

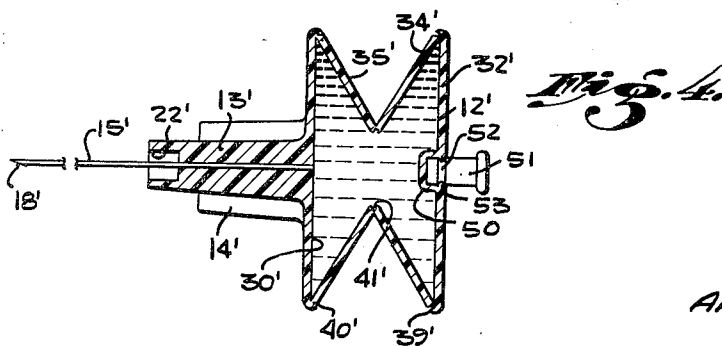
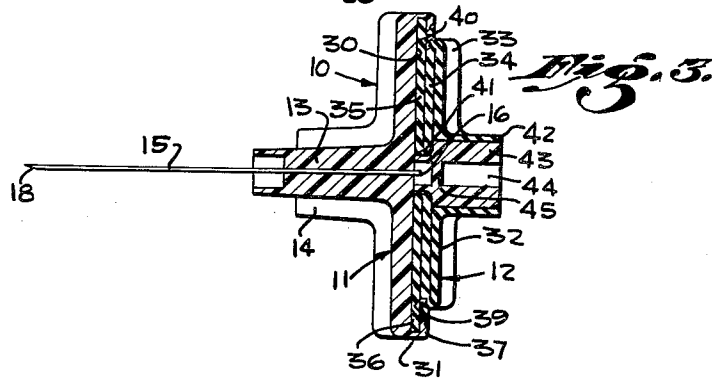
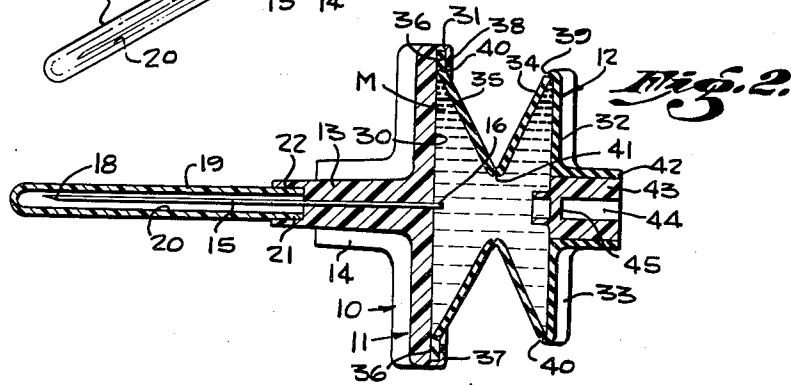
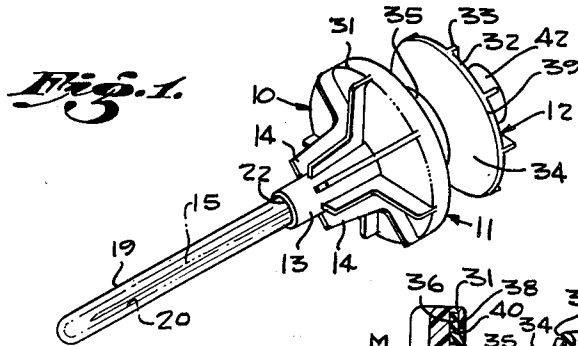
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DISPOSABLE SYRINGE

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DISPOSABLE SYRINGE

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4 Claims. (Cl. 128-216)

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This invention relates to a disposable syringe. The general object of the invention is to provide an improved, highly effective, disposable syringe.

A more specific object of the invention is to provide a novel syringe wherein a front member is employed as a needle support and wherein a recess in a flexible rear member secured to the front member is closed by forward movement of the rear member.

Another object of the invention is to provide a novel disposable syringe which includes a front member and a flexible, accordion pleated, rear member which is secured to the front member to form a chamber.

Another object of the invention is to provide a syringe including a front member and a flexible, integral, accordion pleated, rear member.

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

Fig. 1 is an isometric view of the completed syringe;

Fig. 2 is a central, sectional view through the axis of the syringe, showing my invention;

Fig. 3 is a fragmentary view similar to Fig. 2, showing the parts in the position they assume when the syringe has been discharged, and

Fig. 4 is an enlarged, central, sectional view, showing a modified syringe.

Referring to the drawing by reference characters, I show a syringe embodying the features of my invention which is indicated generally at 10. As shown the syringe includes a front member 11 and a rear member 12.

As shown, the front member includes a forwardly extending tip 13 which is tapered. The front member has spaced ribs 14 which afford strength while maintaining a relatively thin wall so that curing can be promptly done.

A needle 15 is arranged in the tip and extends into the body at 16. The needle is tightly embedded in the front member 13 to prevent movement of the needle, and the forward end of the needle at 18 is sharpened.

A closure cap member 19 surrounds the needle. The closure cap is hollow as at 20 and at its rear end 21 engages in a reduced aperture 22 in the tip 13. Thus the needle 19 is maintained in a sterile condition.

The front member has a planar rear face 30 and has an annular rim 31 integral therewith. The rear member 12 includes a body 32 which may have stiffening corrugations 33. Integral with

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the body I show a pair of reversed, integral, frusto-conical portions 34 and 35 which form an accordion pleat.

The portion 35 includes a flange 36 which engages the face 30 of the front member. The flange 36 is secured to the front member by folding over the annular rim portion 31 as at 37 onto the flange 36 and securing the parts together as by adhesive or heat and pressure as at 38. At their outer peripheries the parts 34 and 35 are shown as provided with V-grooves 39 and 40, which latter form hinge lines about which the parts may flex. A similar groove 41 may be provided at the intersections of the parts 34 and 35.

The syringe may be made of rubber, artificial rubber, polyethylene, Lucite or other plastics which have suitable properties of strength, flexibility and resilience and which may be transparent.

The body of the rear member is shown as having a tubular extension 42 with a plug 43 therein. The plug 43 is provided with a hole 44. The hole is closed by a diaphragm 45. A filling needle may be inserted through the diaphragm 45 and may be withdrawn after the syringe is filled.

In Fig. 4 I show a modification of my invention wherein parts similar to those previously described are indicated by similar primed reference numerals.

In the modification the body 32' of the rear member is provided with an integral cupped portion forming a recess 50 in which I insert an operating member 51. A groove 52 in the member 51 may receive a bead 53 on the body 32' to hold the member 51 in place.

In use, after the syringe has been filled, the operator will remove the cap 19, to place the syringe in condition for use. The injection will then be made and slight forward pressure will be applied upon the extension 42 so that some of the contents of the syringe will be discharged. The extension 42 will then be pulled rearwardly to produce an aspirating effect and if the needle has been inserted in a blood vessel, blood will appear in the recess within the syringe and will be visible through the transparent wall of the syringe (if the syringe is made of transparent material), thus enabling the operator to remove the needle and make a fresh injection.

If the needle has been properly located, the extension 42 will be pushed inwardly until the parts assume the position shown in Fig. 3, whereupon full discharge will have been made.

From the foregoing description it will be apparent that I have invented a novel syringe, which

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is simple in construction, may be readily made and filled, and which is highly efficient in use.

Having thus described my invention, I claim:

1. A syringe including a front member and a rear member, said front member including a body having a tapered forward end, a needle in said body and projecting forwardly therefrom, said front member having a planar rear face and having an annular rim about the planar face, said rear member including a body, said body having an integral accordion folded extension, said extension including a first, inwardly directed, frusto-conical portion united to the rear member body and a second, outwardly directed, frusto-conical portion integral with the inwardly directed portion, said outwardly directed portion having an integral annular rim engaging the front member rim, said front member rim including an extension bent over and secured to the rear member rim to make a seal.

2. A syringe including a front member and a rear member, said front member including a body having a tapered forward end, a needle in said body and projecting forwardly therefrom, said front member having a planar rear face and having an annular rim about the planar face, said rear member including a body, said body having an integral accordion folded extension, said extension including a first, inwardly directed, frusto-conical portion united to the rear member body and a second, outwardly directed, frusto-conical portion integral with the inwardly directed portion, said outwardly directed portion having an integral annular rim engaging the front member rim, said front member rim including an extension bent over and secured to the rear member rim to make a seal, said rear member body having a rearwardly directed extension thereon, a hole in said extension and a pierceable diaphragm closing said hole.

3. A syringe including an integral front member and a rear member, said front member in-

cluding a body having a tapered forward end, said front member forward end having exterior spaced stiffening ribs thereon a needle in said body and projecting forwardly therefrom, said rear member including an integral accordion folded extension, said extension including a first, inwardly directed, frusto-conical portion and a second, outwardly directed, frusto-conical portion integral with the inwardly directed portion, said outwardly directed portion being integral with the front member, and an operating member secured to the rear end of said rear member.

4. A syringe including a front member and a rear member, said front member including a body having a tapered forward end, a needle in said body and projecting forwardly therefrom, said front member having a planar rear face, said rear member including a body, said body having an integral accordion folded extension, said extension including a first, inwardly directed, frusto-conical portion united to the rear member body and a second, outwardly directed, frusto-conical portion integral with the inwardly directed portion, said outwardly directed portion having an integral annular rim engaging the front member planar rear face, means holding the front and rear members together, said rear member body having a rearwardly directed extension thereon, a hole in said extension and a pierceable diaphragm closing said hole.

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