

Sept. 27, 1932.

J. W. KENNEDY

1,879,307

DILATOR

Filed Oct. 7, 1930

Fig. 1.

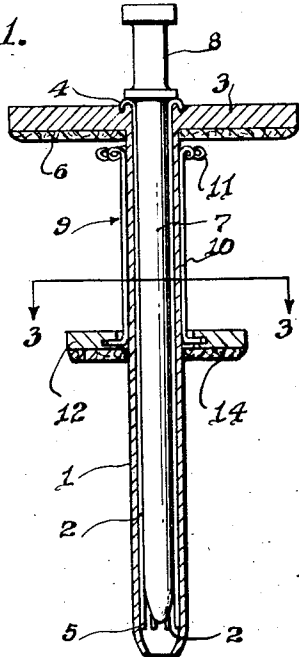


Fig. 2.

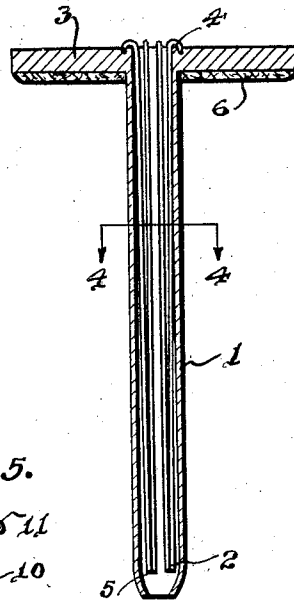


Fig. 5.

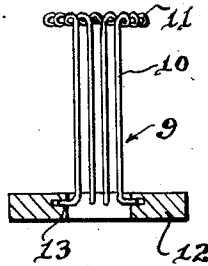


Fig. 3.

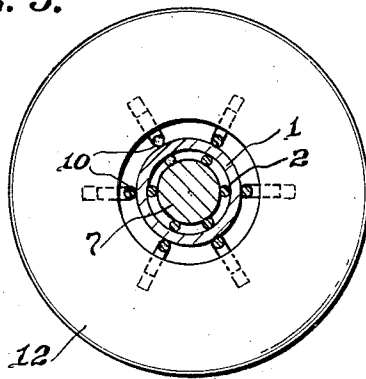


Fig. 6.

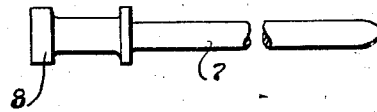


Fig. 7.

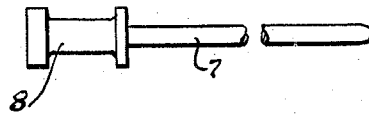


Fig. 8.

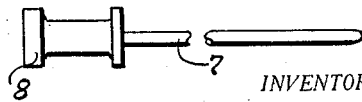
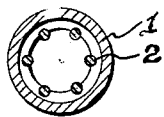


Fig. 4.



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DILATOR

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This invention relates to improvements in dilators and more particularly to an instrument for expanding the sphincter muscles in the rectum. The device can also be used in the treatment of constipation, piles, for poor circulation and other rectal diseases.

The principal object of the invention is to provide a device of this nature which will expand the sphincter muscles of the rectum without causing friction and without damage and pain.

Another object of the invention is to provide a device which will expand the rectum throughout its length in an even and uniform manner.

Still another object of the invention is to provide an instrument of this character consisting of a tube made from pliable material and adapted to be inserted in the rectum and a rod for expanding the wall of said tube.

Still a further object of the invention is to provide an instrument of this kind comprising a pliable tube adapted to fit in the rectum, a series of wire guides longitudinally disposed in said tube and a rod for forcing said wire guides and the wall of the tube outwardly.

A further object of the invention is to provide means to regulate the depth of insertion of the tube.

Other objects of the invention will appear as the disclosure progresses. The drawing is intended to merely indicate a possible embodiment of the invention. It is obvious that the actual needs of manufacture may necessitate certain mechanical changes. It is therefore not intended to limit the invention to the embodiment illustrated, but rather to define such limits in the appended claims.

For a more general understanding of the invention, attention is called to the drawing. In the drawing like reference characters denote like parts throughout the specification.

Figure 1 is a sectional view of the dilator in operative position.

Figure 2 is a similar view as Figure 1 with the rod and adjusting guard removed.

Figure 3 is an enlarged section on line 3—3 of Figure 1.

Figure 4 is a section on line 4—4 of Figure 2.

Figure 5 is a sectional view of the adjusting guard.

Figures 6, 7, and 8 show the different size rods which can be used with the instrument.

Referring now to the drawing in detail, numeral 1 designates the tube made from a soft and pliable material such as rubber or the like, 2 the wire guides, and 3 the circular pad. The wire guides run longitudinally in the tube and are embedded at the top in the circular pad as at 4, while the lower ends 5 are free to swing. Underneath the circular pad is attached a sheet of soft sponge rubber 6 in order to avoid any damage to the skin when the instrument is in use.

Fitting in the tube is a solid rod 7 having a handle 8 at the top. The function of the rod is to expand the tube when inserted therein. Numeral 9 indicates a guard used where the rectum is comparatively shallow as in children. The guard is made from a set of longitudinally disposed wire 10 woven together at the top as at 11 and resiliently fastened to the bottom disk 12 as indicated at 13 in Figure 5. Underneath this disk is also a sheet of soft sponge rubber 14.

The operation of this device is as follows: The tube with the rod 7, removed is first placed in the rectum. The rod is then inserted in the tube and as the rod moves downwardly the wall of the tube will expand and enlarge the membrane of the rectum. As stated heretofore the tube is made from pliable material so it can readily expand without any undue strain of the operator. The rod does not come in contact with the wall of the tube but slides on the wire guides 10 and as the guides spread outwardly the tube distends correspondingly. By this arrangement an even expansion of the tube is brought about. Otherwise there would always be a sharp difference in the diameter of the tube. The portion of the tube which is filled up with the rod would naturally be larger in diameter while at the end of the rod there would be a marked restriction in the diameter of the tube.

In Figures 6, 7, and 8 is shown a series of

different diameter rods which can be used with the instrument. In stubborn case the smaller rod is used first and as the rectum is stretched the larger and large sizes can gradually be used. Thus the rectum can gradually be enlarged without causing pain. The guard 9 resiliently fits on the tube and expands and contracts with same and does not in any way hinder the operation of the device.

- 10 It will thus be seen that I have provided an efficient and simple device for the purpose specified. The wall of the rectum will in no way be subject to friction, but only to diametric expansion. The soft rubber tube is slightly pointed at the end so it can enter the rectum without causing an unpleasant feeling on the part of the patient.

Having described my invention, I claim:

1. In a device of the class described, the combination of a pliable tube, of a set of wire guides in said tube and running the full length thereof, a pad at the top of said tube, the tops of said wire guides fastened to said pad while the lower ends of said guides being unfastened and free to swing, and means to expand the wall of said tube diametrically.

2. In a device of the class described, the combination of a pliable tube, of a set of wire guides in said tube and running the full length thereof, a pad at the top of said tube, a sheet of soft resilient material attached to the bottom face of said pad, the tops of said wire guides fastened to said pad while the lower ends of said guides being unfastened and free to swing, and means to expand the wall of said tube diametrically.

3. In a device of the class described, the combination of a pliable tube, of a set of wire guides in said tube and running the full length thereof, a pad at the top of said tube, the tops of said wire guides fastened to said pad while the lower ends of said guides being unfastened and free to swing, means to expand the wall of said tube diametrically, a guard frictionally engaging the outer surface of the tube, said guard comprising a set of longitudinally spaced wires woven together at the top, a pad at the lower end of said wires, said wires being bent at an angle at the bottom ends and fitting into holes in said pad.

In testimony whereof I affix my signature.
JAMES W. KENNEDY.