

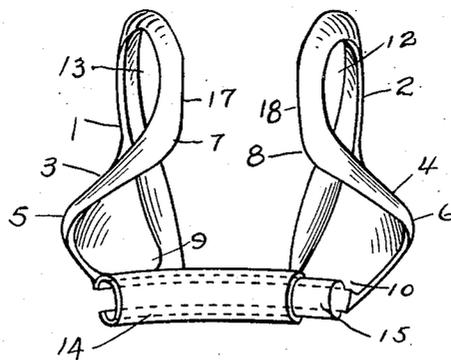
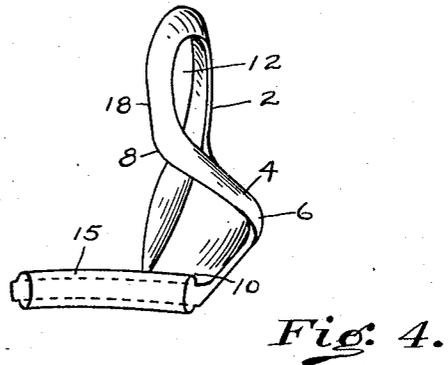
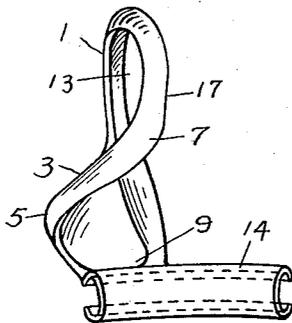
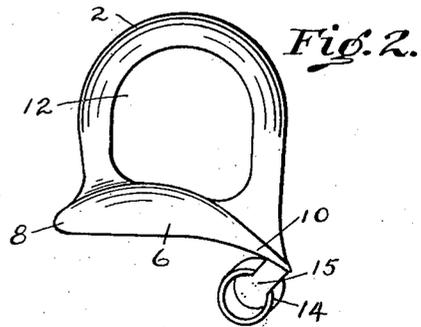
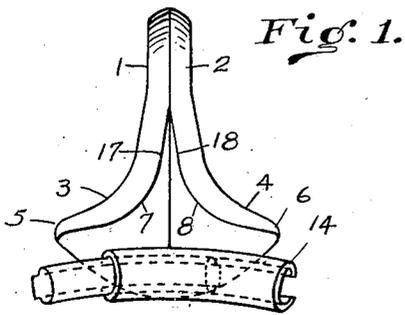
Nov. 11, 1930.

H. F. GAU

1,780,912

DILATOR

Filed Dec. 13, 1926



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UNITED STATES PATENT OFFICE

HENRY F. GAU, OF CINCINNATI, OHIO

DILATOR

Application filed December 13, 1926. Serial No. 154,471.

This invention relates particularly to a dilator belonging to a class of surgical instruments used principally for examination and for minor operations.

I have evolved, as a new article of manufacture, a dilator, cheap of manufacture, simple in construction, and highly efficient in use, its contour, shape, and arrangement of parts adding great utility to the same.

The usual forms of dilators have a considerable tendency to distort the vagina, rectum and associated parts and thereby make a manual or bimanual examination somewhat uncertain.

My dilator is easily inserted and on account of the peculiar contour and shape of the blades or sides, together with the oblique circular movement imparted to the blades or sides by the connecting support, the vagina or the rectum is dilated and at the same time forced inward, the great expansion taking place at the end and where the tissue yields most readily, and by thus expanding leaves the inner parts free of distortion, at the same time permitting free examination, the circular support being to the end, does not interfere with the free use of the hands or the instrument.

My dilator consists of two suitably shaped blades or wings which are expanded at their outer edge to form flanges which act as shields or guards, and which extend outward from the blades.

The lower extremity of one of these blades is connected at the rear to a sleeve adapted to slide on a curved support or yoke attached at one end to the lower rear extremity of the other blade. The blades are so attached to the sleeve and guide that they come together squarely when closed for insertion and travel in the desired predetermined path in opening, the pressure on the blades by the walls of the vagina, or the rectum, causing the device to remain opened as adjusted.

My dilator permits a vaginal abdominal or rectal abdominal bimanual without a secondary muscular spasmodic contraction being exerted upon the examining finger or fingers in the vagina or rectum as the case may be. This is obtained without any dis-

tortion, displacement or malposition of any of the internal organs or tissues.

The various novel features of the invention whereby the desired results are obtained will be more fully set forth by reference to the accompanying drawings and description and will be more fully defined by the appended claims.

Referring to the drawings:

Fig. 1, is a side elevation of my dilator in closed position,

Fig. 2, is a side view of my dilator looking toward the left of Fig. 1, also in closed position,

Fig. 3, is a perspective view of one of the blades,

Fig. 4, is a perspective view of the other of the blades, and

Fig. 5, is a perspective view of my dilator, opened.

As illustrated in the drawings the blades or wings 1 and 2 are made of any suitable material and are so formed and of such contour as to prevent injury to the delicate tissue and at the same time admit of easy insertion. At the rear of blades 1 and 2, respectively, I provide flanges 3 and 4 preferably integral therewith. These flanges are wider to the sides 5 and 6 than either top 7 and 8 or bottom 9 and 10, in order that they may hold back the tissue as they are expanded. The lower rear extremity of the blade 2 is rigidly secured to a yoke 15 and the lower rear extremity of the blade 1 is rigidly secured to a sleeve 14 adapted to slide easily on the yoke 15.

The yoke 15 and the sleeve 14 are so formed and attached to the blades 1 and 2, that the sleeve 14, attached to blade 1, will slide past blade 2 at its point of attachment to yoke 15 and likewise the yoke 15 attached to blade 2 will slide past blade 1 at the point of attachment to sleeve 14, causing the yoke 15 and sleeve 14 to telescope in such manner that when the blades are open, Fig. 5, the yoke 15 and sleeve 14 will be within the limits of the blades 1 and 2.

The blades 1 and 2 are preferably made of light material and are cut away in the center to form open spaces 12 and 13 in order that

they may hold in position more firmly and at the same time giving more freedom for examination.

5 The blades 1 and 2 are cut away at the upper rear, see parts marked 17 and 18, to afford a maximum opening at the upper side with a minimum amount of expansion. The sleeve 14 is so shaped that it may readily be moved in either direction on the yoke 15 by pressure applied at 9 and 10 and when expanded the pressure naturally exerted by the walls of the vagina and the rectum upon the blades 1 and 2 cause the sleeve 14 to bind on the yoke and thereby lock the dilator in open position, as shown in Fig. 5.

15 The yoke 15 is formed in an arc of a circle and set obliquely with reference to the axis of the blades 1 and 2.

In the operation of my dilator the blades 20 1 and 2 brought together as shown in Figs. 1 and 2 are inserted in the vagina or the rectum, then, by force applied at 9 and 10 manually, the blades 1 and 2 are separated and by reason of their curved path of travel due to curved yoke 15 and the sleeve 14 sliding thereon the blades 1 and 2 are drawn inwardly being restrained from undue inward movement by the flanges 3 and 4 pressing on the outer tissue and when thus expanded the space between 30 17 and 18 is sufficient for the purposes of examination or for certain minor operations.

I have described the preferred construction of my invention, it will, however, be understood that the same is capable of some changes and modifications and I wish to be understood as claiming all modifications and changes which fall within the scope of this specification and claims.

40 What I claim as new and my invention and desire to secure by Letters Patent is:

1. A dilator comprising a pair of blade members having curved laterally flaring flanges disposed substantially transversely of the length and width of the blades, a pair of 45 arcuate telescopically sliding members secured one each to the flanges at the top of the blades, the arc of the telescoping members lying in a downwardly and forwardly inclined plane relative to the flanges whereby 50 to provide for self binding frictional engagement to hold the blades apart against the pressure of tissues separated by the blades.

2. In a device of the class described the combination of a longitudinally slotted arcuate sleeve, a complementary yoke slidable in said sleeve and having a portion projecting through the slot in the sleeve, a dilator blade secured to an edge of the sleeve at the slot and extending in an oblique plane thereto, a complementary blade on the projecting portion of the yoke, said blades being co-operatively mounted by entry of the yoke into the sleeve and frictionally retained in adjusted positions by engagement of the yoke in the sleeve 65 upon opposing pressures on the blades.

3. A dilator of the class described comprising two blades, a supporting yoke and a supporting sleeve telescopically received therein, each of said telescoping members having one of the blades attached thereto, said supporting yoke in the sleeve being arcuate and extending from a common edge of their respective blades so that movement of the blades away from one another effects simultaneously a bodily separation of the blades and independent radial turning of the blades away from one another, pressure on the blades serving to effect frictional binding of the support yoke and sleeve.

In testimony whereof, I affix my signature at Cincinnati, Ohio, this 30th day of November, 1926.

HENRY F. GAU.

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