E. M. POND.

MEDICATED TAMPON.

APPLICATION FILED NOV. 17, 1916.

1,234,383. Patented July 24, 1917.

Fig. 1.

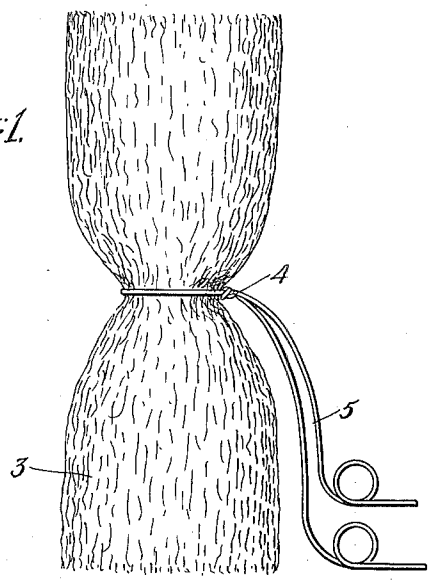


Fig. 2.

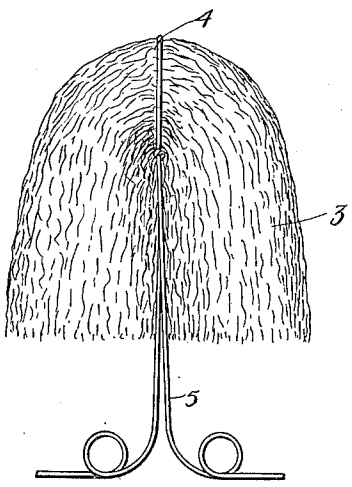


Fig. 3.

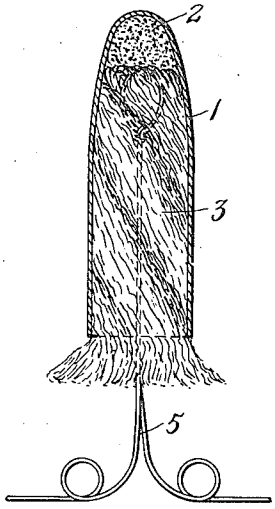
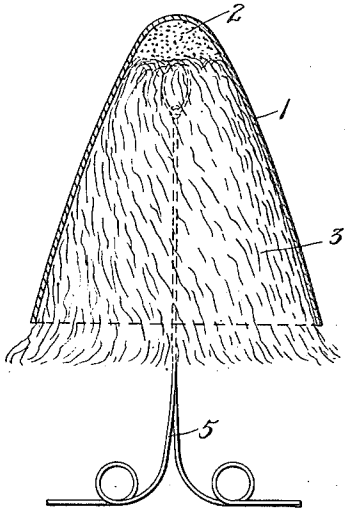


Fig. 4.



Inventor

Edmund M. Pond.

By his Attorney

A. Van Rensselaer

UNITED STATES PATENT OFFICE.

EDMUND MORSE POND, OF RUTLAND, VERMONT.

MEDICATED TAMPON.

1,234,383. Specification of Letters Patent. Patented July 24, 1917.

Application filed November 17, 1916. Serial No. 131,922.

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 designed to contain or support medicated material for use in the vaginal or other cavities of the human body, and comprises certain improvements therein which render the same more effective in action and less liable to expulsion by action of gravity or muscular contractions of the parts.

Heretofore tampons of this general character have been in use in which medicated material has been placed in or on shells of soluble material, such as gelatin, having a filling of fibrous material expected to expand and fill the cavity of the body, when the casing dissolved, and thereupon to maintain the medicated material and the dissolved gelatin in the cavity. In such prior structures, however, the fibers of the packing have been fastened together at the end of the casing which becomes the lower or outer end of the tampon, when in position in the cavity, with the result that the free ends of the fibers become saturated with and entangled by the medicated material at the other end of the tampon and were thereby prevented from expanding as freely as is desirable when the casing splits or dissolves by action of moisture soon after insertion. Moreover, if the fibers did expand at that end they thereby formed a wedge with the point (the point at which they were fastened together) downward or toward the mouth of the cavity which easily slid down or out of the cavity driving the dissolved gelatin of the shell before it.

My invention avoids these difficulties by fastening the fibers of the packing together at the inner or medicated end of the tampon and leaving them free to expand at the outer end, and by certain other details of improvement in form and operation apparent on further consideration.

The best form and arrangement at present known to me embodying my invention is illustrated in the accompanying sheet of drawings in which—

Figure 1 shows the fibrous material as initially assembled preparatory to forming the packing.

Fig. 2 shows the same as bent over about the point of fastening together of fibers, preparatory to insertion in the shell to form the tampon.

Fig. 3 is a side view of the completed tampon, and

Fig. 4 illustrates diagrammatically the action of the tampon in use as the casing begins to soften, or split, and the packing to expand into its final form in the cavity.

Throughout the drawings like reference figures indicate like parts. 1 is the casing of gelatin or similar substance which will soften and ultimately dissolve under the action of heat and moisture from the human body. This shell is preferably circular in cross section, substantially of cylindrical form, but preferably slightly tapered. At the smaller end of shell 1 is located usually a mass of medicated material 2, designed to produce some predetermined effect on the membranes of the body in contact with which it is to be held. 3, is a bundle of elastic fibers such as wool which are arranged parallel to one another and tied together midway of their length at 4, as shown in Fig. 1. The bundle so formed is then bent around the point 4 forming a bight at that point as indicated in Fig. 2. The fastening cord 5, may be extended as shown to form a means for pulling the bundle of fibers out of the cavity after they have done their work therein.

The body of fibers shown in Fig. 2 is then inserted, folded end first, into the larger end of shell 1, to form a packing or filling therefor as shown in Fig. 3. Preferably the fibers are twisted about the axis of the bundle to facilitate handling and their insertion into shell 1. This twist is indicated by helical lines in Fig. 3.

In operation, the heat and moisture of the patient's body soon soften the shell 1 so that it stretches, splits or dissolves at the lower or outer and larger end under the expansive force of the free end of the bundle of fibers, and said fibers spread out as shown in Fig. 4. The free ends of the fibers then seat themselves against the walls of the cavity and any expulsive action of gravity or muscular contraction exerted on the solid end or inner or upper part of the body of packing only tends to further expand or flare

outwardly the other free ends of fiber and increase this gripping action against the cavity walls. The cone thus formed with its apex inward of the cavity tends to crowd the dissolved substance of the shell 1 inward and to retain it in contact with the membranes to be treated. The action on the medicated material 2, is the same, and both are effectively trapped and held against the parts to be treated until a pull on cord 5, removes the whole bundle 3, of fibers.

The advantages of my invention comprise its cheapness and facility of manufacture, and efficiency of action. The shell 1 can be easily molded in one piece, closed at the smaller end if desired. The medicated material is then inserted in the open end and tamped into position at the closed, smaller end. The twisted bundle of fibers is then forced into the shell by a screwing action, and the tampon is completed without any excessive radial compression of the packing so that the latter has all its native elasticity remaining ready for prompt and full action when released by the softening of the shell. When so released the packing promptly flares out at its lower end (the free ends of the fibers being unaffected by any cementing action of the medicated material which has been kept away from them) and forms the best character of holding contact with the cavity walls. Outward pressure of any kind only increases the mushrooming action and the consequent frictional contact between fiber ends and cavity walls. The tightly packed fibers of the bight, or solid head of the bundle tend to form a liquid-proof plug, which holds the dissolved casing and the dissolved medicated material in the cavity so that the full medical effect may be realized.

Various changes could be made in the details of construction herein described without entirely modifying the principles of operation set forth, and such changed constructions would remain within the scope of the invention herein claimed so long as substantially the same novel mode of action and improved result are obtained.

Having described my invention, I claim:

1. A tampon for insertion in the cavities of the human body having in combination an outer shell of soluble material, a body of medicated material localized at one end of the shell and a body of fibrous material filling the remainder of said shell, the fibers of which are fastened together at a point adjacent to the medicated material but are left free to expand at the other end of the shell.

2. A tampon for insertion in the cavities of the human body having in combination an outer shell of soluble material, a body of medicated material localized at one end of the shell and a body of fibrous material filling the remainder of said shell, the fibers of which are left free to expand at the end of the shell farthest from the medicated material.

3. A tampon for insertion in the cavities of the human body comprising in combination a shell of soluble material and substantially cylindrical form and a filling of fibrous material composed of a bundle of fibers each approximately double the length of the shell tied together midway of their length and doubled over at that point for insertion in the shell so that when the tampon is in operative position in the cavity, the bight of the fibers shall be located at the inner end of the tampon and the free ends of the fibers shall be located near the outer end thereof.

4. A tampon for insertion in the cavities of the human body comprising in combination a shell of soluble material and substantially cylindrical form and a filling of fibrous material composed of a bundle of fibers each approximately double the length of the shell tied together midway of their length and doubled over at that point for insertion in the shell so that when the tampon is in operative position in the cavity, the bight of the fibers shall be located at the inner end of the tampon and the free ends of the fibers shall be located near the outer end thereof, said folded bundle of fibers being twisted about the axis of the shell.

5. A tampon for medical use comprising in combination a bundle of fibers of substantially cylindrical form, the fibers extending lengthwise of the bundle, means for fastening the fibers together at one end of the bundle but leaving them free to expand radially at the other end, and a body of medicated material at that end of the bundle at which the fibers are fastened together.

6. A medicated tampon comprising in combination a one-piece shell closed at one end and slightly flaring toward its other open end, a body of medicated material located in the smaller, closed end of the shell, and a body of fibrous material filling the rest of the shell, said fibers being fastened together near the smaller end of the tampon but left free to expand at and near the larger end.

EDMUND MORSE POND.

Witnesses:
JAMES A. MERRILL,
M. CHARLOTTE LESSOR.