Nov. 7, 1950 F. P. PARISH 2,529,183

UNEQUAL LENGTH FOLD TAMPON

Filed July 26, 1949

FIG. 1

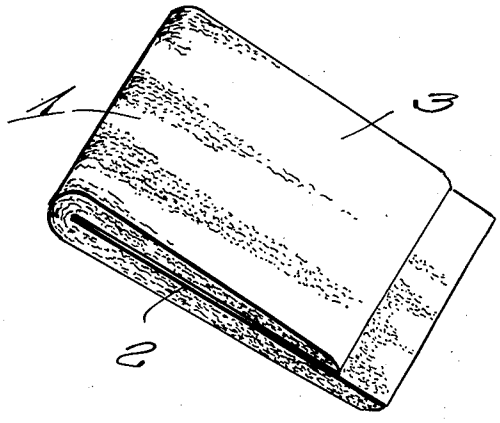
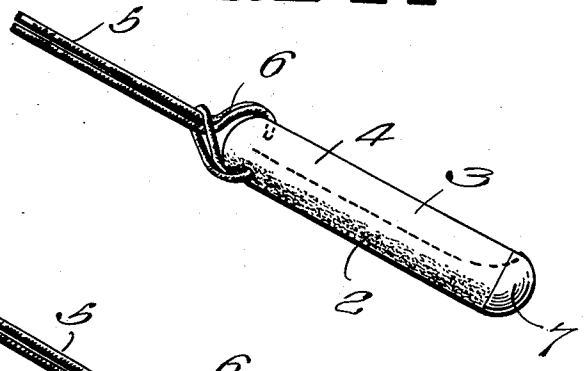


FIG. 2



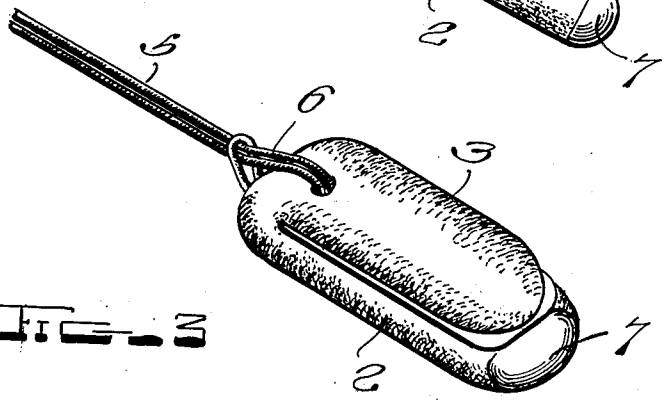


FIG. 3

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Patented Nov. 7, 1950

2,529,183

UNITED STATES PATENT OFFICE

2,529,183

UNEQUAL LENGTH FOLD TAMPON

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Application July 26, 1949, Serial No. 106,844

8 Claims. (Cl. 128—285)

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This invention relates to new and useful improvements in tampons, and, more particularly, to a tampon formed of a strip of absorbent material folded and compressed laterally to cylindrical form with the insertion end rounded and coated with a substance that is slippery when wet and readily dissolves upon contact with the body fluids.

It is well known that a certain time lag occurs between the time of contact of the tampon with the body fluids upon insertion and the entire dissolution of the end coating that has a tendency to retard or restrict immediate or instantaneous absorption of body fluids and expansion of the entire effective length of the tampon.

It is the object of this invention to provide a tampon with a novel construction which will afford practically instantaneous functioning and absorption of fluids after insertion of the tampon in a body cavity.

Another object of this invention is to provide a self-sustaining end coated cylindrical tampon formed of folded and compressed absorbent material that is immediately expansible throughout a substantial part of its effective length to obtain maximum absorption of body fluids upon insertion.

It is also an object of the invention to provide a unique fold in the absorbent strip from which the tampon is formed which eliminates any appreciable restrictive effect on the quick absorptive qualities of the tampon in use due to the entrance end applied coating of the article in the further steps of producing a cylindrical self-sustaining compressed end coated tampon.

These and other objects of the present invention will appear as the following description thereof proceeds, and in order to more clearly understand the invention, reference may be had to the accompanying drawing in which an embodiment of the invention is shown.

In the drawing:

Figure 1 is a perspective view of the folded strip from which the tampon is formed;

Figure 2 is a perspective view of the novel tampon embodying the present invention which is side edge compressed to cylindrical form as a finished article;

Figure 3 is a diagrammatic view of the tampon as expanded upon contact with body fluids.

In Figure 1, there is illustrated a strip of absorbent material from which the tampon is formed. This strip is folded longitudinally upon itself at a transverse line 1 and is provided with a unique fold. This fold is off center medially of

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the strip to form a longer length or member 2 and a shorter length or member 3. When thus folded, the strip is side edge compressed laterally to a cylindrical form 4 shown in Figure 2. By utilizing heat and pressure the tampon is self-sustaining in this form. A withdrawal string 5 is end loop connected at 6 to the rear end of the tampon 4 below the original fold line and at a 45° angle with respect thereto.

In the formation of the cylindrical tampon 4, member 2 is made longer than member 3 and will thus extend beyond the end of the latter to form an insert or entrance tip of the tampon which is coated with a suitable substance to provide a coating 7 that facilitates entrance of the tampon in a body cavity. This substance is slippery when wet and readily dissolves upon contact with body fluids. It is preferred to use a substance such as described in U. S. Patents Nos. 2,340,311 and 2,440,141. Due to the fact that more material is in the longer member 2, the insert tip portion thereof is rounded off with the other portions and conforms to the contour of the formed body. (See dotted line of Figure 2.) However, the coating substance 7 substantially only adheres to this tip and has little or no contact with the end of the shorter folded member 3 of the strip from which the tampon is made. It has been found that the proportions of the shorter member to the longer member in the folded and uncompressed state are important for best results. Thus, referring to Fig. 1 for convenience, the shorter member is illustrated in a preferred proportion of about 85% of the longer member. The proportion may vary from about 65% to about 95%, but is preferably about 80% to about 90%. The lower the percentage, the more the longer member must be end compressed to make it the proper length and the higher the percentage the greater is the tendency to get some of the end fibers of the shorter member coated.

The material from which these tampons are formed is highly absorptive and expands rapidly upon contact with the body fluids. The rate of absorption depends upon how free the compressed body of the tampon may be. Any restriction to expansion retards the absorptive qualities of the tampon. While the coating 7 on the tip of the tampon dissolves upon contact with the body fluids, tests indicate that there is generally a certain time lag before the coating is entirely dispersed. When an equal length fold was employed as heretofore and when both ends of the folded strip came together, their tips were coated as

the coating substance adheres and penetrates the end fibers of the tampon to some slight extent. When the tips of the two ends are together and are coated as a unit, slower dissolution of the coating tended to restrict the expansion and consequently, the rate of absorption of body fluids along the length of the body of the tampon. This is due to the fact that the body is formed of folded strips of equal length which are compressed and united together as a unit and are sealed at the tips, thereby preventing the release of the equal folds and preventing the quick and full absorption of the body fluids.

In Figure 3 is diagrammatically illustrated the expansion of the compressed tampon upon contact with body fluids. As the shorter member **3** has no or very little coating tending to temporarily bind it to the coated tip of the longer member **2**, there is practically no longitudinal binding restriction along the length of the body of the compressed tampon and consequently it can expand. The unrestricted free expansion of practically the entire body beneficially affects absorption. The rate of dissolution of the coated substance on the tip of the longer member **2** is slight and practically immaterial. Such freedom from longitudinal binding restriction permits immediate and practically unrestricted free expansion of the body and the absorption of body fluids upon insertion of the tampon into a body cavity irrespective of the somewhat slower dispersal of the coating **7** on the tip of the longer member **2**.

Although the improved unequal length fold tampon has been illustrated and described herein to a detailed extent, it will be understood that the invention is not to be regarded as limited correspondingly in scope, but includes all variations coming within the terms of the appended claims.

I claim:

1. A tampon formed of a strip of absorbent material folded in unequal lengths and compressed to cylindrical form, and a soluble coating applied to the tip of the longer length of the fold.

2. A tampon formed of a plurality of folds of absorbent material of unequal lengths and compressed to cylindrical form, and a soluble coating applied to the tip of the longer length.

3. A tampon formed of a single strip of absorbent material folded lengthwise in portions of unequal length and compressed to cylindrical form, and a soluble coating applied to the tip of the longer length of the fold.

4. A tampon formed of a single strip of absorbent material folded lengthwise in portions of unequal length and compressed to cylindrical form substantially throughout its length, the tip of the longer length being rounded to form an insert end for the tampon, and a soluble coating applied to said tip.

5. A tampon formed of a single strip of absorbent material folded lengthwise across a transverse fold line into portions of unequal length and compressed to cylindrical form substantially throughout its length, a withdrawal string looped through the compressed material below the original fold line and at a 45° angle with respect to the same, the tip of the longer length being rounded to form an insert end for the tampon, and a coating on said tip having slippery qualities when wet and dispersible when in contact with body fluids.

6. A tampon formed of a single strip of absorbent material folded lengthwise across a transverse fold line and compressed to cylindrical form substantially throughout its length, the folded lengths of said strip comprising a shorter member and a longer member, the portion of the length of the longer member extending beyond the shorter member being rounded to form an insert end for the tampon, and a soluble coating applied to said rounded end.

7. A tampon formed of a single strip of absorbent material folded lengthwise across a transverse fold line and compressed to cylindrical form substantially throughout its length, the folded lengths of said strip comprising a shorter member and a longer member, the proportion of the length of the shorter member with respect to the longer member being from about 65% to 95%, and a soluble coating applied to the tip of the longer member that extends beyond the shorter member.

8. A tampon formed of a single strip of absorbent material folded lengthwise across a transverse fold line and compressed to cylindrical form substantially throughout its length, the folded lengths of said strip comprising a shorter member and a longer member, the proportion of the length of the shorter member with respect to the longer member being from 80% to 90%, the portion of the length of the longer member extending beyond the shorter member being rounded to form an insert end for the tampon, and a soluble coating applied to said rounded end.

FRANK P. PARISH.

No references cited.