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Greene

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[54] **ENEMATA ADMINISTERING DEVICE**

[75] Inventor: **Franklin R. Greene,** Flushing, N.Y.

[73] Assignee: **E-Z-EM Company, Inc.,** Westbury, N.Y.

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[52] **U.S. Cl.** ..... **128/246,** 128/349 B

[51] **Int. Cl.** **A61m 3/00**

[58] **Field of Search** 128/246, 247, 349, 128/145.7, 278, 276, 344

[56] **References Cited**

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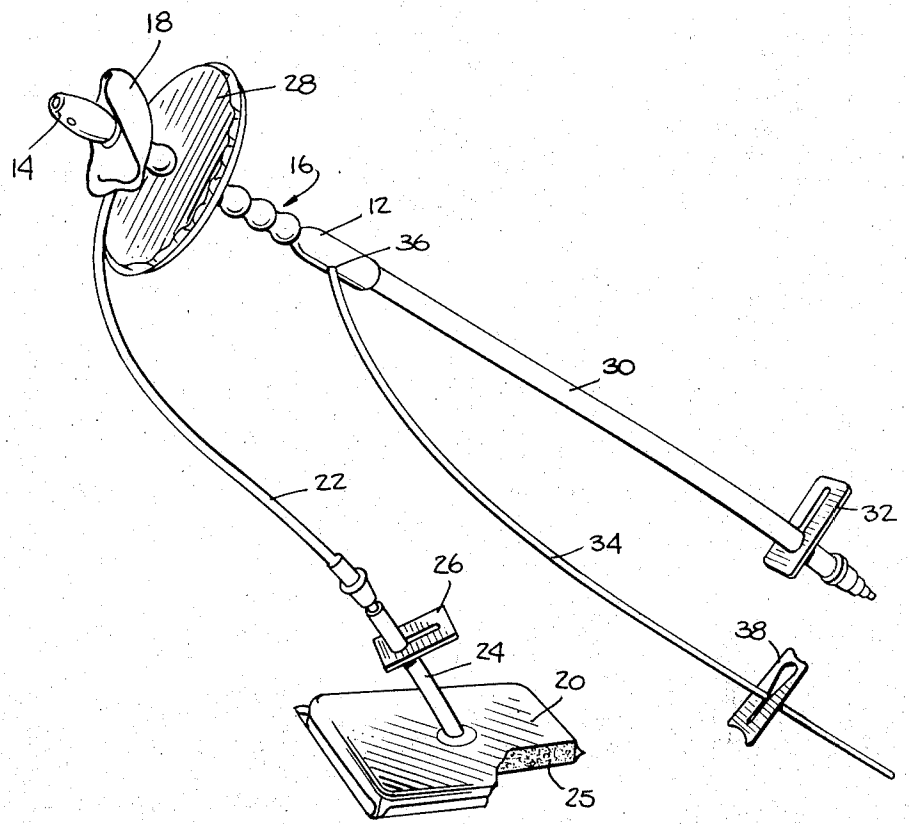
Primary Examiner—Richard A. Gaudet
Assistant Examiner—J. Yasko
Attorney—James E. Ryder et al.

[57] **ABSTRACT**

A smooth, flexible enema tip having an inflatable balloon mounted on the stem behind the exit port from the tip. A limited volume, flexible, hand distendable air reservoir is connected to the balloon-like retention ring so that operator compression of the reservoir will inflate the ring. The reservoir is filled with a resilient sponge so that the reservoir will snap back to its full volume shape once operator pressure is removed and thus normally deflate the ring. A soft, flexible, plastic annular retention pad is mounted for axial movement along the enema stem which terminates on the tip. This pad cooperates with the balloon to hold the balloon in position.

1 Claim, 2 Drawing Figures



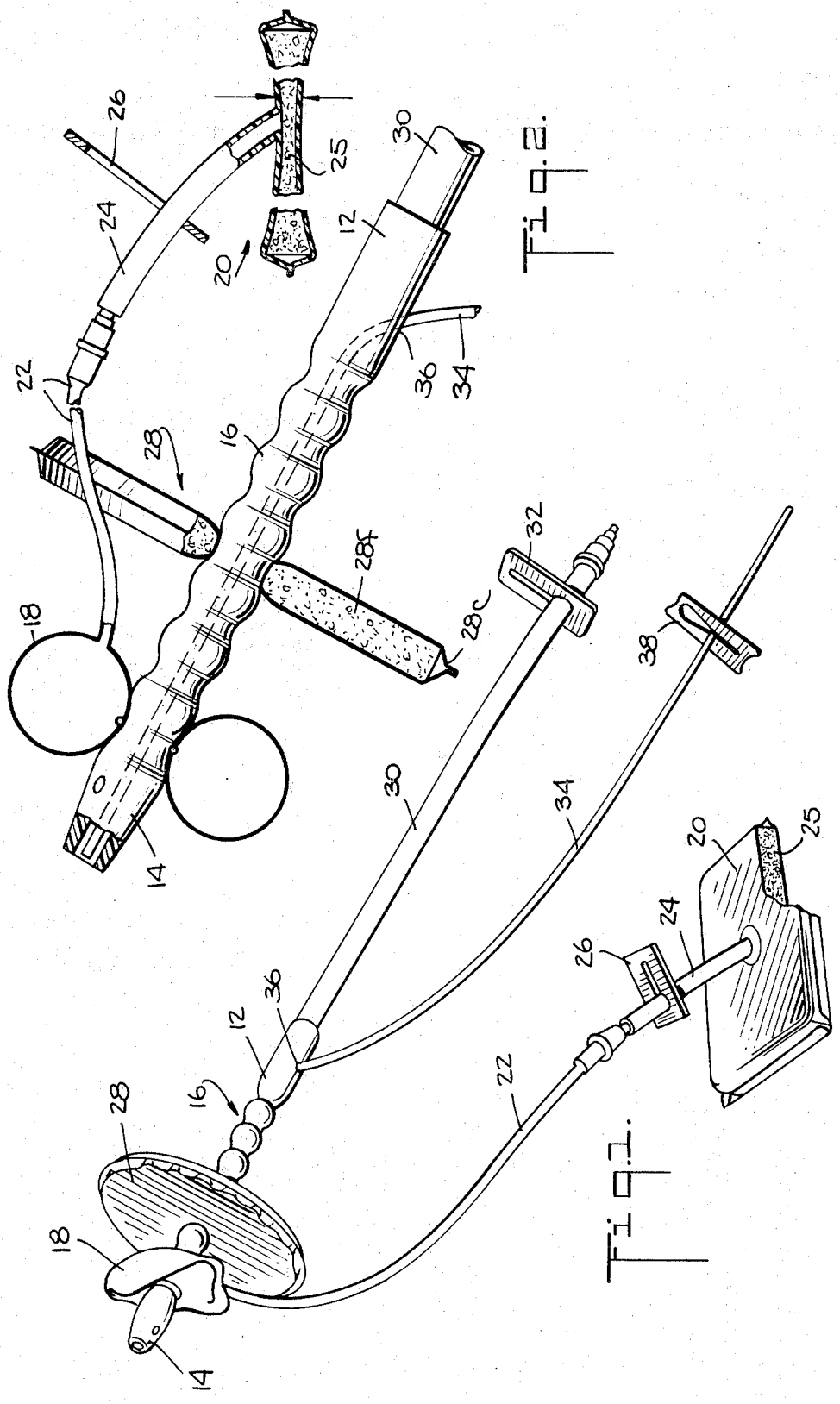

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Fig. 2.

Fig. 1.

ENEMATA ADMINISTERING DEVICE

This invention relates in general to a device for administering enamata and more particularly to one that provides an improved degree of safety for the patient together with convenience and retention features.

BACKGROUND OF THE INVENTION

Although a variety of devices are known and have been proposed for the administration of enemas and particularly for the administration of a barium sulfate enema as part of radiological examination, these devices ignore and perhaps even sacrifice the comfort and safety of the patient to cost consideration or to considerations of convenience for the doctor. For example, it is known to provide an expandable annular balloon near the exit parts of the tip of the enema administering device so as to retain the device and the applied fluid in the patient; (see U.S. Pat. No. 3,459,175). However, this emphasis on effective retention risks danger to the patient. Over inflation of the balloon retention device can result in damage to the tissues and the wall against which the retention device exerts pressure.

Accordingly, it is a major purpose of this invention to provide an enemata administration device with improved patient safety built into the device.

It is a further related purpose of this invention to provide an enemata administration device that will provide as great a degree of increased comfort for the patient as is possible.

It is a further purpose of this invention to provide this increased safety and increased comfort in a device that includes convenience features for the doctor and that is sufficiently simple and inexpensive so that a disposal device is provided at a cost which makes it feasible and likely that the improved safety and comfort features will gain acceptance.

BRIEF DESCRIPTION OF THE INVENTION

In brief, this invention involves a smooth, flexible enema tip having an inflatable balloon mounted on the stem behind the exit port from the tip. A limited volume, flexible, hand distendable air reservoir is connected to the balloon-like retention ring so that operator compression of the reservoir will inflate the ring. The reservoir is filled with a resilient sponge so that the reservoir will snap back to its full volume shape once operator pressure is removed and thus normally deflate the ring. A soft, flexible, plastic annular retention pad is mounted for axial movement along the enema stem which terminates on the tip. This pad cooperates with the balloon to hold the balloon in position.

BRIEF DESCRIPTION OF THE DRAWINGS

The drawings, both of which are the same embodiment are:

FIG. 1 is a perspective view of an embodiment of this invention.

FIG. 2 is a view in slightly larger scale than FIG. 1 of the forward portion of the FIG. 1 device partially in perspective and partially in cross-section and including a view in cross-section of the air reservoir unit.

DESCRIPTION OF THE PREFERRED EMBODIMENTS

As shown in the Figures, this invention is in an enemata structure. The component parts incoude a

smooth, flexible, plastic tubular enema stem **12** having a tip portion **14** for insertion into a patient and a series of concentric undulations **16** behind the tip **14.** An inflatable expandable thin-wall balloon-like torroidal retention element **18** is affixed onto the stem **12** immediately behind the tip portion **14.** A flexible, limited volume air reservoir **20** is in communication with the interior of this torroidal retention element **18** by way of a flexible tube **22.** One end of the tube **22** is connected to the reservoir stem **24** by being stretched over the reservoir stem **24** and retained thereon by friction. This permits the reservoir **20** to be disconnected from the tube **22** at the desire of the doctor so that the doctor can control inflation of the retention device **18** through some other air source. The doctor may wish to do this in particular cases where, for example, he wishes to increase the amount of inflation over the predetermined maximum amount that is available with this enclosed limited volume reservoir **20.**

The air reservoir **20** is an enclosed space which can be compressed by the user so that the air in the space is forced into the retention device **18.** Because the air reservoir **20** is an enclosed volume, it limits the amount of expansion of the retention device **18.** This limitation of the expansion of the retention device **18** is very important from a safety point of view. Over inflation of these retention devices **18** can damage the tissues of the patient, rupture internal walls and, in rare cases, even result in killing a patient. A resilient plastic sponge **25** substantially fills the interior of the reservoir **20** so that when hand pressure of the reservoir is released, the sponge **25** will spring back to its normal shape and expand the walls of the reservoir **20.** As a consequence, the air in the retention device **18** will be drawn back into the reservoir.

Thus, this reservoir **20** not only prevents over inflation of the retention balloon **18,** but also assures that the balloon **18** deflates as soon as the doctor or his assistant releases his hold on the air reservoir. A clip **26** is mounted on the reservoir stem **24** so that the retention balloon **18** can be maintained in an inflated state even after pressure on the air reservoir **20** is released. This design means that the clip **26** purposely has to be moved after the balloon **18** inflation, into the position where it pinches the stem **24** and holds the balloon **18** inflated. Thus the balloon **18** is kept inflated only on purpose and after a chance is had to be warned of excessive patient discomfort or other abnormal reaction.

A soft flexible plastic retention ring **28** is mounted for movement along the stem **12.** The retention ring **28** is a deformable plastic disc-like device that fits on the troughs of the undulations **16** but that can be forced over the ridges of the undulations **16** so that it can be forced forward and back over the ridges. The purpose of the retention ring is so that when the device is inserted into the patient, the retention ring can be pushed forward against the patient's anus to assure that the retention balloon **18** is properly seated against the internal sphincter muscle. The retention ring **28** has a thin vinyl casing **28c** containing an annulus of resilient plastic foam **28f.** The soft foam **28f** is easily deformable so as to provide a soft cushion for the patient. The vinyl casing **28c** stretches sufficiently so that the ring **28** can be manually forced over the ridges of the undulations **16.** Yet the vinyl casing resists stretching sufficiently so that it can operate as part of the retention arrangement without slipping back over the ridges. Because the re-

tention ring **28** is annular it cannot fall off or slip off the stem **12.**

A flexible tube **30** connected to the back end of the enema stem **12** permits connection to a reservoir (not shown), which reservoir may contain, for example, a barium sulphate suspension. A clip **32** on the flexible tube **30** permits a convenience of detaching the flexible tube **30** from the reservoir after the fluid has been administered to the patient so that the patient can be moved, or can move himself, to a toilet for convenient elimination.

An airway or air tube **34** is a small flexible tube that passes through an opening **36** in the stem **12** and then through the interior of the stem **12** to the front opening of the tip **14.** This airway **34** permits air to be administered by the doctor when desired and to the extent necessary. A clip **38** on the airway permits closing off the airway when necessary or desired. Because the airway **34** passes through the interior of the tubular stem **12,** there is no break in the smooth surface of the stem **12** and the tip **14.** This further enhances patient comfort.

What is claimed is:

1. A self-retaining rectal catheter for barium enemata comprising;

a flexible plastic stem having an exit port,

a normally deflated inflatable annular retention balloon mounted behind said exit port of said stem,

a rentention ring mounted for axial movement on said stem and positioned behind said balloon,

an air reservoir,

a first conduit in communication with said retention balloon,

a second conduit in communication with said air reservoir,

a detachable coupling between said first and said second conduits,

said air reservoir and said retention balloon comprising a closed system when said coupling is made, said closed system having a fixed and limited quantity of air therein,

said air reservoir being a readily compressible porous resilient sponge substantially filling said reservoir and having a normal uncompressed state and a compressed state, said reservoir tending to restore itself to said normal uncompressed state when compresive pressure is removed from said reservoir,

said air reservoir when compressed forcing air into said retention balloon, the quantity of air forced into said retention balloon by the compression of said air reservoir being sufficient to inflate said balloon,

said air reservoir in said uncompressed state providing sufficient volume to accept a quantity of air from said balloon when said balloon is in its inflated state to cause said balloon to collapse to its normal deflated state,

the only source of air for inflating said balloon when said coupling is made being the fixed quantity of air in said reservoir when said reservoir is in its normal uncompressed state,

said coupling when detached freeing said first conduit for connection to a source of air other than said reservoir, and

a manually actuable clamp on one of said conduits, said clamp having a closed state and an open state, said clamp when in said closed state shutting off communication between said balloon and said reservoir to permit maintaining said balloon in an inflated state after said balloon has been inflated by compression of said reservoir,

said manually actuable clamp being the sole means of closing off communication between said reservoir and said balloon,

said balloon having a single exit/entrance port and said reservoir having a single entrance/exit port, both of said entrance/exit ports being unobstructed during all states of inflation and deflation of said balloon and during all states of expansion and compression of said reservoir.

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