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E. ACKERMAN
SUPPOSITORY

2,072,438

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FIG.1.

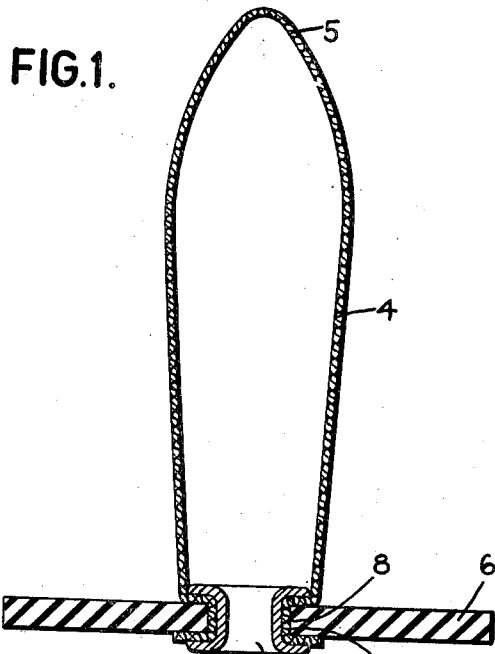


FIG.3.

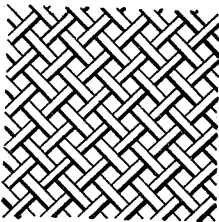
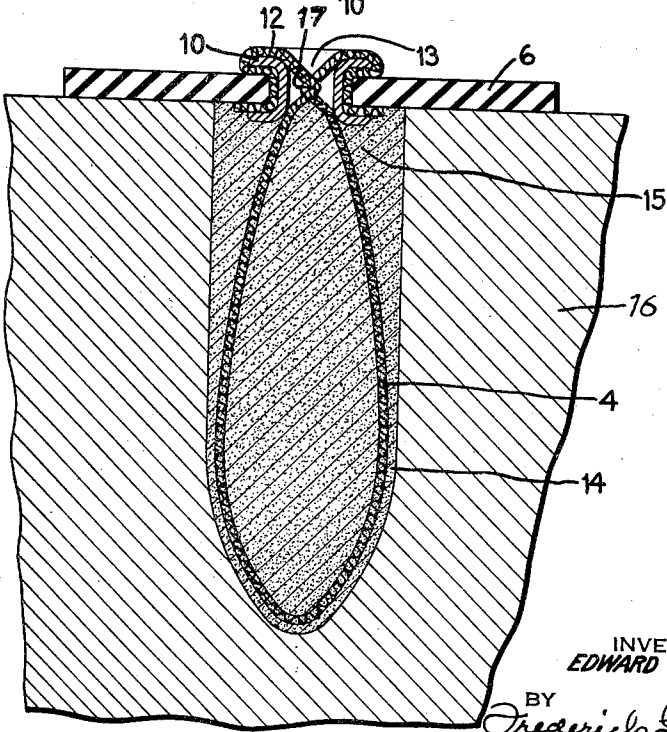


FIG.2.



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8 Claims. (Cl. 128—271)

This invention relates to suppositories particularly adapted for rectal use, as in the treatment of hemorrhoids, or medication by rectum.

When a suppository is inserted in the rectum, although it may be initially positioned properly in contact with the hemorrhoids, the contraction of the sphincter muscle speedily forces it upwardly past the hemorrhoids and into the colon where it becomes embedded in fecal matter and even though it continues to melt, the medicament thereof is entrapped by and assimilated with the fecal matter and cannot come in contact with the parts intended to be treated, namely, the walls of the anus where an hemorrhoidal condition may exist. X-ray photographs of suppositories, originally properly positioned in proximity to the hemorrhoids, show that, after fifteen seconds, they have entirely passed from the anus, where they are intended to remain, into the colon.

It has heretofore been proposed to provide suppository holders which retain the suppository in the proper position with respect to the part to be treated. In a copending application Serial No. 713,652 filed March 2, 1934, now Patent No. 2,017,334 dated October 15, 1935, there is disclosed and claimed a suppository holder comprising a perforated tubular portion of flexible material into which the suppository is adapted to be disposed. Such suppository holder is provided with a portion overlying the interior of the body to prevent displacement of the holder. Such suppository holder contemplated the replacement of the suppository and the reuse of the suppository holder.

The primary object of the present invention is to provide a suppository having means to retain the same in the proper position with respect to the parts to be treated. To this end, a porous or foraminous tubular or bag-like container united with a positioning member is adapted to have the medicament formed therein and thereabout as a suppository.

Another object of the invention is a method of manufacturing a suppository of the character described. Accordingly, a foraminous bag-like member of soft flexible material is united with a disc-like positioning member of flexible material, as by an eyelet or the like, preferably, although not necessarily, protected or covered by other elements of the combined suppository and holder.

The invention also seeks a combined suppository and holder which shall deliver the medicament, as the suppository melts, to the affected parts. With this end in view, the combined suppository and holder is made of a flexible, foraminous, bag-like member united to a disc of flexible material, such as rubber, by means of an eyelet, the parts being so constructed and arranged

that the bag-like member covers the exposed portions of the eyelet.

It is also an object of the invention to provide a combined suppository and holder which is practical from the standpoint of manufacture and use.

These and other objects of the invention and the means for their attainment will be more apparent from the following detailed description, taken in connection with the accompanying drawing, illustrating a preferred embodiment, and in which:

Figure 1 is a view in vertical section showing that portion of the suppository which does not comprise of medicament, at the first step in its manufacture; and

Figure 2 is a similar view of the combined suppository and holder in completed condition.

Figure 3 is an enlarged view of a fragmentary portion of the material of which the suppository holder of this invention is made showing the foraminous character thereof.

While the invention has been illustrated and will be described as applied to a rectal suppository and holder combined, it will be obvious, as the description proceeds, that it is equally applicable for vaginal suppositories or in any other situation where the medicament is to be held for application in close proximity to the affected parts.

As shown in the drawing, the combined suppository and holder of this invention comprises generally a tubular or bag-like portion 4 closed at its upper tapering end 5 and open at the lower end to permit the insertion of medicament. The outer end is substantially frusto-conical with a rounded point. The material of which the bag-like member 4, 5 is made is preferably a fabric whereof the meshes formed by the woven material define interstices through which the medicament may pass as hereinafter explained. A wall of such material is soft and flexible, as well as foraminous or porous, enabling the suppository holder to conform to the shape and movements of the body so that irritation and discomfort are reduced to a minimum and permitting the contents to exude as the medicament melts at body temperature.

The bag-like member 4 is shown as united with a thicker but preferably flexible disc-like portion 6, preferably a disc of yielding, non-metallic material such as rubber formed with a central aperture 8 through which the open end 9 of the bag-like member 4—5 passes, as shown in Figure 1. Where the term "disc" is used in the claims, it is intended to cover a disc-like member which may be circular or non-circular. This end 9 of the bag-like member is secured in the aperture 8 by an eyelet or the like 10 which clamps the end 9 of the bag-like member to the flexible positioning

wall 6, both on the upper and lower surfaces thereof proximate the aperture 8 and also, of course, to the wall of said aperture 8. The bag-like member 4-5 is then drawn downwardly through the central opening of the eyelet, as shown in Figure 2, so that a portion 12 of the bag-like member overlies the exposed surface of the eyelet 10 whereby no metallic part or edge is exposed.

The bag-like member thus formed has a mouth 13 through which may be introduced medicament in liquid form until the bag-like member 4-5 is filled with liquid and the walls extended into the desired shape. Some of this liquid medicament exudes through the pores or interstices of the woven material and forms a coating 14 on the outer surface thereof. The medicament is then permitted to congeal. In any event it solidifies so that the bag 4 is filled with solidified medicament and is coated on the outside with a layer of such solidified medicament. If desired, the bag-like member 4 may be disposed within a mold 16 so that when the medicament hardens, the desired shape and size of the suppository is obtained. Also material at 15 may be thus permitted to form proximate the eyelet to completely embed and coat the same. If desired, during manufacture, after the medicament has been introduced into the holder and mold, as described, and before solidifying, the disc 6 may be turned about its axis to twist the material of the bag 4 as at 17 to close the mouth thereof and prevent escape of medicament in use.

The flexible positioning member 6 may be of any convenient shape as long as it is substantially flexible and conforms fairly well to the shape of and overlies the adjacent parts of the human body in which it is used to prevent seepage, say from the anus, as the suppository melts. The disc 6 limits the inward movement of the suppository so that it cannot pass into the colon.

It will thus be seen that a combined suppository and holder is provided which is retained by the annular disc 6 in position in close proximity to the affected parts, the length of the suppository and bag-like member being determined by the distance of the affected parts from the mouth of the body opening. Since the bag-like member is thin and flexible and is preferably of soft and pliable material, it readily conforms to movement of the body and causes less irritation than holders heretofore known. As the suppository or medicament melts, the action of the sphincter muscle thereon automatically squeezes the medicament out through the interstices of the wall. The device, being simple and of few parts, is readily and cheaply made so that it may be conveniently thrown away when the medicament has been used.

Various modifications will occur to those skilled in the art in the composition and configuration of the component elements going to make up the combined suppository and holder as a whole, as well as its application to different parts of the body, and no limitation is intended by the phraseology of the foregoing description or illustrations in the accompanying drawing except as indicated by the appended claims.

What is claimed is:

1. A suppository holder comprising a perforate bag-like portion of flexible material, an annular disc through which the mouth of the bag extends, an eyelet securing the mouth of said bag

to the aperture in said disc, said bag being positioned in the aperture in the eyelet.

2. A combined suppository and holder comprising a perforate bag-like portion of flexible material, an annular disc of flexible material through which the mouth of the bag extends, an eyelet securing the mouth of said bag to the aperture of said flexible disc, said bag being positioned in the aperture in the eyelet and medicament within the bag-like portion.

3. A combined suppository and holder comprising a perforate bag-like portion of flexible material, an annular disc of flexible material through which the mouth of the bag extends, an eyelet securing the mouth of said bag to the aperture of said flexible disc, said bag being positioned in the aperture in the eyelet, medicament within the bag-like portion and a coating of said medicament on the exterior surface of the bag-like portion.

4. A combined suppository and holder comprising a thin walled perforated bag-like portion of flexible material, an annular disc of flexible material through which the mouth of the bag extends, an eyelet securing the mouth of said bag to the aperture in said flexible disc, said bag being positioned in the aperture in the eyelet and medicament within the bag-like portion and a coating of said medicament on the exterior surface of the bag-like portion embedding the eyelet.

5. A combined suppository and holder comprising a thin walled perforated bag-like portion of flexible material, an annulus carried with the mouth of the bag-like portion, means uniting the two together and medicament within the bag-like portion, said bag-like portion having a twist therein to close the passage thereunto.

6. The method of making a combined suppository and holder comprising securing the mouth of a bag-like member in register with a hole in a disc, introducing medicament in fluid form into the interior of the bag-like portion through the mouth thereof under sufficient pressure to force medicament through the pores to the outer surface of the bag-like member and solidifying said medicament within the bag-like member and on the exterior surface thereof.

7. A rectal suppository comprising a disc having an aperture, an attenuated bag-like member of flexible, foraminous material secured to said disc, with the opening of the bag in register with the opening in the disc, and a mass of medicament, normally solid but meltable at body temperature and filling said bag member, said solidified medicament having the necessary rigidity for the insertion of the suppository into the rectum, said disc serving to prevent the sphincter muscle from drawing the suppository into the rectum.

8. A rectal suppository comprising a disc having an aperture, an attenuated bag-like member of flexible, foraminous material secured to said disc, with the opening of the bag in register with the opening in the disc, a mass of medicament, normally solid but meltable at body temperature and filling said bag member, said solidified medicament having the necessary rigidity for the insertion of the suppository into the rectum, said disc serving to prevent the sphincter muscle from drawing the suppository into the rectum, and a coating of material, meltable at body temperature, on the outside of said bag-like member.

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