

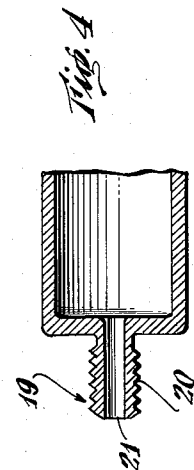
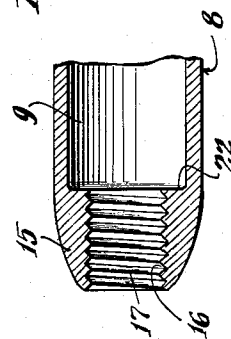
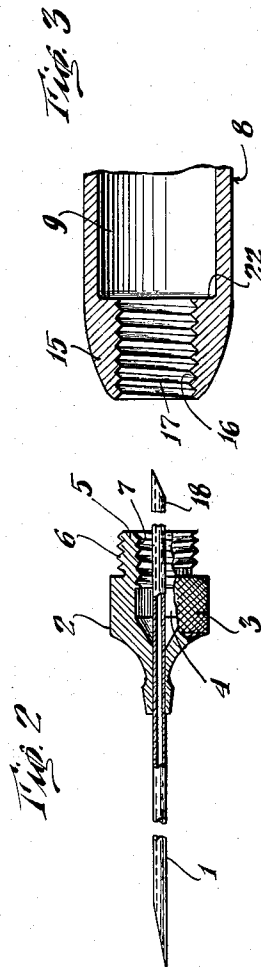
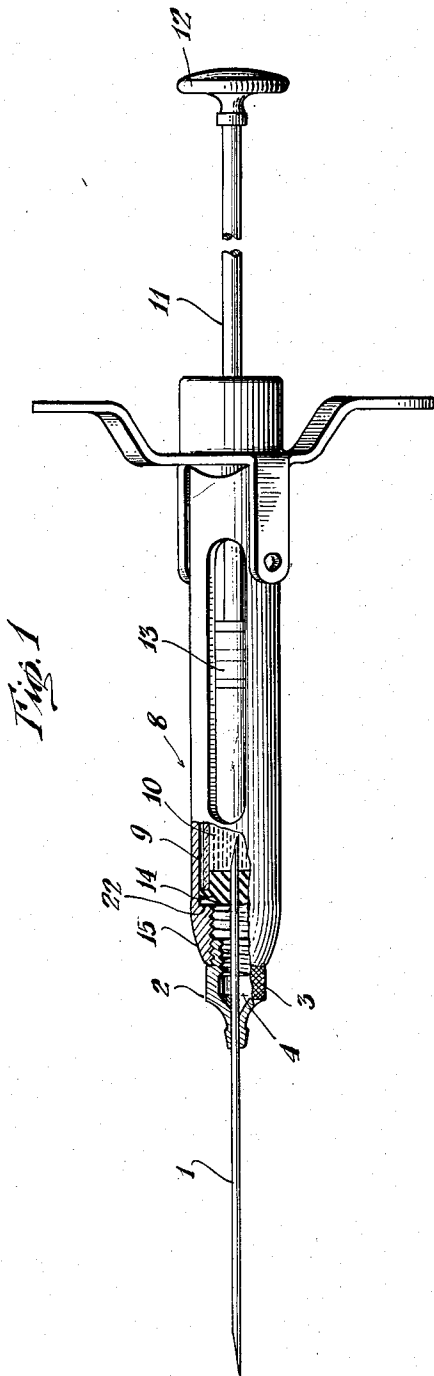
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HYPODERMIC SYRINGE

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HYPODERMIC SYRINGE

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1 Claim. (Cl. 128—218)

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This invention relates to an improved hypo-
dermic syringe, an improved needle therefor, and
their combination.

In recent years a type of hypodermic syringe
has come into extensive use in which a cartridge
of sterile injectable material is placed in the
syringe, one end of the cartridge is pierced by a
sterile double-pointed needle, commonly called
in the art a double-cannula needle, which is
screwed on a nipple at the end of the syringe, and
a movable plug at the end of the cartridge re-
mote from the needle is forced toward the in-
jectable material by pressing on the thumb piece
of the syringe plunger.

In the past it has been customary to provide
the syringe with a nipple having a small bore
and an external or male thread, and to provide
the needle with a hub having an internal or fe-
male thread. One disadvantage that has re-
sulted from this construction is that the bore of
the nipple is necessarily quite small and provides
relatively little clearance around the syringe end
of the needle. Accordingly it is not easy to in-
sert the sterile needle into a syringe without risk
of contacting the needle with the bore of the
nipple. Consequently it is necessary that a sy-
ringe of this type be sterilized before use to pre-
vent contamination of the sterile needle. The
end of the cartridge which is pierced by the nee-
dle also requires sterilizing (as by wiping with
alcohol) before use. The needle is ordinarily in-
serted in the syringe first, then the cartridge,
and the syringe plunger is brought to bear on
the movable plug in the cartridge, preparatory
to injection.

An additional disadvantage is that the small
size of the bore in the nipple makes cleaning un-
certain, difficult and time-consuming.

It is the object of my present invention to pro-
vide a device which avoids these difficulties.

According to my invention I provide a syringe
having a nipple at the needle end which has a
considerably increased diameter and a relatively
large bore provided with an internal or female
thread, and I provide a double-cannula needle
having a hub with an external or male thread;
furthermore I provide the hub of my improved
needle with an internal or female thread so that
it may also fit the conventional type of syringe
nipple, thus avoiding the necessity of providing
two different types of needle where different
types of syringes are sold or used. The provision
of two such threads is made possible by the in-
creased diameter of the hub, as compared with
conventional needles, which in turn is made pos-

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sible by the greater diameter of the syringe nip-
ple of my invention.

This construction eliminates the need for ster-
ilization of the syringe before use, since the large
bore in the nipple permits insertion of the sterile
needle without danger of contact with the bore
of the nipple and consequent contamination.

My invention is illustrated in the accompany-
ing drawing, but this drawing is intended to be
exemplary only and not to limit my invention, the
scope of which is defined in the following claim.

In the drawing Fig. 1 represents an assembly
of my improved syringe and improved needle,
partially in section.

Fig. 2 represents my improved needle, partially
in section.

Fig. 3 is an enlarged sectional view of the nip-
ple end of my improved syringe.

Fig. 4 is an enlarged sectional view of the nip-
ple end of a conventional syringe.

In the drawing a double-cannula needle shaft
1 is mounted in an improved hub 2. This hub
is provided with a knurled portion 3 to facilitate
screwing it into the body of the syringe. The
hub has a hollow bore 4 which at one end has a
diameter approximately equal to the outside di-
ameter of the needle and at the other end is of
considerably greater diameter. The end 5 of the
hub, surrounding the wider part of the bore, is
provided with an external male thread 6, and
the wide portion of the bore is also threaded in-
ternally with female thread 7. The body of my
improved syringe 8 is provided with a large cy-
lindrical bore 9 in which cartridge 10 is inserted.
At one end it is provided with a slideable plunger
on rod 11, to which thumb piece 12 is affixed at
the outer end. The plunger at the other end of
rod 11 bears on movable plug 13 of the cartridge.
The cartridge is provided at the needle end with
a pierceable rubber plug 14. The nipple 15 is in-
tegral with the body of my syringe and consti-
tutes its needle end; this nipple is provided with
an internal or female thread 16 of the same size
and pitch as male thread 6 on the hub of the
needle. Shoulder 22 is provided at the inner end
of thread 16 to receive the thrust of cartridge 10
during injection. It will be seen from the draw-
ing that bore 17 of the nipple of my improved
syringe is of relatively large diameter in compari-
son with the outside diameter of the needle, and
readily permits the insertion of the syringe end
18 of needle 1 without risk of contact with the
interior wall of the nipple.

My improved syringe is made of a rigid, di-
mensionally stable material such as, for exam-

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ple, nickel- or chromium-plated brass, or a rigid plastic material, which may be turned, drawn, stamped, molded or otherwise fabricated.

In Fig. 4 the needle end of a conventional syringe is shown having nipple 19 provided with an external male thread 20 and a smooth internal bore 21. My improved needle will fit such a nipple, female thread 7 of the needle engaging male thread 20 of the syringe, both having the same size and pitch. However, it will be seen that it is much more difficult to insert the needle in the conventional syringe without contact with the inner wall of the nipple. Accordingly in my improved syringe the risk of infecting or contaminating the needle is substantially eliminated.

I claim:

A double-pointed injection needle adapted to be mounted in a syringe barrel by means of a rigid threaded hub constituting an integral part of the needle, said hub having a bore which at one end of the hub is substantially larger in diameter than the needle and at the other end of

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the hub is of substantially the same diameter as the outside diameter of the needle, the needle passing centrally through the bore, being firmly fixed therein in the small end of the bore and projecting beyond the hub at each end, the larger end of the bore being provided with an internal female thread, said hub being provided with a knurled central portion and at the end surrounding the wider portion of the bore being provided with an exterior male thread concentric with the interior female thread.

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