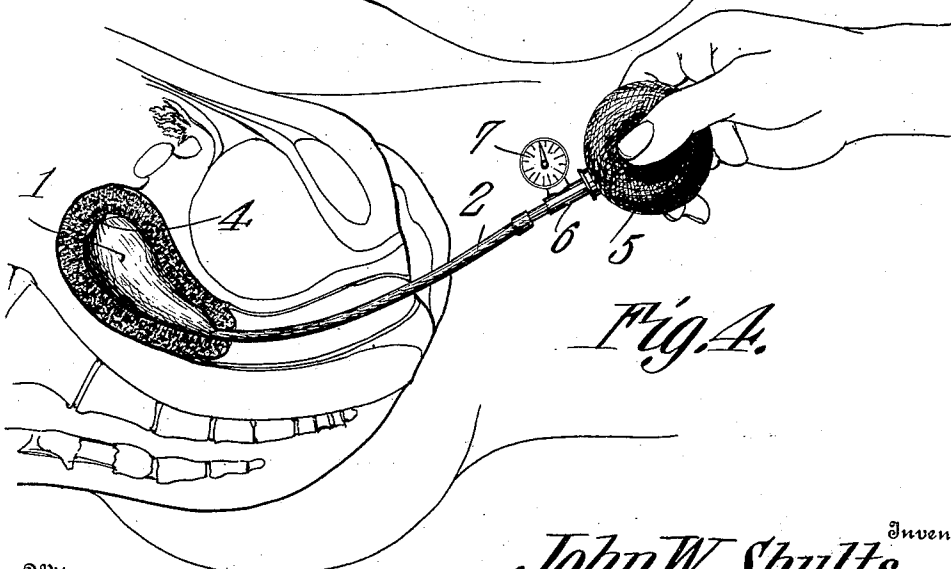
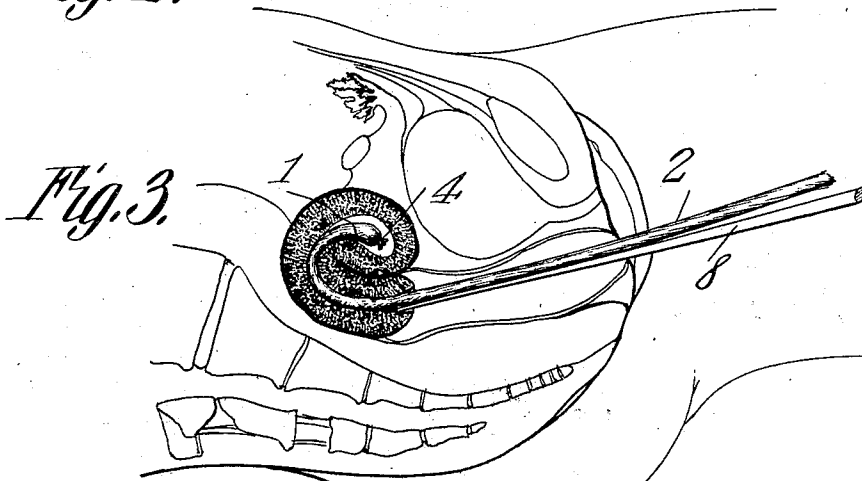
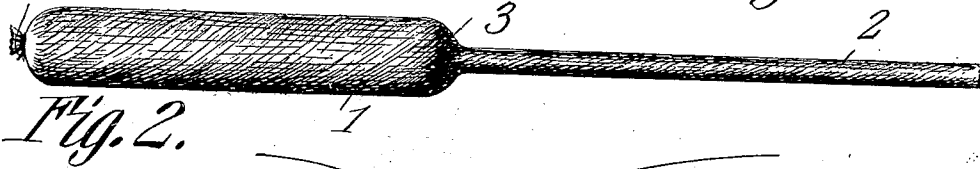
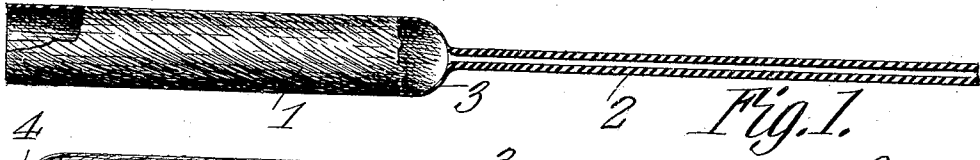


J. W. SHULTS.
DILATOR.

APPLICATION FILED OCT. 14, 1908.

923,303.

Patented June 1, 1909.



Witnesses

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UNITED STATES PATENT OFFICE.

JOHN WARD SHULTS, OF WICHITA, KANSAS.

DILATOR.

No. 923,303.

Specification of Letters Patent.

Patented June 1, 1909.

Application filed October 14, 1908. Serial No. 457,724.

To all whom it may concern:

Be it known that I, JOHN W. SHULTS, a citizen of the United States, residing at Wichita, in the county of Sedgwick and State of Kansas, have invented a new and useful Dilator, of which the following is a specification.

This invention relates to surgical instruments, more especially to what are known as dilators, and has for its object to provide a simple, easily operated and efficient instrument for reducing flexions of the womb, either ante flexion or retro flexion, wholly by fluid forced into an inflatable receptacle placed within the womb. From the receptacle a pipe leads to a pump and to a pressure gage outside the body, by means of which fluid may be forced into the receptacle to any desired pressure and be retained therein at that pressure and for any length of time. The deflated receptacle when placed in the womb follows the curvature of the cavity therein due to the abnormal condition of the womb. When therefore fluid is forced into the receptacle, it not only expands but tends to assume a straight line, the effect of which is to straighten the womb.

Another object of the invention pertains to the receptacle which is made of soft rubber, preferably in the form of a hollow cylinder with thin walls, open at one end and closed at the other end to which a small rubber tube is connected. The open end of the receptacle must be closed before using it.

With these and other objects in view, the invention consists of the construction and arrangement of parts hereinafter described and claimed and illustrated in the accompanying drawing, in which:—

Figure 1 is a view of the improved dilator, partly in section; Fig. 2 is a side view of the same with its outer end closed; Fig. 3, a diagrammatic view showing the noninflated dilator in position in an ante flexed womb; and Fig. 4, a similar view representing the dilator expanded and the womb straightened and its attachment to a pressure device and gage therefor.

Referring to the drawing, Figs. 1 and 2 represent the receptacle 1 and its inflating tube 2 connected to the receptacle at its closed end 3, the opposite end 4 being open. The receptacle 1 is preferably made of soft thin rubber in the form of a hollow cylinder of such length and diameter as occasion de-

mands, the dimensions, however, are not of great importance, provided it is sufficiently long. This length is desirable as one size of receptacle will then suit all occasions, the correct length being determined by tying a ligature 4 around the receptacle at the required distance from the closed end to form a bag and severing the excess of material close to the ligature, as clearly represented in Fig. 2. The receptacle is made with thin walls so that it can be readily folded or twisted into small compass for insertion into the womb and to expand equally in all directions against the sides of the cavity therein when a fluid, such as air, is forced into the receptacle.

The dilator is applied after expanding the vagina by any suitable means, such as a bivalve speculum. The receptacle is then folded or twisted as small as possible and grasped by the thin curved jaws of a suitable pair of forceps and inserted into the womb until the inflating tube 2 passes a short distance within the labia to prevent any portion of the receptacle remaining outside the womb where it would expand and probably burst under pressure or withdraw the receptacle from its position. If the womb is too high to insert the forceps, it may be depressed by means of a tenaculum or hook 8, as shown in Fig. 3.

The dilator is now ready for inflation. One means by which this may be done is represented in Fig. 4 where a hollow ball or bulb 5 of well known type is shown attached to a metal tube 6 the opposite end of which is connected to the outer end of the inflating tube 2 of the receptacle. Between the compressible ball 5 and the end of the metal tube 6 is a pressure gage 7 for indicating the pressure sustained by the womb as the receptacle is being inflated through the compressing operation of the ball 5. It is important that the inflation be not too great, as the pressure may retard or stop the circulation of blood in the membranous lining of the womb and cause sloughing thereof, thus averting the cure or relief sought. For preventing the danger above described, the dilator is provided with the pressure gage 7 situated in convenient position for frequent inspection by the operator.

Attention is called to the fact that the construction and arrangement of the pressure mechanism shown and described is merely illustrative, for the ball may be re-

placed by a hand pump, fan, or other source of pressure and the pressure gage disposed in some other position and a different type used. Also, the connections and necessary
5 valves may be changed to suit other changes in the several parts.

It is found in practice that while air is preferable as an inflating agent, other fluids may be used without departing from the in-
10 vention.

I claim:—

A dilator consisting of two cylindrical integrally connected soft rubber tubes of different diameters and open at their distal
15 ends, the larger tube being arranged to be

shortened as required by the application of a ligature which serves to seal its open end, a compressible resilient ball provided with an extension to fit into the open end of the smaller tube for forcing air into the larger
20 tube, and a pressure gage connected with the said extension.

In testimony that I claim the foregoing as my own, I have hereto affixed my signature in the presence of two witnesses.

JOHN WARD SHULTS.

Witnesses:

J. H. DAVISON,
E. T. NICKERSON.