

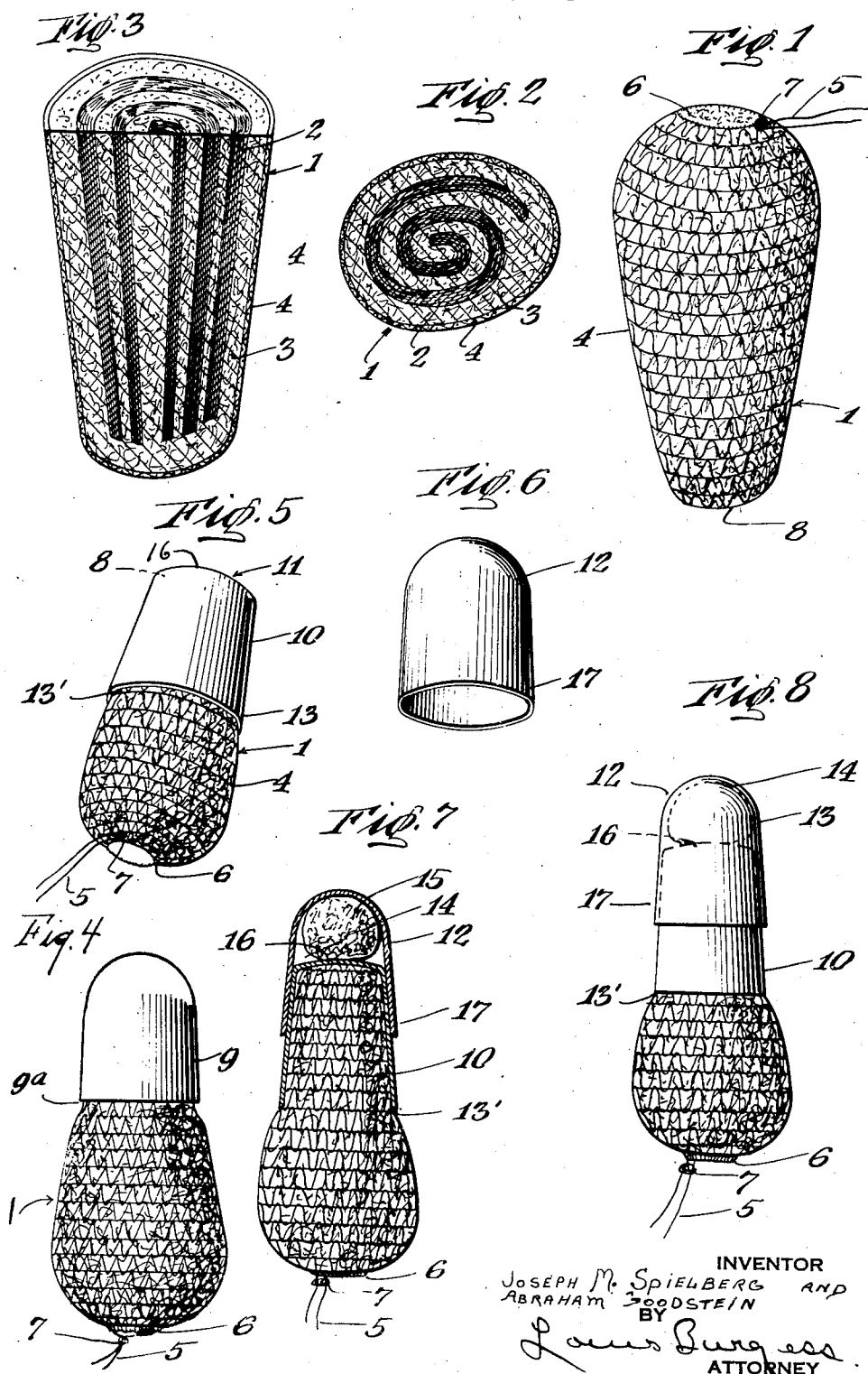
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MEDICAL TAMPON

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MEDICAL TAMPON

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This invention relates to tampons for use in stopping wounds or for use in the control of hemorrhages in physiological canals, or for use in the application of medicament to the interior of the body passages. The invention will be fully understood from the following description read in conjunction with the drawing, in which,

Fig. 1 is a side view of a preferred embodiment of our invention.

Fig. 2 is a cross section through a preferred embodiment of our invention.

Fig. 3 is a segmental view showing in part a cross-section and in part a longitudinal section through a preferred embodiment of our invention.

Fig. 4 is a side view of a modification of the construction shown in Figs. 1 to 3.

Fig. 5 is a side view of an alternative form of our invention.

Fig. 6 is a perspective view of a part to be used with the construction shown in Fig. 5.

Fig. 7 is a composite side view with parts in section through a further alternative form of our invention, and

Fig. 8 is a side view of the construction shown in Fig. 7.

In one preferred embodiment, the tampon 1 which we have invented comprises a longitudinal stiffener 2 of bibulous paper. While the stiffener is preferably parallel to one diameter of the tampon, the tampon itself is preferably of greater length than breadth and the stiffener is parallel to the length of the tampon. The stiffener facilitates the positioning of the tampon, cooperates in the absorption of fluids by the tampon in use, and is so softened by the fluids absorbed that after use the tampon will bend to the form of the body canals or passages, thereby permitting the easy removal of the same. While, in general, any form of bibulous paper may be employed for the stiffener 2, we have found a substantially unsized laminated paper to be distinctly preferable. The paper may be composed of either cotton or wood fibres or a mixture of the two. The paper is fabricated by laying down a relatively thin layer of substantially unsized fibres on a paper making machine and combining a plurality of

these layers to form an absorbent material of exceptional value. One type of this material is ordinarily referred to as cellulose tissue. While the material just referred to possesses exceptional absorptive capacity, it is not of itself eminently satisfactory for use in forming the matrix of a tampon, inasmuch as it tends to shrink or diminish in bulk when wetted. In forming the matrix or absorptive center of our tampons, we therefore find it preferable to combine the unsized laminated paper with an auxiliary material which, although it may possess somewhat lesser absorptive capacity, simultaneously manifests a lesser tendency to shrink when wetted; thereby imparting elasticity to the matrix of the tampon while simultaneously insuring that the tampon as a whole will retain substantially its original bulk or size. The auxiliary material may, for example, be sponge rubber or a mat of unwoven fibres, such as cotton. We have found wool to be eminently satisfactory for this purpose. In this broad aspect of the invention the orientation of the bibulous paper is not essential and the paper need not necessarily be longitudinally arranged so as to insure the stiffening effect hereinbefore described. Preferably, however, the paper and the auxiliary material are arranged in alternate layers. This may, for example, be accomplished by forming them in alternating concentric rings, but in the preferred form the paper has a spiral cross-section with the unwoven fibres of wool laying between the folds of the paper spiral and continued to at least partially and preferably to wholly surround the same. The wool mat has been indicated by numeral 3 in Figs. 2 and 3.

We also find it preferable, in combination with a matrix of the type described, to surround the said matrix with a porous envelope of insoluble material which serves to hold the same together and facilitate the convenient removal of the same as a unit after use. This envelope may, for example, be a sack of textile material. The withdrawal string 5 is preferably connected to the sack or envelope 4. In the preferred form, the sack may be slipped over the assembled stiff-

ener 2 and mat 3, and the withdrawal string 5 is threaded through the channel 6 formed in the edge of the sack 4 so that the withdrawal string may be operated as a purse string by means of which the sack 4 may be closed snugly about the matrix, whereupon the string 5 is secured by forming the knot 7.

We find it of further advantage to surround at least the leading surface of the sack 4 with a smooth exterior coating of material disintegrable under body conditions cf., soluble in body fluids, such as gelatin. This coating is preferably in the form of a thimble 9 which may be forced over the leading extremity 8 of the tampon. The skirt 9^a (Fig. 4) of the thimble is preferably shorter than the tampon. The effect of this construction is that while the thimble facilitates the introduction of the tampon, enough of the surface of the sack 4 is exposed to hold the same in place when fully introduced.

In a further improvement of our invention, the leading extremity 8 of the tampon (Fig. 5) is surrounded by the thimble 10 which is of material disintegrable under body conditions cf., soluble in body fluids. The thimble 10 is preferably made smaller than the diameter of the tampon when fully expanded, so that the thimble holds the tampon in compression and is secured thereto. The thimble 10 carries a second thimble 12 which extends in the same direction as the thimble 10 and telescopically overlays the thimble 10, thereby forming the space or cavity 14 within which the medicament 15 may be carried. The medicament may, of course, be either solid, semi-solid or fluid and if solid may be in powder form. In this case it will be seen that the head 16 of the thimble 10 forms the floor of the space 14. The outer thimble 12 is also composed of material soluble in body fluids. The skirt 17 of the outer thimble 12 is preferably of such a length that when the two are assembled it does not extend beyond the lower edge 13' of the thimble 10. As a result of this construction, it will be seen that only the thimble 10 is in contact with and is secured to the tampon 1, whereas, the thimble 12 which is not secured thereto may be manually detached from the thimble 10. This is particularly desirable, inasmuch as the tampons are to be supplied to pharmacists, etc., for general distributions, whereas the type of medicament required is ordinarily specific to the particular case and by virtue of the construction disclosed the pharmacist is enabled to open the capsules and to introduce any prescribed medicament.

The foregoing specific embodiments have been recited by way of illustration and not of limitation. The invention is susceptible of embodiment in a variety of forms, and it is therefore our intention that the invention

be limited only by the appended claims wherein we have endeavored to claim broadly all inherent novelty.

We claim:

1. A tampon, comprising an absorbent matrix, a first thimble composed of material disintegrable under body conditions at least in part surrounding the said matrix and holding the same in compression, a second thimble composed of material disintegrable under body conditions facing in the same direction as the first said thimble, telescopically overlaying the said first thimble and manually detachable therefrom, the space between said first and second thimbles forming a capsule for the retention of medicament, the head of the said first thimble forming the floor of the said capsule.

2. A tampon according to claim 1, in which said first and second thimbles are composed of material soluble in body fluids.

3. A tampon, comprising an absorbent matrix, a porous envelope of insoluble material enclosing said matrix, and a thimble of material disintegrable under body conditions at least in part enclosing said envelope.

4. A tampon according to claim 3, in which the said thimble is composed of material soluble in body fluids.

5. A tampon, comprising an absorbent matrix, said matrix being composed in part of bibulous paper and in part of a resilient permeable mat of unwoven wool fibers associated with said bibulous paper, said tampon comprising in addition a porous envelope of insoluble material enclosing the said matrix, and binding together the said bibulous paper and wool.

6. A tampon, comprising an absorbent matrix of greater length than breadth, said matrix comprising a longitudinal stiffener of bibulous paper parallel to the length of said matrix, and a resilient permeable mat of unwoven wool fibers associated with said bibulous paper, said tampon comprising in addition a porous envelope of insoluble material enclosing said matrix, and binding together the said bibulous paper and mat of unwoven fibers.

7. A tampon, comprising an absorbent matrix of greater length than breadth, said matrix comprising a longitudinal stiffener of bibulous paper parallel to the length of said matrix, and a resilient permeable mat of unwoven wool fibers associated with said bibulous paper, said mat and stiffener being arranged in alternating layers, said tampon comprising in addition a porous envelope of insoluble material enclosing said matrix, and binding together said bibulous paper and mat of unwoven fibers.

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