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MEDICAL APPLIANCE FOR CONTROL OF ENEMATA

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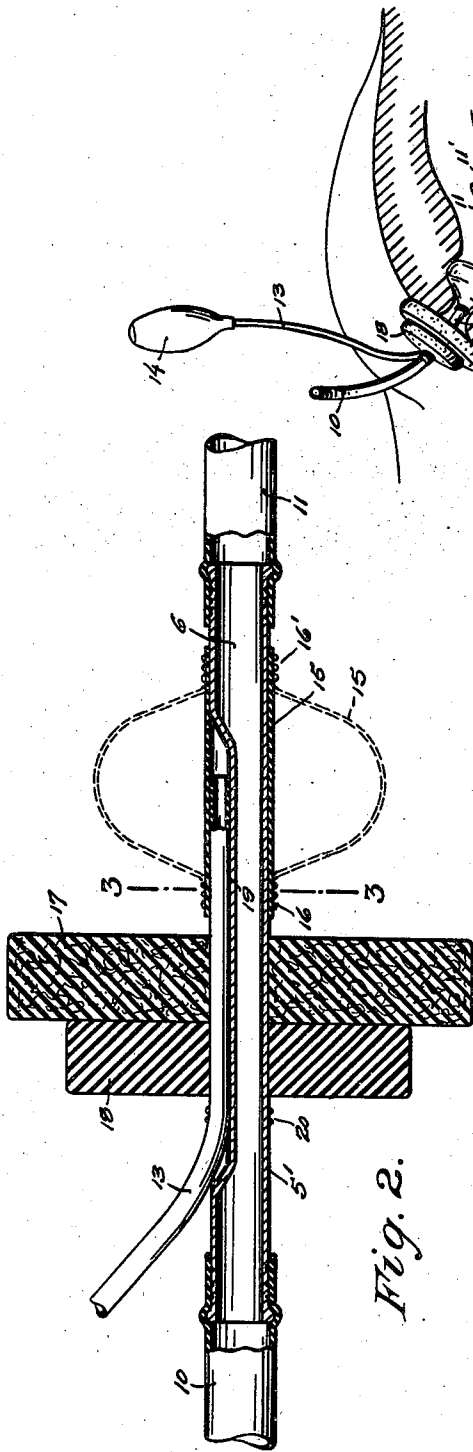


Fig. 2.

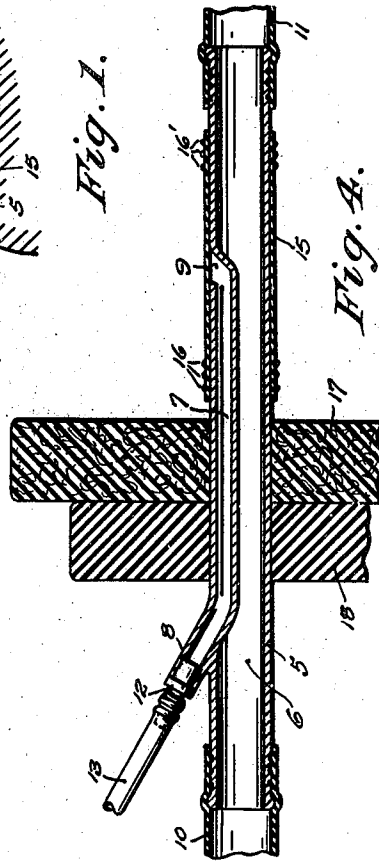


Fig. 1.

Fig. A.

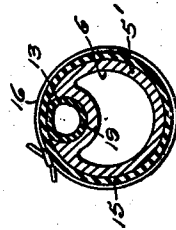


Fig. 3.

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MEDICAL APPLIANCE FOR CONTROL OF ENEMATA

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1 Claim. (Cl. 128—246)

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This invention relates to a device for giving enemata, and for its general object aims to provide an appliance operative to preclude premature expulsion of the introduced fluid and thereby enable an attendant to positively control rectal injections.

Clarity in an understanding of this and other more particular objects and advantages in view will perhaps be advanced by here stating that enemata, as heretofore given, have required constant attention on the part of a nurse or other attendant. As a result thereof and particularly where the demands upon an attendant's time are relatively heavy—this condition being especially pronounced at the present time when hospitals are forced to operate with far less than the usual number of help—there is a not unnatural tendency to give enemata with undue haste. Aside from the pain to the patient caused by resulting bowel spasms, some patients, and this is especially evidenced in cases of a weak sphincter muscle of the anus, are entirely unable to retain the injected fluid, in consequence expelling the same prematurely. Bed linen unnecessarily soiled in this manner is one item which reflects itself in the exceptionally heavy laundering requirements of hospitals. Moreover, it becomes self-evident that an expulsion of enema fluid before the same has served its intended end of entirely loosening and softening congested feces within the bowel requires repetitive clyster operations which, if resorted to at too frequent intervals, can be quite harmful to the patient.

Having the foregoing in mind, the present invention aims to devise an enema control appliance providing a clyster tip in association with means functioning to fixedly hold the same within the rectum—in consequence obviating need for an attendant's presence during the enema—and additionally serving the office of a seal, precluding premature escape of the injected fluid. The device is, therefore, one which enables an attendant to insert the appliance, set the same for any desired degree of slow-feed flow, and then go about his or her other duties, giving other enemata if called for, during the relatively protracted time period required to best consummate a softening of the stool. It will be thus apparent that the appliance operates to largely overcome spasms of the bowel and permit fluid, slowly injected, to reach the upper limits of the colon. During the course of the enema, the ordinary convalescent patient can, of course, make slight adjustments in the fluid flow and can take the enema in comparative comfort with the bowel rel-

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atively relaxed as distinguished from the usual rigidity which sympathetically follows when, as heretofore, it becomes necessary to exert a certain amount of effort in maintaining a contracted condition of the external sphincter muscle of the anus.

The present invention provides a highly satisfactory method of giving nutrient enemata, also retention enemata which are indicated in some instances and are performed by clamping the fluid-supply tube at a point distal from the appliance or, otherwise stated, at a point intermediate the appliance and the container for the fluid. In the field of retention enemata are, of course, barium injections which are resorted to for X-ray purposes and which, previous to the present invention, have occasioned considerable annoyance to the medical fraternity due to premature expulsion of the liquid-suspended barium.

The invention serves the further and important end of providing an assured method of giving enemata to patients with a colostomy, namely, an artificial anus; the procedure consists in the new method of fixedly holding an enema tube or, more properly, the rectal part thereof, within the rectum while coincidentally sealing the anal canal against leakage, and in the novel construction, adaptation and combination of parts hereinafter described and claimed.

In the accompanying drawing:

Figure 1 is a perspective view portraying the invention and showing the same applied to a patient preparatory to giving an enema.

Fig. 2 is a detail longitudinal vertical section of one embodiment with the view taken to an enlarged scale and being fragmentary to the extent that enema-flow tubes leading to and from the appliance proper and an air-delivery catheter are broken away. In this view the balloon element which performs the holding and sealing office of the invention is shown in its inactive normal condition by full lines and in its active inflated condition by dotted lines.

Fig. 3 is a transverse vertical section taken to an enlarged scale on line 3—3 of Fig. 2; and

Fig. 4 is a view similar to Fig. 2, excepting that I have shown a somewhat modified construction in which the air duct which supplies pressure air for inflating the balloon is molded into the enema-flow pipe as an integral part thereof.

First describing the invention as illustrated in Fig. 4 and which constitutes the now preferred embodiment, there is provided a rectal pipe denoted by the numeral 5 which is, or may be

molded from, rubber or one of the various applicable plastics to provide a main canal 6 open at the two ends and, along one side, present a longitudinal air duct 7. This duct connects toward the rear end of the pipe with a laterally projecting nipple 8 and extends forwardly to a point somewhat short of the forward limit of the pipe whereat the same terminates in a surface outlet 9. The pipe is terminally beaded or otherwise suitably formed as, for example, by the instrumentality of embedding male hose fittings in the two ends to accommodate the attachment, to the rear end thereof, of a supply hose 10 from a fluid container (not shown) and, to the forward end, of a clyster tip 11 forming the enema nozzle and having the usual vent or vents 11'. 12 denotes an adapter embedded in the exposed nipple 8, and attached thereto is a flexible catheter 13 to which is connected an air syringe 14 having the usual one-way valve permitting atmospheric air to be drawn into the bulb while trapping the same against escape.

There is applied about the pipe 5 to extend in opposite directions beyond the airports 9 a sleeve 15 to be hereinafter termed a balloon—held to the pipe by seizings 16—16' applied at the end extremities. Being arranged to normally occupy a collapsed position, said balloon is inflatable by the pressure influence of air injected through the duct 7 and, when so inflated, assumes the shape shown by dotted lines in Fig. 2 and by full lines in Fig. 1. The balloon is desirably produced from a cylinder of elastic rubber but it is self-evident that the same admits of the use of any flexible nonporous material such as parachute silk which, if perforce, would embody the necessary folds when collapsed to enable the same to expand under injection of pressure air.

Occupying a position to the rear of the balloon and fitting freely upon the pipe is a pad 17 indicated as being of sponge rubber, and abutting the outer face thereof is a disc 18. Such disc, composed of rubber more dense in texture than that of the pad, is arranged to snugly encompass the pipe and in the use of the appliance frictionally grips the latter.

Now referring to Figs. 2 and 3 it will be seen that substantially the only change from the construction of Fig. 4 lies in the fact of producing the pipe as 5', with a surface channel 19 corresponding as to length with the duct 7 and which is arranged to have the catheter 13 snugly fit therein with the latter's outlet end leading directly to the balloon, a seizing 20 being applied about the pipe exteriorly of the friction disc 18 or which is to say at a point rearwardly removed from the disc to augment the seizing 16 in fixing the catheter in position.

In the use of the appliance the rectal pipe with its attached clyster tip, and with the balloon deflated, is inserted within the rectum of the patient to locate the balloon fully an inch beyond the external sphincter muscle of the anus, and the attendant then operates the syringe to inflate the balloon, such inflation occasioning no discomfort to the patient. The attendant then exerts tension upon the rectal pipe in a withdrawal direction to pull the expanded balloon snugly against the internal sphincter muscle, and fixes the appliance in this position by bringing the pad 17 snugly against the anus and sliding the friction disc forwardly to have the same press against the pad, thus holding the pad against shifting and causing the anal canal to

be sealed by the "stopper" action of the balloon. The enema may be now given by attaching the supply hose 10 to the rectal pipe and suspending the enema can or bottle at a relatively low elevation of, say, 12 to 16 inches, assuring a slow injection of the fluid and thereby permitting the latter to work gradually through the entire colon and effectively loosen and soften the feces without developing bowel spasms.

The appliance may be readily withdrawn for defecation by the instrumentality of removing the syringe from the catheter to allow escape of the pressure air from the balloon. A valve for this purpose might of course be applied to obviate the need for removing the syringe. Syringes are now produced to meet manifold requirements and there is available, and commonly used, a bulb including a non-return check—accomplishing the pumping function of the syringe—and also equipped with a release valve to exhaust the pumped air when it is desired to relieve the pressure. Consequently, a syringe of this type, and which I prefer to employ, obviates not only a need for removal of the syringe when it is desired to exhaust the pressure air in effectuating a deflation of the balloon, but also obviates the need for an exhaust valve separate and apart from the syringe. It will be self-evident that an exhausting of the air will cause the balloon to return to the deflated condition in which it is shown in Fig. 2 (full lines) and in Fig. 4 and, so deflated, can be passed freely through the anal canal to clear the latter and permit the patient to void the softened feces by natural defecation.

It should, perhaps, be mentioned that in lieu of a cushion rubber pad no discomfort would be attached to the employment of an inflexible member of hard rubber or plastic molded to have its frontal face, considered in horizontal section, describe an elliptical profile. There is this advantage which would follow from the use of such a piece, by comparison with the cushion rubber pad, namely the ease in cleaning and which obviates the need, or desirability, of applying a sheet of disposable tissue over the frontal face of the rubber pad.

Of particular import at the present time when hospitals, especially as to nurses, are short-handed, it can be conservatively estimated that the use of the present appliance within a 500-bed hospital can save upwards of 30 nursing hours a day. To the patient requiring enemata, whether indicated as a therapeutic treatment or resorted to for prophylactic reasons to preclude the development of conditions traced to constipation, the invention may be said to introduce an entirely new technique to which the benefits hereinbefore enumerated can be attributed.

It is my intention that no limitations be implied as various changes beyond those herein specifically referred to will, without departing from the spirit of the invention, readily occur to those versed in the art.

What I claim is:

An appliance for the control of enemata comprising the combination of a rectal pipe providing a main fluid canal arranged to be inserted by its forward end through the anal canal into the lower region of a patient's bowel and being adapted to connect by its rear end with an enema tube, said pipe when inserted exposing its said rear end beyond the distal end of said anal canal; an inflatable element carried upon the forward end of the pipe and arranged and adapted to be bal-

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looned by injection of pressure air from a normally collapsed condition permitting the same to pass freely through said anal canal into an expanded compass exceeding that of the internal mouth of the anal canal, said element being comprised of a single-thickness fistular-shaped sheet of elastic rubber sleeved over said forward end of the pipe and, when collapsed, finding a snug fit upon the latter and having its end extremities made fast to the pipe to provide a seal against the escape of air introduced to the element for ballooning the same; an air duct isolated from said main fluid canal of the pipe and extending longitudinally from the outer end of the pipe to terminate in an outlet port giving access to the interior of the balloon, the admission end of said air duct being arranged for connection with a source of controlled pressure air; and means also carried upon the pipe and in the use of the appliance operating to fit snugly against the anus of the patient and in consequence hold the inflated bal-

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loon against said internal mouth of the anal canal.

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