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M. H. GURLEY, JR., ET AL

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TAMPON

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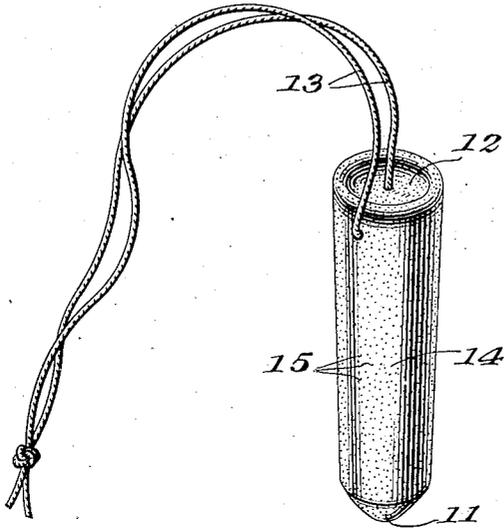


Fig. 1

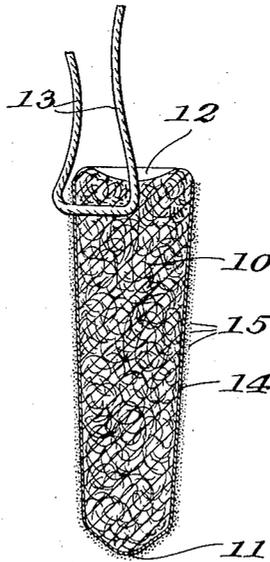


Fig. 2

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UNITED STATES PATENT OFFICE

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TAMPON

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2 Claims. (Cl. 128—285)

This invention relates to catamenial and similar tampons adapted for insertion in cavities in the human body for the purpose of absorbing and preventing the discharge of fluids.

Tampons of this character have heretofore been made in the form of compressed plugs of cotton or similar absorbent material having coatings of materials which are water soluble at body temperature, for example, gelatine plasticized by glycerine, such coatings aiding in maintaining the shape and condition of the tampons prior to use and facilitating their application by increasing their rigidity, but being dissolved in a short time after application, thereby exposing the absorbent material and permitting the latter to expand and perform its intended function. Such coatings are, however, somewhat tacky and tend to resist insertion when dry, so that it has heretofore been necessary to wet the same with water, just prior to application, in order to render them smoother and more slippery. Considerable care and skill are, however, required in order to effect just the proper wetting of the coating. If insufficiently wetted, difficulty of application or insertion is experienced, whereas if allowed to remain in water too long, disintegration of the coating prior to application is apt to result. Consequently, in order to insure against premature disintegration while permitting what will be certain to be adequate wetting, it has been customary to make the coatings thicker than otherwise necessary, so that, unless given a somewhat excessive preliminary wetting, their dissolution and absorption after application is unduly delayed. Also, such excessively thick coatings involve the use of a correspondingly and unnecessarily large amount of coating material in the production of the tampons. Furthermore, preliminary wetting of the coating impairs its rigidity and increases the difficulty of insertion. It also makes the tampon slippery and difficult to handle.

We have discovered that it is possible to make coated tampons which require no preliminary wetting whatsoever prior to application, which tampons can be applied dry with the same facility as prior tampons when wetted. Since no preliminary wetting is necessary, skill and care in effecting just the proper wetting is no longer required, and the coating may be relatively thin, so as to be disintegrated and absorbed in a correspondingly shorter time after application. Also, only a relatively small amount of coating material is needed to form the coating. The present invention, based on this discovery, relates to such a tampon and the method of producing the same.

In the accompanying drawing Fig. 1 is a perspective view and Fig. 2 a somewhat diagrammatic sectional view of a tampon embodying the invention and produced in accordance therewith.

In said drawing, 10 denotes a plug of cotton or equivalent absorbent material compressed, both laterally and longitudinally in suitable dies, into a suitable shape, which may be substantially cylindrical or, preferably and as shown, slightly tapered from its outer to its inner end. The inner end is preferably rounded, as shown at 11, while the outer end is preferably formed with a finger-receiving recess 12 and may have extending therefrom a suitably attached withdrawing cord 13. The plug 10 is coated, preferably throughout (as shown in Fig. 1) or at least on its side and inner end surfaces (as shown in Fig. 2) with a material 14 which is hard and firm when dry but water soluble at body temperatures, preferably about equal parts by weight of gelatine and glycerine, with or without a small quantity of a suitable pigment or whitening agent, such as zinc oxide. The coating material, in a fluid condition, such as an aqueous solution, is suitably applied as by dipping (only enough being used to cover the cotton completely, the excess being stripped or allowed to drain off), and allowed to dry, solidify and harden, after which its outer surface is dusted with dry powdered starch, as indicated at 15. This can conveniently be done by rolling the coated tampon in starch dust, the inherent tackiness of the coating causing just enough of the dust to accomplish the desired purpose to adhere thereto.

The dried gelatine-glycerine coating, while hard and firm, is more or less tacky, rendering the tampon unsuitable for insertion without preliminary wetting, as above explained. The dusting of powdered starch, however, removes this tackiness completely and provides an outer surface which is smooth, slippery, and of a velvety texture, permitting the ready application of the tampon in a dry condition. The natural tackiness of the main coating causes the outer coating of starch dust or powder to be bonded thereto with sufficient firmness to resist dislodgement under ordinary handling. While the outer starch coating permits the dry application of the tampon, it is not injuriously affected by wetting. On the contrary, when, upon application of the tampon, the normally dry starch powder is brought into contact with the wet or moist body tissues, it is, from its peculiar inherent nature, capable, in the presence of the moisture derived from such tissues themselves, of swelling to form a continuous,

slippery film which further facilitates insertion; this, however, taking place only at the time of insertion, so that slipperiness prior to insertion, due to preliminary wetting, is avoided. Moreover, said starch outer coating is not subject to deterioration or separation under any reasonable temperature and humidity conditions of normal storage. On the other hand, when the tampon has been applied, the outer starch coating is readily dispersed by the body fluids, along with the main gelatine coating, without deleterious effects.

We claim:

1. A tampon comprising a compressed mass of absorbent material having a main coating of a

normally hard material, water soluble at body temperature and in contact with vaginal moisture, and an outer coating on said first mentioned coating of a normally dry, smooth, powdered material, capable in the presence of vaginal moisture of swelling at body temperature and forming a continuous slippery film, whereby the dry tampon may be inserted without prewetting.

2. A tampon in accordance with claim 1 in which the normally dry, smooth, powdered material is starch.

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