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S. J. EVERETT

2,219,089

HYPODERMIC NEEDLE MOUNT

Filed March 9, 1938

FIG. 1.

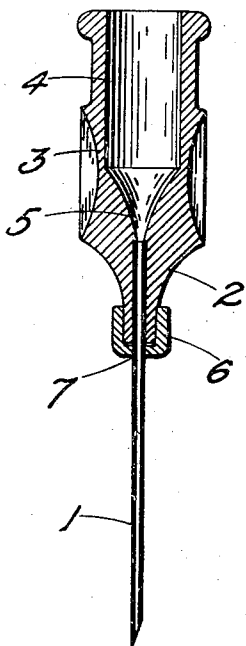


FIG. 2.

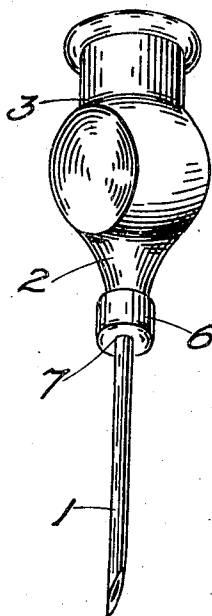


FIG. 3.

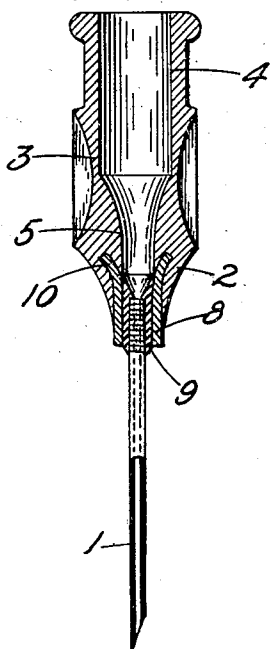


FIG. 4.

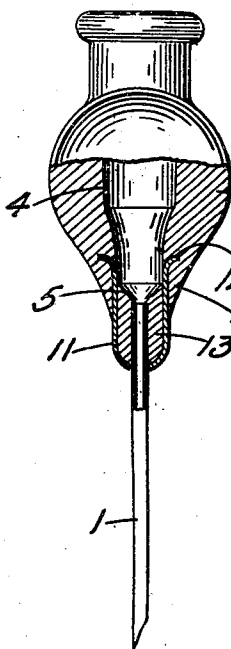
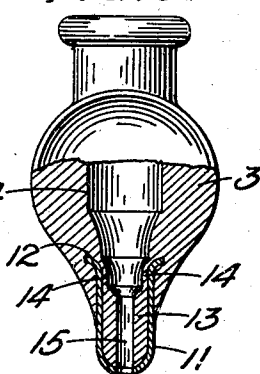


FIG. 5.



Inventor,
Samuel J. Everett.
By,
Sommer & Young *ATTORNEYS*

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HYPODERMIC NEEDLE MOUNT

Samuel James Everett, Norbury, London, England

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7 Claims. (Cl. 128—215)

This invention concerns improvements relating to mounts for hypodermic needles. The term mount, in this specification, is to be understood to exclude so-called heads on hypodermic needles.

5 It has already been proposed that such heads should consist of a small disc of hard metal which is dished and contains a similar disc, or a small body, of soft metal, both parts being secured upon the end of the needle. Needles with such
10 heads are releasably connected to the syringe by being clamped against a nipple on the said syringe by a separate nozzle screwed upon the said nipple. In contrast with a head of this nature, a mount is a relatively elongated body by
15 which a releasable connection is made to the syringe by the mount itself being interfitted with a nipple on the syringe. Known such mounts are formed with a slightly tapering bore or with an external taper whereby they are adapted for being
20 releasably connected to the syringe by being forced over a conical nipple thereon or into a conical bore therein. Needles with such mounts are generally discarded after a single use and must therefore be inexpensive to produce. On
25 the other hand, the needle proper must be firmly and strongly held in the mount.

Pewter mounts cast upon the needles have the advantage that they can be made to facilitate the insertion through the mount of the wire
30 which is generally introduced into the bore of the needle. As hitherto practised, however, the process is slow and the further treatment of the mounts on the needles is expensive. If the
35 mounts are produced apart from the needles, it is difficult to attach them securely by any commercially practicable process. It is an object of the invention to overcome such difficulties as these and at the same time to retain ease of
40 insertion of the needle-wire.

According to the invention, a mount for a hypodermic needle comprises a body of soft-metal, adapted at one end for being secured to the end of a syringe and having at the other end
45 a nozzle-like formation provided with a needle bore, and a hard-metal re-inforcement, provided at that end of the said body which receives the needle proper, and surrounds the needle bore and blunt end of the needle. By this means, the
50 mount is strengthened where the needle is attached and the attachment is firmer than would be possible with the soft body alone. The re-inforcement may consist of a hard-metal cap, nipple, ring or tube embracing or embedded in the
55 aforesaid end of the soft body and may be pro-

duced in any appropriate fashion, as by pressing, turning, die-casting or moulding.

It has heretofore been proposed that a brass mount should be completely lined with a soft metal insert. In contrast to this proposal, the
5 mount according to the invention is essentially a soft mount having only a re-inforcement of hard metal at the end which receives the needle proper.

Embodiments of the invention are illustrated by way of example in the accompanying drawing, in which:

Fig. 1 is a longitudinal axial section of a needle fitted with a mount.

Fig. 2 is a perspective view thereof.

Fig. 3 is a view similar to Fig. 1 of an alternative arrangement.

Fig. 4 is a longitudinal axial section of a needle fitted with another form of mount, and

Fig. 5 is a similar view showing an intermediate stage in the production of the mount of Fig. 4.

In the embodiment illustrated in Figs. 1 and 2, the needle proper 1 is secured in the tapering end-part 2 of a soft-metal mount-body 3. The
25 body 3 has a deep, slightly tapering, bore 4 adapted for being secured over the nipple of a syringe, the bore of the needle 1 opening smoothly into the bore 4 by way of a flared part 5 facilitating
30 insertion of a needle-wire through the mount. A small hard-metal cap 6 pierced at 7 for the passage of the needle fits tightly over the reduced extremity of the end-part 2 of the soft-metal body. The said body may be made of pewter and the cap 6 may be made of brass.

A method of producing the needle-assembly illustrated will now be described.

The mount-body 3 may be produced separately and is formed with a narrow bore for receiving the needle proper 1. The latter is provided with
40 a screw-thread at its blunt end and is screwed into the bore in the aforesaid body. The cap 6, produced by die-casting or stamping, is then secured over the extremity of the end-part 2 of the body 3 by being pressed or swaged, or screwed, thereon. By this means, the needle is secured
45 considerably more tightly and permanently in the end-part 2 of the soft-metal and the said end-part is strengthened.

If desired, the re-inforcement may be first attached to the needle-proper and then secured to, for instance pressed into, the mount body. Thus, in the production of a needle-assembly similar to that illustrated in Figs. 1 and 2, the cap-part
50 6 may be first attached to the needle 1 and the
55

cap and needle then engaged with the mount body 3 by compressing the cap-part 6 around the extremity of the latter. Or the engagement may be effected by forcing the mount-body into the cap-part. Or a needle with a hard-metal re-

5 reinforcement attached to it may be introduced into the mount-body from the wide end and the re-inforcement pressed or forced into the bottom of the interior of the said body.

10 Various modifications may be made without departing from the invention. Thus a hard-metal re-inforcing ring may be employed in place of the cap-shaped part 6. Furthermore, instead of an external re-inforcement, a hard-metal in-

15 sert may be embedded in the end-part 2 of the soft-metal body. For instance, a small brass or silver tube or nipple 8 such as is illustrated in Fig. 3 may be secured in the end-part 2 in the die-casting or stamping process by which the

20 pewter mount is formed, and the needle 1 may be secured in the tube or nipple, without disturbing the mount itself, by means of a pewter slug 9 as illustrated, or by soldering, pressing or swaging the needle in the tube or nipple. To assist an-

25 anchorage of the tube 8 in the mount, the tube may be of flared formation at the inner end 10.

In the arrangement of Fig. 4, the re-inforce-ment consists of a hard-metal cap 11 which ex-

30 tends into and is embedded in the end-part 2 of a soft-metal mount-body 3, the flared edge 12 assisting in anchoring the cap in the mount-body. The needle 1 is embedded in a plug 13 of soft-metal contained in the lower part of the cap 11. An intermediate stage in a preferred

35 mode of production is illustrated in Fig. 5 which shows the mount-body, including the plug 13, die-cast upon and in the cap 11. As will be seen, there is surplus metal at 14 which is forced into the formation shown in Fig. 4 when the mount

40 is stamped upon the needle 1 inserted in the hole 15. As before, the needle is thus tightly secured in the strengthened end-part of the mount.

In accordance with another method, the mount body 3 is attached to the needle by die-casting

45 a re-inforcement in the said body and immediately surrounding the needle 1. The said body can then be made of a softer metal than would otherwise be possible, whereby the seating of the

50 mount is rendered more pliable whilst strong attachment of the needle and the other aforesaid advantages are retained.

It is an advantage of the initially described methods that finishing operations can be per-

55 formed upon the mount and, if desired, upon the re-inforcing part before attachment to the comparatively delicate needle. Thus, metal mounts and re-inforcing parts may be buffed and nickel-plated without difficulty.

60 The illustrated external form of the mount-body 3 is convenient for ease of manipulation of the needle, but other forms may be employed, if required.

I claim:

65 1. A hypodermic needle mount for syringes comprising a body part of relatively soft metal securable to the end of a syringe, said body part having a nozzle-like end provided with a needle

70 bore, a hard metal end fitting securable to said nozzle-like end of the body part, and a needle having its blunt end fixedly secured within said

hard metal end fitting with the hard metal fitting surrounding the needle bore and blunt end of the needle.

2. A hypodermic needle mount comprising a body part of relatively soft metal securable to the end of a syringe, said body part having a nozzle-like end provided with a needle bore, a hard metal end fitting embedded in said nozzle-like end of the body part, and a needle having its blunt end fixedly secured within said hard metal end fitting with said fitting surrounding the needle bore and blunt end of the needle.

3. A hypodermic needle mount comprising a body part of relatively soft metal securable to the end of a syringe, said body part having a nozzle-like end provided with a needle bore, and a hard metal, tubular reinforcement having one end portion embedded in said nozzle-like end of the body part, a needle having a plug surrounding its blunt end, the other end portion of said tubular reinforcement enclosing and engaging said plug and thus also surrounding the needle bore and the blunt end of the needle.

4. A hypodermic needle mount comprising a body part of relatively soft metal securable to the end of a syringe, said body part having a nozzle-like end provided with a needle bore, a hard metal end fitting embedded in said nozzle-like end of the body part, said end fitting being tubular and having an outwardly flared portion for assisting anchorage in the body part, and a needle having its blunt end fixedly secured within said hard metal end fitting with said fitting surrounding the needle bore and blunt end of the

35 needle.

5. A hypodermic needle mount comprising a body part of relatively soft metal adapted at one end for attachment to a syringe and having at its other end a nozzle-like formation having a bore for the reception of a needle, a hard metal end fitting embedded and secured in the nozzle-like formation, said body part being pressed on the hard metal fitting, and a needle having its blunt end fixedly secured in said hard metal end fitting with said fitting surrounding the needle bore and blunt end of the needle.

6. In a hypodermic needle and mount, said mount comprising a body part of relatively soft metal adapted at one end for attachment to a syringe and having at its other end a nozzle-like formation provided with a bore for the reception of the needle, a hard metal tubular reinforcement embedded in said nozzle-like formation and surrounding said bore, a plug-like body of soft metal within said reinforcement, the said needle having its blunt end secured within the said plug-like body of soft metal enclosed by said tubular reinforcement.

7. In a hypodermic needle and mount, said mount comprising a body part of relatively soft metal adapted at one end for attachment to a syringe and having at its other end a nozzle-like formation provided with a bore for the reception of the needle, a hard metal tubular reinforcement having one end portion embedded in said nozzle-like formation and surrounding said needle bore, and a soft metal plug within the other end portion of said tubular reinforcement, the blunt end of the needle being secured in said plug.

SAMUEL JAMES EVERETT.