April 17, 1956 M. LIPARI 2,742,041

COMBINATION PRE-STERILIZED SYRINGE AND CONTAINER

Original Filed March 19, 1953

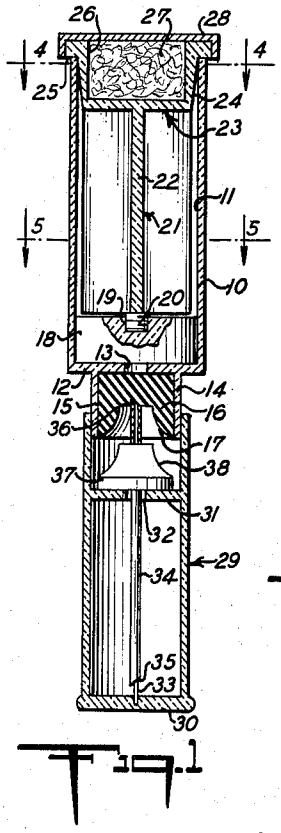


FIG. 1

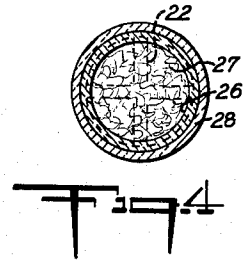


FIG. 4

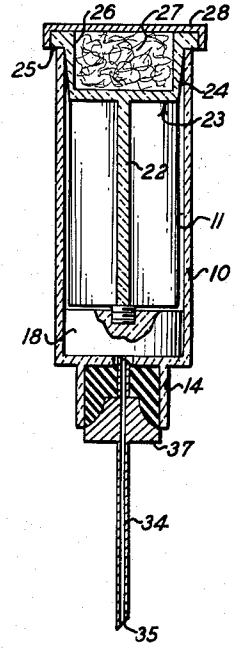


FIG. 2

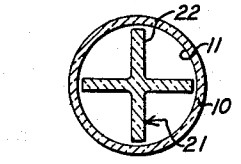


FIG. 6

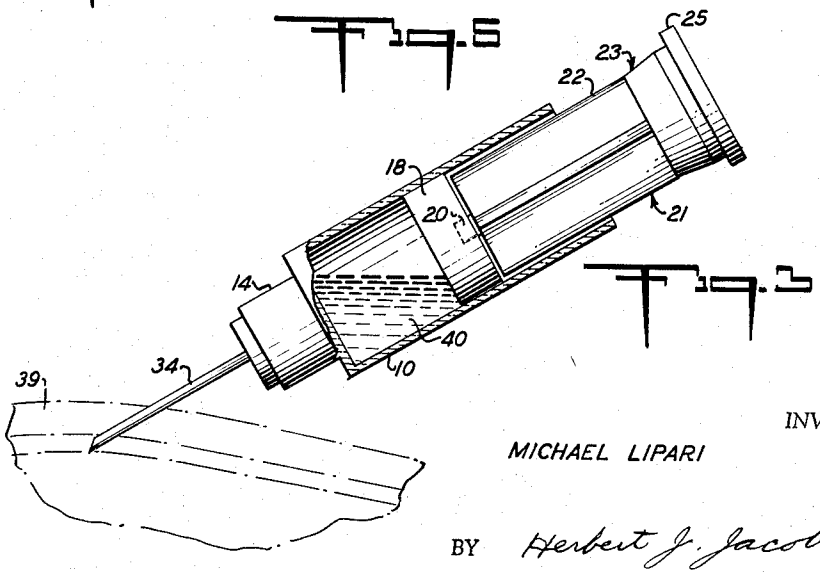


FIG. 3

INVENTOR

MICHAEL LIPARI

BY Herbert J. Jacobi

ATTORNEY

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COMBINATION PRE-STERILIZED SYRINGE AND CONTAINER

Michael Lipari, Oneonta, N. Y., assignor to Giaocchino Lipari, East Meadow, N. Y.

Original application March 19, 1953, Serial No. 343,323. Divided and this application October 13, 1954, Serial No. 461,963

11 Claims. (Cl. 128—218)

This invention relates to surgery and more particularly to a device in the nature of a hypodermic syringe which may be pre-sterilized and utilized to obtain a specimen of body or other fluids, such as blood, and thereafter provide a container for such fluid for storing or transporting the same for laboratory examination. This application is a division of my copending application Serial No. 343,323, filed March 19, 1953.

Heretofore, conventional hypodermic syringes have been utilized for obtaining specimens of body fluids, these fluids thereafter being ejected from the syringe into a sterile container for storage or transportation to a laboratory for examination. This prior art practice required a large quantity of sterile syringes and needles, particularly where mass examinations were to be conducted, such as in Public Health work, and furthermore, the speed with which such examinations might be conducted was seriously impaired by the necessity for first obtaining the specimen and then transferring the same from the syringe to a sterile container. While numerous attempts have been made in the past to provide a combined syringe and container, or to provide a syringe which could be conveniently pre-sterilized and packaged prior to use, nevertheless, these prior art devices have not proven entirely satisfactory and their use has been relatively infrequent.

It is accordingly an object of this invention to provide a combination pre-sterilized syringe and container in which the syringe as well as the needle utilized therewith, may be provided as a unitary package and the entire device protected against contamination.

A further object of the invention is the provision of a combination pre-sterilized syringe and container consisting of a unitary package including the needle, and also including a shield for such needle which may be utilized to move such needle from operative to inoperative position, the shield thereafter being removed and discarded.

A still further object of the invention is the provision of a combination pre-sterilized syringe and container in which the plunger of the syringe, after being utilized to withdraw fluid from the body or other source into the syringe, is utilized to close such syringe thereby providing a storage or shipping container.

Another object of the invention is the provision of a combination pre-sterilized syringe and container which includes a readily available supply of sterilized swab material which may be conveniently utilized to cleanse the skin surface to be pierced by the needle and to cover the wound formed by the needle in the body of the patient.

A further object of the invention is the provision of a combination pre-sterilized syringe and container in which a specimen of fluid may be drawn into the syringe by outward movement of an actuating member attached to the plunger of the syringe after which such actuating member may be removed and the needle also removed from the syringe thereby providing a container for storing or transporting the specimen contained therein.

A still further object of the invention is the provision

of a combination pre-sterilized syringe and container which may be readily and economically manufactured from suitable materials at a sufficiently low cost to be expendable after a single use.

Further objects and advantages of the invention will be apparent from the following description taken in conjunction with the accompanying drawing wherein:

Figure 1, is a longitudinal sectional view showing a combination syringe and container constructed in accordance with this invention and with the needle in inoperative position;

Fig. 2, a view similar to Fig. 1, but showing the needle in operative position and with the needle shield removed;

Fig. 3, an elevational view with parts in section for greater clarity, and showing the combination syringe and container of this invention in use;

Fig. 4, a sectional view on the line 4—4 of Fig. 1; and

Fig. 5, a sectional view on the line 5—5 of Fig. 1.

With continued reference to the drawing there is shown a combination syringe and container constructed in accordance with this invention and which may well comprise a body **10** providing an elongated cylinder **11**, and, of course, the body **10** may be of any desired external configuration. The cylinder **11** is open at one end and closed at the other by a wall **12**. Centrally of the wall **12** there is provided an aperture **13** and depending from the wall **12** is an annular skirt **14** which provides an outwardly opening recess **15**. Disposed within the recess **15** and tightly engaging the walls thereof, is a plug **16** of yieldable material, such as rubber or the like, and this plug **16** is provided with an outwardly opening tapered recess **17**, the purpose of which will presently appear.

Slidably disposed in the cylinder **11** is a plunger **18** which may be formed of any suitable material and centrally of the upper surface thereof there is provided a threaded recess **19** for threadedly and detachably receiving a threaded stud **20** forming a part of and depending from an actuating member **21**. Actuating member **21** is provided with a plurality of elongated ribs **22** which may be in the form of a cross, as shown, or any other desired configuration, and these ribs **22** have an outer diameter slightly less than the diameter of the cylinder **11**. Thus the ribs **22** may engage the wall of cylinder **11** and act as guides to maintain the actuating member **21** in substantially axial alignment with the cylinder **11**. The actuating member **21** terminates at its upper end in a finger-engaging stopper **23** provided with a tapered portion **24** for tightly engaging in the outer end of cylinder **11** and also being provided with an annular flange **25** having a diameter somewhat greater than the outer diameter of body **10** and providing a portion which may be easily gripped by the fingers of the operator or technician utilizing this device. The stopper **24** is provided with an outwardly opening recess **26** which may serve to receive and contain a quantity of sterile swab material **27**, and this material may be retained in a sterile condition by means of a seal **28** of suitable material which extends over the recess **26** and engages the annular flange **25**. If desired, the seal **28** may, of course, extend downwardly and engage the outer wall of the body **10** to provide an additional seal between the stopper **23** and the body **10** thereby further insuring against contamination of the cylinder **11**.

Slidably mounted on the skirt **14** is a needle shield **29** which may well comprise an elongated cylindrical member closed at one end by a wall **30**, and having an internal diameter sufficient to provide a relatively tight sliding fit on the outer surface of skirt **14**. Spaced inwardly of the shield **29** from the open end thereof, is a partition **31** which is provided with a central aperture **32**. Secured to the wall **30** of the shield **29** and extending up-

wardly through the aperture 32 in the partition 31, is a stylet 33 which serves to slidably receive and support a hypodermic needle 34 sharpened at the end 35 and also sharpened at the opposite end 36. Fixed on the needle 34 is a collar 37 of rubber or other suitable material, and such collar is provided with a tapered surface 38 complementary to the surface of the tapered recess 17 in the plug 16. The collar 37 is so positioned on the needle 34, that the same is in engagement with the surface of partition 31 with the sharpened end 35 of the needle 34 spaced from the end wall 30 of the shield 29 and with the shield and needle in the position shown in Fig. 1, the sharpened end 36 of the needle 34 penetrates a relatively short distance into the plug 16.

The body 10, actuating member 21, and needle shield 29 may be formed of glass or a non-breakable plastic, or any other suitable material which will withstand a sterilizing temperature, and it is to be presumed, that the entire device will be presterilized and provided as a unitary package with the parts in relationship shown in Fig. 1. If desired, a seal of suitable material may be provided between the needle shield 29 and the skirt 14, but normally the engagement between the shield 29 and skirt 14 is sufficiently tight to preclude the necessity of a seal in this location.

In order to prepare the device of this invention for use, it is only necessary to force the needle shield 29 inwardly on the skirt 14, which, by reason of the engagement of partition 31 with the collar 37, will force the sharpened end 36 of the needle 34 through the plug 16 and into communication with the cylinder 11 through the aperture 13 in the end wall 12. At the same time, the collar 37 will be moved into the recess 17 until the complementary wall theretof, tightly engage, as clearly shown in Fig. 2. At this time, the shield 29 may be removed by simply withdrawing the same in an axial direction which will, of course, remove the stylet 33 from the interior of the needle 34, leaving the sharpened end 35 available for use.

The sharpened end 35 of the needle 34 may then be inserted in the arm 39, or other body part of a patient, or into a vessel form which a sample of fluid is to be taken and the plunger 18 withdrawn outwardly of the cylinder 11 by grasping the flange 25 on the stopper 24 of the actuating member 21. This operation is clearly shown in Fig. 3, and by reason of the movement of the plunger 18, fluid 40 will be drawn into the cylinder 11 through the needle 34. Upon completion of the outward movement of the plunger 18, after a sufficient quantity of fluid has been drawn into the cylinder 11, the actuating member 21 may be removed from the plunger 18 by relative rotation which will release the threaded engagement between the stud 20 and the recess 19 in the plunger 18, and thereafter plunger 18 serves as an air-tight closure for the cylinder 11. The needle 34 and the collar 37 may be removed from the plug 16 and the yieldability of the material forming such plug results in closing the opening formed by the needle therein, which in turn seals the cylinder 11 and prevents contamination of the contents thereof. The swab material 27 may be conveniently removed from the recess 26 by removing the seal 28 and such swab material utilized to cleanse the skin surface to be pierced by the needle 24 and to cover the wound formed by the needle in the body of the patient.

The body 10 containing the fluid 40 and closed at one end by the plunger 18 and then at the opposite end by the plug 16, provides a container for the fluid 20 which may be utilized for storing the same or transportation to a laboratory for examination, and obviously, there is no opportunity for contamination of the contents thereof prior to such laboratory examination. Upon completion of such examination, the body 10 may, if desired, be discarded or sterilized and reassembled for future use.

The ribs 22 in engagement with the interior surface of the cylinder 11 serve to guide the actuating member 21 and plunger 18 during outward movement thereof, thereby preventing any displacement of the plunger 18 which might result in leakage between such plunger and the wall of the cylinder 11. Likewise, the provision of the sterile swab material 27 makes it unnecessary to provide any other equipment than that contained in the unitary package provided by the combined syringe and container of this invention.

It will therefore be seen, that by this invention there has been provided an extremely economical, yet highly efficient combination syringe and container which may be conveniently pre-sterilized and provided with means for conveniently attaching a needle in operative position, after which a specimen may be obtained and the device conveniently closed to provide a sterile container for such specimen. The device of this invention is particularly well adapted to obtain specimens of body fluids during mass examinations and is of such economical construction that the same may be utilized once and then discarded or, of course, the same, if desired, may be sterilized and reused.

It will be obvious to those skilled in the art that various changes may be made in the invention without departing from the spirit and scope thereof and therefore the invention is not limited by that which is shown in the drawing and described in the specification, but only as indicated in the appended claims.

What is claimed is:

1. A combination pre-sterilized syringe and container providing a device for obtaining and storing a specimen of fluid, said device comprising a body providing a cylinder open at one end, and a wall closing the opposite end, a skirt depending from said wall and providing a recess open at one end and closed at the opposite end by said wall, a central aperture in said wall communicating with said cylinder and said recess, a plug of yieldable material disposed in said recess and closing said aperture, a tapered, outwardly opening recess in said plug, a tubular shield slidably and removably received on said skirt, an end wall closing said shield opposite said skirt, a partition in said shield spaced from the outer end of said skirt, a central aperture in said partition, a stylet secured in said end wall and extending through said last named aperture, a hypodermic needle sharpened at both ends and slidably received on said stylet with the inner end embedded in said plug and the outer end spaced from said end wall, a collar fixed to said needle and engaging the surface of said partition, said collar having a tapered surface complementary to said recess whereby upon relative movement of said shield towards said body, the engagement of said partition and said collar will force the inner end of said needle through said plug and said first named aperture into communication with said cylinder and said collar into said recess, said shield and stylet being removable and leaving said needle in operative position, a plunger slidably received in said cylinder, an actuating member disposed in said cylinder and detachably connected to said plunger, guide ribs on said actuating member for maintaining the same in substantially axial alignment in said cylinder, a finger-engaging stopper on said actuating member for closing said cylinder and for facilitating outward movement of said plunger, an outwardly opening recess in said stopper for receiving sterile swab material, and hermetic sealing means covering said last named recess and sealing said stopper to said body to maintain said cylinder in sterile condition whereby upon outward movement of said plunger, fluid will be drawn into said cylinder through said needle and upon completion of such movement, said actuating member may be disconnected from said plunger and said needle removed from said plug, the material of said plug closing the opening therein and said plunger closing the outer end of said cylinder to provide a sterile container for said fluid.

2. A combination pre-sterilized syringe and container providing a device for obtaining and storing a specimen of fluid, said device comprising a body providing a cylinder open at one end and a wall closing the opposite end, a skirt depending from said wall and providing a recess open at one end and closed at the opposite end by said wall, a central aperture in said wall communicating with said cylinder and said recess, a plug of yieldable material disposed in said recess and closing said aperture, a tapered, outwardly opening recess in said plug, a tubular shield slidably and removably received on said skirt, an end wall closing said shield at the end opposite said skirt, a partition in said shield spaced from the outer end of said skirt, a central aperture in said partition, a stylet secured in said end wall and extending through said last named aperture, a hypodermic needle sharpened at both ends and slidably received on said stylet with the inner end embedded in said plug and the outer end spaced from said end wall, a collar fixed to said needle and engaging the surface of said partition, said collar having a tapered surface complementary to said recess whereby upon relative movement of said shield towards said body, the engagement of said partition and said collar will force the inner end of said needle through said plug and said first named aperture into communication with said cylinder and said collar into said recess, said shield and stylet being removable and leaving said needle in operative position, a plunger slidably received in said cylinder, an actuating member disposed in said cylinder and detachably connected to said plunger, guide ribs on said actuating member for maintaining the same in said substantial axial alignment in said cylinder, a finger engaging stopper on said actuating member for closing said cylinder and for facilitating outward movement of said plunger and hermetic sealing means for sealing said stopper to said body to maintain said cylinder in sterile condition whereby upon outward movement of said plunger, fluid will be drawn into said cylinder through said needle and upon completion of such movement said actuating member may be disconnected from said plunger and said needle removed from said plug, the material of said plug closing the opening therein and said plunger closing the outer end of said cylinder to provide a sterile container for said fluid.

3. A combination pre-sterilized syringe and container providing a device for obtaining and storing a specimen of fluid, said device comprising a body providing a cylinder open at one end and a wall closing the opposite end, a skirt depending from said wall and providing a recess open at one end and closed at the opposite end by said wall, a central aperture in said wall communicating with said cylinder and said recess, a plug of yieldable material disposed in said recess and closing said aperture, a tapered, outwardly opening recess in said plug, a tubular shield slidably and removably received on said skirt, and an end wall closing said shield at the end opposite said skirt, a partition in said shield spaced from the outer end of said skirt, a central aperture in said partition, a stylet secured in said end wall and extending through said last named aperture, a hypodermic needle sharpened at both ends and yieldably received on said stylet with the inner end embedded in said plug and the outer end spaced from said end wall, a collar fixed to said needle and engaging the surface of said partition, said collar having a tapered surface complementary to said recess whereby upon relative movement of said shield toward said body, the engagement of said partition and said collar will force the inner end of said needle through said plug and said first named aperture into communication with said cylinder and said collar into said recess, said shield and stylet being removable and leaving said needle in operative position, a plunger slidably received in said cylinder, an actuating member disposed in said cylinder and detachably connected to said plunger, guide ribs on said actuating

member for maintaining the same in substantially axial alignment in said cylinder and a finger engaging stopper on said actuating member for closing said cylinder and for facilitating outward movement of said plunger whereby upon outward movement of said plunger, fluid will be drawn into said cylinder through said needle and upon completion of such movement said actuating member may be disconnected from said plunger and said needle removed from said plug, the material of said plug closing the opening therein and said plunger closing the outer end of said cylinder to provide a sterile container for said fluid.

4. A combination pre-sterilized syringe and container providing a device for obtaining and storing a specimen of fluid, said device comprising a body providing a cylinder opening at one end and a wall closing the opposite end, a skirt depending from said wall and providing a recess open at one end and closed at the opposite end by said wall, a central aperture in said wall communicating with said cylinder and said recess, a plug of yieldable material disposed in said recess and closing said aperture, a tapered outwardly opening recess in said plug, a tubular shield slidably and removably received on said skirt, an end wall closing said shield at the end opposite said skirt, a partition in said shield spaced from the outer end of said skirt, a central aperture in said partition, a stylet secured in said end wall and extending through said last named aperture, a hypodermic needle sharpened at both ends and slidably received on said stylet with the inner end embedded in said plug and the outer end spaced from said end wall, a collar fixed to said needle and engaging the surface of said partition, said collar having a tapered surface complementary to said recess whereby upon relative movement of said shield toward said body, the engagement of said partition and said collar will force the inner end of said needle through said plug and said first named aperture into communication with said cylinder and said collar into said recess, said shield and stylet being removable and leaving said needle in operative position, a plunger slidably received in said cylinder, an actuating member disposed in said cylinder and detachably connected to said plunger, means for maintaining said actuating member in substantially axial alignment in said cylinder and a finger engaging stopper on said actuating member for closing said cylinder and for facilitating outward movement of said plunger whereby upon outward movement of said plunger, fluid will be drawn into said cylinder through said needle and upon completion of such movement said actuating member may be disconnected from said plunger and said needle removed from said plug, the material of said plug closing the opening therein and said plunger closing the outer end of said cylinder to provide a sterile container for said fluid.

5. A combination pre-sterilized syringe and container providing a device for obtaining and storing a specimen of fluid, said device comprising a body providing a cylinder opening at one end and a wall closing the opposite end, a skirt depending from said wall and providing a recess open at one end and closed at the opposite end by said wall, an aperture in said wall communicating with said cylinder and said recess, a plug of yieldable material disposed in said recess and closing said aperture, an outwardly opening recess in said plug, a tubular shield slidably and removably received on said skirt, an end wall closing said shield at the end opposite said skirt, a partition in said shield, an aperture in said partition, a stylet secured to said end wall and extending through said last named aperture, a hypodermic needle sharpened at both ends and slidably received on said stylet with the inner end embedded in said plug and the outer end spaced from said end wall, a collar fixed to said needle and engaging the surface of said partition, said collar having a surface complementary to said recess whereby upon relative movement of said shield toward

said body, the engagement of said partition and said collar will force the inner end of said needle through said plug and said first named aperture into communication with said cylinder and said collar into said recess, said shield and stylet being removable and leaving said needle in operative position, a plunger slidably received in said cylinder, an actuating member disposed in said cylinder and detachably connected to said plunger, means for maintaining said actuating member in substantially axial alignment in said cylinder and finger engaging stopper on said actuating member for closing said cylinder and for facilitating outward movement of said plunger whereby upon outward movement of said plunger, fluid will be drawn into said cylinder through said needle and upon completion of said movement, said actuating member may be disconnected from said plunger and said needle removed from said plug, the material of said plug closing the opening therein and said plunger closing the outer end of said cylinder to provide a sterile container for said fluid.

6. A combination pre-sterilized syringe and container providing a device for obtaining and storing a specimen of fluid, said device comprising a body providing a cylinder open at one end and a wall closing the opposite end, a skirt depending from said wall and providing a recess open at one end and closed at the opposite end by said wall, an aperture in said wall communicating with said cylinder and said recess, a plug of yieldable material disposed in said recess and closing said aperture, an outwardly opening recess in said plug, a tubular shield slidably and removably received on said skirt, an end wall closing said shield at the end opposite said skirt, a partition in said shield, an aperture in said partition, a stylet secured to said end wall and disposed within said shield in alignment with said last named aperture, a hypodermic needle sharpened at both ends and slidably received on said stylet with the inner end embedded in said plug, a collar fixed to said needle and engaging the surface of said partition, said collar having a surface complementary to said recess whereby upon relative movement of said shield toward said body, the engagement of said partition and said collar will force the inner end of said needle through said plug and said first named aperture into communication with said cylinder and said collar into said recess, said shield and stylet being removable and leaving said needle in operative position, a plunger slidably received in said cylinder, an actuating member disposed in said cylinder and detachably connected to said plunger, means for maintaining said actuating member in substantially axial alignment in said cylinder and a finger engaging stopper on said actuating member for closing said cylinder and for facilitating outward movement of said plunger whereby upon outward movement of said plunger, fluid will be drawn into said cylinder through said needle and upon completion of such movement said actuating member may be disconnected from said plunger and said needle removed from said plug, the material of said plug closing the opening therein and said plunger closing the outer end of said cylinder to provide a sterile container for said fluid.

7. A combination pre-sterilized syringe and container providing a device for obtaining and storing a specimen of fluid, said device comprising a body providing a cylinder open at one end and a wall closing the opposite end, a skirt depending from said wall and providing a recess open at one end and closed at the opposite end by said wall, an aperture in said wall communicating with said cylinder and said recess, a plug of yieldable material disposed in said recess and closing said aperture, an outwardly opening recess in said plug, a tubular shield slidably and removably received on said skirt, an end wall closing said shield at the end opposite said skirt, a partition in said shield, an aperture in said partition, a stylet secured to said end wall and disposed within said shield in alignment with said last named aperture, a hypodermic needle sharpened at both ends and slidably received on said stylet, the inner end embedded in said plug, a collar fixed to said needle and engaging the surface of said partition, said collar having a surface complementary to said recess whereby upon relative movement of said shield toward said body, the engagement of said partition and said collar will force the inner end of said needle through said plug and said first named aperture into communication with said cylinder and said collar into said recess, said shield and stylet being removable and leaving said needle in operative position, a plunger slidably received in said cylinder, an actuating member disposed in said cylinder and detachably connected to said plunger and finger engaging stopper on said actuating member for closing said cylinder and for facilitating outward movement of said plunger whereby upon outward movement of said plunger, fluid will be drawn into said cylinder through said needle and upon completion of such movement said actuating member may be disconnected from said plunger and said needle removed from said plug, the material of said plug closing the opening therein and said plunger closing the outer end of said cylinder to provide a sterile container for said fluid.

8. A combination pre-sterilized syringe and container providing a device for obtaining and storing a specimen of fluid, said device comprising a body providing a cylinder open at one end and a wall closing the opposite end, a skirt depending from said wall and providing a recess open at one end and closed at the opposite end by said wall, an aperture in said wall communicating with said cylinder and said recess, a plug of yieldable material disposed in said recess and closing said aperture, a tubular shield slidably and removably received on said skirt, an end wall closing said shield on the end opposite said skirt, a partition in said shield, an aperture in said partition, a stylet secured to said end wall and disposed within said shield in alignment with said last named aperture, a hypodermic needle sharpened at both ends and slidably received on said stylet with the inner end embedded in said plug, a collar fixed to said needle and engaging the surface of said partition, whereby upon relative movement of said shield toward said body, the engagement of said partition and said collar will force the inner end of said needle through said plug and through said first named aperture into communication with said cylinder, said shield and said stylet being removable and leaving said needle in operative position, a plunger slidably received in said cylinder, an actuating member disposed in said cylinder and detachably connected to said plunger and a finger engaging stopper on said actuating member for closing said cylinder and for facilitating outward movement of said plunger whereby upon outward movement of said plunger, fluid will be drawn into said cylinder through said needle and upon completion of such movement said actuating member may be disconnected from said plunger and said needle removed from said plug, the material of said plug closing the opening therein and said plunger closing the outer end of said cylinder to provide a sterile container for said fluid.

9. A combination pre-sterilized syringe and container providing a device for obtaining and storing a specimen of fluid, said device comprising a body providing a cylinder open at one end and a wall closing the opposite end, a skirt depending from said wall and providing a recess open at one end and closed at the other end by said wall, an aperture in said wall communicating with said cylinder and said recess, a plug of yieldable material disposed in said recess and closing said aperture, a tubular shield slidably and removably received on said skirt, an end wall closing said shield at the end opposite said skirt, a partition in said shield, an aperture in said partition, a stylet secured to said end wall and disposed within said shield in alignment with said last named aperture, a hypodermic

needle slidably received on said stylet, a collar fixed to said needle and engaging the surface of said partition, whereby upon relative movement of said shield toward said body, the engagement of said partition and said collar will force the inner end of said needle through said plug and through said first named aperture into communication with said cylinder, said shield and stylet being removable and leaving said needle in operative position, a plunger slidably received in said cylinder, an actuating member disposed in said cylinder and detachably connected to said plunger and a finger engaging stopper on said actuating member for closing said cylinder and for facilitating outward movement of said plunger, whereby upon outward movement of said plunger, fluid will be drawn into said cylinder through said needle and upon completion of such movement said actuating member may be disconnected from said plunger and said needle removed from said plug, the material of said plug closing the opening therein and said plunger closing the outer end of said cylinder to provide a sterile container for said fluid.

10. A combination pre-sterilized syringe and container providing a device for obtaining and storing a specimen of fluid, said device comprising a body providing a cylinder open at one end and a wall closing the opposite end, a skirt depending from said wall and providing a recess open at one end and closed at the opposite end by said wall, an aperture in said wall communicating with said cylinder and said recess, a plug of yieldable material disposed in said recess and closing said aperture, a tubular shield slidably and removably received on said skirt, an end wall closing said shield at the end opposite said skirt, a partition in said shield, an aperture in said partition, a hypodermic needle disposed in said shield and extending through said last named aperture, a collar fixed to said needle and engaging the surface of said partition, whereby upon relative movement of said shield toward said body the engagement of said partition and said collar will force the inner end of said needle through said plug and said first named aperture into communication with said cylinder, said shield being removable and leaving said needle in operative position, a plunger slidably received in said cylinder, an actuating member disposed in said cylinder and detachably connected to said plunger and a finger

engaging stopper on said actuating member for closing said cylinder and for facilitating outward movement of said plunger, whereby upon outward movement of said plunger fluid will be drawn into said cylinder through said needle and upon completion of such movement, said actuating member may be disconnected from said plunger and said needle removed from said plug, the material of said plug closing the opening therein and said plunger closing the outer end of said cylinder to provide a sterile container for said fluid.

11. A combination pre-sterilized syringe and container providing a device for obtaining and storing a specimen of fluid, said device comprising a body providing a cylinder open at one end and a wall closing the opposite end, a skirt depending from said wall and providing a recess open at one end and closed at the opposite end by said wall, an aperture in said wall communicating with said cylinder and said recess, a plug of yieldable material disposed in said recess and closing said aperture, a tubular shield slidably and removably received on said skirt, a partition in said shield, an aperture in said partition, a hypodermic needle disposed in said shield and extending through said last named aperture, a collar fixed to said needle and engaging said partition, whereby upon relative movement of said shield toward said body, the engagement of said partition and said collar will force the inner end of said needle through said plug and said first named aperture into communication with said cylinder, said shield being removable and leaving said needle in operative position, a plunger slidably received in said cylinder, an actuating member disposed in said cylinder and detachably connected to said plunger and a finger-engaging stopper on said actuating member for closing said cylinder and for facilitating outward movement of said plunger, whereby upon outward movement of said plunger, fluid will be drawn into said cylinder through said needle and upon completion of such movement said actuating member may be disconnected from said plunger and said needle removed from said plug, the material of said plug closing the opening therein and said plunger closing the outer end of said cylinder to provide a sterile container for said fluid.

No references cited.