

P. J. McELROY.
HYPODERMIC NEEDLE.
APPLICATION FILED APR. 30, 1909.

950,822.

Patented Mar. 1, 1910.

Fig. 1.

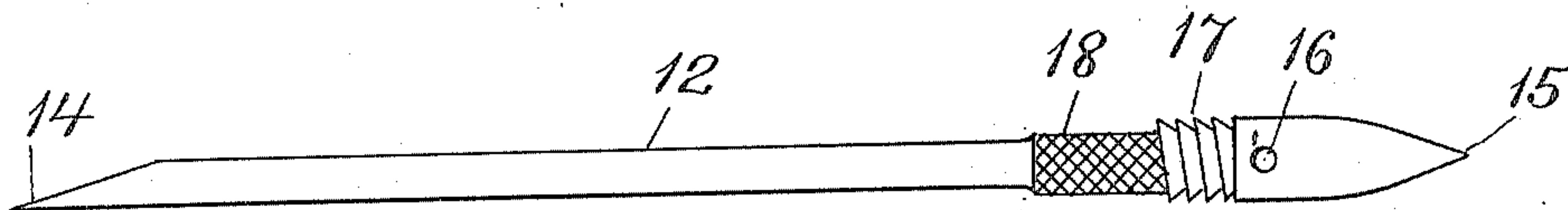


Fig. 2.

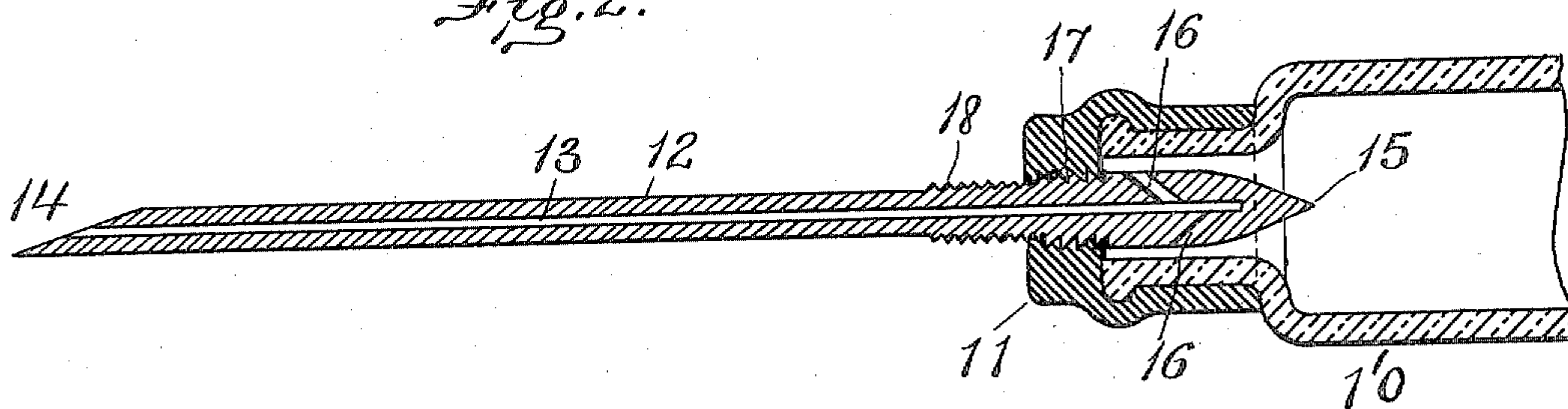
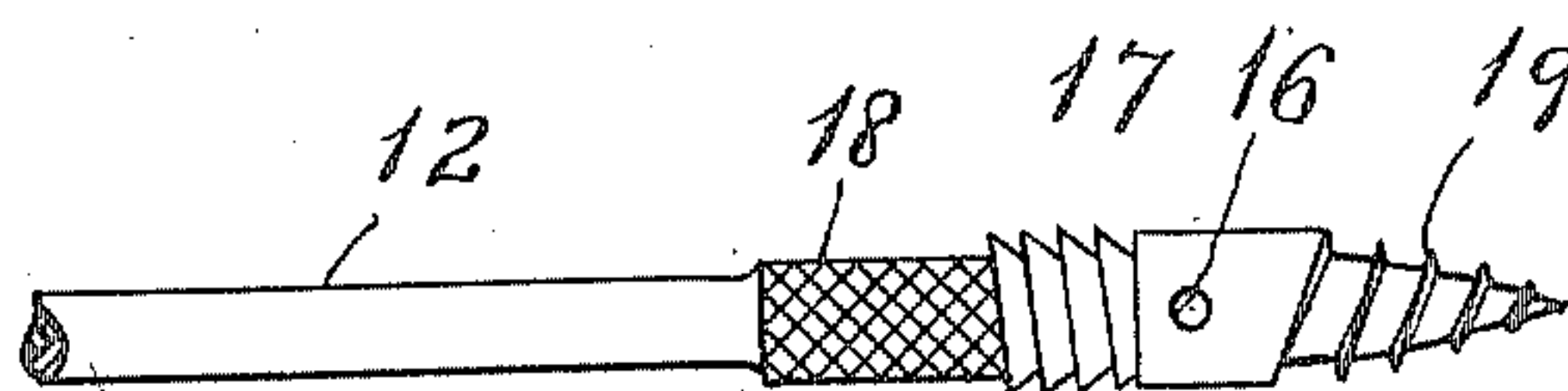


Fig. 3.



Witnesses.
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UNITED STATES PATENT OFFICE.

PATRICK J. McELROY, OF CAMBRIDGE, MASSACHUSETTS, ASSIGNOR TO HIMSELF, AND
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HYPODERMIC NEEDLE.

950,822.

Specification of Letters Patent.

Patented Mar. 1, 1910.

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To all whom it may concern:

Be it known that I, PATRICK J. McELROY, of Cambridge, in the county of Middlesex and State of Massachusetts, have invented certain new and useful Improvements in Hypodermic Needles, of which the following is a specification.

This invention relates to a hypodermic needle which is so formed that its inner end, which receives the liquid to be discharged from the outer end, is adapted to penetrate a stopper or closure applied to a container for the liquid to be administered, said container being usually a syringe barrel provided with a piston adapted to force the liquid through the needle. Containers of this character are now on the market, the needle-receiving end of the container being closed by a stopper or closure of penetrable material, such as rubber, which retains the contained liquid until the device is to be used, the syringe being rendered usable by forcing the inner end of a tubular needle through the closure, so that the inner end of the longitudinal duct in the needle is in communication with the interior of the container. Heretofore, the duct has extended through the inner end of the needle so that the mouth of the duct has been exposed to contact with the material of the plug or closure when the needle is penetrating the same, the mouth of the duct being therefore liable to be closed and obstructed by particles or fragments of the material of the plug. The duct has a very small diameter so that it is easily obstructed and rendered inoperative. Owing to the small size of the duct, the removal therefrom of obstructing matter forced into it, is somewhat difficult.

My invention has for its object to prevent any obstruction of the duct by the material of the plug or closure through which the inner end of the needle is forced, and it consists in the improvements which I will now proceed to describe and claim.

Of the accompanying drawings, forming a part of this specification,—Figure 1 represents a side elevation of a hypodermic or tubular needle embodying my invention. Fig. 2 represents a longitudinal section of the same, and a sectional view of a portion of a liquid container with which the needle is connected. Fig. 3 represents a side view of the needle showing its inner end provided with a gimlet or screw end.

The same reference characters indicate the same parts in all the figures.

In the drawings,—10 represents a liquid container, which may be a cylindrical syringe barrel composed of glass, and 11 represents a plug or closure for the delivering end of the container, said closure being of any suitable penetrable material, such as rubber.

12 represents a hypodermic needle having the usual longitudinal duct 13, and pointed outer discharging end 14 through which the duct extends. The duct 13 instead of extending through the inner end of the needle, terminates at a distance from said inner end, as shown in Fig. 2, the inner end portion of the needle being tapered so that it is adapted to penetrate the closure 11, the tapered portion being imperforate so that when it is forced through the plug or closure, the material of the closure cannot enter the duct and form an obstruction therein. To permit the passage of the liquid from the container of the duct, I provide the inner end portion of the needle with one or more lateral passages 16 extending from the periphery of the needle to the duct. I have here shown two passages 16, each of which is inclined relatively to the axis of the needle, and backwardly from its outer end toward the inner end of the needle. This inclination of the passages prevents any liability of the material of the plug or closure being scraped off by the edges of the passages while they are moving through said material. An unobstructed communication between the interior of the container and the duct 13 when the needle has been forced to its operative position, is thus insured.

The portion of the needle which is engaged with the closure 11 when the needle is in its operative position is preferably screw-threaded or corrugated in such manner as to resist the outward movement of the needle. I have here shown the said portion of the needle provided with peripheral ridges 17 which are beveled at the side adjacent the inner end of the needle, and thus adapted to readily move inwardly in the closure 11, the outer faces of said ridges being substantially at right angles with the axis of the needle, so that they oppose outward movement of the needle. The ridges may be convolutions of a screw thread.

The needle is preferably provided between the ridges 17 and the outer end with a

roughened portion 18 which is preferably milled, and is adapted to engage the thumb and finger of the operator during the operation of forcing the needle into the closure 11.

5 In Fig. 3 I show the needle having a gimlet or screw formation at its inner end portion 19 adapted to be forced through the closure 11 by a rotary movement of the needle.

10 I claim:

1. A hypodermic or tubular needle having a penetrating inner end which is closed at its point and provided with a lateral passage extending from the periphery of the needle
15 to the longitudinal needle duct, the needle having the usual penetrating and liquid-discharging outer end portion through which said duct extends.

2. A hypodermic needle having the usual penetrating and liquid-discharging outer 20 end portion, and a penetrating inner end portion which is closed at its point, and is provided with a lateral passage adjacent to said point through which liquid may pass from the container to the needle duct, said 25 passage being inclined relatively to the axis of the needle and backwardly from its outer end toward the inner end of the needle, substantially as and for the purpose specified.

In testimony whereof I have affixed my signature, in presence of two witnesses.

PATRICK J. McELROY.

Witnesses:

C. F. BROWN,
P. W. PEZZETTI.