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MEDICAL CAPSULE

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Fig. 1

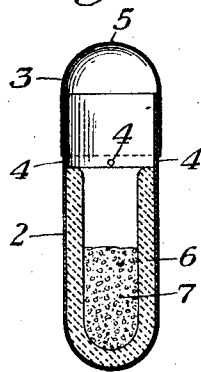
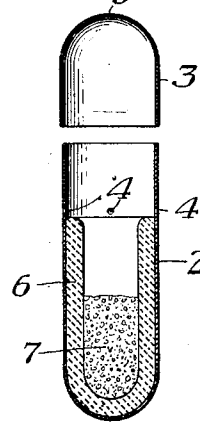


Fig. 2.



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MEDICAL CAPSULE.

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The present invention relates to medical devices, and is for a capsule for use in the treatment of orifices of the body.

Various forms of dilators have been proposed for effecting mechanical dilation of body orifices, more especially rectal dilation, and for various treatments in connection with such dilation. Many of these devices are provided with some heating means or medium, and it has even been proposed that some of the devices apply medicating substances during the treatment.

Such devices, by their very nature, require that a period of time be devoted to their use, and their use is therefore accompanied with considerable inconvenience.

Various forms and kinds of suppositories have also been proposed for the treatment of orifices of the body. Such devices have nearly always been of a kind that absorbed heat from the part of the body being treated to reduce them from a solid form and render them effective.

It is quite generally recognized that heat is a desirable therapeutic aid. Because heat stimulates vasomotor reaction and enhances local circulation where applied, it is quite generally believed that medication applied under the influence of heat is of increased effectiveness. The suppositories of the type above referred to are incapable of the liberation of any heat, and consequently do not beneficially stimulate local circulation or apply the medicament under the conditions generally recognized as being most favorable to their use. A great advantage of such suppositories, however, resides in the fact that their use is accompanied by no inconvenience.

According to the present invention, it is proposed to provide a capsule capable of applying heat to the body either with or without medication.

It is a further important object of the invention to provide a capsule of this kind where the application of a beneficial amount of heat may be accompanied by the application of medicament contained in the capsule.

A further important object of the invention is to produce heat within the capsule through the harmless reaction of chemicals, and to provide a capsule where the heat producing chemicals may preferably come into actual contact with the tissues to be treated, and thereby afford the most effective heat stimulation while utilizing the

stimulating properties inherent in the chemicals employed.

These and other objects and advantages are secured by my invention, which may be readily understood by reference to the accompanying drawing which illustrates a preferred embodiment of my invention, but it will be understood the drawing is to be considered merely illustrative of one embodiment thereof and that various changes and modifications may be made without departing from the spirit of the invention.

In the drawings—

Figure 1 is a vertical section through a capsule embodying the invention; and

Figure 2 is a view similar to Figure 1 showing the capsule separated to permit insertion of water or other substance to start reaction.

In the drawings, 2 designates the lower portion of a suitable capsule-like body of any desired shape. I prefer that this body be of the soluble gelatine kind, but it may be of a permanent nature, if desired. One advantage of the gelatine capsule is the fact that it is cheap, and the patient is not bothered with any sterilizing, cleaning and refilling thereof. The capsule has a cover section 3 of any desired shape and capable of fitting onto the open end of section 2. In the side walls of the section 2 are a plurality of small holes 4. The cap 3 also has at least one outlet hole 5 in the top thereof.

Within the body 2 is a lining or shell 6 of a suitable medicament vehicle, preferably cocoa butter, which may contain any desired medicating substance. In the chamber within the shell 6 is a mass 7 of normally inert chemicals adapted to react to liberate heat upon the addition of water or alcohol or other substance thereto. These chemicals are those which are harmless to body tissues, or which, upon reaction, produce substances which are entirely harmless. As a matter of fact, they may be entirely beneficial. They are selected to produce only a mild degree of heat and to react without violence. Any selection of chemicals obvious to those skilled in the art may be employed. I prefer to use a mixture of powdered metallic magnesium and copper oxide. A reaction would be started by the addition of water thereto. If desired, sodium bicarbonate and tartaric acid could be used. This would liberate a considerable volume of gas.

The liberation of gas may be desirable as a means of getting a harmless and gentle dilation of the colon in the treatment of constipation.

5 It is proposed that just prior to the insertion of the capsule, the cap be lifted, as indicated in Figure 2, and water, alcohol or other substance added, after which the cap is replaced and the insertion of the capsule
10 made. The heat resulting from the reaction of the chemicals will be carried to the body tissues for its remedial effect. It will be obvious that the capsule may be beneficial for its heating properties alone.

15 However, in order to increase its utility, the shell 6 is provided. This shell, which, as above stated, preferably carries a medicating substance, is melted by the heat of reaction and is forced through the holes in
20 the capsule to the surrounding body tissues.

In the arrangement shown, the chemicals of reaction and the resulting salts, as well as any gas generated, may also be forced out of the capsule with beneficial results.

25 If the casing of the capsule is of gelatin or the like, it will gradually dissolve. If it is of a permanent nature, it may be cleaned and refilled, and refills could even be furnished for this purpose. The device can be
30 used either with or without the shell 6, and this shell, instead of being of a substance such as cocoa butter that is melted by heat, could be of a soluble nature instead.

The advantages of the invention arise out
35 of the fact that a capsule capable for complete or partial insertion is provided which is capable of liberating heat at a substantially constant temperature for a definite period of time, with or without medication
40 of body tissues, and entirely without the inconvenience attached to ordinary forms of heated dilators.

I claim:

1. A capsule of the shape and size suitable
45 for official insertion in the body, including a perforate casing and a mass of chemicals capable of liberating heat on interreaction in the casing.

2. A capsule for the treatment of body
50 tissues, including a medicament containing shell having normally inert heat liberating chemicals therein, said shell being of a substance which breaks down when the chemicals are active, and a casing through which the
55 medicament containing shell may pass when such shell breaks down.

3. A capsule for the treatment of body

tissues, including a medicament containing heat softened shell having normally inert heat liberating chemicals therein, said shell
60 being of a substance which melts when the chemicals are active, and a perforate casing through which the medicament containing shell may pass as it breaks down.

4. A capsule for the treatment of body
65 tissues, including a medicament containing shell having normally inert heat liberating chemicals therein, said shell being of a substance which breaks down when the chemicals are active, and a perforate casing
70 through which the medicament containing shell may pass as it breaks down, said casing being of a soluble material.

5. A mass of material for application to body tissues, having a supply of magnesium
75 and a metallic oxide for reaction with the magnesium therein.

6. A mass for the application of heat to body tissues, including a casing having magnesium and a metallic oxide therein. 80

7. A mass for the application of heat to body tissues, including a casing having magnesium and a metallic oxide therein, said casing being perforate.

8. A mass for the application of heat to
85 body tissues, including a casing having magnesium and a metallic oxide therein, said casing being perforate, and a mass of medicating vehicle in the casing within which the magnesium and metallic oxide is contained. 90

9. Means for effecting official treatment, including a perforate casing, a cocoa butter lining within the casing, and normally inert chemicals having an affinity for each other within the cocoa butter lining. 95

10. Means for effecting official treatment, including a soluble casing, a cocoa butter lining within the casing, and normally inert chemicals having an affinity for each other within the cocoa butter lining. 100

11. Means for effecting official treatment, including a soluble and perforate casing, a cocoa butter lining within the casing, and normally inert chemicals having an affinity for each other within the cocoa butter lining. 105

12. Means for effecting official treatment, including a perforate casing, a cocoa butter lining within the casing, and normally inert heat liberating chemicals having an affinity for each other within the cocoa butter lining, 110 said casing having a removable cap.

In testimony whereof I have hereunto set my hand.

JOHN G. HOMAN.