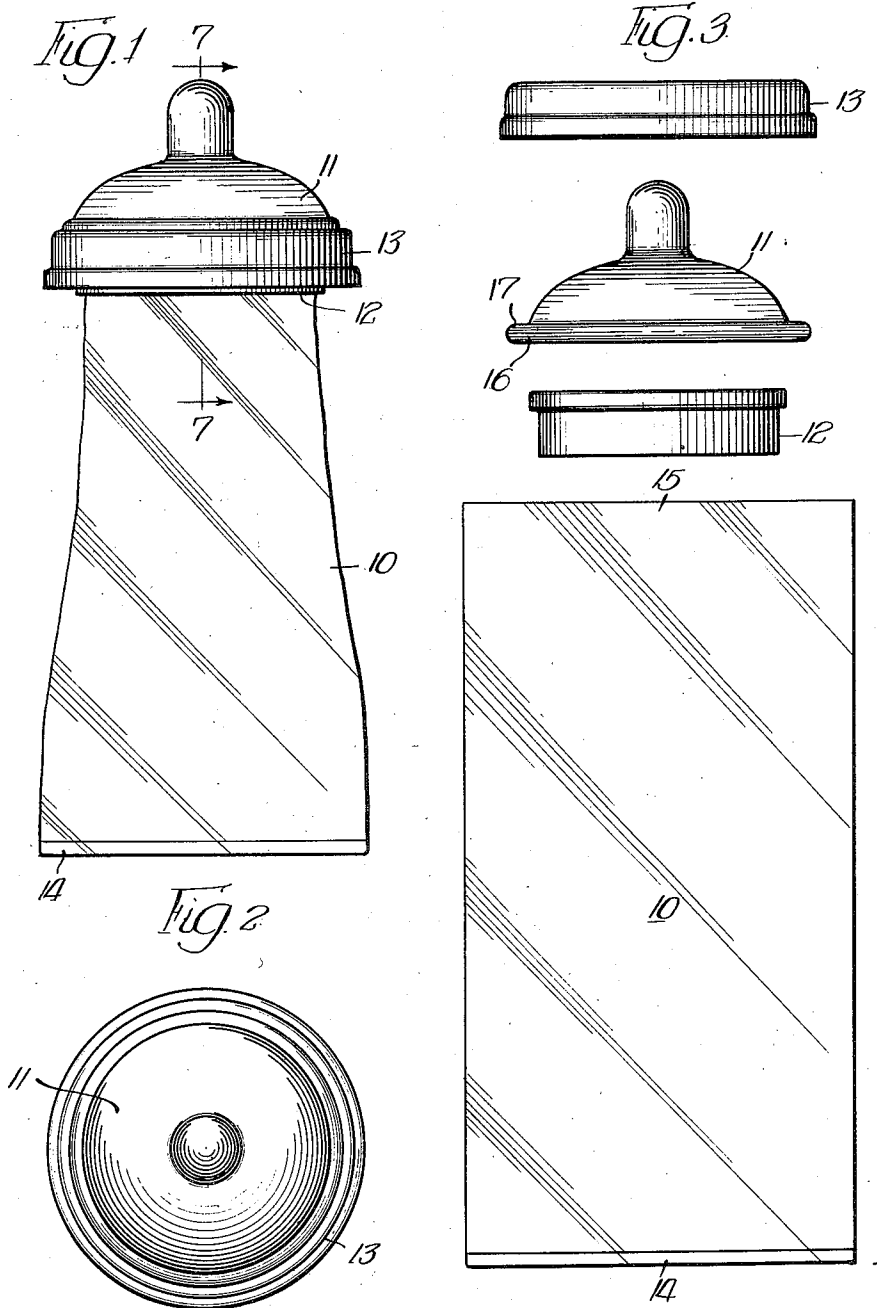
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T. E. PIAZZE
NURSING UNIT

2,541,934

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2 Sheets-Sheet 1



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Fig. 4

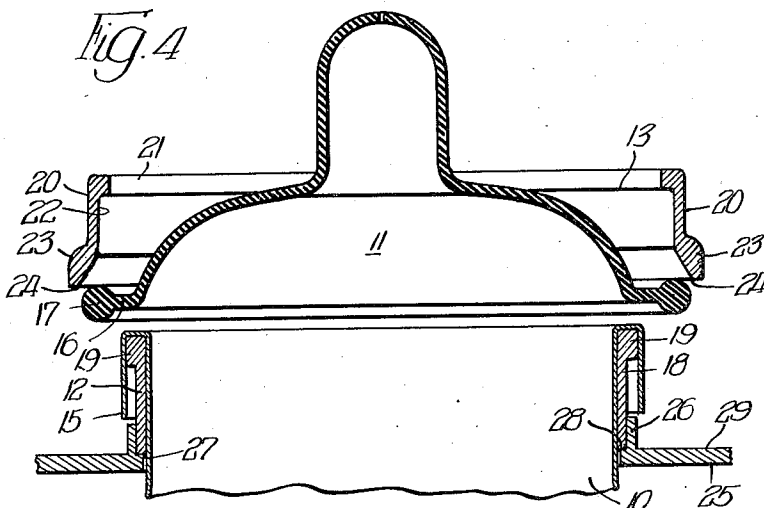


Fig. 6

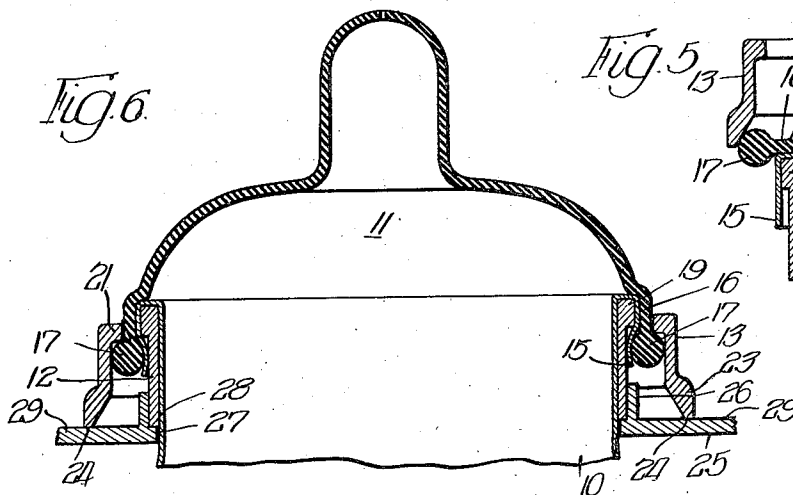


Fig. 5

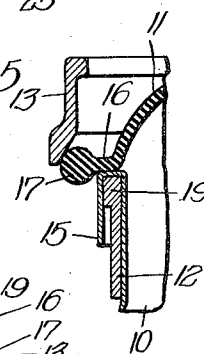
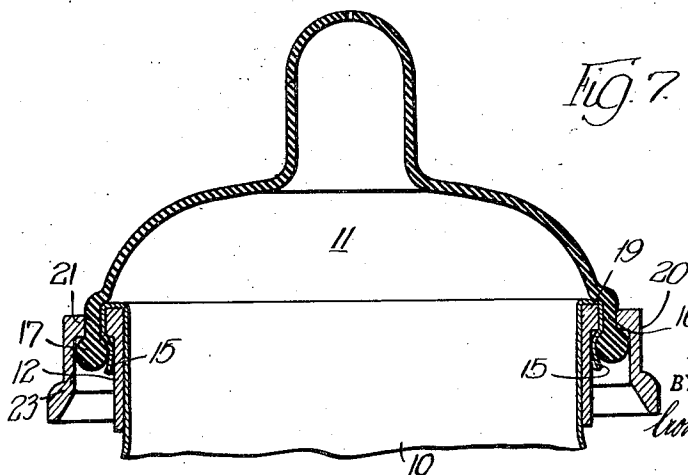


Fig. 7



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UNITED STATES PATENT OFFICE

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NURSING UNIT

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8 Claims. (Cl. 215—11)

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This invention relates to improvements in a nursing unit of the type which comprises a nursing nipple, a disposable container member and means for detachably securing the container member in communicating relation with the nipple.

It is an object of the invention to provide a nursing unit which is characterized by a nursing nipple combined with a flexible disposable container and a pair of cooperating ring members for attaching the mouth of the container to the base of the nipple wherein the fluid in the nursing unit comes in contact with the interior surfaces of the container and the nursing nipple only, the ring members being positioned exteriorly of the disposable container.

It is a further object of the invention to provide a nursing unit comprising a nipple having a flange which terminates in a peripheral bead on the base thereof, a flexible disposable container, and inner and outer attaching rings, the inner attaching ring having a radially outwardly directed top flange which is adapted to have the top margins of the flexible container folded outwardly over the same, and the outer attaching ring being adapted to clamp the beaded flange on the nipple in container securing relation against the bottom side of the top flange on the inner attaching ring.

A more specific object of the invention is to provide a nursing unit comprising a nipple having a radially extending base flange terminating in a peripheral bead, a flexible disposable container, an inner clamping ring having an outwardly directed top flange, the diameter of the outer edge of which is less than the diameter of the inner edge of the bead on the nipple, and an outer clamping ring having an internal diameter less than the diameter of the external edge of the bead on the nipple and provided with an inwardly directed top flange having a greater internal diameter than the external diameter of the flange on the inner ring whereby the marginal portions of the mouth of the container may be folded outwardly around the flanged top of the inner ring and clamped in position thereon by placing thereover the beaded flange on the nipple and contracting the same by moving the outer ring downwardly into encompassing relation relative to the inner ring.

These and other objects of the invention will be apparent from a consideration of the nursing unit which is shown by way of illustration in the accompanying drawings, wherein:

Fig. 1 is an elevation of a nursing unit in

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assembled condition which embodies the principles of the invention;

Fig. 2 is a top plan view of the nursing unit;

Fig. 3 is an exploded elevation of the separate parts which constitute the nursing unit;

Figs. 4, 5 and 6 are partial vertical sections illustrating the method of assembling the unit with the aid of a stand or support for the inner ring member; and

Fig. 7 is a partial vertical section to an enlarged scale, taken on the lines 7—7 of Fig. 1 and showing the unit in completely assembled condition.

The nursing unit which is illustrated in the drawings incorporates the principles of the invention, and is characterized by a flexible disposable container or bottle member 10, a nursing nipple 11 and cooperating inner and outer connecting and clamping ring members 12 and 13, respectively.

The container or bottle member 10 consists of a length of tubular material which is flexible and which may be formed of any suitable sheet or film-like material, such as polyethylene, Pliofilm, or similar material. The container 10 is closed by a transverse seal 14 at one end and open at the other end 15. It is formed with a diameter which will permit the margins at the top 15 to be folded outwardly over and down around the outside of the rigid inner attaching ring 12. The container 10 may be furnished to the user in any convenient form. Preferably the containers are provided in rolls which comprise a predetermined length of flattened, sterilized tube transversely sealed at spaced intervals to provide a plurality of the containers or bottles 10 which may be cut one at a time from the end of the roll.

The nursing nipple 11, which is formed of rubber-like material, is preferably of the wide base type and is provided with an integral, relatively narrow, radially outwardly extending flange portion 16 which terminates in a peripheral bead portion 17.

The inner attaching ring or band 12 is formed of rigid material, preferably metal, and comprises a relatively short tubular section or body portion 18 having a radially outwardly extending top flange 19 which is of slightly less diameter than the internal diameter of the peripheral bead portion 17 on the nipple 11.

The outer locking ring 13 comprises a tube-like body portion 20 terminating at the top in a relatively narrow inwardly directed flange 21. The body portion 20 may be straight on its inner

surface 22 or provided with a slight taper in the downward and outward direction. The body portion 20 terminates at its lower edge in a section 23 which is substantially tapered in the outward direction. The internal diameter at the bottom edge 24 is slightly greater than the external diameter of the peripheral bead portion 17 on the nipple 11. The internal diameter of the body portion 20 is substantially less than the external diameter of the bead 17. The internal diameter of the top flange 21 on the ring member 13 is approximately the same as the internal diameter of the bead 17 on the nipple 11.

In assembling the nursing unit a stand or supporting member is preferably provided as indicated at 25 (Fig. 4). The stand 25 is provided with an upwardly directed flange 26 which is arranged about an aperture 27 in the stand to provide a recess or shoulder 28 for receiving the bottom portion of the inner ring member 12. The top flange 19 of the inner ring member 12 is positioned a substantial distance above the flange 26 when the ring 12 is located on the stand 25. The flexible container 10 is opened and positioned with its top margins 15 folded outwardly and downwardly over the flange 19 of the inner ring member 12 in any convenient manner such as by means of an expanding and holding device or tool of the general type illustrated in the copending application of Teague et al., Serial No. 41,554, filed July 30, 1948.

With the top margins 15 of the container 10 folded outwardly and downwardly over the inner ring member 12 (Fig. 4) the container 10 is filled with a nursing fluid and the nipple 11 is positioned with the bottom flange 16 overlying the top flange 19 of the inner ring member 12. The lower portion of the bead 17 which extends below the flange 16 on the nipple 11 facilitates assembly of the nipple and the inner ring member 12, the top of the member 12 being received within the confines of the bead 17 and the nipple 11 being readily assembled in properly centered relation to the member 12 with the flange 16 of the nipple resting on the top of member 12. Thereafter the outer ring member 13 is moved downwardly in encircling relation to the inner ring member 12. The peripheral bead 17 on the nipple 11 is contracted and the flange 16 of the nipple 11 is stretched down and around the top flange 19 of the inner ring member 12 by the downward movement of the ring member 13. The ring member 13 is moved downwardly until its bottom edge 24 is engaged with the top surface 29 (Fig. 6) of the supporting member 25 which limits the downward movement of the same relative to the inner ring member 12. When the outer ring member 13 is at the downward limit of its movement the bead 17 on the nipple 11 is positioned slightly below the bottom of flange 19 on the inner ring member 13. When the outer ring member 13 is then released the resiliency of the bead 17 and the flange 16 causes member 13 to move upwardly a short distance from the top surface 29 of the supporting frame 25. The bead 17 moves upwardly with the ring member 13 into close engagement with the bottom edge of the flange 19 on the inner ring thereby clamping the container margins 15 against the flange 19.

With the members assembled as illustrated in Figs. 1 and 7, any axial force exerted between the container 10 and the nipple 11 tends to draw the bead 17 and the stretched flange 16 into closer contact with the lower and outer surfaces of the flange 19 on the inner ring member 12 and to

more tightly clamp the margins 15 of the container 10 between the members.

The unit is readily disassembled by placing one side of the bottom edge 24 of the outer ring member 13 on a surface or abutment with the unit held at an angle thereto and by applying pressure with the thumb or fingers against the opposite portion of the top flange 19 of the inner ring member 12 while at the same time holding the outer ring member 13 against downward movement at that side of the unit until the ring member 12 has been moved downwardly past the bead 17 at that side of the unit.

While previous nursing units of a similar type were subject to failure at the seal when used with an oversize container which produced wrinkles at the top, in the present device the use of slightly oversize containers does not result in leakage because of the resiliency of the rubber bead 17 under compression which maintains the seal even though there are substantial wrinkles in the container material.

While specific materials and details of construction have been described and shown in illustrating the invention, it will be understood that other materials and other details of construction may be resorted to within the scope of the invention.

I claim:

1. A nursing unit comprising a flexible disposable receptacle, a nursing nipple having a relatively narrow bottom flange extending radially outwardly and terminating in a peripheral bead, a rigid inner connecting ring member having a tubular body portion and a relatively narrow radially outwardly directed top flange, and an outer connecting ring member having a tubular body portion and a radially inwardly directed top flange, said outer ring member being of lesser inside diameter than the outside diameter of the bead on said nipple flange and when the unit is in assembled condition said ring members being positioned in telescoping relation with the top margins of the receptacle and the bead on said nipple flange in clamped relation between the same.

2. A nursing unit comprising a flexible disposable receptacle, a nursing nipple of stretchable material having a relatively narrow bottom flange extending radially outwardly and terminating in a peripheral bead, a rigid inner connecting ring member comprising a tube-like section and an outwardly directed top flange, and an outer connecting ring member having a radially inwardly directed top flange, said outer ring member having a tubular body section of lesser inside diameter than the outside diameter of the bead on said nipple flange, said ring members clamping the top margins of the receptacle and the bead on the nipple between the same when the unit is in assembled relation.

3. A nursing unit comprising a flexible disposable receptacle, a nursing nipple of resilient material and a pair of cooperating inner and outer ring members for clamping the nipple and the container in communicating relation, said inner ring member having an outer flange at the top thereof over which the top margins of the container are adapted to be outwardly folded, the outer periphery of said flange being of less diameter than the internal diameter of said bead portion said nipple having a bead portion on the base thereof adapted to be moved into encircling relation to said inner ring member and said outer ring member having an inner flange portion at

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the top thereof, said outer ring member having a tubular body portion of lesser diameter than the external diameter of said bead portion and being adapted to engage said bead portion and compress the same into clamping relation with the lower portion of the flange on said inner ring member whereby when said unit is assembled the top margins of the container will be held in sealed relation between the bead on said nipple and the flange on said inner ring member.

4. A nursing unit as recited in claim 3 wherein the tubular body portion of said outer ring member comprises an edge portion provided with a downwardly and outwardly tapered inner surface for constricting said bead portion and placing the same under compression when said unit is assembled.

5. A nursing unit comprising a flexible disposable receptacle, a nursing nipple of resilient material having a flanged base thereon which terminates in a peripheral bead, and a pair of inner and outer clamping rings, said outer ring having inner wall portions of less diameter than the external diameter of said bead portion and being telescoped over said inner ring when said unit is assembled, the top margins of the receptacle being folded around the inner ring and said bead being clamped in compressed relation between the rings, the top margins of the receptacle being clamped by the compressed bead against the inner ring.

6. A nursing unit comprising a flexible disposable receptacle, a nursing nipple of resilient material having an outwardly directed base flange which terminates in a peripheral bead, and a pair of inner and outer clamping rings, the outer clamping ring having inner wall portions of lesser diameter than the external diameter of said bead and being positioned in encircling relation to the inner ring when said unit is assembled, the top margins of the receptacle being reversely folded out over the upper portion of the inner ring, the base flange of the nipple being stretched over the upper portion of the inner ring in clamping relation with the top margins of the receptacle and the peripheral bead being confined between the rings whereby to hold the nipple and the receptacle in communicating relation.

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7. A nursing unit comprising a flexible disposable receptacle, a nursing nipple of resilient material having a base flange which terminates in a peripheral bead, and a pair of inner and outer connecting rings, said rings having portions of lesser diameter than the external diameter of said bead whereby when said unit is assembled with the top margins of the receptacle folded outwardly and downwardly over the inner ring and with the base flange of the nipple positioned on the top of the inner ring the outer ring is moved downwardly over the inner ring to constrict the peripheral bead and place the same in compressed clamping relation with the margins of the receptacle and against the inner ring.

8. A nursing unit comprising a flexible disposable receptacle, a nursing nipple of resilient material having a base flange which terminates in a peripheral bead, and a pair of inner and outer connecting rings, said rings having radial flange portions extending in opposed relation which are of lesser diameter than the external diameter of said bead whereby when said unit is assembled with the top margins of the receptacle folded outwardly and downwardly over the inner ring and with the base flange of the nipple positioned on the top of the inner ring the outer ring is moved downwardly over the inner ring to stretch the base flange over the radial flange portion of the inner ring and place the same in tensioned clamping relation with the margins of the receptacle and against the radial flange portion of the inner ring.

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