June 20, 1933. M. YAMAGUCHI 1,915,176

ANAL SUPPOSITORY

Filed July 22, 1932

Fig. 1

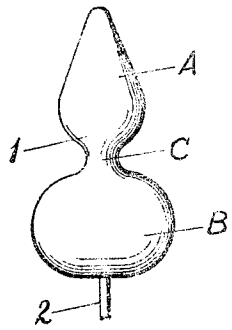


Fig. 2

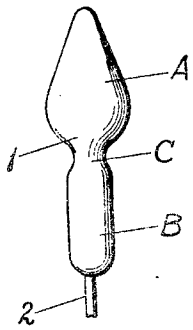


Fig. 3

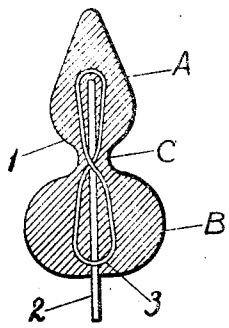
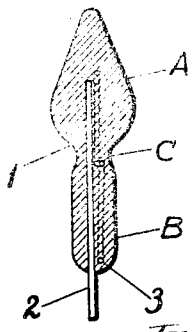


Fig. 4



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UNITED STATES PATENT OFFICE

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ANAL SUPPOSITORY

Application filed July 22, 1932, Serial No. 624,113, and in Japan September 15, 1931.

This invention has relation to anal suppositories for the treatment of hemorrhoids and other affections of the anus and rectal canal, and has for its object the provision of a suppository so formed as to avoid the defects of the suppositories of ordinary character, which, by reason of their shape are usually forced upward into the rectal canal, after introduction so that the proper medication of the anus and lower parts and contiguous parts is not fully effected.

According to the present invention the body of the suppository is so shaped that it is prevented from being forced upward by the sphincter muscles and is kept in position partly within and partly without the anus, whereby the parts requiring medication are subjected to the action of the medicament to the most advantageous extent.

A further object of this invention is to provide a suppository which can be easily and conveniently handled and applied without danger of distortion or premature melting, and which will remain in place during the action of the medicament and which will, as it melts constantly present fresh surface of the medicated material to the surface to be treated.

The accompanying drawing illustrates an example of the suppository according to the invention. Fig. 1 is the front elevation, Fig. 2 its side elevation, Fig. 3 longitudinal central section in front view and Fig. 4 a longitudinal central section in side view.

The anal suppository according to the present invention may be formed in such a manner that a stalk (2) of celluloid, bamboo, wood, paper or the like material and a thin cord such as silk cord or the like are imbedded in the medical material previously prepared by mixing suitable medicines into the ground materials such as cacao butter, resins, etc. capable of melting owing to the temperature of the body. The upper portion (A) is of a spindle-like shape while, the lower portion (B) of a flattened hemi-spherical shape and the connecting portion (C) in the form of slender column (in short, the suppository is to be formed like a gourd with its lower portion flattened). In the application of the suppository, the stalk (2) is grasped between the fingers and the upper portion (A) is introduced into the anus. While the spindle-shaped portion (A) wholly enters the anus, the middle slender column (C) is constricted by sphincter muscles at the mesial part of the cutis and mucus membrane and the lower portion (B) is held flat between the exterior tissues of the anus. The stalk (2) may then be drawn out leaving the suppository in naturally stable state.

The size and shape of the upper and lower portions, the size of the middle constricted portion, and the flatness of the outer part are to be determined according to the shape or curvature of the interior and exterior of the anus and, so as to avoid discomfort. Silk is preferably used as the binding cord (3). Therefore, the suppository according to the present invention has such advantages that even the mesial part of the cutis and mucus membrane, which is the most sensitive part near the anus, is never irritated by it and feels comfortable to the user. Ordinary suppositories are often melted and are often deformed by the temperature of the finger-ends, often expelled immediately after introduction and frequently cannot be applied at all. These failures never occur in the case of the suppository according to the present invention, which is to be grasped at the stalk of celluloid or the like and thus introduced into the anus, without injury to the suppository.

The medicament melts gradually owing to the heat of the body during about five hours, but both parts, upper and lower, are united by the binding cord (3) and the medication continues to the last, each medicament being effective for more than five hours at least and frequent substitution being unnecessary. Moreover, secretions and the like which adhere to the surface of the medicament is discharged by the natural expelling action of sphincter muscles in the interior of the anus as well as by the muscles of the buttocks in the exterior of the anus and always fresh surfaces of the medicament come in contact with the affected parts.

The stalk (2) to be used in the suppository

according to the present invention is preferably of celluloid or the like material such as neither changes nor is changed by the medicines and the ground materials and is comparatively soft when it is inserted. As the cord (3), silk or the like which is pleasant to the touch is preferably adopted and, if it is twisted in the constricted part of the suppository, it forms a figure which is more effective.

And suppositories of the usual character, which are not anal suppositories in reality and are not desirable are forced upwards owing to the slipperiness and contracting action of the sphincter muscles and enter the rectal canal as soon as introduced. They are no other than rectal canal suppositories, the medication of the affected parts of the anus being only temporary. On the other hand, the medication by the usual liniment for the anal exterior, which is applied by coating on the cotton or cloth, is interrupted by the filth such as mucus, fæces, ichor, etc., which are constantly secreted from the affected parts and covers the surface of the medicament, moreover, it gives rather noxious action to the part where it is applied. It has been actually observed very often that the condition of the disease becomes serious while the patient is feeling easy.

I claim:

1. An anal suppository, comprising an upper insertable portion of spindle like character, a lower portion of laterally expanded shape and greater area in its flattened portion than the upper portion, and an intervening neck portion, with a twisted cord of soft flexible material imbedded in the upper, lower and intervening parts of the suppository, said upper, lower and intervening portion being composed of medicated material adapted to be melted by the temperature of the body.

2. An anal suppository as claimed in claim 1, and embracing an imbedded stem adapted to be withdrawn from the suppository when applied and to constitute a manual means for inserting the suppository into the anus.

In testimony whereof I affix my signature.

MASAICHI YAMAGUCHI.