United States Patent [19]

Clark

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[54] **URETHROGRAM DEVICE**

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[52] **U.S. Cl.** ..... **128/2 R;** 128/232; 128/245

[51] **Int. Cl.** **A61b 5/02**

[58] **Field of Search** ..... 128/2 A, 2 R, 231, 241, 128/245, 232, 303, 75, 84, 305

[56] **References Cited**

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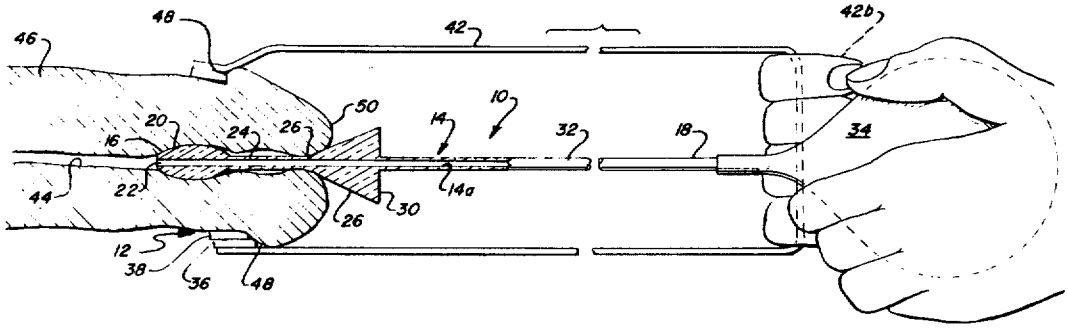
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Attorney, Agent, or Firm—Coffee and Sweeney

[57] **ABSTRACT**

A device for use in inserting dye into the urethra preparation to taking x-rays thereof including an elongated hollow tube having an ovoid enlargement at the distal end thereof and a frusto-conical enlargement spaced a short distance proximally from the distal end, with the tube having a reduced neck between the two enlargements. In addition, a clamp is provided for wrapping about the exterior of the penis, preferably behind the glans, and in the area of the reduced neck between the two enlargements of the device. It is intended that the clamp would include pull straps for assistance in retaining the device in place during use.

2 Claims, 3 Drawing Figures



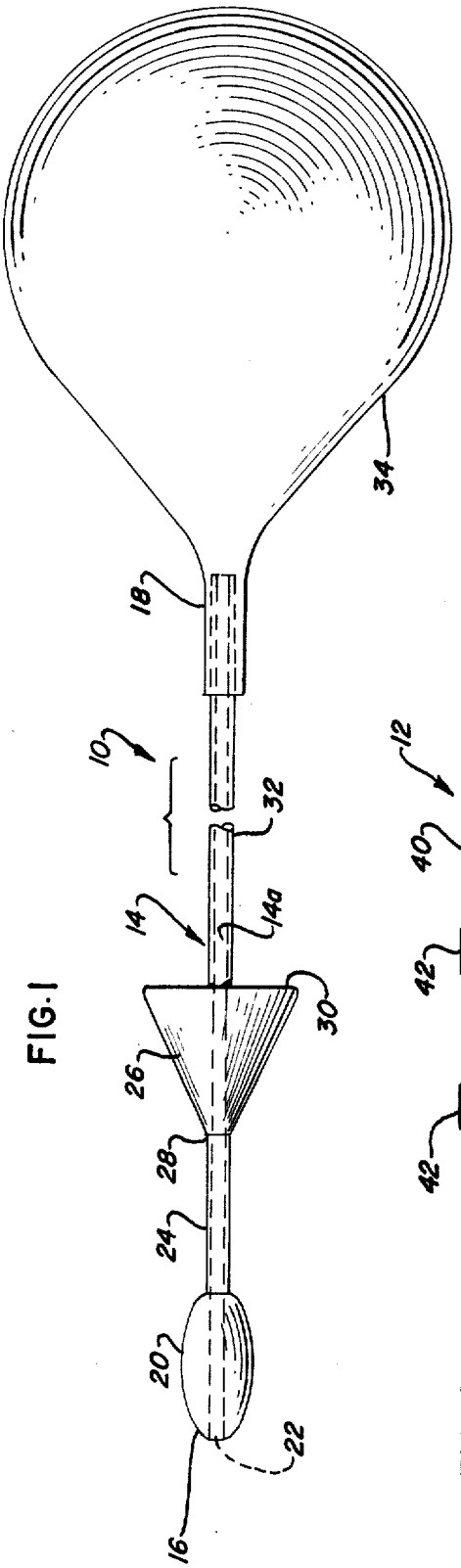


FIG. 1

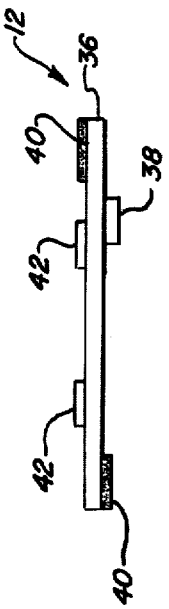


FIG. 2

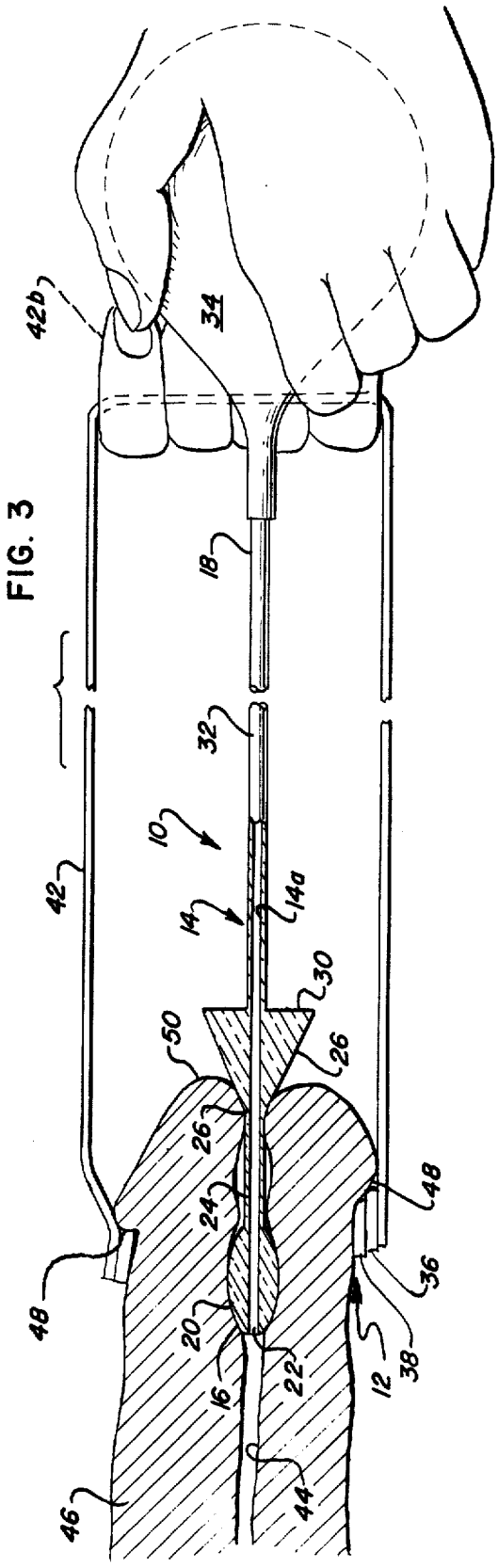


FIG. 3

URETHROGRAM DEVICE

BACKGROUND OF THE INVENTION

1. Field of the Invention

This invention relates to medical-surgical appliances, and specifically, to a catheter type device for use in administering dye to the urethra.

2. Brief Description of the Prior Art

Related patents known to the applicant comprise the following:

Munz et al	3,086,529	Raiche	2,693,191
Mattler	3,417,753	Remer et al	3,428,046
Outwin	3,155,096		

Presently known devices for use in supplying dye to the urethra for use preparatory to x-ray thereof, have been found to be unsatisfactory in that no reliable means has been provided for retaining the device in place during use. Thus the instruments either become dislodged or they must be retained in position through the efforts of an assistant who then becomes exposed to radiation by being in the x-ray field. In addition, these devices may be of several parts and require sterilization after each use with the possibility that some of the parts may become lost or misplaced. Therefore it is the object of this invention to meet the continuing need and desire in the art for an improved form of a device for supplying dye to the urethra preparatory to x-ray thereof.

SUMMARY OF THE INVENTION

This invention is directed, in brief, to the provision of an improved form of catheter specifically designed for use in x-rays of the urethra by supplying thereto.

The best mode currently contemplated for carrying out the invention comprises a hollow tubular stem having an ovoid enlargement at the distal end and a conical enlargement spaced slightly proximally or rearwardly from the distal end, with a resultant reduced area between the ovoid enlargement and the conical enlargement which is intended to be a continuation of the hollow tubular stem. An enlarged hollow squeeze bulb is intended to be mounted at the proximal end, a substantial distance from the conical enlargement. The main tubular portion extends rearwardly from the conical enlargement and is connected with the squeeze bulb which is to be filled with a radioopaque media, hereinafter generally referred to as a "dye."

In use, the distal end is inserted into the urethra and a strap arrangement is wrapped about the exterior of the penis, preferably behind the glans area thereof. The strap includes extensions which may be grasped by hand to pull against the inserting force of the catheter. Dye may be forced into the urethra by squeezing the bulb at the proximal end, and with the bulb held in one hand and the strap in the other, the opposing forces will retain the device in place and retain the dye in the urethra during the time that x-rays may be taken.

BRIEF DESCRIPTION OF THE DRAWINGS

FIG. 1 is an elevational view of the catheter portion of the device of this invention.

FIG. 2 is an elevational view, partially broken in section, of the clamp portion of the device of this invention, and

FIG. 3 is a view, partially broken in section, showing the combination device of this invention in use.

While this invention is susceptible of embodiment in many different forms, there is shown in the drawings and will herein be described in detail a specfic embodiment therefor, with the understanding that the present disclosure is to be considered as an exemplification of the principles of the invention and is not intended to limit the invention to the embodiment illustrated.

BRIEF DESCRIPTION OF THE PREFERRED EMBODIMENT

The device of this invention includes a catheter-like member, generally indicated **10,** and a retaining member a shown in FIG. **2,** generally indicated **12.** The catheter-like member **10** includes an elongate hollow tube **14** preferably made of a generally rigid plastic having a hollow interior **14***a*. Tube **14** generally extends between a distal end **16** and a proximal end **18.** The distal end **16** of tube **14** is provided with a rounded ovoid enlargement **20** having end opening **22** therein in communication with the hollow interior **14***a* of tube **14.** It is through this opening that contents of the tube may be discharged.

Immediately rearwardly or proximally of the ovoid enlargement **20,** the catheter device **10** is provided with a reduced neck portion **24** which terminates in a conical enlargement **26** having a forward, or distal portion **28,** and flares preferably uniformly outwardly into a rearward, or proximal, termination **30.** Extending rearwardly, or proximally, from the conical enlargement **26** is the main tube body portion **32** which preferably, though not necessarily, is the same size and shape as neck portion **24.** In one preferred form of this invention the dimension of the ovoid enlargement, the reduced neck **24** and the conical enlargement **26** all are approximally 0.394 inches. The dimension of the tube body portion **32** is generally 12 inches so that the individual handling the appliance may have his hands well away from the x-ray field. It is to be understood that these dimensions are given for purposes of illustration only and not by way of limitation.

Preferably the tube body **32** has a hollow squeeze bulb **34** connected to the proximal end **18.** It is to be understood that squeeze bulb **34** may take several forms but generally speaking should be resilient, capable of containing a quantity of liquid, such as dye, and easily deformable by hand so as to cause expulsion of a liquid held therein through the hollow interior **14***a* and out of the opening **22** in the ovoid enlargement **20** at the distal end **16** of the tube. Also, the bulb **34** may be detachable, as shown, or may be formed unitary with the tube body **32** as desired.

FIG. **2** illustrates the intended clamp device preferably utilized with the catheter portion **10** of this invention. Clamp device **12** includes a main body **36** preferably of a fabric type of material and including a padding portion of preferably resilient foam material, generally indicated **38,** provided on one side of the body **36.** Portions on opposite sides of the body **36** are provided with complementary fastening means **40,** preferably of a self fastening material in the form of the well known "velcro" type fastener. It is to be understood that other suitable forms of fastening may be utilized, such as a strap and pin arrangement, a snap fastener or other arrangement, but in the preferred embodiment, the previously referred to "velcro" has been used. In addition,

the clamp member is provided with a strap means **42**, also preferably of a fabric material, secured to body **36** by suitable means, such as a line of stitching **42***a*. Preferably the strap **42** is in the form of a continuous member having a loop or grasping area **42***b* so as to be easily grasped by hand as shown in FIG. **3** with the strap having a sufficient length so as to place loop **42***b* generally at the distal end **18** of the catheter when the clamp member **12** is wrapped about the penis.

In use, the catheter portion **10** is inserted into the urethra **44** of the penis **46**, preferably in the area **48** just behind the glans. In particular, the slightly enlarged ovoid end **20** is inserted until the conical enlargement **26** comes into abutment with the glans penis **50** and slightly depresses the same. Generally speaking, the ovoid enlargement **20** will be slightly beyond the glans. Following this, the clamp **12** is applied about the exterior of the penis as shown in FIG. **3**, to exert a somewhat compressive force, preferably about the reduced neck portion **24** of the tubular body **14**. The straps **42** extend rearwardly, or proximally, generally to the same area as the squeeze bulb **34**. The attendant may now grasp the squeeze bulb **34** in one hand and pull on the strap means **42** with the other hand and begin to apply dye into the urethra **44** by squeezing on the squeeze bulb **34**. The cooperative forces acting between the reduced neck portion **24** and the flare **26** and the clamp means **12**, as pulled in opposition by pulling on the straps **42**, will tend to cause the device to stay in place in the urethra **44**. Thus the squeeze bulb may be discharged so that dye will flow throughout the intended area and an x-ray may be taken, following which the procedure may be reversed and the clamp means removed from about the exterior of the penis and the catheter portion **10** withdrawn from the urethra **44**. All of this may be accomplished without the need of exposing the attendant to the field of x-rays which, as can be understood, over a period of time would cause severe exposure to such harmful rays.

It is intended that the device of this invention would be made of a disposable plastic and fabric material to eliminate the need for sterilization by being disposable after a single use. It is possible that the squeeze bulb could be formed as an integral part of the structure but even as a separately assembled component, the entire combination could still be made inexpensive enough so as to render it disposable. With the device of this invention, unintentional withdrawal of the catheter instrument during the duration of the dye insertion and x-ray is eliminated, thereby eliminating the need of reinsertion of the administering device and also eliminating the need for the attendant to expose himself to the x-ray field in an effort to maintain the catheter device in place during use.

The foregoing detailed description has been given for clearness of understanding only, and no unnecessary limitations should be understood therefrom, as some modifications may be obvious to those skilled in the art.

I claim:

1. Apparatus for administering dye or the like to the urethra, comprising, in combination: an injection device which includes an elongate body having conduit means longitudinally therethrough and an outlet therein, said body having a distal end with said outlet disposed thereat and a proximal end, a first generally ovoid enlargement at said distal end and a second generally frusto-conical enlargement spaced slightly proximally from said first enlargement and defining therewith a reduced neck portion therebetween, a reservoir means at said proximal end of said body and spaced from said second enlargement by an elongate tubular portion which supports the reservoir means, said reservoir means being deformable for expelling a quantity of material therefrom and through the conduit means through said outlet, and clamp means including a clamp body portion of a size and shape for wrapping about the exterior of the penis and strap means extending outwardly from said clamp body portion for grasping during insertion of the distal end of said injection device into the penis for holding the injection device in place during the expulsion of dye into the urethra, said strap means being in the form of a strand extending generally transversely outwardly from said clamp body portion and terminating in a handle forming loop, said strand being of a length relative to said injection device so as to locate said loop adjacent said reservoir means when said clamp body portion is wrapped about the exterior of the penis and the distal end of said injection device is inserted into the urethra so that cooperative forces may be applied through said second enlargement and said clamp body portion in opposite directions facilitates maintaining said injection device in place during usage.

2. The combination of claim **1** wherein said clamp body portion is an elongated member having cooperating fastening means at opposite ends thereof so as to form a closed loop when placed about the penis generally in the area behind the glans thereof.

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