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J. U. LLOYD

MEDICINE DROPPER OR SYRINGE

Filed March 29, 1926

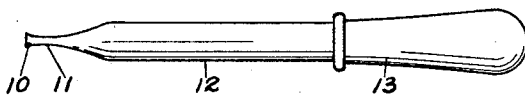


Fig. 1.

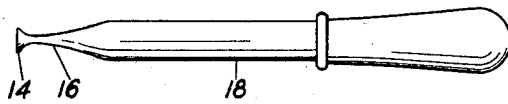


Fig. 2.

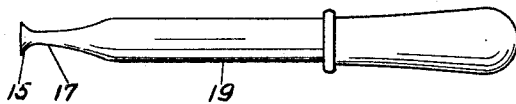


Fig. 3.

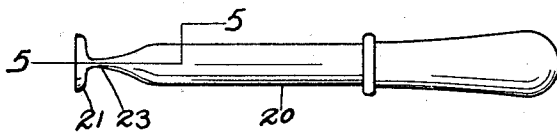


Fig. 4.

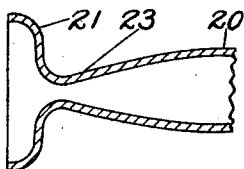


Fig. 5.

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JOHN URI LLOYD, OF CINCINNATI, OHIO.

MEDICINE DROPPER OR SYRINGE.

Application filed March 29, 1926. Serial No. 98,068.

My invention relates to devices generally referred to as medicine droppers or syringes and comprising a tubular glass member reduced at its one end, and provided at its other end with an elastic cap, generally made of rubber for exhausting the tube.

An object of my invention is to provide a device wherein there is eliminated the uncertainty of dose incident to the present type of dropper occasioned by the reduced blunt discharge end of the tube. In the present type of dropper, the reduced end of the glass tube must be sufficiently small to prevent the escape of fluid from the reduced end of the tube when said end is lowermost. Because of this fact, it is extremely difficult to accurately discharge drops of uniform size and to avoid loss or misplacement of discharged drops incident to any slight nervousness or unexpected movement of the operator.

An object of my invention is to provide a tubular member of such structure that the form of the discharge end thereof will serve to assemble a minim or one-sixtieth (1/60) part of a fluid dram at the end of the dropper whereby compression of the rubber like cap serves merely to discharge a drop rather than to both form and discharge a drop of fluid.

These and other objects are attained by the means described herein, and disclosed in the accompanying drawings, in which:

Fig. 1 is a view showing a medicine dropper embodying my invention.

Figs. 2, 3 and 4 are views similar to Fig. 1, showing slightly modified forms of a dropper.

Fig. 5 is an enlarged sectional view on line 5—5 of Fig. 4.

Generally my invention comprises the provision of a flared or funnel shaped conical end 10 formed upon the reduced portion 11 of the tube 12. In practice, tubes such as 12 are made of glass. A cap 13 is provided, said cap being of an elastic or resilient material, for example, rubber, whereby the tube may be exhausted both before conditioning the same for causing fluid to enter the tube, and for administering fluid from within the tube.

In the devices as shown in Figs. 2 and 3, the flared ends 14 and 15 are made slightly larger relative to the reduced portions 16 and 17 respectively of the tubes 18 and 19 respectively.

In Figs. 4 and 5, the discharge end of the tube 20 is enlarged or provided with an annular flange like structure 21, of such size and shape that substantially a drop or a minim, or one-sixtieth (1/60) part of a fluid dram will be held thereby preparatory to discharge therefrom upon application of pressure to the flexible cap.

It is to be noted that in all of the forms disclosed herein, there is provided a reduced portion 23 in each of the tubes adjacent the discharge ends thereof, this reduced portion serving the same purpose as the reduced portion of droppers commonly used heretofore, viz, by providing such a small cross sectional opening into the tube, capillary attraction will suffice to preclude flow of fluid from the tube except as discharged therefrom by manipulation of the cap. By providing the enlarged or flared end upon the tube outwardly from the restricted portion 23, the fluid may pass to the flared portion of the dropper but will not leave the dropper until the cap is manipulated.

Although I do not fully understand why the structure as described accomplishes the results stated, I believe the proper theory is that in order for a drop or minim to leave the flared end of the dropper, it is necessary to overcome the natural abhorrence of nature to a vacuum that would tend toward creation should the drop leave the flared end of the dropper, the capillary attraction of the fluid at the reduced portion of the dropper serving to preclude entry of air into the tube.

What I claim is:

1. A dropper or syringe comprising a tubular member, means at one end of said member for exhausting air therefrom for the purpose of introducing a liquid into the tubular member, an enlarged cup-like member at the opposite end of the tube and a reduced portion in the tubular member intermediate the cup-like portion and the body thereof providing a restricted passage of a size such that capillary attraction of the fluid in the reduced portion of the tube will prevent discharge of the contents of the tubular member independently of the air exhausting means when the cup-like member is inverted, actuation of the exhausting means serving to break the capillary attraction of the fluid whereby to drop the contents of the cup-like portion.

2. As a new article of manufacture a tube

for a dropper comprising a tubular member and provided adjacent its one end with a reduced bore, said end being enlarged and extended to provide a cup with an enlarged mouth, said cup being adapted to separate and retain a predetermined quantity of fluid from a body of fluid within the tube.

3. As a new article of manufacture, a dropper comprising a collapsible member and a tubular member attached to the collapsible member at its one end and provided adjacent its opposite end with a reduced

bore, said last mentioned end being enlarged and extended to provide a cup with an enlarged mouth, said cup, when inverted being adapted to hold, by adhesion, a minimum of ordinary liquid and to discharge the contents of the cup-like portion upon actuation of the collapsible member. 15

In testimony whereof, I have hereunto subscribed my name this 25th day of March, 1926.

JOHN URI LLOYD.