May 15, 1934. F. M. DUERME 1,959,127

SURGICAL INSTRUMENT

Filed May 4, 1933

Fig. 1.

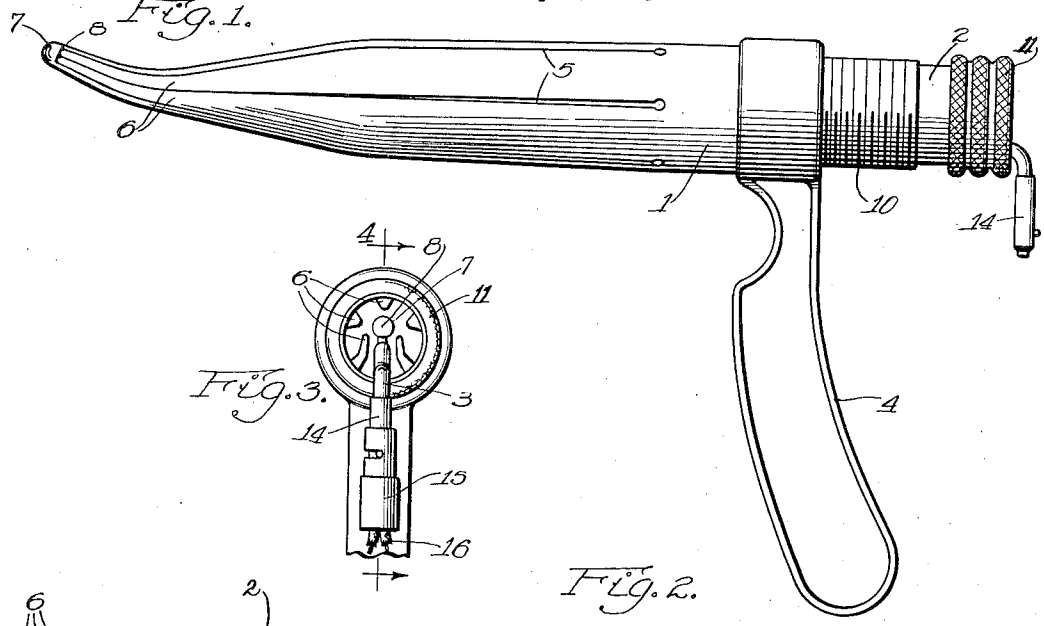


Fig. 3.

Fig. 2.

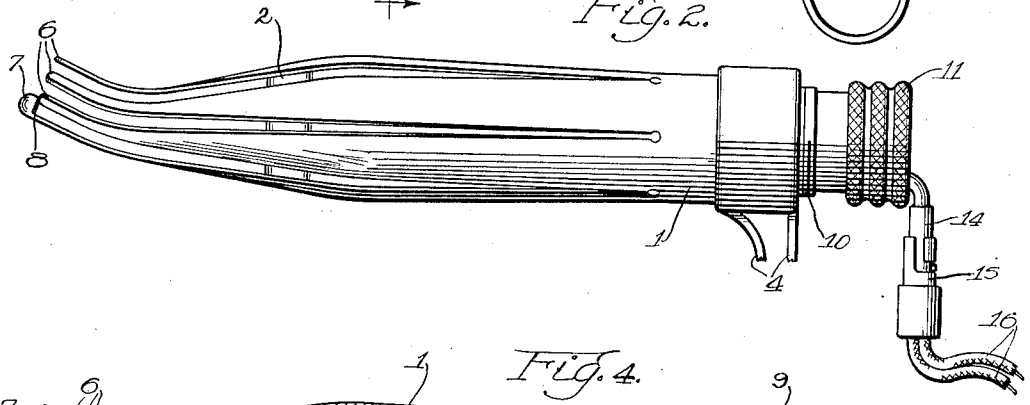


Fig. 4.

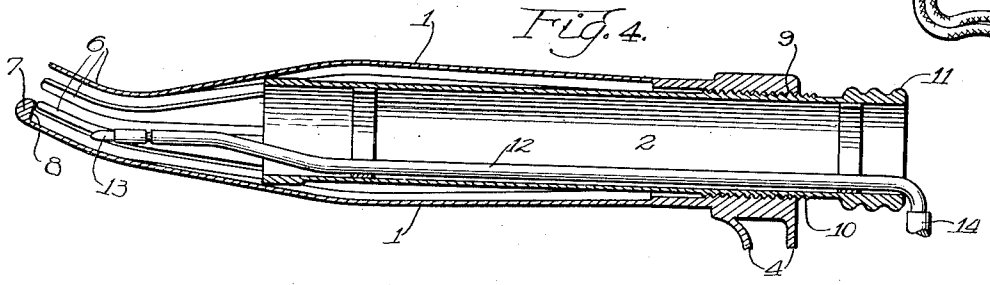
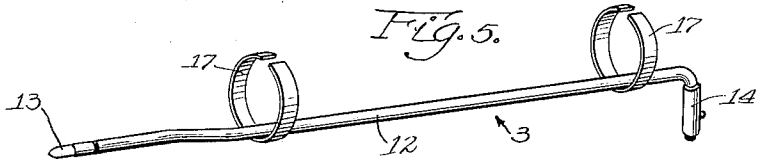


Fig. 5.



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1,959,127

SURGICAL INSTRUMENT

Francisco Maya Duerme, Chicago, Ill.

Application May 4, 1933, Serial No. 669,363

4 Claims. (Cl. 128—6)

This invention relates to improvements in surgical instruments and more particularly to an instrument used for dilation purposes.

Heretofore the medical profession has been using an instrument known as a meatoscope when gynecologic and obstetrical problems confront them, but with this instrument a secondary instrument, known as a tenaculum, must be employed especially in performing intra-uterine surgery. However, this work is performed more or less at random, there being no means to illuminate the area exposed, and the result is more often a ruptured uterus and extensive traumatism.

With these faults in mind, the main objects of this invention are to provide an improved surgical instrument used for dilation purposes; to provide an instrument of this character which has a lighting unit; and to provide an instrument of this character which is simple in construction and operation.

An illustrative embodiment of this invention is shown in the accompanying drawing, in which:

Figure 1 is a face view in elevation of my invention, shown in closed or inoperative position.

Fig. 2 is a view similar to Fig. 1 but showing my invention in open or operative position with a portion of the handle shown broken away.

Fig. 3 is an end view taken from the right of Fig. 2.

Fig. 4 is a sectional view taken on the line 4—4 of Fig. 3.

Fig. 5 is a perspective view of the lighting unit.

Referring in detail to the drawing, the present invention comprises an outer tubular shell 1, an inner cylindrical tube 2, and a lighting unit 3.

The shell 1 is provided with a handle 4 at its proximal end for holding the device and is tapered and curved at its distal end as shown in the drawing. The shell 1 is cleft endwise as at 5 from the distal end to form a series of prongs 6 which are normally closed as shown in Fig. 1. One of the prongs 6 is provided at its end with a ball nib 7, the inner side of which is flat shaped as at 8 so that the balance of the ends of the prongs will abut snugly against it. The distal end will thereby be a perfectly round cylindrical end with no protrusions. The proximal end is provided with female threads 9 on its inner surface. See Fig. 4.

The cylindrical tube 2 is slightly smaller in circumference than the shell 1, and is adapted to be inserted in the shell and is provided with male threads 10 on its proximal end and a knurled handle 11 for manipulating the tube.

The lighting system comprises a cylindrical tube 12 provided at one end with a small light bulb 13 and at the other end with a connector 14, adapted for the reception of a socket 15 which is connected to a battery (not shown) through wires 16. A pair of mutually spaced split resilient rings 17, slightly smaller in circumference than the inner diameter of the tube 2, are secured to the tube 12 and are adapted to be inserted into the cylinder 2 as shown in Fig. 4 and hold the tube 12 firmly in position.

In assembling the device, the tube 2 is inserted in the shell 1 and partially screwed into it. The lighting unit 3 is then inserted in the tube 2 and the device is completely assembled and ready for use.

In operation, the lighting unit is carefully withdrawn from the tube to insure against breakage. The handle 4 is then grasped firmly and inserted gently in the cervical canal of the uterus and the knurled handle of the tube turned clockwise, thereby forcing the distal end of the tube against the tapered end of the shell, causing the prongs to expand as shown in Fig. 2. This, of course, dilates the cervical canal, thus exposing the interior of the uterus. The lighting unit is then placed in the tube and connected to a battery. The bulb is of special design adapted to throw light of great intensity, thereby illuminating the area exposed.

It will be seen that a secondary instrument may readily be inserted through the tube and the area affected treated. This, of course, eliminates any guess work as to where the afflicted area might be, due to the presence of illumination.

To remove the instrument, the lighting unit is first extracted and the knurled handle on the tube is turned counterclockwise, thereby allowing the prongs to contract, and the instrument is withdrawn from the uterus.

The present invention may be put to many other sundry uses, such for instance as examining the meatus auditorius, and meatuses of the nose and rectum, and for operating thereon as will be apparent.

It is to be understood that some of the details shown and described may be omitted without departing from the spirit of this invention as defined by the following claims:

I claim:

1. A surgical instrument comprising a shell, having a tapered end cleft endwise to form prongs, a tube arranged to be inserted in said shell, and cooperating means on said shell and tube for manipulating said tube and cause said tube to rotate within said shell, said tube arranged to dilate said prongs when said tube is rotated in a clock-

wise direction and contract when moved in a counterclockwise position.

2. A surgical instrument comprising a shell having a tapered end cleft endwise to form prongs, a tube arranged to be inserted in said shell, and cooperating means on said shell and tube for manipulating said tube and cause said tube to rotate within said shell, said tube arranged to dilate said prongs when said tube is rotated in a clockwise direction and contract when moved in a counterclockwise position, and a lighting unit arranged to be inserted in said tube.

3. A surgical instrument comprising a shell having a tapered end cleft endwise to form prongs, a tube arranged to be inserted in said shell, cooperating means on said shell and tube for manipulating said tube and cause said tube to rotate within said shell, said tube arranged to dilate said prongs when said tube is rotated in a clockwise direction and contract when moved in a counterclockwise position, a lighting unit arranged to be inserted in said tube, and a ball nib on one of said prongs arranged to protect the ends of the other of said prongs when said shell is in contracted position.

4. A surgical instrument comprising a shell having a tapered end cleft endwise to form prongs, a tube arranged to be inserted in said shell, cooperating means on said shell and tube for manipulating said tube and cause said tube to rotate within said shell, said tube arranged to dilate said prongs when said tube is rotated in a clockwise direction and contract when moved in a counterclockwise position, and a lighting unit arranged to be inserted in said tube comprising an elongated tube provided with a bulb on one end and a socket on the other end adapted to be attached to a battery.

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