June 21, 1949 H. L. POHL 2,474,188

ENEMA TUBE

Filed July 23, 1946

Fig. 1.

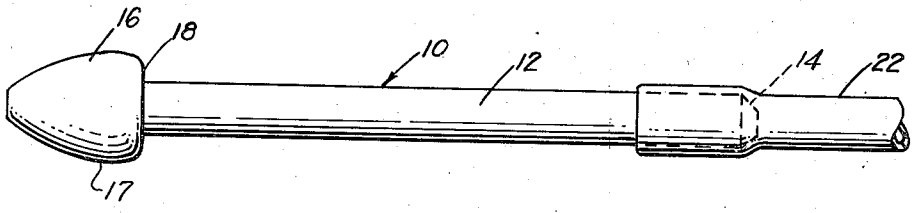
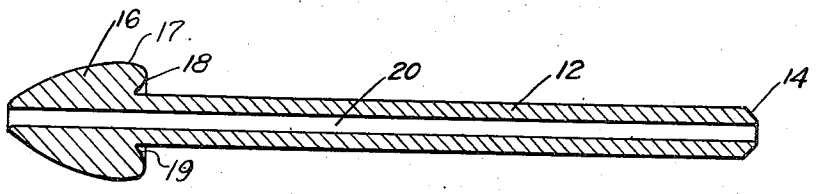


Fig. 2.



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ENEMA TUBE

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7 Claims. (Cl. 128—239)

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This invention relates to enema tubes, and more particularly to a disposable type of enema tube so formed as to be efficiently and sanitarily adaptable to the mass technique of enema treatment commonly followed in radiographic examinations.

Conventional radiographic examinations of the colon comprise the giving of a barium enema to the patient and the subsequent X-raying of the colon. Any drainage of the barium solution during this operation, causing the colon to be less than completely filled with said solution, necessitates a repetition of the procedure. In order to inhibit such drainage during the solution injection period, it is necessary that the attendant manually retain the enema tube against displacement from the patient, since the conventional tube is so shaped as to be readily ejected in the absence of a counter-acting force by the normal convulsive restrictions of the rectal muscles. The enforced proximity of the attendant has certain obvious disadvantages, among them being the fact that the attendant is substantially prevented from performing other functions or duties, an important consideration particularly when a succession of patients are being similarly treated, as is often the case in military hospitals and the like.

In the conventional practice of enema treatment, the same tube is used for successive patients after an intervening sterilization which is too frequently incomplete due to the insufficiency of the time period between patients. The result of this practice is that not only is the transfer of various types of diseases between patients enhanced, but the attendant is faced with the time-consuming task of cleansing and sterilizing the tube.

Among the objects of the instant invention are the following: to provide an enema tube having a portion so shaped as to be retained against displacement solely by the rectal muscles of the patient; to provide an enema tube of sufficient length to prohibit contact between the tube attached thereto and the patient and to reduce the possibility of contact between the patient and the attendant handling the tube; and to provide an enema tube fashioned of a material sufficiently low in cost to enable the disposal of the tube after a single usage.

Other objects and advantages of the invention will be apparent from the following description taken in conjunction with the drawing forming part of this specification, and in which:

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Fig. 1 is a view in elevation of the enema tube embodied in the invention; and

Fig. 2 is a view in section taken along the longitudinal axis of the tube.

Referring to the drawing for more specific details of the invention, 10 indicates generally a unitary enema tube having a shaft portion 12 with a bevelled end 14 and a conoidal head portion 16 having an axial sectional contour resembling an arrowhead, said head portion having an inward taper 17 terminating in a smoothly rounded annular shoulder 18, and an annular base surface 19 forwardly and inwardly inclined to its line of juncture with the shaft 12. The line of juncture of the base surface 19 and the shaft is located forwardly of the shoulder 18 a distance not greater, and preferably less, than the radial distance between the shaft and the ridge of the shoulder 18. An axial passage 20 extends through the length of the tube 10.

The tube is preferably made of moulded wood-pulp or other material sufficiently low in price to warrant disposal of the tube after a single using thereof. When wood-pulp or other water pervious material is used, a water-proofing material should be incorporated with such material before the molding operation, or the molded tube may be coated with a quick-drying water-proofing solution. In either case, it is only necessary to water-proof the tube sufficiently to withstand moisture for a period of approximately ten minutes.

In using the tube, a rubber hose 22, connected to the enema solution container, not shown, is slipped over the bevelled end 14 of the tube, and the tube is lightly covered with a lubricating jelly and inserted in the rectal passage of the patient to a depth beyond the shoulder 18. After completion of the enema, the tube 10 is removed from the hose 22 and discarded, and a new tube is inserted in the hose for treatment of the next patient.

The contour of the head portion 16, including the inward taper 17, of the tube provides for an easy insertion of said portion into the patient. Following insertion of the tube, the sphincter muscle of the patient constricts to the diameter of the shaft portion 20 of the tube to engage the annular shoulder 18 and base surface 19 and retain the tube in position against the opposing action of the spasmodically acting muscles in the rectal passage anterior to the sphincter muscle. In withdrawing the tube, the sphincter muscle readily expands to follow the contour of base surface 19 and shoulder 18 with no more discom-

fort to the patient than that caused by conventionally shaped enema tube heads.

Figs. 1 and 2 of the drawing illustrate the normal size of the enema tube, and it is readily apparent that the length of the shaft portion 12 of the tube is sufficient to permit of handling during the insertion and withdrawal of the tube with little possibility of contact between patient and attendant.

While the preferred embodiment of the invention has been shown and described, modifications of the invention may be made within the scope of the appended claims.

What I claim as new and desire to secure by Letters Patent is:

1. An enema tube comprising a shaft, a conoidal head, a rounded annular edge on the head adjacent the shaft, and an annular and forwardly inclined base surface for the head between said edge and said shaft.

2. An enema tube comprising a shaft having a bevelled end, a conoidal head on the other end of the shaft, an axial passage through said head and shaft, a rounded annular edge on the head adjacent the outlet of said passage, a rounded annular edge on the head adjacent the shaft, and an annular and forwardly inclined base surface for the head between said latter edge and said shaft.

3. An enema tube comprising a shaft, a conoidal head having an annular rearward edge, and a base surface for said head extending forwardly and inwardly from said rearward edge to a line of juncture with said shaft, said line of juncture being located forwardly from said rearward edge a distance not in excess of the radial distance from said shaft to said rearward edge.

4. An enema tube comprising a shaft, a conoidal head having a rounded annular rearward edge, and a base surface for said head extending forwardly and inwardly from said rearward edge to a line of juncture with said shaft, said line of juncture being located forwardly from said rearward edge a distance not in excess of the radial distance from said shaft to said rearward edge.

5. An enema tube comprising a shaft, a conoidal head having a smoothly curved external surface extending from a rounded annular leading edge to an annular rearward edge, said head having a maximum external diametral portion intermediate said leading and rearward edges and located in closer proximity to said rearward edge.

6. An enema tube comprising a shaft, a conoidal head having a smoothly curved external surface extending from a rounded annular leading edge to a rounded annular rearward edge, said head having a maximum external diametral portion intermediate said leading and rearward edges and located in closer proximity to said rearward edge, and a base surface for said head extending forwardly and inwardly from said rearward edge to a line of juncture with said shaft.

7. An enema tube comprising a shaft, a conoidal head having a smoothly curved external surface extending from a rounded annular leading edge to a rounded annular rearward edge, said head having a maximum external diametral portion intermediate said leading and rearward edges and located in closer proximity to said rearward edge, and a base surface for said head extending forwardly and inwardly from said rearward edge to a line of juncture with said shaft, said line of juncture being located forwardly from said rearward edge a distance not in excess of the radial distance from said shaft to said rearward edge.

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