

[54] **DISPOSABLE DOUCHING APPARATUS**
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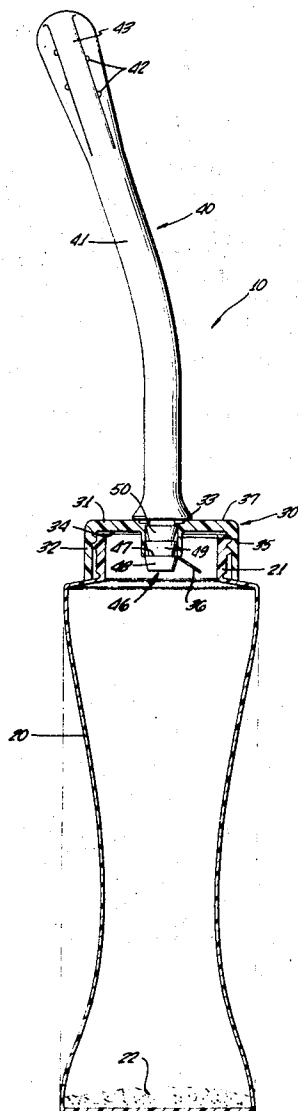
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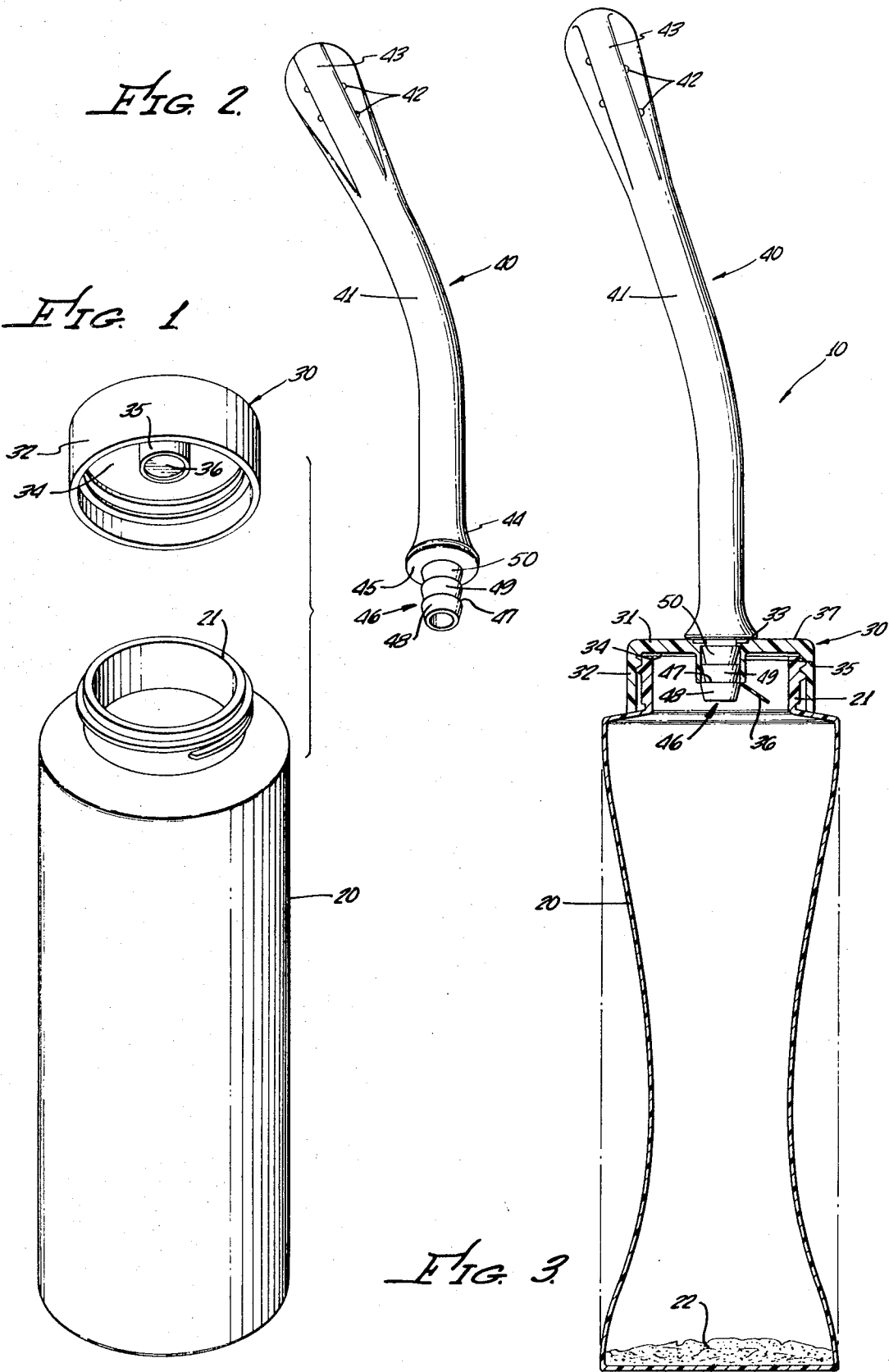
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[57] **ABSTRACT**

Disposable douching apparatus comprising a flexible squeeze bottle, a cap removably connected to the bottle, the cap having a hole therein and a thin disc-shaped member connected to the perimeter of the hole thereby completely sealing the hole, and a nozzle, one end of the nozzle including a circumferential lip at the end thereof and being extendable through said hole in said cap to break at least a portion of the circumferential connection between the disc-shaped member and the cap, the lip at the end of the nozzle engaging the inside of the cap for preventing removal thereof.

3 Claims, 3 Drawing Figures





DISPOSABLE DOUCHING APPARATUS**BACKGROUND OF THE INVENTION****1. Field of the Invention**

The present invention relates to a disposable douching apparatus and, more particularly, to a completely sanitary apparatus for vaginal lavage which may be disposed after use.

2. Description of the Prior Art

Conventional douching apparatus comprises a flexible bag which is adapted to be filled with a liquid douching solution and either secured or held in an elevated position. An elongated hose connects the bag with a suitable nozzle.

While such conventional douching apparatus is widely used, several problems are associated therewith. In the first instance, such apparatus is cumbersome and inconvenient to use. In addition, the apparatus is intended to be used repeatedly and must be cleaned and stored. This latter problem is especially troublesome in the case of institutions, such as hospitals, convalescent homes, and the like. More specifically, each female patient must be assigned one of the beforementioned types of douching apparatus and the apparatus must be sterilized before it is assigned to another patient. In addition, the use of such apparatus is a time-consuming process for the nurse or other attendant, which process includes the addition of a powdered disinfectant into the flexible bag before each use.

SUMMARY OF THE INVENTION

According to the present invention, there is provided a disposable douching apparatus which completely solves all the problems mentioned above. In the first instance, the present apparatus is convenient, simple, and efficient to use, and may be manufactured and sold so inexpensively that it may be readily used only once and disposed thereafter. Since the present douching apparatus is a one-time, disposable unit, the problems of sterilization and repeated use are eliminated, not only for the individual user, but also for the institutional user. In this latter case, substantial savings in cost and attendant time is realized.

Briefly, the present douching apparatus comprises a flexible squeeze bottle, a cap removably connected to the bottle, the cap having a hole therein and a thin disc-shaped member connected to the perimeter of the hole thereby completely sealing the hole, and a nozzle, one end of the nozzle including a circumferential lip at the end thereof and being extendable through said hole in said cap to break at least a portion of the circumferential connection between the disc-shaped member and the cap, the lip at the end of the nozzle engaging the inside of the cap for preventing removal thereof.

OBJECTS

It is therefore an object of the present invention to provide a disposable douching apparatus.

It is a further object of the present invention to provide a completely sanitary apparatus for vaginal lavage which may be disposed after use.

It is a still further object of the present invention to provide a convenient, efficient, easy to use, and inexpensive douching apparatus.

It is another object of the present invention to provide a disposable douching apparatus including a flexible squeeze bottle and a nozzle connectable thereto.

Still other objects, features, and attendant advantages of the present invention will become apparent to those skilled in the art from a reading of the following detailed description of the preferred embodiment constructed in accordance therewith, taken in conjunction with the accompanying drawings wherein like numerals designate like parts in the several figures and wherein:

BRIEF DESCRIPTION OF THE DRAWINGS

FIG. 1 is an exploded perspective view of a flexible squeeze bottle and cap of the present disposable douching apparatus;

FIG. 2 is a perspective view of the nozzle of the present disposable douching apparatus; and

FIG. 3 is a cross-sectional view, taken through the center of the bottle and cap of FIG. 1, and showing the mating relationship between the cap of FIG. 1 and the nozzle of FIG. 2.

DESCRIPTION OF THE PREFERRED EMBODIMENT

Referring now to the drawings, the present disposable douching apparatus, generally designated 10, comprises a bottle, generally designated 20, a cap, generally designated 30, and a nozzle, generally designated 40. Bottle 20 is a conventional, cylindrical bottle, including an externally threaded neck 21. The significant feature of bottle 20 is that it is made from a soft, flexible material, such as a soft plastic, so that it may be readily squeezed, as shown in FIG. 3. In addition, bottle 20 would be provided with a measured amount of powdered disinfectant 22. Therefore, it is only necessary to fill bottle 20 with water and it is ready for use.

Cap 30 has a generally conventional appearance including a top portion 31 and an internally threaded portion 32 which is adapted to engage the external threads on neck 21 of bottle 20 to provide a relatively tight seal. Positioned in the center of top portion 31 of cap 30 is a circular hole 33 which extends entirely therethrough. For reasons which will appear more fully hereinafter, extending axially from the bottom surface 34 of top portion 31 of cap 30 is a cylindrical sleeve 35, sleeve 35 being coaxial with hole 33. Finally, cap 30 includes a thin, disc-shaped member 36 connected along the circumference thereof to the inner surface of sleeve 35, at the end thereof farthest from top portion 31 of cap 30. In this manner, with member 36 sealing hole 33 and cap 30 in contact with bottle 20, the inside of bottle 20 is entirely enclosed and remains sterilized. On the other hand, the connection between member 36 and sleeve 35 is an extremely fragile one which is adapted to readily break in the presence of any axial force.

Nozzle 40 is of conventional configuration including a hollow body 41 having a plurality of openings 42 at one end of 43 thereof. The other end 44 of body 41 is adapted to be connected to cap 30 to conduct the liquid in bottle 20 to openings 42. More specifically, body 41 of nozzle 40 terminates at end 44 in a flat surface 45 which is adapted to engage the outer surface 37 of top portion 31 of cap 30. Extending from surface 45 is a hollow, elongated plug 46 which is adapted to extend through hole 33 and sleeve 35 in cap 30. The end of plug 46 is provided with a circumferential lip 47 having a diameter slightly greater than the inside diameter of sleeve 35. In addition, the distance between lip 47 and surface 45 is approximately equal to the distance be-

tween the end of sleeve 35 and the surface 37 of cap 30. In this manner, lip 47 is adapted to engage the end of sleeve 35 after insertion therethrough for preventing removal of plug 46 from sleeve 35.

Lip 47 may be provided by forming the end of plug 46 into the shape of a segment of a cone 48, the small diameter end of cone 48 having a diameter less than the inner diameter of sleeve 35 and the large diameter end of cone 48 having a diameter greater than the inner diameter of sleeve 35. In this manner, the small diameter end of cone 48 provides a surface for applying an axial force to member 36 to break at least a portion of the circumferential connection between member 36 and the inner surface of sleeve 35 upon insertion of plug 46 into sleeve 34 and the large diameter end of cone 48 acts as lip 47.

It will be apparent to those skilled in the art that sleeve 35 may be entirely eliminated and that member 36 may be placed directly across hole 33, coplanar with surface 34 or intermediate surfaces 34 and 37. This will simply require a corresponding shortening of the length of plug 46. However, by providing sleeve 35, sleeve 35 provides a channel for guiding plug 46 during insertion of nozzle 40 into cap 30. Furthermore, by forming plug 46 into a plurality of identical cone-shaped segments 48-50, as shown, the remaining cone-shaped segments 49 and 50 are operative to dig into the inner surface of sleeve 35, providing an effective fluid-tight seal between cap 30 and nozzle 40.

In operation, douching apparatus 10 is conveniently provided with powdered disinfectant 22 in container 20 and with cap 30 tightly engaging neck 21. At this time, nozzle 40 is completely separate and member 36 completely seals hole 33, preventing contamination of powdered disinfectant 22. When ready for use, cap 30 is removed and plug 46 of nozzle 40 is inserted into hole 33 in cap 30 and pushed axially until cone-shaped segment 48 breaks the connection between member 36 and sleeve 35 and until lip 47 snaps into position, as shown in FIG. 3. Container 20 may then be filled with water at the desired temperature. Cap 30 having nozzle 40 attached thereto is then connected to bottle 20 and bottle 20 is shaken thoroughly to dissolve disinfectant 22. In this simple, convenient, and efficient manner, douching apparatus 10 is now ready for use and the solution in bottle 20 may be readily expelled through holes 42 in nozzle 40 by the simple expedient of squeezing bottle 20, as shown in FIG. 3. After use, douching apparatus 10 may be readily disassembled by firmly grasping bottle 20 and nozzle 40 and pulling in opposite directions and disposing of the two parts in the original container.

It can therefore be seen that in accordance with the present invention there is provided a disposable douching apparatus 10 which completely solves all of the problems discussed previously. In the first instance, apparatus 10 is convenient, simple, and efficient to use, and may be manufactured and sold so inexpensively that it may be readily used only once and disposed thereafter. Since apparatus 10 is a one-time, disposable unit, the problems of sterilization and repeated use are eliminated, not only for the individual user, but also for the institutional user. In the latter case, substantial sav-

ings in cost and attendant time is realized.

While the invention has been described with respect to a preferred physical embodiment constructed in accordance therewith, it will be apparent to those skilled in the art that various modifications and improvements may be made without departing from the scope and the spirit of the invention. Accordingly, it is to be understood that the invention is not to be limited by the specific illustrative embodiments, but only by the scope of the appended claims.

I claim:

1. Disposable douching apparatus comprising:

a flexible squeeze bottle;

a cap removably connected to said bottle, said cap having a circular hole in the top portion thereof;

a cylindrical sleeve, one end of said sleeve being connected to the inside surface of said top portion of said cap, coaxial with said hole therein;

a thin, disc-shaped member connected along the circumference thereof to the inner surface of said sleeve, at the other end thereof, thereby completely sealing said hole in said cap, said connection being readily breakable under the influence of a slight axial force;

a hollow nozzle having a plurality of openings at one end thereof and terminating in a flat surface at the other end thereof which is adapted to engage the outside surface of said top portion of said cap; and

a hollow, elongated plug, one end of said plug being connected to said flat surface of said nozzle, said plug having a circumferential lip adjacent the other end thereof, said lip having a diameter slightly greater than the inner diameter of said sleeve, the distance between said circumferential lip and said flat surface being approximately equal to the distance between said outer surface of said top portion of said cap and said other end of said sleeve whereby said sleeve provides a channel to guide said plug to said disc-shaped member, said other end of said plug being adapted to apply an axial force to said disc-shaped member to break said connection, said lip engaging said other end of said sleeve thereby preventing removal of said plug therefrom.

2. Disposable douching apparatus according to claim 1 wherein said other end of said plug has the shape of a segment of a cone, the small diameter end of said cone being farthest from said nozzle and having a diameter less than the inner diameter of said sleeve, said small diameter end of said cone applying said axial force to said disc-shaped member, the large diameter end of said cone having a diameter greater than the inner diameter of said sleeve and acting as said circumferential lip.

3. Disposable douching apparatus according to claim 2 wherein said plug includes a plurality of said cone-shaped segments, positioned end-to-end, the large diameter ends of the segments between said lip and said other end of said nozzle digging into said inner surface of said sleeve providing an effective fluid-tight seal between said cap and said nozzle.

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