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APPARATUS FOR APPLYING MEDICAMENTS, PARTICULARLY
INTO CAVITIES OF THE HUMAN BODY
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FIG. 1.

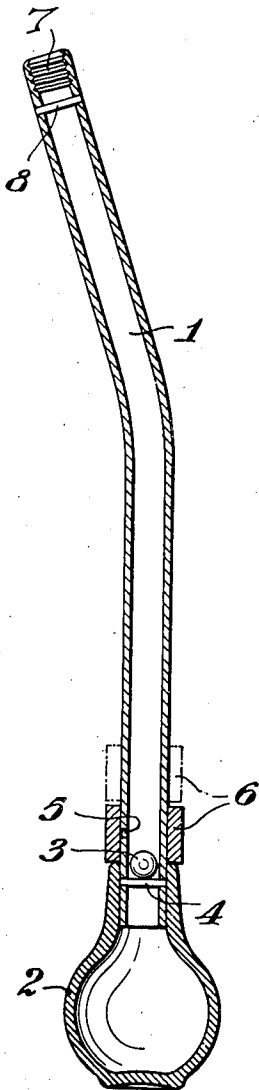
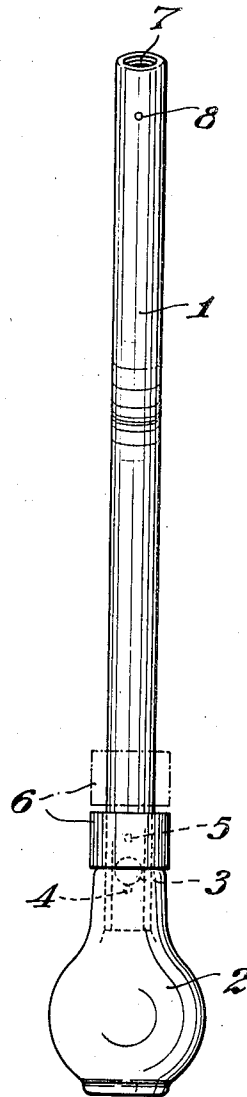


FIG. 2.



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APPARATUS FOR APPLYING MEDICAMENTS,
PARTICULARLY INTO CAVITIES OF THE
HUMAN BODY

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In Great Britain December 21, 1937

3 Claims. (Cl. 128—231)

This invention relates to an apparatus for injecting medicaments, more particularly medicament of a creamy or semi-solid nature, into the cavities, canals or passages of the human body.

The primary object of the invention is to simplify and cheapen the cost of manufacture without detracting from the efficiency of the apparatus, and also to facilitate the cleaning and sterilizing thereof.

The invention broadly consists of an open-ended tube, a compressible bulb attached or adapted to be attached to one end of said tube and means for permitting the tube to be filled from the remote end without allowing the charging substance to enter the bulb, said means comprising a vent hole in the tube, a floating piston within the tube, which is situated between the vent hole and the bulb, and means for covering said vent hole whilst the contents of the tube is expressed, the vent hole being adapted to serve as an indicator as to the filled condition of the tube.

In a preferred form of the device, the valve consists of a floating piston, and a stop is provided therefor adjacent the bulb and between said bulb and the vent hole, the piston being adapted to push forward the charging substance and being prevented from passing out of the tube by the provision of a second stop. The other or outer end of the tube aforesaid may be plain externally and screw-threaded internally for use with nozzles adapted to be fitted thereon with a push-on fit or with nozzles adapted to be screwed thereinto, said nozzles being of any suitable shape provided with an orifice or orifices having a diameter such as to meet different medical requirements, the internally threaded end of the tube also serving for the screw-in reception of a hypodermic needle attachment.

For a ready understanding of the invention, reference is to be had to the following description and accompanying sheet of drawings, illustrative of a preferred embodiment of the invention, and wherein:

Figure 1 is a vertical sectional view of the apparatus, the same being empty.

Figure 2 is an elevational view thereof and at right angles to Figure 1.

In carrying out the invention and referring to the drawing, there is provided an open-ended tube 1, having a length and internal diameter such as to receive therein a measured quantity of medicament, detachably mounted by one end, with a push-in fit, in the mouth of a compressible rubber bulb 2, a floating piston 3 being located

in said push-in end of the tube 1 and normally seated on a pin 4 mounted in and extending diametrically across said tube so that the piston 3 is prevented from entering into the bulb 2, said piston being slightly less in diameter than the internal diameter of the tube 1 aforesaid.

In the wall of the tube 1 and above the piston 3 there is provided a vent hole 5 adapted to be covered over by a collar 6 which is slidably, rotatably and frictionally mounted on the tube 1 aforesaid.

The free or outer end of the tube 1 is plain exteriorly and is provided with a tapped portion 7 below which, and extending diametrically across said tube 1, is a pin 8, the same preventing the escape of the piston 3 through said outer end of the tube.

To charge the tube 1 with medicament, the vent 5 is uncovered by upwardly sliding the collar 6, and the medicament is inserted into the tube through the open outer end thereof, said vent 5 not only permitting of the escape of air displaced by the medicament, but also giving, by exuding from the vent, a visible indication that the tube is fully charged.

The collar 6 is then slid back to cover over the vent 5, thereby preventing the contents of the tube from being spilled or dropping out from the open end of the tube, and the appropriate nozzle is then placed over the open end of the tube, or screwed thereinto, as the case may be, and the apparatus is ready for use.

Alternatively, the apparatus may be used without a nozzle being affixed to the open outer end of the tube thereof.

The medicament is preferably fed from a collapsible tube having a screw-thread nozzle fitted with a cap, the same being removed and the collapsible tube screwed, by its nozzle, into the tapped open end of the tube of the apparatus, the collapsible tube then being squeezed to force its contents into the tube of the apparatus, said collapsible tube then being removed.

The tube of the apparatus may be of a shape in cross-section other than circular, and may be made of synthetic resinous product, xylonite, ebonite, glass or of impervious paper or other suitable plastic material, or it may be made of any suitable metal, and it may be made to screw into the mouth of the compressible rubber bulb instead of being a push-in fit in said mouth of the bulb.

The tube aforesaid will be made in various size lengths and diameter to contain a specific quantity of medicament and thus obviate the neces-

sity of having first to measure the quantity of medicament before filling the said tube, each tube being marked with the particular capacity of the tube.

- 5 Further, instead of a floating piston being employed, use may be made of any other suitable form of non-return valve, e. g. a valve consisting of a small rubber tube which is closed or sealed at the end nearest the compressible bulb, but open
10 at the other end so that, when pressure is applied to the bulb to extrude the medicament, the air from within the bulb passes freely around the said valve.

- The collar, which is mounted on the tube, and
15 is or may be made of the same material as the tube, may be formed with an opening therein to correspond with the vent hole in the tube when in a certain position, that is, when the tube is being charged with medicament, said collar being
20 rotated so that the holes are out of register with one another when the bulb is being compressed to extrude the medicament, and any form of stop may be provided on the tube to limit the rotation of the said collar.

- 25 The floating piston, when the same is employed, serves the dual purpose of ensuring that the medicament does not pass beyond the end of the tube and so into the bulb, and that when it is lifted by air pressure caused by compression of
30 the bulb, and as only extremely small clearance is allowed between it and the wall of the tube, it ensures that the whole of the medicament is expelled from out of the said tube.

- The easy removal of the bulb and nozzle from
35 off the tube facilitates the cleaning and sterilizing of the parts and the replacement thereof and considerable time is thus saved.

I claim:

1. An apparatus for injecting medicaments
40 into cavities of the human body, comprising an open-ended tube, a compressible bulb attached to one end of said tube and means for filling the tube from the open end and preventing a charging substance entering the bulb, said means comprising a vent hole in the tube, piston means
45 within the tube, means for causing said piston

means to rest between the vent hole and the bulb, and means mounted on the tube for covering said vent hole while the contents of the tube is expressed, the vent hole when uncovered being adapted to serve as an indicator as to the filled condition of the tube.

2. An apparatus for injecting medicaments into cavities of the human body, comprising a curved open-ended tube, a compressible bulb attached to one end of said tube, an aperture in the wall of the tube and situated near the compressible bulb, a stop within the tube and situated between the aperture and the bulb, a second stop provided within the tube in spaced relation to the first mentioned stop, a floating piston adapted to traverse the tube between the said stops and shiftable means carried by the tube for covering and uncovering the aperture, the aperture being adapted, when uncovered, to serve as an air vent whilst the tube is filled from its open end, and to serve as an indicator as to the filled condition of the tube, the piston co-operating with the said first mentioned stop to prevent the charging substance from entering the bulb.

3. An apparatus for injecting medicaments into cavities of the human body, comprising a curved open-ended tube, a compressible bulb attached to one end of said tube, an internal screw-thread in the other end of said tube, an aperture in the wall of the tube and situated near the compressible bulb, a stop within the tube and situated between the aperture and the bulb, a second stop provided within the tube in spaced relation to the first mentioned stop, a piston adapted to traverse the tube between the said stops, and a sliding sleeve on the tube for covering and uncovering the aperture, the aperture being adapted, when uncovered, to serve as an air vent while the tube is filled from its open end, and to serve as an indicator as to the filled condition of the tube, the piston co-operating with the said second stop to prevent the charging substance from entering the bulb.

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