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J. R. JOHNSON
MEDICAMENT APPLICATOR

2,647,512

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Fig 1.

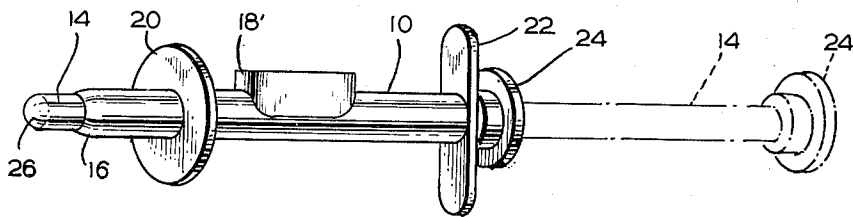


Fig 2.

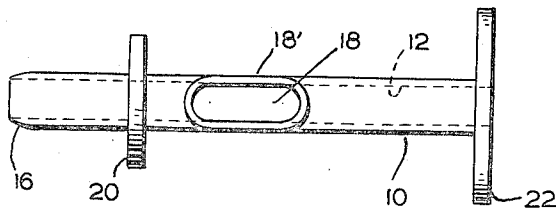


Fig 3.

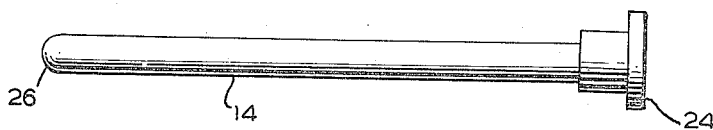
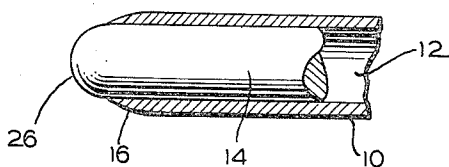


Fig 4.



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MEDICAMENT APPLICATOR

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1 Claim. (Cl. 128—264)

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This invention relates to devices for applying a medicament to body cavities and in particular relates to such a medicament applicator for applying capsules.

It is an object of this invention to provide such an applicator having a plunger with a rounded end and of uniform diameter throughout its length, and with a loading aperture through which medicament can be introduced into the applicator after the applicator has been inserted into the body cavity and a plunger retracted.

It is a further object to provide a rim around the loading cavity for retaining medicament until the loading aperture is clear.

Further objects and the entire scope of the invention will become further apparent from the following detailed description and from the appended claim.

The invention may be best understood with reference to the accompanying drawing, in which:

Figure 1 is a perspective view of the assembled applicator.

Figure 2 is a side view of the main cylindrical portion of the applicator.

Figure 3 is a side view of the plunger, and

Figure 4 is a detail view of the plunger cooperating with the main cylindrical portion of the applicator.

In all known medicament applicators of the present type with which I am familiar the insertion of the applicator into a body cavity has been complicated by having the leading end of the applicator provided with serrations, flexible fingers or more or less blunt ends. It has been the practice to insert the applicator into a body cavity in one manner or another and then afterwards inject the capsule or other medicament by use of a plunger.

Referring now to the drawings, by the present invention I provide a medicament applicator having a main or cylindrical portion 10 having a centrally located passage 12 into which a slender plunger 14 may be inserted.

The main or cylindrical portion 10 is outwardly bevelled at 16 to provide a length adjacent the insertion end which gradually increases in diameter from the size of the passage to whatever external diameter of the cylindrical portion 10 is required. The cylindrical portion 10 is further characterized by a medicament loading aperture 18 in the wall of the cylindrical portion 10 intermediate the ends thereof.

Additionally, an upstanding wall 18' or similar structure may be provided about aperture 18. This will serve as a well within which a capsule

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or other medicament may be retained while the applicator is inserted, but before the plunger 14 is retracted.

The applicator is further characterized by a stop flange 20 located intermediate the bevelled end and the loading aperture 18. The stop flange 20 will be located at such position for each intended use as to enable the person inserting the applicator to determine the correct distance of insertion.

The end of the cylindrical portion 10 remote from the bevelled end may be provided with extending ears 22 for use in cooperation with a cap 24 on the plunger 14 to enable operation of the plunger by the operator looping his fingers about the ears 22 and pressing the plunger with his thumb. This is a customary arrangement in syringes and the like.

One salient and novel feature of my invention is in having the end of the plunger 14 remote from the cap 24 rounded as at 26 to provide a leading end of the plunger which by itself may be readily inserted into a body cavity. I then have the length of the plunger 14 such that when the plunger is inserted in the passage 12 and before the cap end of the plunger sets against the unbevelled end of the cylindrical portion, the rounded end 26 will at least have extended beyond the bevelled end 16 of the cylindrical portion to permit the rounded end of the plunger to coincide with the bevelled end of the cylindrical portion to provide a substantially continuous curve. This particular position of the plunger is shown in detail in Figure 4. It will further be apparent that if the plunger 26 is increased in length the rounded end 26 may actually project a substantial distance beyond the bevelled end 16 of cylindrical portion 10 and yet the function will be substantially the same.

In operation, after the applicator has been inserted with the aid of the extended end of the plunger the cylindrical portion 10 may be held in position and the plunger withdrawn or retracted until the rounded end 26 has cleared the loading aperture 18. Thereupon the medicament may be placed in the passage 12 through aperture 18 and the plunger then driven forward to drive the medicament into the body cavity.

It will be noted from Figures 2-4 that the plunger is of uniform diameter throughout its length and the passage is similarly of uniform diameter throughout its length. Moreover, the diameters of the plunger and passage are substantially the same to provide a close sliding fit.

It will be clear that any sort of medicament

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can be introduced through the aperture 18. That is, not only will the aperture receive capsules, but depending on the clearance tolerance between the plunger and passage 12, even liquids of very low viscosity may be pumped into the body cavity. In fact, where liquids are to be inserted the loading aperture 18 may be in the form of a projected hollow stem to which a tube may be attached.

It will be understood that my applicator can be made for permanent use in which case it may be constructed of glass, metal, plastic or hard rubber. On the other hand, where it is desired to dispose of the applicator after each use, it can be fabricated of paper and the like.

The foregoing detailed description of a preferred form of my invention is not to be taken as a limitation on the scope thereof. On the contrary, I desire that the scope of my invention be determined from the following claim.

I claim:

An applicator for introducing a medicament into a body cavity comprising a main portion having a cylindrical passage therein opening through at least one end of the main portion, the said one end of the main portion being outwardly bevelled about the passage opening, a cylindrical plunger mounted for reciprocating operation in the passage, one end of the plunger being rounded, the arrangement being such that the applicator may be readily inserted into a body cavity when the main portion and plunger are arranged so that the rounded end of the plunger coincides with or extends beyond the bevelled end of the main portion, cap means on

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the plunger for moving the plunger to retract the said rounded end into the passage after the main portion is inserted in the body cavity, a medicament loading aperture in the wall of the main portion communicating with the passage at a distance from the bevelled end of the main portion sufficient to permit loading of the applicator when the plunger is retracted after the main portion has been inserted into the body cavity and remains there, and a wall means extending about the loading aperture means to retain medicament in a well formed by the wall until the plunger is retracted after the applicator is inserted in a body cavity, the plunger being of equal diameter throughout its length and the passage similarly being of equal diameter throughout its length so that the plunger completely fills the passage behind said rounded end of the plunger in all stages of insertion of the plunger beyond said loading aperture, the diameters of the plunger and passage being substantially the same to provide a close sliding fit.

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