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PATENT



SPECIFICATION

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COMPLETE SPECIFICATION.

Improvements in or pertaining to Medicated Tampons.

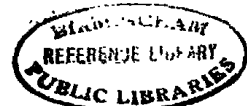
I, EDMUND MORSE POND, of 29, South Main Street, Rutland, in the County of Rutland, State of Vermont, United States of America, Physician and Surgeon, do hereby declare the nature of this invention and in what manner the same is to be performed, to be particularly described and ascertained in and by the following statement:—

My invention relates to tampons designed to contain or support medicated material for use in vaginal or other cavities of the human body, and comprises certain improvements therein which render them more effective in action and less liable to expulsion by the 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 gelatine, 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 gelatine in the cavity. In such prior structures, however, the fibres of the packing have been fastened together at the end of the casing which became the lower or outer end of the tampon when in position in the cavity, with the result that the free ends of the fibres became saturated with and entangled by the medicated material at the other end of the tampon and were thereby prevented from expanding as freely as desirable when the casing split or dissolved owing to the action of moisture soon after its insertion. Moreover, if the fibres did expand at that end they thereby formed a wedge which had its point (the point at which they were fastened together) downward or toward the mouth of the cavity and which consequently easily slid down or out of the cavity and so drove the dissolved gelatine of the shell before it.

A tampon according to this invention is intended to avoid these disadvantages and comprises a bundle of fibres extending lengthwise thereof, means for fastening the fibres together at one end of the bundle but leaving them free at the other end to allow the bundle to expand thereat, the former end being adapted to be the inner end of the tampon when in position in the cavity, and medicated material located at that end of the bundle at which the fibres are fastened together, means being provided adapted to hold the bundle of fibres together and the medicated material in place until inserted into the cavity of the body but to be soon caused by the action of the adjacent parts thereof to permit the bundle to expand at the free ends of the fibres and also to permit the medicated material to act upon the adjacent parts of the patient's body.

[Price 6d.]



The fibres are preferably of approximately double the length of the bundle and are tied together and doubled over midway of their length, the folded bundle of fibres being advantageously twisted about its longitudinal axis.

An example of a tampon constructed according to my invention is illustrated by the accompanying drawings, in which—

Fig. 1 shows the fibrous material as initially assembled preparatorily to forming the packing;

Fig. 2 shows the same as bent over about the point of fastening together of the fibres preparatorily to insertion into 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.

1 is a casing of gelatine 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, and substantially of cylindrical form, though possibly slightly tapered. 2 is a mass of medicated material located at the closed end of the shell 1 and 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 fibres 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 to form 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 fibres out of the cavity after they have done their work therein.

The body of fibres shown in Fig. 2 is then inserted, with its folded end first, into the shell 1 through the open end thereof, to form a packing or filling therefor as shown in Fig. 3. Preferably the fibres are twisted about the axis of the bundle to facilitate handling and their insertion into the shell 1. The twist produced 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 end under the expansive force of the free end of the bundle of fibres, and the said fibres spread out as shown in Fig. 4. The free ends of the fibres 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 expand or flare outwardly still further the free ends of the fibres and to 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 the cord 5 removes the whole fibrous bundle 3.

The advantages of such a tampon comprise its cheapness and facility of manufacture, and its efficiency of action. The shell 1 can, if desired, be easily moulded in one piece closed at one end. The medicated material is then inserted into the open end and tamped into position at the closed end. The twisted bundle of fibres 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 or outer end (the free ends of the fibres being unaffected by any cementing action of the medicated material, which has been kept away from them) and forms an excellent holding contact with the cavity walls. Outward pressure of any kind only increases the mushrooming action and the consequent frictional contact between the fibre ends and the cavity walls. The tightly packed fibres 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 for the purposes of securing cleanliness and the realization of the full medical effect.

5 Various changes could be made in the details of construction herein described without departing from the nature or scope of the invention, the use of which is not confined to cases in which soluble shells are employed, a soluble shell being only one example of means adapted to hold the bundle of fibres together and the medicated material in position until inserted into the cavity of the body but to be soon caused by the action of the adjacent parts of the patient's body to permit the bundle to expand at the free ends of the fibres and thus 10 produce the flaring hereinbefore indicated and also to permit the medicated material to act upon the adjacent parts of the patient's body; other examples of such means are (a) a disintegrating shell, as one of soft paper, adapted to rupture when damped and subjected to the pressure in the cavity; (b) a confining ring of soluble material, the packing material being impregnated with the medication or being contained in a pocket formed therein, and (c) a mass 15 of soluble material cementing the fibres together, the medication being in the cement or in a pocket formed by the bundle of fibres.

Having now particularly described and ascertained the nature of my said invention and in what manner the same is to be performed, I declare that 20 what I claim is:—

1. A medicated tampon comprising a bundle of fibres extending lengthwise thereof, means for fastening the fibres together at one of the bundle but leaving them free at the other end, to allow the bundle to expand thereat, the former end being adapted to be the inner end of the tampon when in position 25 in the cavity, and medicated material located at that end of the bundle at which the fibres are fastened together, means being provided adapted to hold the bundle of fibres together and the medicated material in place until inserted into the cavity of the body but to be soon caused by the action of the adjacent parts thereof to permit the bundle to expand at the free ends 30 of the fibres and also to permit the medicated material to act upon the adjacent parts of the patient's body.

2. A tampon according to the preceding claiming clause in which the fibres are of approximately double the length of the bundle, and are tied together and doubled over midway of their length, the folded bundle of fibres being 35 preferably twisted about its longitudinal axis.

3. An improved medicated tampon constructed and adapted to operate substantially as hereinbefore described with reference to and as shown in the accompanying drawings.

Dated this 4th day of February, 1918.

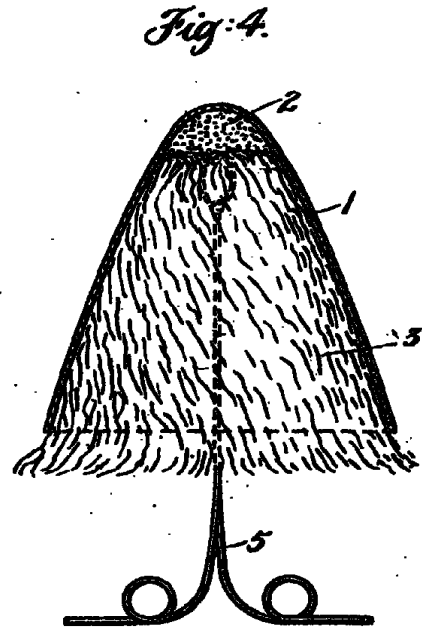
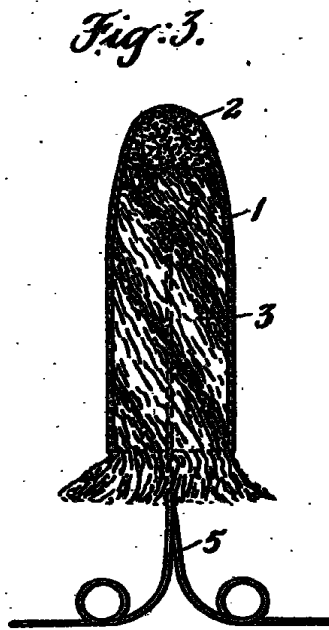
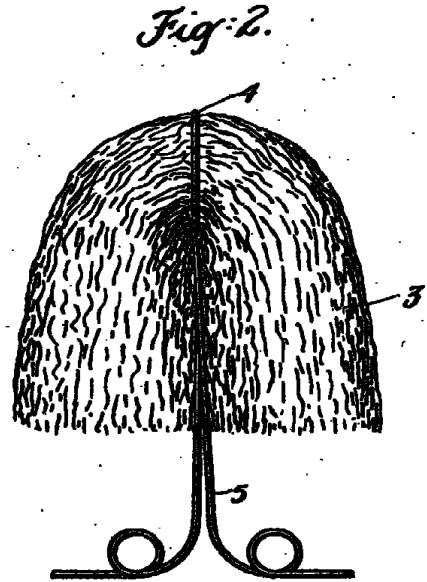
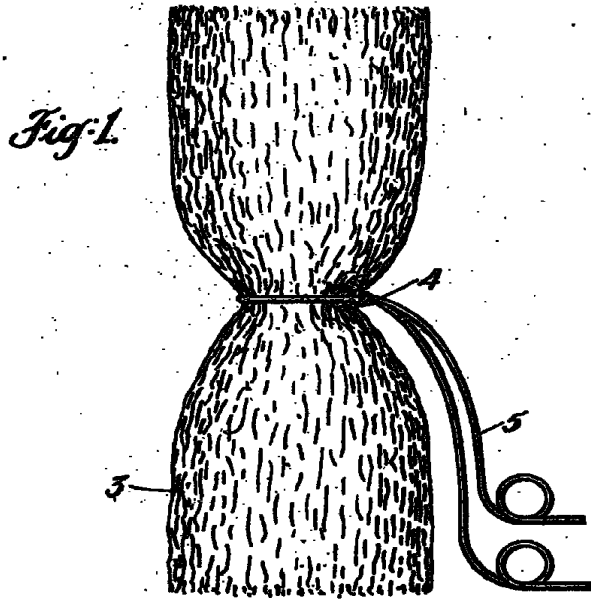
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For the Applicant,

J. A. LAW,

29, Southampton Buildings, London, W.C. 2.

[This Drawing is a reproduction of the Original on a reduced scale.]



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