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TIP FOR COLON THERAPY APPLIANCES

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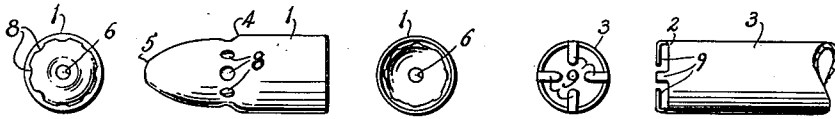


Fig.2 Fig.1 Fig.3 Fig.5 Fig.4

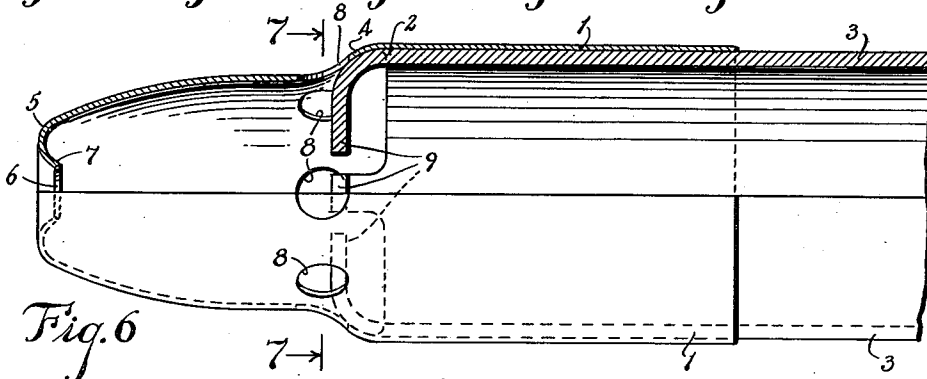


Fig.6

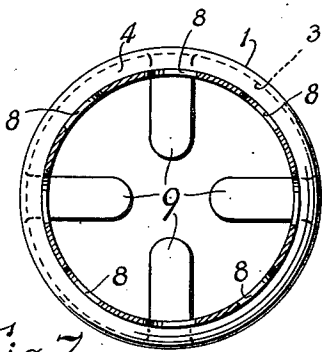


Fig.7

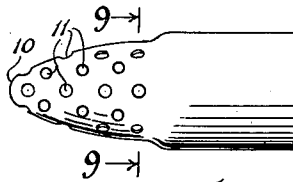


Fig.8

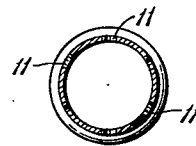


Fig.9



Fig.10

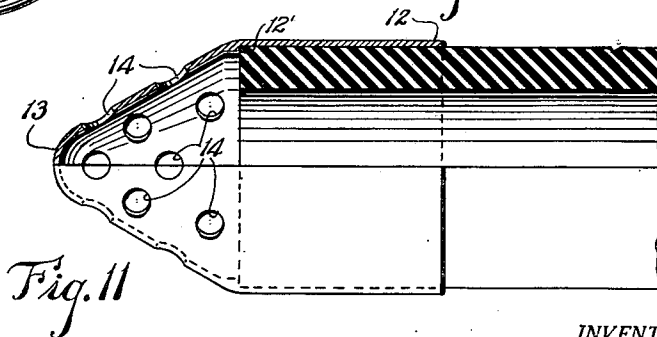


Fig.11

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TIP FOR COLON THERAPY APPLIANCES

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2 Claims. (Cl. 128-239)

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This invention relates to means for colon therapy, such as the administration of enemas and colon irrigation and particularly to an improved tip for the introduction of the instrumentality by which such treatments are applied.

Heretofore, it has been necessary to form applicators for colon irrigation with tapered ends to facilitate insertion into the colon of the patient notwithstanding the fact that, once inserted, a large receiving orifice disposed directly at the end of the applicator is desirable and the necessity of providing a tapered entrant end has heretofore prevented the realization of this most desirable form of applicator. Various expedients have been proposed among which are the use of tapered end plugs which are manually moved away from the receiving orifice of the applicator but which either continue to partly obstruct the free reception of material or must be completely removed from the applicator before the water is applied thereto. Another form of applicator employs a bar-like member extending across the applicator opening in advance thereof, but this leaves a laterally disposed opening into which colonic growths such as hemorrhoids or polyps can enter, preventing further movement of the applicator in either direction without at least discomfort and possible trauma.

Also in the administration of enemas there is always danger that the blunt ended tubes may engage colonic growths and either cause discomfort or trauma or that the small tubing ordinarily employed will become clogged during introduction.

With the foregoing considerations in mind, it is an object of the invention to provide a water soluble tip for instrumentalities to be introduced in the colon of a patient which will permit safe and easy insertion and which is quickly dissolved by the water used for treatment.

Another object of the invention is to provide a water soluble pointed tip for use with a blunt ended applicator for colon irrigation which tip after being dissolved renders the end of the applicator open for reception of matter to be evacuated.

A further object of the invention is to provide a water soluble tip for a tube such as is used for administering enemas which is so constructed and arranged as to facilitate the safe introduction of the tube and which operates to prevent clogging of the tube during insertion.

A still further object of the invention is to provide a soluble tip for colon irrigation applicators, enema tubes, and the like, which is adapted to permit an initial flow of water therethrough to facilitate the breakdown of the tip.

Still another object of the invention is to provide a soluble tip for colon irrigation applicators and like instrumentalities which is so constructed and arranged that the initial application of water acts to cause a breaking away of a portion of the

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tip rendering the end of the instrumentality open for reception of matter before the complete dissolution of the tip.

With the above objects in view, together with such other objects and advantages as may subsequently appear, the invention resides in the provision of a pointed tip means formed of a normally relatively rigid, water soluble material which tip may be mounted on the distal end of a syringe nozzle, an enema tube, or an applicator for colon irrigation, certain forms thereof being described by way of example in the following specification, reference being had to the accompanying drawings forming a part of said specification and in which:

Fig. 1 is a side elevation of one mode of execution of the invention showing a representative form of soluble tip adapted for use with an applicator for colon irrigation treatments,

Figs. 2 and 3 are left and right hand end views, respectively, of Fig. 1,

Figs. 4 and 5 are side and end elevations, respectively, of the distal end of a colon irrigator with which a tip such as shown in Figs. 1, 2 and 3 may be used,

Fig. 6 is a greatly enlarged side elevation, partly in section, showing the tip and irrigator of the preceding figures assembled for use,

Fig. 7 is a transverse, sectional view taken on the line 7-7 of Fig. 6,

Fig. 8 is a side elevation of a modified form of the invention,

Fig. 9 is a transverse, sectional view taken on the line 9-9 of Fig. 8,

Fig. 10 is a side elevation of a second modified form of the invention adapted for use with an enema tube, and

Fig. 11 is an enlarged side elevation, partly in medial section of the form of the invention shown in Fig. 10 and including the mounting thereof on an enema tube.

Referring to the drawings, the invention comprises a cylindrical tip formed of a normally relatively rigid water soluble material, such as gelatine, and comprising a sleeve portion 1 adapted to be slipped over the distal end of a blunt ended colon irrigator 3 and having a shoulder portion 4 adapted to engage the end of the irrigator as best shown in Fig. 6. Beyond the shoulder portion 4, the tip gradually tapers to a point 5 having an axial opening 6 therein bordered by the intumed end edge 7 of the tip material and the tapered tip portion adjacent the shoulder portion 4 is provided with a circumferential series of holes 8.

The applicator is preferably formed of thin wall metal tubing and the distal end thereof is partly obstructed by a series of tongues 9 extending part way across the tube opening and which tongues operate to break up discharged matter prior to entry thereof into the applicator. It will be obvious that other forms of ap-

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plicator ends may be employed and the illustrated form is merely an example of one which is both economical to manufacture and readily cleaned and sterilized.

Referring now to Figs. 8 and 9, there is shown a modified form of the invention which is generally like the first described form but in which the surface of the pointed entrant end 10 is provided with a greater number of openings 11 to promote the quick dissolution of the tip. Preferably, these openings are very small and the outer edges thereof are rounded to prevent irritation of colonic growths such as polypi or hemorrhoids.

Figs. 10 and 11 illustrate an adaptation of the invention to enema tubes comprising a soluble tip having a cylindrical tube engaging end 12 adapted to be slipped on to the end of a small rubber tube such as is employed in giving enemas; said cylindrical portion at the end thereof adjacent the pointed portion of the tip terminating in a shoulder 12' engaging the end of the tube and thus relieving the sleeve portion 12 from the necessity of resisting end thrust incident to introduction of the tip and tube into a body opening and the end of the tip terminating in a pointed end 13 which may or may not be provided with openings 14 for the escape of water to promote the breakdown of the tip.

In general the enema tubes heretofore used are of two general types, i. e., those having an axial discharge opening in a relatively blunt end and those having a somewhat flattened end with a transverse opening therein which communicates with the interior of the tube. The use of either of these types is somewhat hazardous due to the possibility of trauma as has already been mentioned and the use of the first described type is complicated by the possibility of becoming clogged incident to insertion with the attendant necessity of removing and cleaning of the tube end. It is particularly to be noted that in all illustrated forms of the invention, the sleeve portion which surrounds the end of the instrumentality is not subject to end thrust incident to introduction of the tip and instrumentality into a body opening and hence may be made very thin. The end thrust is resisted by the shoulder portion which is located at the end of the sleeve portion adjacent the pointed portion of the tip and by said pointed portion of the tip; the latter by reason of its form being better able to thus resist thrust and thus the pointed end may also be made with a minimum wall thickness.

All of these dangers and annoyances are overcome by the use of the water-soluble tip and while one or more openings in the side wall are desirable to effect the quick breakdown of the tip point, in some instances it may be desirable to employ a tip element without such openings and in which the initial flow of fluid occurs between the adjacent sides of the tube and the tube engaging portion of the tip element. This may be accomplished in either of two ways. First, sufficient differences in the diameters of the tube and the tube engaging portion of the tip may be provided, such clearance being on the order of a few thousandths of an inch. Second, the exterior of the tip engaging portion of the tube or the interior face of the tube engaging portion of the tip may be given a corrugated or other non circular periphery to provide clearance space for the flow of fluid therebetween with resultant breakdown of the

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tube engaging portion of the tip to release the direct flow of fluid from the end of the tube. It will be realized, of course, that the above principles of construction and use of the invention may as well be applied to tips used with colon irrigation applicators.

The use of the invention is believed to be apparent. A dry tip is placed on the end of a tube or applicator, is moistened and is introduced into the body of the patient, the action of the contacting fluid on the outer surface of the tip acting to produce a lubricated surface and facilitating introduction. When the tube or applicator is properly positioned, a flow of water is started and during the first few seconds of use the water breaks down the tip leaving the irrigator ready for reception of evacuated matter and in the case of an enema tube, leaving the discharge end thereof open and uncontaminated.

The use of tips formed according to the present invention permits the introduction of irrigators having the most desirable form of distal orifice without danger of trauma or of discomfort to the patient and makes unnecessary the complicated constructions of applicators heretofore proposed and which have failed to achieve the optimum results with respect to safety in use, in ease of reception of material to be evacuated and in ease of introduction. Applied to enema tubes, the water soluble tip prevents clogging and contamination of the tube and provides a smooth pointed end therefor, which permits safe introduction of the tube.

While, by way of example, I have described and illustrated certain specific forms of my invention in the foregoing specification, it is realized that many other variations and modifications of the invention will suggest themselves to those skilled in the art and therefore, the invention is intended to embrace not only the illustrated forms thereof, but also, all such changes and modifications in form and material as shall come within the purview of the appended claims.

I claim:

1. As an article of manufacture, a normally rigid tip element formed of water soluble material and comprising a sleeve portion providing a receiving socket for the distal end of an open ended instrumentality for introducing a flow of fluid through a body opening of a person, a pointed distal end portion projecting beyond the distal end of the instrumentality, and an internal shoulder portion intermediate the ends of said tip effective to engage the distal end of the instrumentality.

2. A tip element as claimed in claim 1 in which the pointed end portion is perforated.

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