July 9, 1935. O. I. WARING 2,007,626

CAPSULE APPLICATOR

Filed April 14, 1933

Fig. 6.

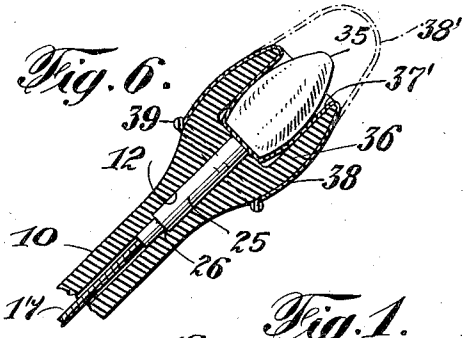


Fig. 1.

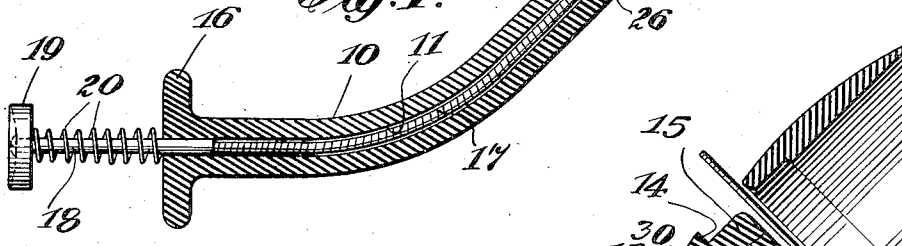


Fig. 2.

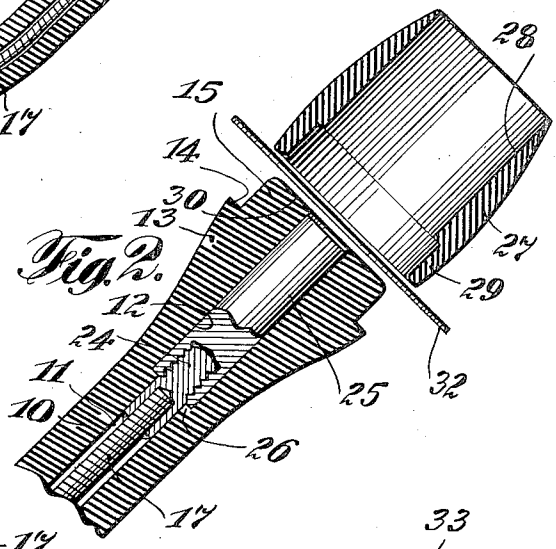


Fig. 3.

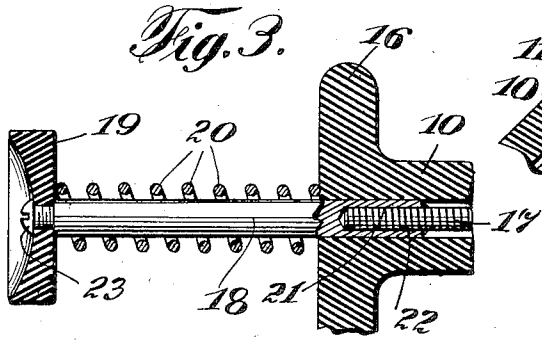


Fig. 4.

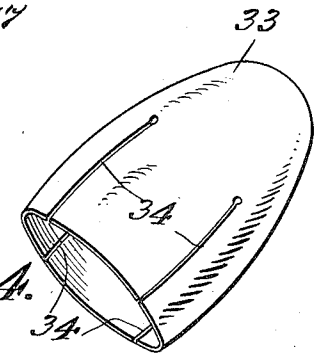
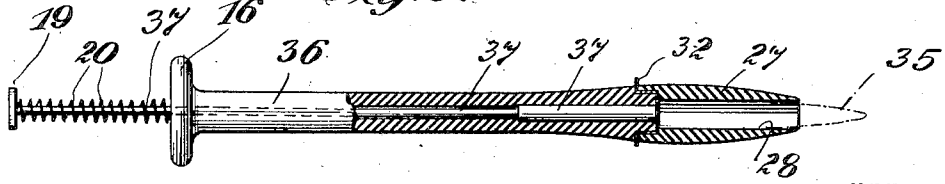


Fig. 5.



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CAPSULE APPLICATOR

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Application April 14, 1933, Serial No. 666,090

3 Claims. (Cl. 128—264)

My invention relates to capsule applicators and refers particularly to devices of this character adapted for the insertion and deposition of capsules, suppositories and similar medicament containers.

In the application of capsules of the indicated character it is essential that the capsule be inserted through a body orifice and deposited some distance from the mouth of the orifice in order that it may be positioned in a desired portion of the body organ.

The applicator of my invention accomplishes this desirable object in a positive and hygienic manner as is evident from my specification and accompanying drawing.

In the accompanying drawing illustrating the device of my invention, similar parts are designated by similar numerals.

Figure 1 is a partially vertical section of one form of my device with a suppository carried thereby.

Figure 2 is a broken enlarged vertical section, illustrating a modified form of hygienic fabric material.

Figure 3 is an enlarged vertical section of the hand operating end of the device of Figure 1.

Figure 4 is a perspective view of a cover cap for my device.

Figure 5 is a partially vertical section of a modified form of my device.

Figure 6 is a vertical section of the head of a modified form of my device.

The device of my invention illustrated in Figures 1 to 4 inclusive, consists of a body portion 10, having a conduit 11 extending therethrough, the upper portion 12 of said body conduit 11 is slightly greater in diameter than the remaining portion. The upper portion, or head, 13 of the body 10 is somewhat enlarged and has a shoulder 14 for purposes described later, and is extended into the reduced portion 15. The lower portion of the body 10 is extended into the annular flange 16 for purposes of easy manipulation of the device.

The capsule depositing device, which is capable of longitudinal movement through the opening or conduit 11—12 of the body member consists of a flexible rod, or wire, 17, one end of which is attached to the rigid rod 18, the latter extending beyond the body 10, carrying the annular flange-shaped member 19 which is spaced from the flange 16 by means of the coil spring 20.

In the drawing the flexible rod 17 is affixed to the rigid rod 18 by means of a threaded end 21 of the rod 17 threaded in an opening 22 of the rod 18 and soldered therein, but other fastening means may be employed.

The rod 18 is affixed to the annular flange-shaped member by means of the screw 23.

The other end of the flexible rod 17 is soldered to the annular member 24, the latter being threaded to the rigid ejector member, or plunger, 25.

The diameter of the body conduit 11 is enlarged to accommodate the larger ejector 25, thus forming an annular shoulder 26.

The annular capsule holder 27 has an annular opening 28 and an extended annular flange 29, the capsule holder being so proportioned that it will fit down over the body head 13 and be frictionally held in position.

Positioned over the outward face 30 is a sheet of pliable material, or elastic material, said sheet being maintained in position between the ejector 27 and the body head 13 by means of the flange 29 abutting upon the shoulder 14.

The said sheet of pliable, or elastic, material acts as a closure for the head end of the body conduit, thus preventing the entrance of foreign substance from said conduit into the capsule chamber and into contact with a capsule therein without interfering with the operation of the ejector.

This said sheet of material may be large enough to allow of the movement of the ejector 25 without stretching the material as shown at 31 in Figure 1, or it may be of rubber as shown at 32 in Figure 2, allowing of its stretching during the ejecting operation.

A protective cap 33 has a number of slots 34, 34, and is capable of being placed over the capsule member 27 and held frictionally thereon, in order to prevent the admission of foreign substances into the capsule chamber when the device is not in use.

The distance between the flanges 16 and 19 is the distance which the plunger 25 must move in order to eject the capsule. These two flanges limit the forward movement of the plunger and the abutment of the member 25 upon the shoulder 26 limits its movement in the other direction.

The operation of the device is as follows:—

The cap 33 is removed; a capsule 35 is placed within the capsule chamber 28, the device is inserted through the opening of the body recess, or organ, until the capsule is in the desired position,

the flange 19 is moved in the direction of the flange 16 until they abut, this movement forcing the capsule outwardly from the capsule chamber 28 and the device is then withdrawn, and the cap 33 is replaced upon the capsule member 27.

The modified form of my device shown in Figure 5, is similar to that previously described, except that the body 36 is straight and the movable member 37 may be rigid throughout its entire length.

The modified form of my device shown in Figure 6 consists of a one-piece head 36 having an annular chamber 37 therein. An annular flexible cover member 38, preferably of rubber is maintained upon the head by means of the flange 39. The cover member 38 is of such size that it will fit within the chamber 37 and can be extended outwardly by means of the plunger 25, as 38', thus allowing the ejection of the capsule 35. It will be noted that the flexible cover member 38 prevents dust and other substances from entering the tubular member 10, and further it can be readily removed and cleaned before use, thus possessing hygienic properties.

While I have shown my device as being of annular formation, it is evident that it may be of angular formation if so desired.

My invention, therefore, presents an effective and hygienic device for the internal application of capsules, suppositories and other similar containers.

I do not limit myself to the particular size, shape number, arrangements or materials of parts as shown and described as these are given simply as a means for clearly explaining the device of my invention.

What I claim is:—

1. In a capsule applicator, in combination, a tubular body member, a head member to said tubular body member having an opening therein, a plunger movable longitudinally within said body member and said head member, a separable annular capsule container capable of attachment to said head member and having a capsule chamber therein in alignment with the opening in said head member, a separable pliable closure member free from said plunger removably interposed in sealing relation between and held in place by the inner end of said capsule container and said head member and forming a seal between said head member opening and said capsule chamber outwardly of said closure member, and means whereby said plunger may be moved freely against the inner face of said closure member for thereby causing a capsule within said capsule chamber to be ejected therefrom.

2. In a capsule applicator, in combination, a head, a chamber adapted to hold a capsule within said head, a cap-shaped separately detachable sheet rubber cover member removably carried by said head extending over the entire outer face of the outer portion of said head and over said chamber therein and capable of placement within said chamber, an ejector capable of free abutment upon the inner face of said sheet rubber cover member and the outward movement of which is adapted to eject a capsule from within said chamber.

3. In a capsule applicator, in combination, a tubular body member, a rigid tubular capsule chamber carried by an end of said body member in alignment therewith and into which the latter opens, a plunger slidable in said body member and adapted to enter said chamber, a pliable sealing member free from said plunger adapted to extend across said chamber and adapted for movement within said chamber, and means whereby said plunger may be moved freely against the inner face of said sealing member for thereby causing a capsule within said chamber outwardly from said sealing member to be ejected from said chamber.

OLAF I. WARING.