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SYRINGE AND AMPULE

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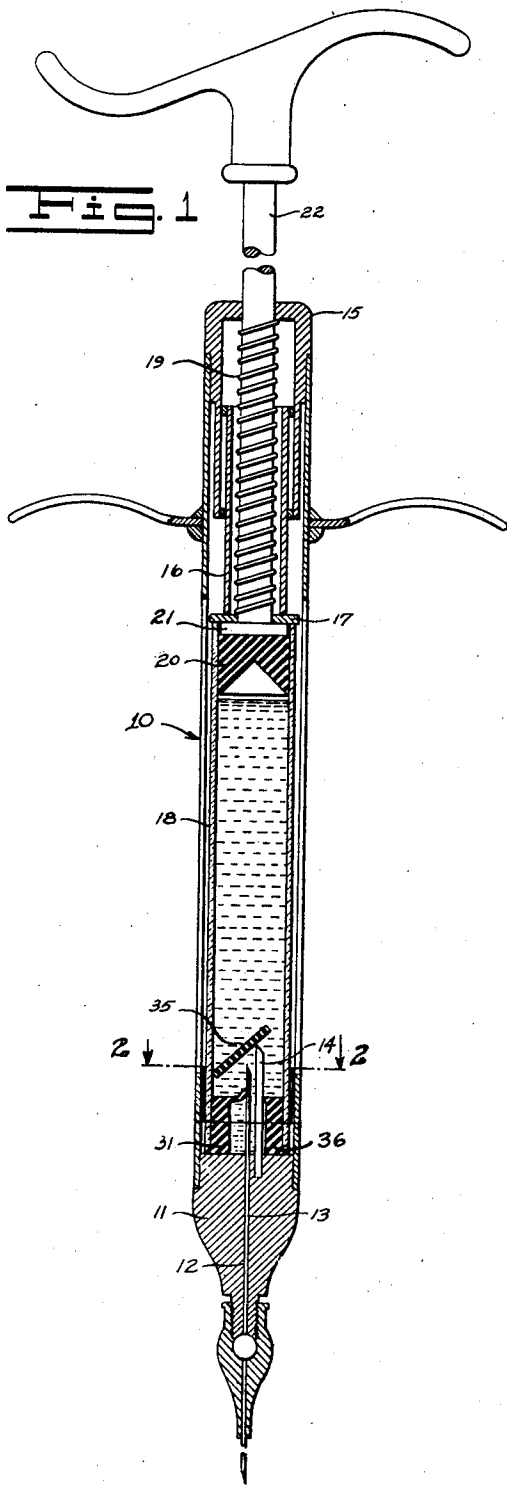


FIG. 2

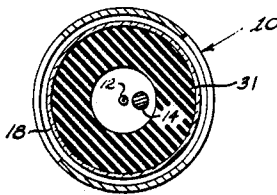
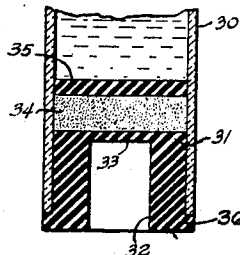


FIG. 3



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SYRINGE AND AMPOULE

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Original application May 5, 1939, Serial No. 271,888, now Patent No. 2,283,234, dated May 19, 1942. Divided and this application March 30, 1942, Serial No. 436,754

1 Claim. (Cl. 128—218)

This invention relates to a syringe and ampoule.

The general object of the invention is to provide a syringe of the ampoule holding type wherein the syringe has means for displacing a closure within the ampoule.

Other objects and advantages of this invention will be apparent from the following description taken in connection with the accompanying drawing, wherein:

Fig. 1 is a central sectional view through a syringe and ampoule and wherein the ampoule embodies the features of my invention;

Fig. 2 is an enlarged section taken on line 2—2, Fig. 1, and

Fig. 3 is a fragmentary enlarged section showing one end of the ampoule with the corks therein.

This application is a division of my co-pending application Serial Number 271,888, filed May 5, 1939, now Patent No. 2,283,234 granted May 19, 1942.

Referring to the drawing by reference characters I have shown my invention as embodied in a syringe which is indicated generally at 10. As shown the syringe includes a front member 11 having an aperture 12 through which a needle 13 extends. The front member 11 is also provided with a needle 14 which is disposed at one side of the axis of the barrel and which extends into the barrel farther than does the needle 13.

At the rear end the barrel is provided with a rear member 15 which includes a telescopic section 16 having a head 17 thereon which is normally urged against the upper end of an ampoule 18 by a spring 19.

At its rear end the ampoule includes a resilient piston closure cork 20 which is shown as engaged by a flange 21 on a plunger 22 mounted on the rear end member.

The front of the ampoule is provided with an end cork 31 having an outer recess 32 and an inner diaphragm 33 with a medicinal preparation 34 adjacent to the end of the cork 31 and held in place by a resilient disk 35. The disc, or cork 35, has planar ends which are arranged perpendicular to the axis of the ampoule. The recess 32 enables the cork 31 to have sufficient length while also permitting the diaphragm 33 to be sufficiently thin. As shown the cork 31 includes an end flange 36 which engages the end of the ampoule

30 to prevent inward movement of the cork 31. The third cork 35 is spaced from the front end of the ampoule a distance less than the distance which the piercing member or needle 14 extends into the barrel.

In operation the ampoule 30 is inserted in the syringe and the needle 14 passing through the diaphragm 33 tilts and displaces the disk 35 allowing the vehicle and drug 34 to mix after which the solution may be injected through the needle 13.

From the foregoing it will be apparent that I have invented a novel syringe ampoule which are highly efficient for their intended purpose.

Having thus described my invention, I claim:

In a syringe, the combination of a cylindrical barrel having a front and a rear member thereon, said rear member having ampoule engaging means thereon, a plunger slidable in the rear member, said front member having a hole therethrough, an injection needle mounted on said front member and having an end portion passing through said hole and adapted to extend into an ampoule, said hole being coaxial with said barrel, a piercing needle on the front member and extending into the barrel, said piercing needle being disposed at one side of the axis of the barrel, and a cylindrical ampoule, said ampoule having a piston cork in the end thereof adapted to be engaged by said plunger, a second cork in the front end of said ampoule, said second cork having an inwardly opening recess therein adapted to receive the piercing member and the needle, said second cork having a diaphragm at and closing the inner end of said recess and puncturable by the piercing member passing through said recess, a third cork in said ampoule, said third cork having planar ends, said third cork being arranged so that the planar ends thereof are perpendicular to the axis of the ampoule, said third cork being adjacent to but spaced from the second cork to form a chamber, said third cork comprising a thin tiltable disc, said third cork being spaced from the front end of the ampoule a distance less than the distance which the piercing member extends into the syringe barrel, a medicinal preparation in said chamber, said first and second corks being cylindrical, and a solvent for the medicinal preparation in the ampoule between the first and third corks.

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