# United States Patent [19]

**Burnhill**

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[54] **VAGINAL SPONGE**


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[52] **U.S. Cl.** ..... **128/285**

[51] **Int. Cl.** ..... **A61f 13/20**

[58] **Field of Search** ..... 128/270, 285, 294, 128/296



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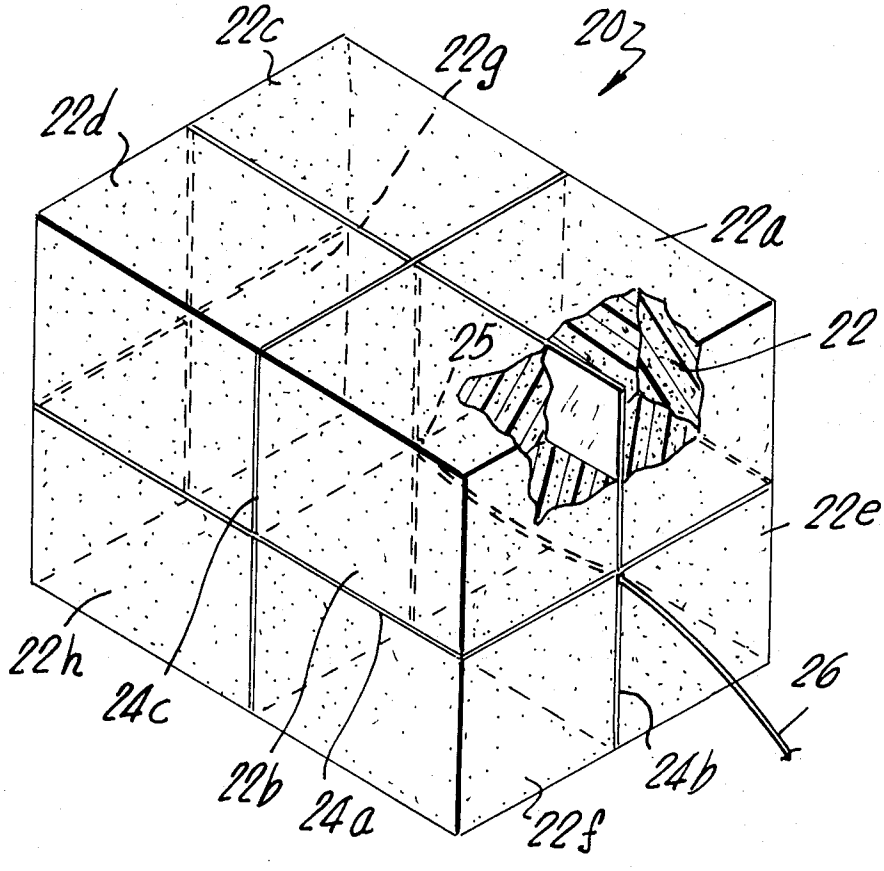
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[57] **ABSTRACT**

A vaginal sponge is disclosed as including a compressible, smooth surfaced, plastic sponge in the form of a solid rectangle, a cylinder or a sphere. The sponge is divided into two or more sections by a plastic, latex or other rubber sheet or film which prevents fluid flow from one section of the sponge to the other. The sponge is used for dispensing medicaments and controlling the flow of menstrual blood or seminal fluid (contraception).


**1 Claim, 5 Drawing Figures**



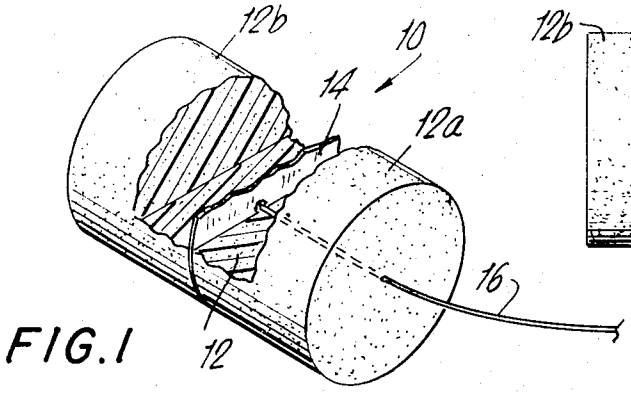



FIG. 1

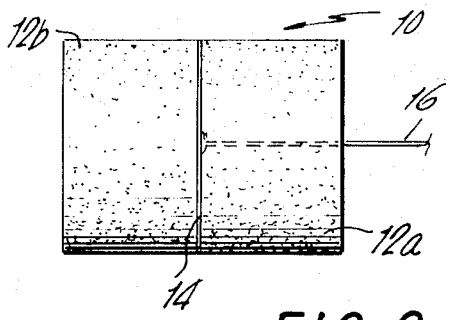



FIG. 2

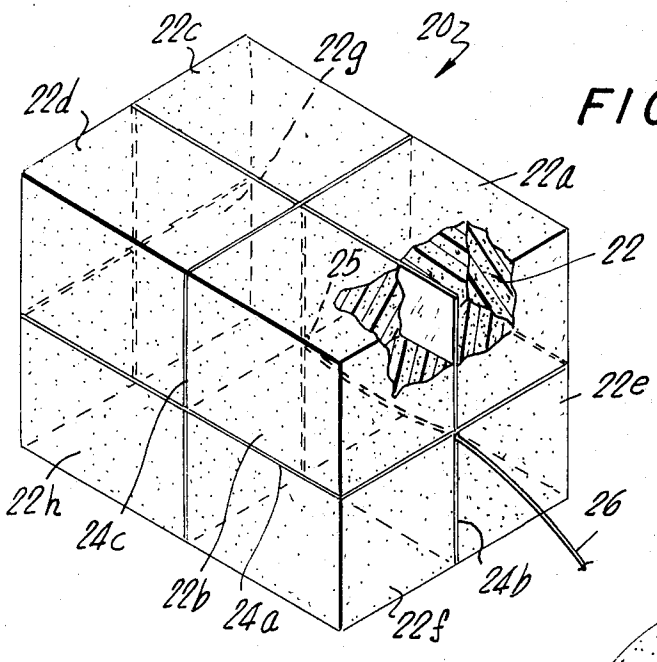



FIG. 3

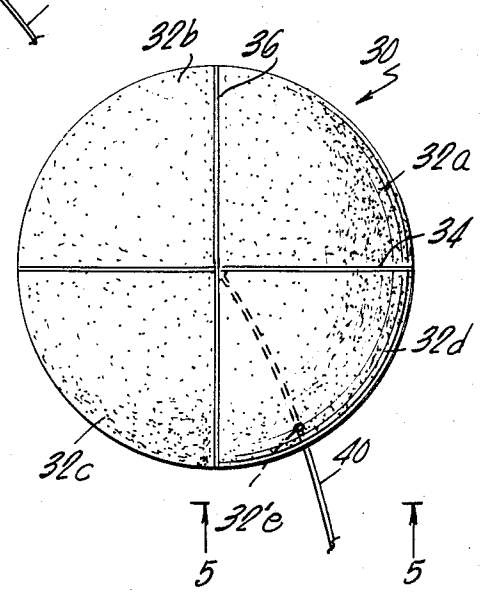



FIG. 4

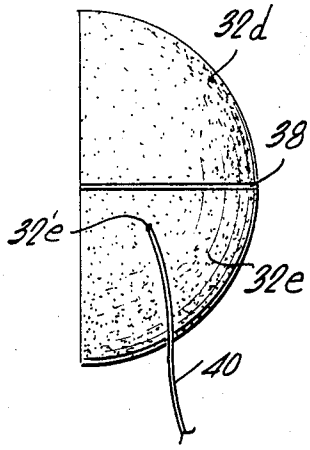



FIG. 5

# VAGINAL SPONGE

This invention relates primarily to medical appliances and more particularly to vaginal appliances for use as a contraceptive device, a menstrual device or for medicament application.

For centuries, vaginal sponges have been tried as contraceptive devices, but without success, since the rough surface commonly associated with sponges and the porosity of sponges have proven to produce significant disadvantages. The rough surface becomes an irritant to the vaginal walls, which actually assists in the contraceptive purpose, but only with harmful side effects of discomfort and infection. The porosity problem has led to the defeat of the primary contraceptive purpose of the sponge, since seminal fluid, on occasion, passes through the sponge, thus leading to the conception which is the primary purpose of the sponge to avoid.

Furthermore, the problems of uterine procidentia, cystocele and rectocele have for years plagued the women of the world, manifesting themselves as descent of the vaginal or uterine walls. Still further, the inconvenience of using separate appliances for correcting such anatomical problems, controlling menstrual fluid and contraception is a drawback of present technology.

Accordingly, a primary object of the present invention is to provide a multi-purpose vaginal appliance suitable for use in controlling various processes such as the descent of the vaginal or uterine walls, menstrual flow, contraception and medicament application.

A further object of the present invention is to provide a vaginal appliance which is non-irritating to the vaginal walls.

A more particular object is to provide a vaginal appliance that prevents fluid flow from one of its ends to the other and yet is porous.

A further particular object is to provide a vaginal appliance which is compressible and generally more convenient to use.

These and other objects of the present invention are accomplished in one preferred embodiment of the present invention which features a vaginal sponge including a plurality of sponge sections separated by a thin plastic, latex or other rubber film to prevent fluid flow from one sponge section to the other. A tail is connected at or near the center of the sponge and extends beyond the periphery thereof to assist in removal of the sponge from the vagina. Medicament application and contraception are enhanced by the use of copper salts or other medicaments which are absorbed and released in a sponge-like, controlled manner. Furthermore, such chemical contraceptive or medicinal substances may be chosen for activation immediately prior to insertion in the vagina, such as by wetting or the like in order to control the immediate leakage of such chemicals or substances upon insertion into the vaginal canal.

The above description as well as further objects, features and advantages of the present invention will be more fully appreciated by reference to the following detailed description of the preferred, but nonetheless illustrative, embodiment when taken in conjunction with the accompanying drawings, wherein:

FIG. 1 is a perspective view of a vaginal sponge according to the present invention wherein a two-section, cylindrical embodiment with a film therebetween is shown;



FIG. 2 is a side view of the embodiment of FIG. 1;

FIG. 3 is an eight-section, solid rectangular embodiment of the present invention wherein films are used to divide each of the eight sections from any other section of the device.

FIG. 4 is a top view of a spherical embodiment of the present invention; and

FIG. 5 is a front, partial view of the embodiment of FIG. 4 viewed along the lines 5—5 of FIG. 4.

Referring to the drawings and in particular to FIGS. 1 and 2 thereof, a vaginal sponge, generally designated **10**, is shown in a cylindrical shape, wherein polyurethane foam or other smooth surfaced plastic foam or porous rubber material **12** is divided into two sections, **12*a***, **12*b*** separated by a plastic, latex or other non-porous rubber film **14**. Tail **16** is attached at or near the center of the cylinder, preferably to film **14**, to provide ease in removal of the device from the vagina. The cylinder should be manufactured to be slightly oversized relative to the vagina so that upon insertion it is first compressed to avoid irritation of the vaginal walls, and upon the conclusion of insertion, it will expand to assume the shape of the vagina at its insertion location.

FIG. 3 shows an alternative embodiment of the present invention, wherein an eight-section, rectangular vaginal sponge, generally designated **20**, is shown to include eight sponge sections **22*a*** – **22*h***. Orthogonally arranged films **24*a*** – **24*c*** are shown in FIG. 3 to divide the eight sponge sections and to prevent fluid flow from one to the other according to the purposes of the present invention. As with the embodiment of FIGS. 1 and 2, the material **22** of the vaginal sponge of FIG. 3 is made porous and the material of films **24*a*** through **24*c*** is made non-porous. Furthermore, tail **26** is attached at point **25** which is approximately the geometrical center of vaginal sponge **20** and the intersection of films **24*a*** – **24*c***.

A further eight-section embodiment of the present invention is shown in FIGS. 4 and 5, wherein a spherical vaginal sponge, generally designated **30**, is shown to include sponge sections **32*a*** to **32*e*** and three other sponge sections (not shown). Films **34, 36, 38** separate the eight sponge sections and prevent fluid flow from one section to the other. Tail **40** is attached at or near the geometrical center of the vaginal sponge **30** such that it protrudes from the periphery of the device at point **32'*e***.

By use of any of the above embodiments or modifications thereof, a contraceptive action is provided by sponge-like absorption of sperm by materials **12** or **22** and blockage of the passage of such sperm by films used to separate the sponge sections. Relatively stiff material **12** or **22** may be used concurrently to prevent descent of the vaginal walls or uterus in the presence of conditions known as uterine procidentia, cystocele or rectocele. Furthermore, collection of menstrual fluid is a separate or concurrent function that may be provided by a vaginal sponge **10, 20** or **30** according to the present invention. The smooth outer surface of the sponge sections of each device prevents irritation of the walls of the vagina. Still further, in the presence of vaginal infections, the vaginal sponge as described herein, may be used as a carrier and dispenser for medicaments used to treat such infections.

Copper salts or the like can be applied to the vaginal sponge of the present invention to provide longterm contraceptive effects. In this way, in addition to occlud-

ing the upper end of the vagina to prevent contraception, the copper salt insures longterm contraceptive action.

Construction of a vaginal sponge according to the present invention can be accomplished by use of a non-irritating cement or the like to cause the separating films to adhere and hold together the sponge sections.

Other modifications are contemplated and thus the present invention should be limited only by the following claim.

What is claimed is:

1. A vaginal sponge conprising a plurality of sponge sections and a separating film attached to and separating said sections, said sponge sections being formed of a porous, sponge-like material and said film being formed of a non-porous material, said separating film being arranged in an orthogonal array to prevent passage of fluid completely through the said vaginal sponge without regard to the orientation of said vaginal sponge, the material of said sponge sections being stiff to provide support for and relief of anatomical defects of the vagina and said film including a plurality of portions, with each portion being arranged perpendicular to at least one other portion and all of said portions extending to the peripheral edge of said vaginal sponge in all directions.

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