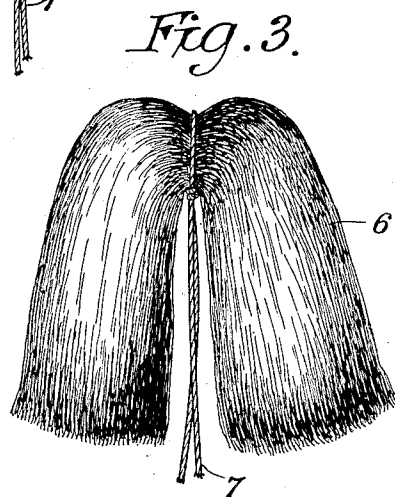
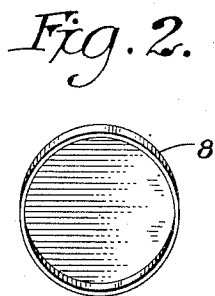
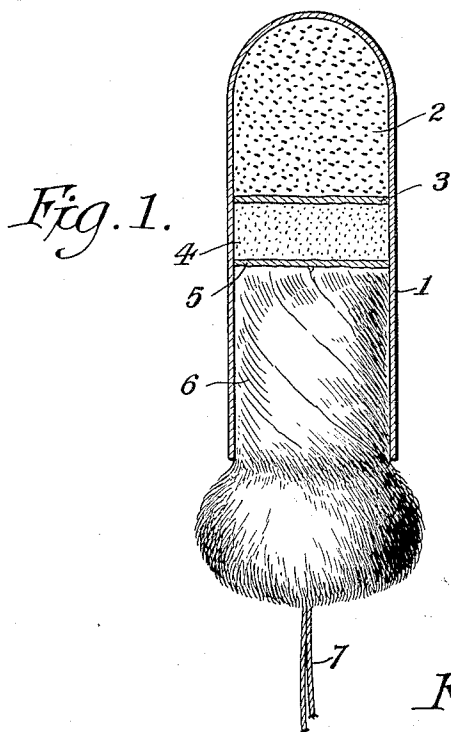


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MEDICATED TAMPON.

APPLICATION FILED JAN. 24, 1918. RENEWED SEPT. 10, 1921.

1,395,295.

Patented Nov. 1, 1921.



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MEDICATED TAMPON.

1,395,295.

Specification of Letters Patent.

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To all whom it may concern:

Be it known that I, EDMUND MORSE POND, a citizen of the United States of America, residing at Rutland, county of Rutland, State of Vermont, have invented certain new and useful Improvements in Medicated Tampons, of which the following is a specification.

My invention relates to tampons containing medicated material for use in the cavities of the human body and is designed to extend the scope of medication capable of satisfactory use therein and also to preserve the same from deterioration during storage and handling prior to use. The best form of apparatus at present known to me embodying my invention is illustrated in the accompanying sheet of drawings in which—

Figure 1 is an axial cross section of a completed tampon.

Fig. 2 is a detail view in perspective of a modified form of one of the diaphragms used therein, and

Fig. 3 shows the packing as prepared for use in the manufacture of the tampon.

Throughout the drawings like reference characters indicate like parts. 1, is the usual shell or casing made of gelatin and open at one end. Through this open end is introduced the main body of medicated material 2. This is usually poured in in a fluid condition, though it may be made up in the form of a gelatin-glycerin suppository of a size to fit closely into the casing or capsule 1. In either case the mass 2, has the proper proportion of the desired principal medication mixed therewith. In order that this material may retain its full strength during periods of storage and transportation under varying climatic conditions and that the tampon be prevented from either shriveling by evaporation of some of its contents, or swelling or deteriorating from the absorption of moisture, it is essential that the hygroscopic contents of the capsule be hermetically sealed from the atmosphere so that the original moisture content, if any, be preserved until the tampon is used.

6, is the wool filling of the tampon which is designed to expand when in use after the casing 1, has dissolved and to hold the medicated material in position in contact with the parts of the patient's body to be treated. This wool filling is preferably of the char-

acter described in my Patent No. 1,234,383, granted July 24, 1917. Fig. 3 shows it in the form preferred for use before being twisted and inserted in the capsule. The string 7, is provided as a means for withdrawal of the filling 6, after the effective life of the medicated material is ended.

In the use of tampons of the general construction above described as heretofore made several difficulties have been encountered. Moisture in the component parts of the mass 2, (present mainly in the gelatin component) has evaporated during storage and transportation so that the tampon has shriveled and become unmarketable. I have found, also, that even if the mass 2, be thoroughly dried before insertion in the tampon in the form of a suppository, the filling 6, absorbs moisture from the atmosphere and by capillary action transmits it to the medicated material, thus producing progressive deterioration thereof, through absorption by the wool of the medication, if the tampon is not immediately used. This action is further aggravated by the tendency of the fibrous filling 6, to absorb the more volatile and important ingredients of the medicament, and by their tendency to evaporate even if the mass is kept dry, when the atmosphere is allowed access to the mass through the porous filling 6. Furthermore, for certain diseases the combined action of different medicaments is required which materials, if placed in the tampon in contact one with the other, may set up chemical actions which are mutually destructive.

My present invention overcomes these difficulties in the following manner: I separate the medicated material 2, from the filling 6, and hermetically seal it from any access and consequent action of the atmosphere by inserting a diaphragm or septum 3, of gelatin or other suitable impervious, but ultimately soluble material, between the medicated mass 2, and the wool filling 6. This diaphragm may be molded separately as shown in Fig. 2 (marked 8), and pressed into the capsule or casing 1, so as to make a tight joint therewith, or it may be formed *in situ* by pouring in melted gelatin or other material such as agar-agar, as indicated in Fig. 1 (marked 3). I prefer the second method described, as producing a tighter joint.

In cases where different medicaments are employed which may have a deterious effect

one upon the other if left in contact for a period of time prior to use, the two may be separated by the diaphragm 3. Thus in case the combined action of an iodine compound and silver nitrate is desired, when the tampon is in use, these materials which often exert destructive reactions one upon the other if left in contact prior to use, are thus separated. In such case the iodine is placed in the mass 2, and the silver nitrate (usually mixed with boric acid) is placed at 4, on the outside of diaphragm 3. The gelatin mass will dissolve in from 12 to 24 hours. The action of the iodine or other medicament is first local and then general, being gradually absorbed into the patient's system. The silver nitrate is then released and comes into action, being thoroughly distributed over the adjacent membranes by the massage action of the fibrous mass behind it, coagulating the secretions by its action on the mucous, and sub-mucous tissues.

If desired, the mass 4, may also be sealed in and separated from the wool 6, by a second diaphragm 5. This, however, is not always necessary, as the silver nitrate is less volatile and subject to degeneration by atmospheric exposure. Also the diaphragm 3, may be dispensed with and that marked 5, used alone.

When the tampon is thus constructed the various constituents are protected completely from evaporation, and from action of the atmosphere, as well as from absorption by the wool and from mutually destructive reactions, and retain their pristine strength for an indefinite period until the placing of the tampon in the cavity to be treated. Thereupon the moisture and heat of the parts in contact with the tampon dissolve the shell 1, and ultimately the diaphragms 3 and 5 or 8, as well, and the full therapeutic action of all the medicaments comes into play.

Various modifications of the preferred construction above described could be made without taking the modified structure outside the scope of my invention so long as the principle of operation and general arrange-

ment of parts shown are preserved in substance.

When the medicated mass 2, is primarily introduced into the capsule in fluid form, it should, of course, be allowed to solidify before the formation of diaphragm 3, by pouring in fluid gelatin or other material, is attempted. Preferably the capsule and the medicated material 2, poured therein should be allowed to stand for some days so that said mass may thoroughly dry out before the diaphragm 3, is placed over it. The dryer the medicated material before it is sealed in, the better it retains its normal strength and condition during storage and transportation and the less the deformation of the tampon as a whole with age.

Having described my invention, I claim:

1. A medicated tampon for treatment of the cavities of a patient's body comprising, in combination, a shell of soluble material closed at one end, a body of soluble material impregnated with medicament located in the closed end of the shell, a layer of less soluble material capable of therapeutic action next to said first mentioned mass, and a body of fibrous material filling the open end of the shell, whereby in use the shell is first dissolved by the secretions of the adjacent membranes and the soluble mass held in contact therewith until dissolved by said secretions, the contained medicament being absorbed into the patient's system, and thereafter the less soluble material is distributed over said membranes by the massage action of the fibrous material.

2. A medicated tampon for treatment of the cavities of a patient's body comprising, in combination, a gelatin shell closed at one end, a body of gelatin and iodine located in the closed end of said shell, a layer of silver nitrate next to said gelatin body, and a mass of fibrous material filling the open end of the shell.

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Witnesses:

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