May 12, 1936. C. H. WOLFF ET AL 2,040,420

RECTAL DILATOR

Filed March 15, 1933

Fig. 1.

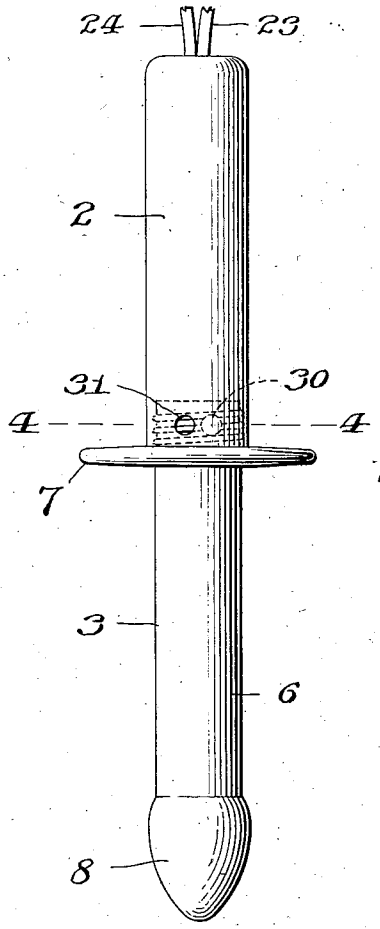


Fig. 2.

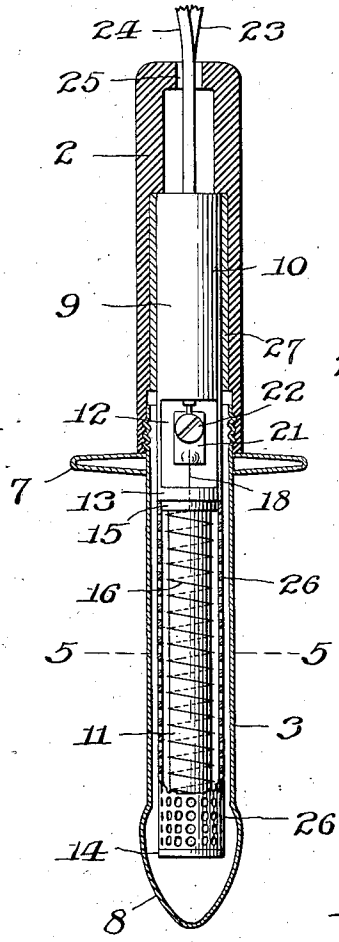


Fig. 3.

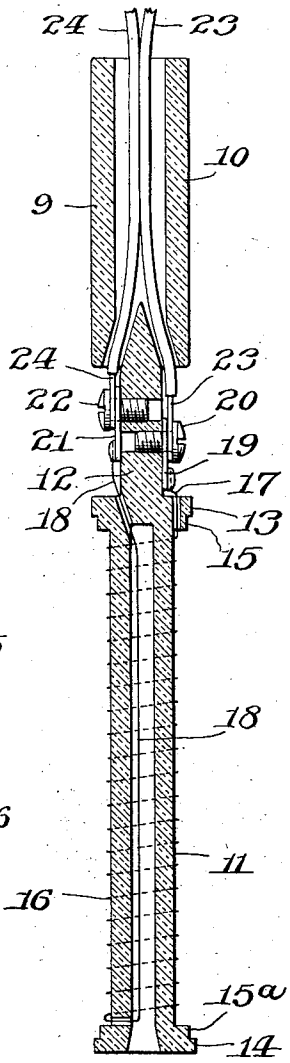


Fig. 4.

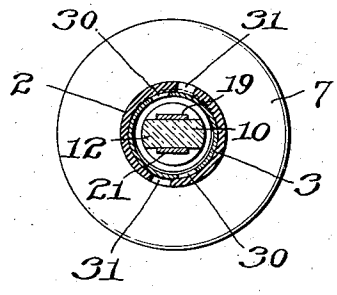
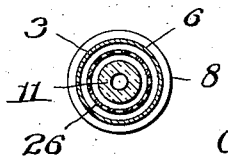


Fig. 5.



Inventor

Charles H. Wolff

and Hermann Weder, Sr.

By A. V. Grouse

Attorney

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RECTAL DILATOR

Charles H. Wolff and Hermann Weder, Sr.,
Philadelphia, Pa.

Application March 15, 1933, Serial No. 660,800

2 Claims. (Cl. 128—303.12)

This invention relates to improvements in electrically heated rectal dilators for the treatment of piles or hemorrhoids, constipation, prostatic troubles and other ailments which will respond to the treatment of dilating the rectum and the internal application of heat thereto.

An object of the invention is to provide a novel durable and advantageous means for supporting the heating element and the electrical conductors leading therefrom within the instrument. Another object is to provide a novel means for guarding and protecting the heating element when the part of the instrument which is constructed to make contact with the rectum and adjacent body parts is removed from the remaining parts of the instrument for sterilization. A further object is to provide a novel means for regulating the heat of the instrument by permitting air to enter and leave the interior thereof.

With the foregoing and related objects in view the invention resides in the elements and the combinations of them hereinafter described and claimed.

In the accompanying drawing, illustrating the invention,

Figure 1 is a side view of my improved rectal dilator.

Figure 2 is a longitudinal section of the instrument.

Figure 3 is a longitudinal section, enlarged, of the insulating core, showing certain parts carried thereby.

Figure 4 is a transverse section through the instrument, on line 4—4 of Fig. 1.

Figure 5 is a transverse section through the dilator and heater, on line 5—5 of Fig. 2.

Referring to the drawing, 2 designates the handle and 3 the dilating member of the device.

The handle 2 is made hollow and cylindrical in form and it may be constructed of hard rubber or any other suitable material.

The dilating member 3 is made hollow and constructed of thin metal and it comprises a cylindrical body 6 having an outwardly extending, annular flange 7 near one end thereof and having the opposite end portion thereof terminating in a somewhat oval shaped enlargement 8 shaped to permit its easy insertion into the rectum. The length of the cylindrical body 6 between the flange 7 and the enlargement 8 is such as to permit the insertion of the dilating member to a point where the enlargement 8 occupies a position inwardly of the inner and outer sphincter muscles, and in which the further insertion is prevented by the flange 7. The end portion of the cylindrical body 6 adjacent to and beyond the flange 7 is threaded and screwed into corresponding threads in the adjacent end portion of the handle 2 in a manner to permit the dilating member 3 easily to be applied to or removed from the handle. When the member 3 is applied to the handle 2, the flange 7 engages the adjacent end of the handle and serves as a stop to prevent further relative turning of the member and handle and to provide sufficient friction between them to prevent accidental unscrewing of the parts when the device is in use.

Extending centrally within the handle 2 and the dilating member 3 is a core 9 which is formed of suitable electrical insulating material and which comprises a supporting tubular end portion 10, a free tubular end portion 11 and a reduced or flat intermediate portion 12 connecting the end portions 10 and 11.

The free tubular end portion 11 is made smaller in diameter than the supporting tubular end portion 10, and the respective ends of the portion 11 are provided with annular expanded portions or heads 13 and 14 having oppositely facing, annular shoulders 15 and 15a, respectively, thereon. Encircling the tubular portion 11 and extending between the heads 13 and 14 thereon is an electrical heating coil 16 having terminals 17 and 18 leading from the respective ends thereof. The terminal 17 extends from the coil 16 through an opening in the head 13 to a plate 19 which is secured to one side of the intermediate portion 12 of the insulating core 9 by a screw 20, the terminal being connected to the plate 19 by soldering or other suitable means. The terminal 18 extends from the coil 16 through an opening in the wall of the tubular portion 11 to the interior thereof and thence through the portion 11 and out through an opening in a wall thereof to a plate 21 which is secured to the side of the intermediate portion 12 opposite to the plate 19 by a screw 22, the terminal 18 being connected to the plate 21 by soldering or other means.

Connected to the plates 19 and 21 by means of the screws 20 and 22 are the inner ends of electrical wires 23 and 24 which extend therefrom through openings in parts of the core 9 to the interior of the supporting tubular portion 10 thereof and thence through the portion 10 to and out through an opening 25 in the free end of the handle 2. The outer portions of the wires 23 and 24 are adapted to be connected to an electrical plug for insertion into the socket of a source of electric current to supply the same to the heating coil 16 when the device is in use.

The heating coil 16 is surrounded by a tubular guard 26 which is held in place by and between the heads 13 and 14 and which is mounted on the shoulders 15 and 15a and thereby held in spaced concentric relation with the tubular core portion 11 and the coil 16 thereon. The guard 26 is provided with numerous perforations for the passage of air into and from within the same and the distribution of heat from the coil 16 to all parts of the interior of the dilating member 3 for heating the same.

The supporting end portion 11 of the insulating core 9 is held firmly in place within the hollow handle 2 by a suitable sleeve 27 which surrounds the same in firm frictional engagement therewith and with the inner wall of the handle 2; and the free end portion 11 of the core 10 and the guard 26 carried thereby are supported by and extend from the supporting portion 10 into the dilating member 3 in spaced relation to the inner wall thereof.

The dilating member 3 may be easily unscrewed from the handle 2 and withdrawn from the core 10 and parts carried thereby, for the purpose of sterilizing the member 3 or for other purposes, and when the member is removed from the handle, the guard 26 serves to protect the heating coil against accidental damage.

The end portion of dilating member 3 which is screwed into the handle 2 is provided with openings 30 which are adapted to be moved into and out of registry with corresponding openings 31 in the surrounding wall of the handle 2 when the member 3 is turned therein. When the flange 7 of the member 3 is screwed tight against the opposing end of the handle 2, the openings 30 are out of registry with the openings 31, as shown in Figs. 1 and 4, but a slight reverse or unscrewing movement of the member 3 will bring the openings 30 into registry with the openings 31 for the purpose of permitting air to pass through the same into and from the interior of the member 3 for a purpose presently appearing.

The length and diameter or gauge of the wire forming the heating coil 16 is such as to heat the dilating member 3 to about 110 degrees Fahrenheit when the device is connected to a source of electric current supply of the usual 110 volts provided for household use. The heat of the member 3 may be varied to some extent by turning it relatively to the handle 2 to bring the openings 30 into partial or full registry with the openings 31 and thereby permit some of the heated air within the member to escape therefrom. By turning the member 3 to bring the openings 30 into full registry with the openings 31 the temperature of the member will be reduced about five degrees.

It will now be understood that the dilating member 3 may be inserted into the rectum and that the device may be connected to a suitable source of electric current for heating the member 3 for the purpose of dilating the rectum and heat treating the same and other parts of the patient in the region of the rectum.

We claim:

1. In a rectal dilator, a hollow handle, a hollow dilating member having an end portion thereof removably connected to an end portion of the handle, a core having an end portion supported within the handle and a free end portion extending from the handle and into the dilating member, said core being formed wholly of insulating material, an electrical heating coil surrounding and supported by the free end portion of the core, and a tubular guard provided with numerous perforations supported by the free end portion of the core and surrounding the coil in spaced relation thereto and to the dilating member.

2. In a rectal dilator, a hollow handle, a hollow dilating member having an end portion thereof removably connected to an end portion of the handle, a core having an end portion supported within the handle and a free end portion extending from the handle and into the dilating member and having shouldered expanded portions at the respective ends thereof, said core being formed wholly of insulating material, an electrical heating coil surrounding and supported by the free end portion of the core, and a tubular guard provided with numerous perforations extending between and supported by the said shoulders and surrounding the coil in spaced relation thereto and to the dilating member.

CHARLES H. WOLFF.
HERMANN WEDER, SR.