

[54] FINGER MOUNTED NEEDLE ASSEMBLY
WITH MANIFOLD

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303, 361, 214 R, 253

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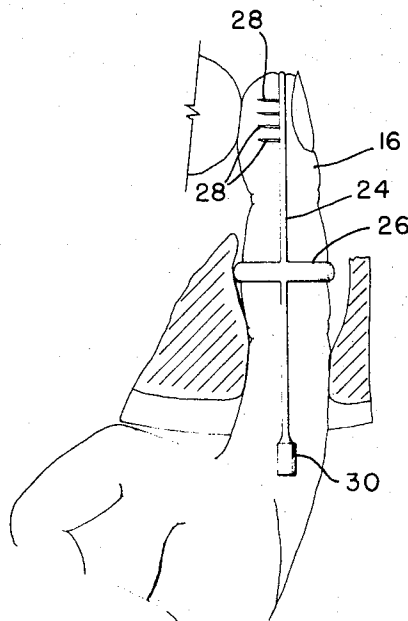
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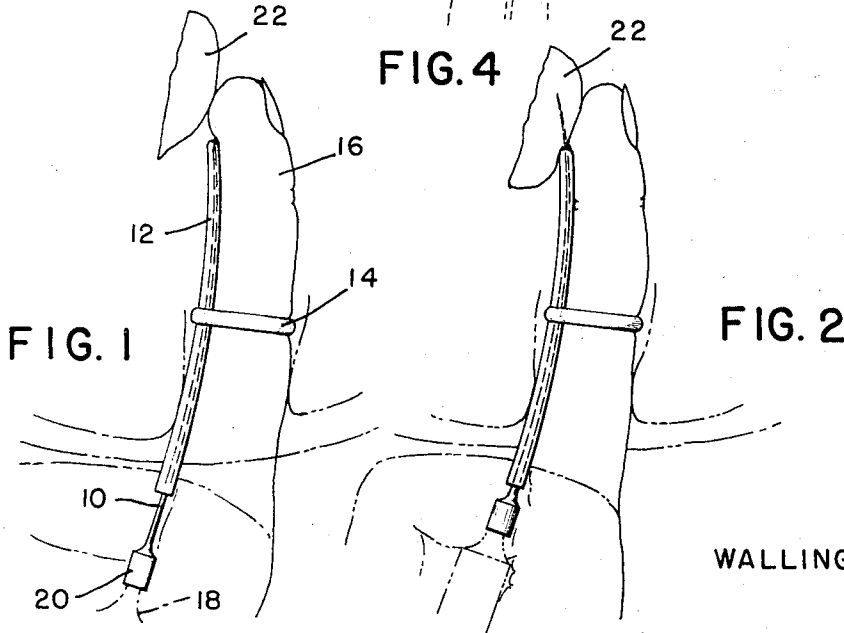
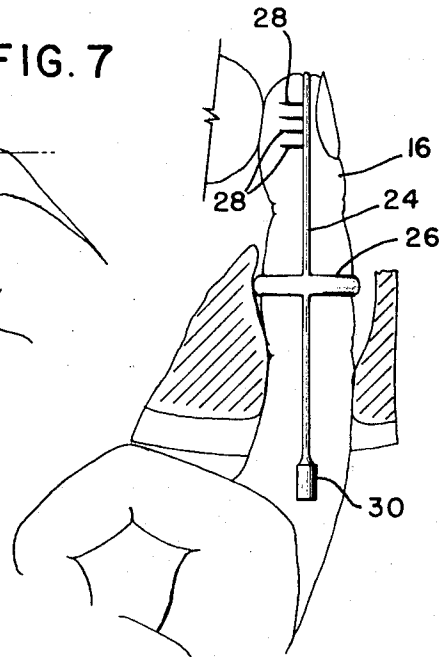
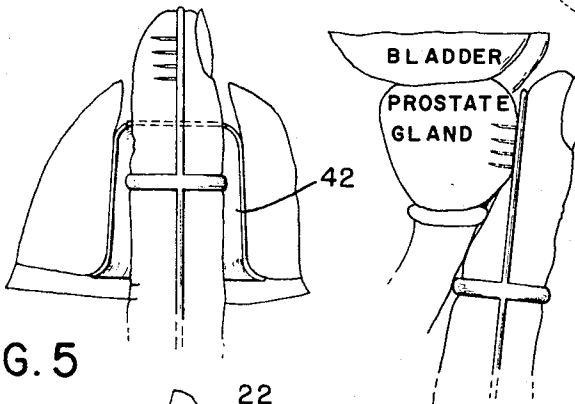
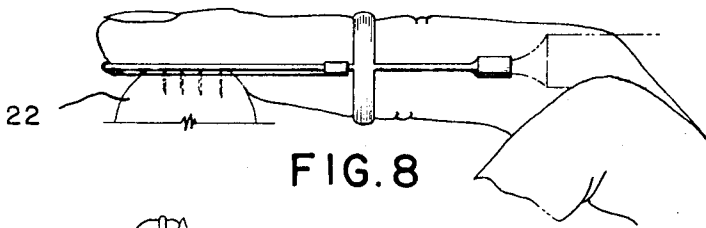
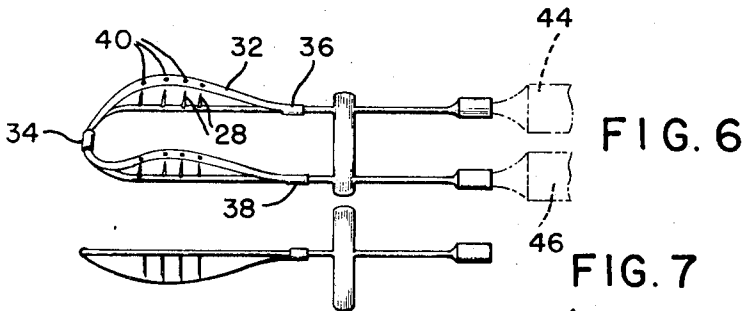
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[57] ABSTRACT

A needle designed for medical injections which can be inserted prior to actuation into one or more body orifices. The first embodiment includes an arcuately shaped guide and slidably contained needle conforming generally to but not beyond the injection operator's extended finger wherein the needle may be retracted into the guide to avoid piercing flesh while being positioned for injection and extended from the guide when injection is desired. A second embodiment includes a U-shaped manifold conforming to the injection operator's extended finger having a spring-biased protective rib covering one or more downwardly extending needles communicating with the manifold so that the needles can be isolated from body tissue until the needle is in position for injection at which time the operator's finger may be flexed to extend the needles through apertures in the rib for penetration into the adjacent tissue. Both embodiments require attachment to one or more syringes for operation by the free hand of the injection operator once the needle has been positioned at the location where injection is desired.

6 Claims, 8 Drawing Figures





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FINGER MOUNTED NEEDLE ASSEMBLY WITH MANIFOLD

BACKGROUND, BRIEF SUMMARY AND OBJECTIVES OF THE INVENTION

There are many instances wherein it is desirable to inject drugs into an internal organ or at a location which is accessible through one of the body's natural orifices as when administering a local anesthesia during childbirth. In order to provide medication at the proper location, it is necessary to use a needle such as disclosed in U. S. Pat. Nos. 2,700,385 and 2,880,724 so that the needle may be guided through the body's curved and somewhat restricted passageway until the point of injection is reached.

Attention has been focused during the past several years on the treatment of chronic prostatitis, an affliction which plagues a surprising percentage of the male population of the world. Heat and massage are commonplace treatments of this disease. Some European physicians have provided medication by injection administered from outside the body directly through the flesh into the prostate gland with appreciable success though this technique causes a considerable amount of pain to the patient. Drugs such as tetracycline and cortisone have been extremely effective in treating prostatitis though injection of these drugs has heretofore been done from outside the body as described above as no internal or parenteral medication has been effective in treatment of the affliction.

In an effort to provide a device for administering the drugs which have been extremely successful in treating prostatitis in a relatively painless manner, the present invention was developed so that injection could be made directly into the gland after the needle had been positioned proximate the gland by passage through the rectum. Thus the painful experience associated with injection into the prostate gland from outside the body is eliminated.

The invention has been developed in two equally effective embodiments, the first of which comprises an arcuately shaped guide and slidably contained needle held against the injection operator's finger by a retaining clamp so that the needle can be retracted while the finger and guide are inserted into the rectum and the prostate gland is located by the finger. After proper positioning of the guide by the finger, the needle is moved forwardly, extended from the guide and injected into the prostate gland by the free hand of the operator after which the syringe is actuated and serum is introduced into the gland itself.

A second embodiment is formed by a continuous U-shaped manifold which lies about the periphery of the finger having one or more downwardly extending needles. A retaining ring holds the assembly fast against the finger of the user and a slidable, biased, protective rib extends as a shield over the needles so long as no injection is desired. When the needles are to be introduced into the prostate gland, the finger is flexed so that the rib is flattened against the manifold and the needles extend through a plurality of aligned apertures within the rib and into the gland itself. This embodiment will permit the attachment of two syringes for actuation by the free hand of the injection operator.

With the foregoing in mind, it is therefore an object of the present invention to provide a needle for insertion into a natural orifice of the body that can be subse-

quently operated while positioned at an internal location to provide proper and effective serum injection.

Another object of the present invention is to provide a needle of the type described which will prevent damage to surrounding tissue while the needle is being positioned at and withdrawn from an internal bodily location for injection.

Yet still another object of the present invention is to provide needles suitably adapted for the effective and relatively painless treatment of prostatitis through the rectum.

These and other objects of the present invention will become more apparent after a consideration of the following detailed specification taken in conjunction with the accompanying drawings wherein like characters of reference designate like parts throughout the several views.

FIGURE DESCRIPTION

FIG. 1 is a side elevational, fragmentary and sectional view of one embodiment of a needle for treating prostatitis positioned near the prostate gland by movement of the injection operator's finger through the rectum, the needle being retracted within a protective guide.

FIG. 2 is a side elevational, fragmentary and sectional view of the embodiment of a needle for treating prostatitis shown in FIG. 1 which has been positioned proximate the prostate gland and inserted into the gland for injection of serum.

FIG. 3 is a side elevational, fragmentary and sectional view of a second embodiment of a needle designed for treating prostatitis wherein the injection operator's finger carrying a U-shaped manifold having a plurality of needles has been positioned proximate the gland for subsequent injection.

FIG. 4 is a side elevational and fragmentary view of the needles shown in FIG. 3 being extended into the gland as the injection operator's finger is flexed and pressure is applied.

FIG. 5 is a side elevational, fragmentary view of the needle embodiment shown in FIGS. 3 and 4 used in cooperation with a protective sleeve or ring inserted in the rectum so that the extending points of the needle will not damage the surrounding tissue.

FIG. 6 is a perspective view of a variation of the needle embodiment shown in FIGS. 3, 4 and 5 which has a protective rib positioned adjacent the manifold to prevent the extending needles from damaging surrounding tissue.

FIG. 7 is a side elevational view of the needle embodiment shown in FIG. 6.

FIG. 8 is a side elevational, sectional and fragmentary view of the needle shown in FIGS. 6 and 7 wherein the finger of the injection operator is flexed to cause the extending needles to pass through the protective rib and into the gland for injection.

DETAILED DESCRIPTION OF THE INVENTION

Referring now to the drawings and initially to FIG. 1, there is shown an arcuately shaped needle 10 slidably and substantially completely retained within a similarly curved guide 12 for movement or passage of the needle therethrough. A finger-engaging ring 14 communicates with the guide 12 intermediate its ends to retain the guide and needle substantially contiguous with but not beyond the finger 16 of the injection operator. A syringe 18 is secured to the needle by an engaging lug 20

or other suitable, sealed means so that the syringe 18 can then be operated by the free hand of the injection operator when the guide 12 has been positioned proximate an injection location such as the prostate gland 22 shown in FIG. 2. Positioning of the guide 12 at the surface of the gland 22 then makes it possible for the needle 10 to be urged forwardly from the retracted shielded position of FIG. 1 to the extended position of FIG. 2 beyond the end of the extended finger of the injection operator for the injection medication. Upon completion of the injection, the needle is withdrawn into the guide 12 and the entire assembly removed.

A second embodiment of a needle for the specified treatment is shown in FIG. 3 and comprises generally a U-shaped manifold 24 bent to conform with the periphery of the injection operator's finger 16 and held securely thereabout by a retaining ring 26. Preferably a plurality of downwardly extending needles 28 communicate with the manifold 24 to allow the passage of serum from the hollow portion of the manifold through the needles and into the perforated flesh. This embodiment of the needle will accommodate two syringes (FIG. 6) which are secured sealably by suitable means such as securing lugs, one of which is shown in FIG. 3 and designated 30.

Because there might be some occasional difficulty in inserting and withdrawing the embodiment shown in FIG. 3, it has been found advantageous to provide a flexible, biased protective rib 32 which is firmly secured at the forward portion 34 of the U-shaped manifold by a clamp or other suitable means and is slidably held at the two extending portions 36 and 38 against the manifold for movement therealong. A plurality of perforations 40 are positioned in alignment with the needles 28 so that they can pass through the apertures when the rib 32 is flattened by pressure being exerted against the manifold by the finger of the injection operator, this being illustrated more particularly in FIG. 8. As the rib 32 is biased normally in the position shown in FIG. 6, release or withdrawal of any pressure by the finger of the user will cause the rib to return to its normal position and allow the withdrawal of the needles 28 through the apertures 40. Thus an injection operator can insert the apparatus shown in FIGS. 6, 7 and 8 in through the orifice of a patient so that the rib 32 will protect any surrounding tissue and prevent the needles 28 from contacting and perhaps damaging that tissue. Once the needle has been positioned proximate the prostate gland 22, the finger can exert pressure sufficient to overcome the normal bias of the rib and cause the needles 28 to extend through apertures 40 and into the gland for the subsequent injection of serum.

One other procedure and device has been used in conjunction with the embodiment shown in FIGS. 3 and 4 and is particularly illustrated in FIG. 5. Here a ring or protective sleeve 42 is inserted into the rectum of the patient to provide ample room for the injection operator's finger and the carried device to pass without contacting the surrounding tissue. The needle is operated as described above so that upon movement of the injection operator's finger, the needles penetrate the

surface of the prostate gland for the subsequent introduction of medication.

The embodiment shown in FIG. 6 most clearly illustrates the attachment of two independent syringes 44 and 46 which are operated by the free hand of the injection operator once the needles have been injected into the gland. Additionally, the manifold may be continuously hollow from one syringe to the other or it may be provided with a partition (not shown) located near the junction of the rib 32 with the manifold so that one syringe can provide serum for one portion of the needle while the second syringe will provide serum for the other needle portion.

While there has been shown and described a number of embodiments of a device for internal bodily injection particularly useful in treatment of prostatitis, it will be obvious to one skilled in the art of needle construction that modifications may be made in the needles, the needle guide, the manifold, the finger-retaining portion and other components of the present inventive concept without departing from the spirit and purpose thereof. Such modifications and the use of mechanical equivalents are contemplated.

I claim:

1. A device usable with a syringe or the like suitable for passage through a natural body opening and administering an injection into a gland or the like comprising: a generally U-shaped tubular manifold having a hollow interior and conforming to the contour of the finger of the injection operator; at least one hollow needle communicating with said hollow interior and extending outwardly and substantially perpendicularly from the plane of said manifold; a finger-engaging portion retaining said manifold adjacent the finger of the operator; and syringe-engaging means for releasably securing a syringe to said manifold.

2. The device as claimed in claim 1 further comprising a slidable, spring-biased protective rib adjacent said U-shaped manifold having a plurality of apertures at least one of which is aligned to receive said needle there-through when pressure is applied to the manifold by the finger of the injection operator.

3. The device as claimed in claim 2, said syringe-engaging means including two syringe-securing lugs retaining two syringes in cooperative connection with said manifold for operation by the free hand of the injection operator.

4. The device as claimed in claim 3, said rib normally biased to a retracted position shielding said needle from flesh contact and slidable along said manifold to a flexed position wherein said needle passes through one of said apertures upon operation by said injection operator.

5. The device as claimed in claim 4, said manifold having a continuous passageway from one syringe-engaging means to the other of said means.

6. The device as claimed in claim 5, said manifold having a plurality of needles extending therefrom and positioned in alignment with said plurality of apertures.

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