Jan. 8, 1952 A. M. ALLEN 2,581,340

ASSOCIATED EQUIPMENT FOR NURSING UNITS

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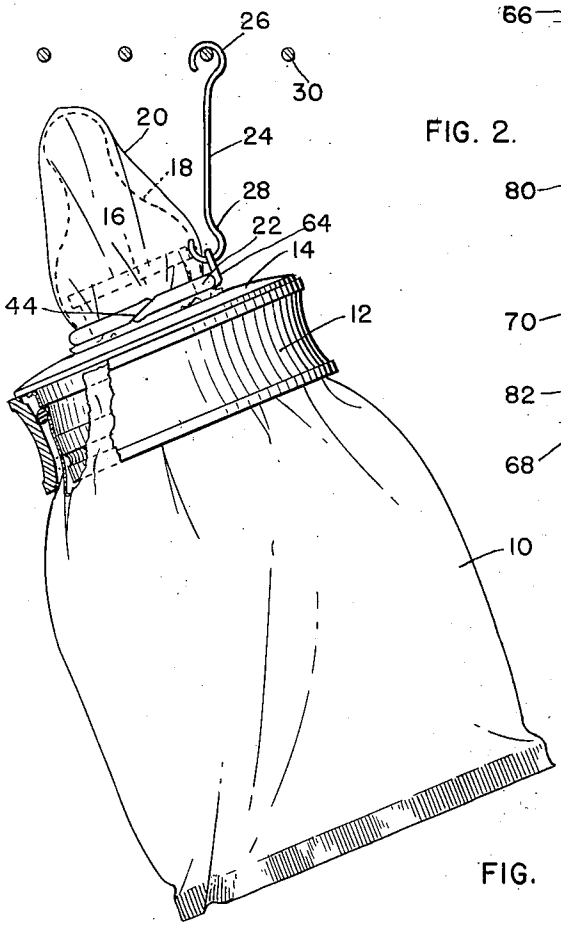


FIG. 1.

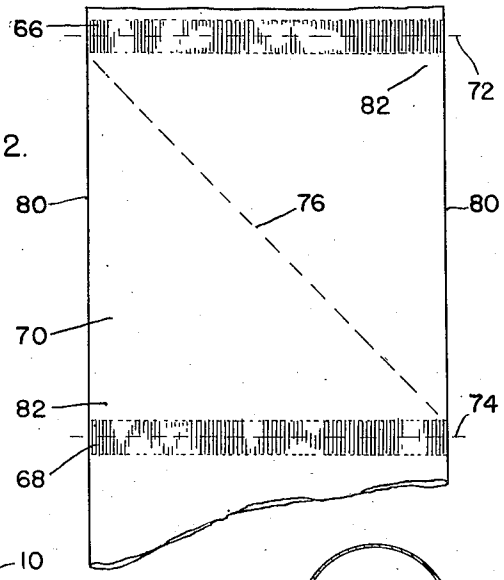


FIG. 2.

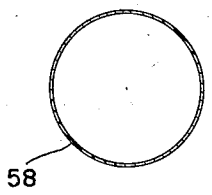


FIG. 7.

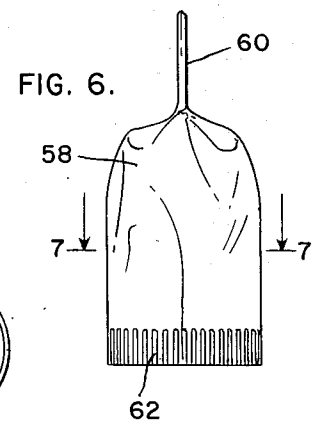


FIG. 6.

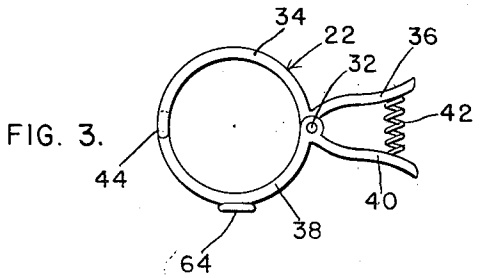


FIG. 3.

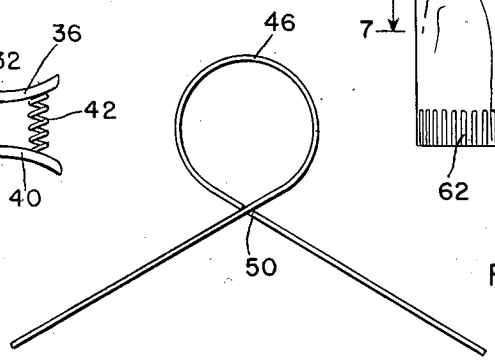


FIG. 5.

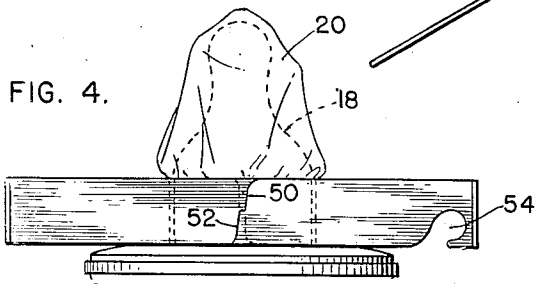


FIG. 4.

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## ASSOCIATED EQUIPMENT FOR NURSING UNITS

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Application April 18, 1947, Serial No. 742,377

2 Claims. (Cl. 215—11)

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The present invention relates to apparatus for use in assembling, filling, and handling nursing units of a type having a disposable container portion which is connected with a rigid neck ring, to which in turn the nursing nipple is attached. The material of the container portion, and the manner in which it is formed, is described in my copending applications Serial No. 710,744 filed November 19, 1946 and Serial No. 717,105, filed December 19, 1946 now Patent No. 2,550,034, dated April 24, 1951. The neck ring to which the flexible container is attached is of the general type disclosed in my earlier applications, Serial No. 526,354 filed March 14, 1944, which issued as Patent No. 2,448,569 and Serial No. 560,610 filed October 27, 1944, which issued as Patent No. 2,446,451, in that the neck ring or collar comprises two parts which are suitably detachably locked together to seal the open end of the container between them, one of the parts having an upwardly extending neck with a bead thereon for the attachment of the nipple.

The object of the present invention is to provide apparatus for use in association with nursing units of the character referred to, which will facilitate the convenience and sterile handling and storing of the nursing units at the time of their use. With respect to the construction of the nursing units, and the materials employed therein, the disclosures of the copending applications referred to are made a part hereof by reference.

In the drawings:

Figure 1 is a side elevational view of a nursing unit suspended from a grill or rack in a refrigerator.

Figure 2 is a view of a portion of a tubular strip of the plastic film used to form the hood of the nursing unit.

Figure 3 is a top plan view of a contractile clamp, as employed in Figure 1 to seal a hood over the nipple and to suspend the nursing unit from such as a refrigerator grill.

Figure 4 is a partial side elevational view of the neck ring of a nursing unit, using a modified form of clamp.

Figure 5 is a top plan view of the clamp employed in Figure 4.

Figure 6 is a side elevational view of a modified form of a nipple protecting hood.

Figure 7 is a cross sectional view of the hood of Figure 6.

Referring to Figure 1, the transparent retractable nursing container of the type specifically described in my copending application Serial No. 717,105, is indicated at 10. The open end of said container is connected with a collar 12, which is only generally indicated. The collar comprises an outer ring and an inner ring, which are suitably connected together, the open end of the container being sealed between these rings in any suitable manner, preferably employing a gasket to insure the seal, generally in the manner referred to in my Patents Nos. 2,448,569 and 2,446,451. The inner ring is formed with an inwardly tapering flange 14 which has a central outwardly extending tubular neck with a nipple attaching bead 16 thereon, as indicated in dotted lines in Figure 1. The nipple 18 is tightly secured over the bead 16, and a hood 20, as hereinafter described, is placed over and around the nipple and is secured thereto by a contractile clamp 22 of the form shown in Figure 3. The hood is made of the same transparent film as the body portion 10 of the container, and in a manner hereinafter described.

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By means of a supporting rod 24 having upper and lower hook portions 26 and 28, the entire unit is suspended from an overhead support, such as the grill 30 of a refrigerator. Thus, after the nursing container is filled, and the nipple applied thereto, the unit may be stored in a normally unused space in the refrigerator, in sterile and protected condition.

Referring to Figure 3, the clamp 22 may consist of a pair of arms pivoted together as at 32, one arm comprising a semi-circular portion 34 and an integral handle portion 36, whereas, the other arm comprises integral corresponding portions 38 and 40. There is a compression spring 42 suitably mounted between the handle portions 36 and 40 which spring normally urges the opposite jaws of the clamp toward one another in order to contract the clamp about the lower open end of the hood 20, as indicated in Figure 1, to seal the same against the outside surface of the nipple 18 below or on the maximum diameter of the latter. The extreme ends of the clamping portions 34 and 38 may be beveled or suitably formed to fit against one another to complete the closing action of the clamp, as indicated at 44 in Figures 1 and 3.

It is obvious that the clamp may be removed or applied with one hand, by simply pressing handle portions 36 and 40 toward one another. When pressure is released, the spring 42 will cause the clamp to firmly engage around the hood and against the nipple. Of course, if the nipple is not applied to the collar, the same action would be accomplished by causing the clamp to lock the

hood around and beneath the bead 16 of the collar.

Another form of clamp is shown in Figures 4 and 5, comprising an elongated strip of material, such as thin sheet metal, which is adapted to form a cylindrical locking portion 46 around the hood and nipple, in approximately the position shown in Figure 4. This strip of metal is provided with opposed slits 50 and 52 which engage one another as shown in Figure 4 to lock the clamp around the nipple. One end of this strip is suitably formed to provide a hook portion 54, which can be used to suspend the clamp and the nursing unit from the refrigerator grill in the same manner as is generally illustrated in Figure 1. It will be noted that the hook portion 54 is arranged in the lower edge of one end of the strip adjacent to the slit 50 in the upper edge thereof in such manner that the clamp will have a tendency to be tightened by the weight of the nursing unit when it is suspended, as described.

In Figure 6, a modified type of hood 58 of the same plastic material is shown, this hood being of sack-like form, and having its closed end flattened and bonded together by heat as at 60 in order to provide a finger grip for the hood. The lower open edge of this hood is suitably fluted as at 62, so that it will slip over the nipple and will expand at its open end to seal over the nipple, as will be apparent. This type of hood might be used with or without the clamp previously described.

While the suspension means for the clamp may vary, the embodiment of Figures 1 and 2 include a suitable eye 64 on one side of the clamp, to which the lower hook 28 of the rod 24 may be removably connected.

It is preferred to form the hoods from the same material as is used in the manufacture of the container bodies. This material may be supplied in tubular form as shown in Figure 2, the tubing being flattened throughout, and at spaced points being bonded together transversely, by heat, as designated at 66 and 68, thus forming in the tube a plurality of sterile, closed, substantially rectangular envelopes 70. When it is desired to form a hood, the tube may be severed along the lines 72 and 74 to provide a single closed envelope, and when the hoods are required for use, two of them can be cut from each envelope by a simple diagonal scissors cut 76, which may be made across the envelope as shown. This will provide two identical hoods open along the diagonal line 76, but closed along the lines 72 and 74, and of course closed along the fold lines 80 of the tube. When the hoods are placed over the nipple, the end of the latter extends up into the closed corners 82, and the open lower edges 76 of the hoods will extend downwardly around the nipple to a point adjacent the top surface of the flange 14.

Referring to Figure 1, the neck ring or collar may be of types as described in the copending applications referred to, or it may be of the form generally as illustrated in the drawings. In this illustrated form, the collar is constructed of two concentric rings, which are snapped axially together, the gasket sealing the open end of the container against the inner ring, and against an annular ledge around the inner ring as shown. It is the inner rig which is provided with the flange



14, and with the throat on which the nipple receiving bead 16 is carried.

While I have described hoods of the type shown in Figures 1 and 6, simple tubular hoods of diameter substantially equal to the maximum diameter of the nipple 18 may be employed. For example, long tubes of plastic film as shown in Figure 2 could be manufactured, but of smaller size, i. e., of inside diameter about equal to the maximum diameter of the nipple 18. Such a tube could be provided with transverse bonds spaced apart a distance slightly greater than the height of the nipple. Separate hoods of tubular form, open at their bottoms and closed at their tops are formed by cutting them off from the long sheet just above each transverse bond. Such hoods could be clamped in sealing relation on the nipple in the manner previously described.

It will be observed that I have provided associated equipment for the nursing units which will be of pronounced usefulness in supplying, filling and handling the containers of pliable film, as described.

I claim:

1. A sterile nursing unit adapted to be supported from the grill of a refrigerator, comprising a thin, transparent flexible and retractible container portion, an annular neck ring having means for securing a nursing nipple thereto, a hood for said nipple made of the same material as that of said container and having a closed top and open bottom to pass over and protect the nipple, and a contractible clamp adapted to grip around the open bottom of said hood and seal the same against said nipple, said clamp having means on one side thereof including a hook portion for suspending said unit by said clamp from the grill of the refrigerator with said neck ring canted from the horizontal yet supporting the flexible filled container in a substantially vertical position.

2. A device in accordance with claim 1 wherein said clamp comprises a thin elongated strip of flexible material having cooperating notches therein to lock the same around said nipple, said strip having at one end thereof a hook portion to engage the grill of the refrigerator to suspend the unit.

ADDA M. ALLEN.

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