

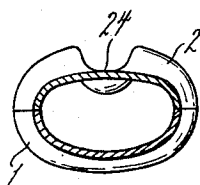
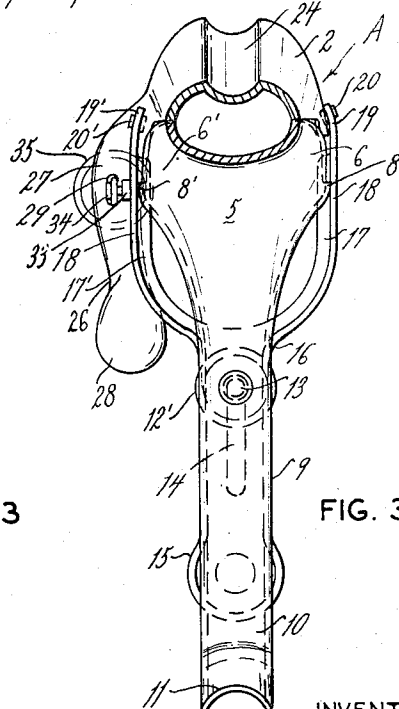
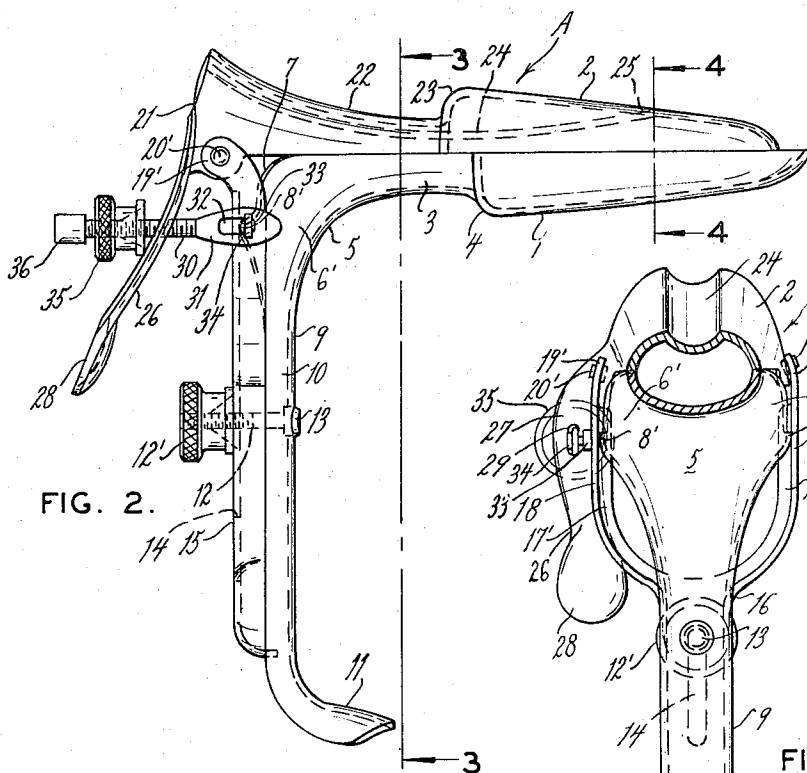
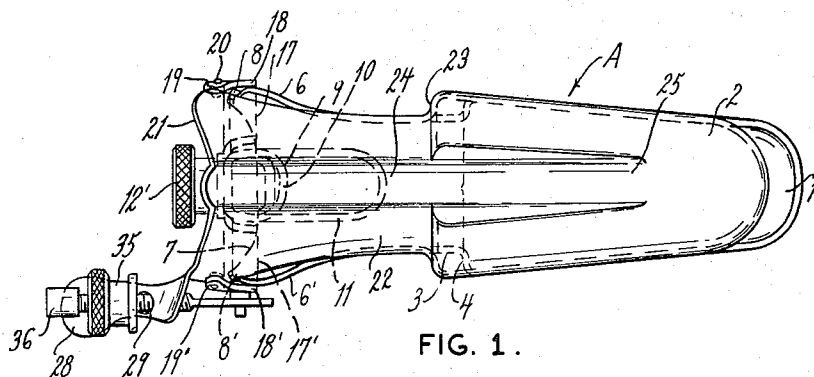
March 13, 1951

T. C. GILBERT

2,545,201

VAGINAL SPECULA

Filed Sept. 23, 1949



INVENTOR
TAYLOR C. GILBERT
BY *afraunhofer*
ATTORNEY

UNITED STATES PATENT OFFICE

2,545,201

VAGINAL SPECULUM

Taylor C. Gilbert, Dallas, Tex.

Application September 23, 1949, Serial No. 117,342

6 Claims. (Cl. 128—17)

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This invention relates in general to surgical instruments and more particularly to certain new and useful improvements in vaginal specula.

The primary object of the present invention is to provide a vaginal speculum which is designed and constructed for engagement with the anatomy of the patient for self-retention in desired position.

It is a further object of the present invention to provide a vaginal speculum which is adapted to prevent the imposition of painful pressure upon the urethral passage when the speculum is in operative position.

It is an additional object of the present invention to provide a vaginal speculum which is reliable in use and economical in construction.

With the above and other objects in view, my invention resides in the novel features of form, construction, arrangement, and combination of parts presently described and pointed out in the claims.

In the accompanying drawing (one sheet)—

Figure 1 is a top plan view of a vaginal speculum constructed in accordance with and embodying the present invention;

Figure 2 is a side view; and

Figures 3 and 4 are transverse sectional views taken along lines 3—3 and 4—4 of Figure 2 respectively.

Referring now by reference characters to the drawing which illustrates a preferred embodiment of my invention, A designates a speculum, fabricated preferably of stainless steel, comprising lower and upper dilator blades 1, 2, sized for entering the vaginal passage. The lower blade 1 is of general arcuate contour in cross section (see Figure 4), having a dished inner face. Adjacent its rearward end the blade 1 is shaped to provide a neck portion 3 and is enlarged forwardly thereof forming a rounded shoulder 4 and tapering upwardly toward its forward end. The inner face of the blade 1 curves downwardly at the rearward end thereof, as at 5, and the adjacent wall portions 6, 6' flare slightly laterally and extend rearwardly in the provision of a relatively wide mouth 7. Integral with the walls 6, 6' and protruding from their end margins are projections 8, 8' respectively. Continuous with the inner face of the blade 1 is a downwardly extending channel-shaped handle 9 which is of arcuate cross-sectional shape to provide a rearwardly opening vertical channel 10. The handle 9 is bent forwardly at its lower end to provide a stop member 11 for normal abutment against the side of the user's little finger to prevent any untoward slipping during usage.

Suitably mounted in the handle 9, approximately midway the length thereof, is a rearwardly extending adjustment screw 12, its head 13 being substantially flush with the forward

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face of the handle 9. The screw 12 projects through a longitudinal aperture 14 in the depending leg 15 of a yoke member 16, and has a thumb-nut 12' engaged upon its projected end for abutting against the leg 15 to maintain the yoke 16 in any selected vertical position in relation to the handle 9. The yoke 16 is provided with a pair of spaced upwardly extending arms 17, 17' having lateral flanges 18, 18' respectively. The forwardly presented faces of the arms 17, 17' abut against the end margins of the projections 8, 8' which are prevented from lateral displacement by the flanges 18, 18' (see Figure 1). At their upper ends each of the arms 17, 17' is provided with inwardly and rearwardly bent ears 19, 19' through which extend pins 20, 20' respectively, for pivotally supporting the upper blade 2 by projection through suitable apertures adjacent the rearward end thereof. The extension rearwardly of the ears 19, 19' causes the blade 2 to be displaced rearwardly in relation to the lower blade 1, and thus out of marginal registration therewith (see Figure 2). The blade 2 is substantially similar to the blade 1 in having a mouth portion 21, a neck 22 and a rounded shoulder 23 formed by the enlargement of the forward portion thereof, said shoulder being perforce disposed rearwardly of the shoulder 4 of the blade 1 due to the rearward displacement of the blade 2. Provided in the outwardly presented face of the blade 2 and extending medially therealong from the rearward margin to a point adjacent the forward end thereof is a canal-like recess 24, the bed of which follows an arcuate path opening upwardly at its forward end into the face of the blade 2, as at 25 (see Figures 1, 2).

Formed integrally with the upper blade 2 and extending outwardly from its rearward end margin, is a downwardly and rearwardly inclined lever arm 26 having a relatively widened central portion 27 and being enlarged at its lower end and suitably formed to provide a spooned rearwardly presented thumb-press section 28. Provided in the central portion 27 is an aperture 29 through which extends an adjustment screw 30 having a flattened, ovate forward end 31 which in turn is provided with an elongated aperture 32. Projecting floatingly through the aperture 32 in the screw 31 is the stem of a pin 33 rigidly mounted at its inner end in the arm 17' and having an enlarged outer end 34 for maintaining the pin 33 in such relation to the aperture 32. Threadedly engaged upon the adjustment screw 30 is a nut 35 for abutment against the lever 26 to limit the movement thereof rearwardly, the forward movement of said arm 26 being in turn limited by abutment against the rearward face of the arm 17'. At its rearward end, the screw 30 is provided with a diametrically increased, smooth-surfaced head 36 to prevent disengagement of the

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nut 35. Thus, it will be seen that when the nut 35 is in its rearward-most position, in surface contact with the head 36, it will be entirely out of contact with the lever arm 26 which may thus be swung freely to pivot the blade 2 upwardly about the pins 20, 20', with the upper limit of such movement being determined by abutment of the lever arm 26 against the rearward face of the arm 17'. Adjustment of the nut 35, by limiting the arc of movement of the lever arm 26, maintains the desired spacing between the blades 1, 2.

In usage, the blades 1, 2 in their normal marginal abutting relationship are inserted into the vaginal passage, the lower blade 1 being disposed against the posterior wall portion thereof with the shoulder 4 seated upon the muscular tissue, being that of the sphincter vaginae (bulbo cavernosus), adjacent the external orifice of the vagina. Thereon the passage is dilated by operation of the lever arm 26 which pivotally moves the upper blade 2 against the anterior wall portion of the passage for removing same from normal contact with the posterior wall portion. This expanding movement of the upper blade 2 will be limited by abutment of the neck 22 against the so-called pubic arch of the pelvic bone, upon the upper portion of which the shoulder 23 will become frictionally engaged. Thus, it is to be particularly noted that both of the blades 1, 2, when in passage-dilating position, are engaged upon anatomically provided surfaces, namely the pubic arch and the vaginal orifice musculature, and thereby being prevented from unauthorized dislodgement during usage. The adjustment nut 35 is threaded forwardly into tight abutment against the lever arm 26, and thus, in conjunction with the engagement of the shoulders 4, 23 within the vagina as above described, serves to make the speculum entirely self-retaining, being secure and steady in operative disposition. With this positive engagement of the speculum A, the surgeon may carry out the indicated technique without fear of the speculum slipping out of position at a precarious moment.

In the course of the pivotal movement of the blade 2, the canal-like recess 24 will provide a protective receptacle, as it were, for the urethral passage shielding it from direct forceful contact with the outer face of the blade 2, whereby the imposition of painful pressure thereon, customarily encountered in the use of conventional specula, is prevented.

As stated above, the yoke 16 may be adjusted in relation to the handle 9 by loosening of the thumb-nut 12' and moving the yoke 16 upwardly or downwardly about the screw 12 to the desired position, the length of the aperture 14 determining the range of adjustment. Thereby the initial spatial relationship between the blades 1, 2 may be regulated so that the requisite expansion of the vaginal passage may be effected.

It should be understood that changes and modifications in the form, construction, arrangement, and combination of the several parts of the vaginal speculum may be made and substituted for those herein shown and described without departing from the nature and principle of my invention.

Having thus described my invention, what I claim and desire to secure by Letters Patent is:

1. In a vaginal speculum having first and second dilator blades, the improvement comprising said second blade being provided with an outwardly opening canal-like recess extending

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substantially the length of said blade for encasingly protecting the urethral passage during operation of the speculum.

2. In a vaginal speculum having first and second dilator blades, the improvement comprising said second blade being provided with an outwardly opening canal-like recess extending from the rearward end of said blade to a point adjacent the forward end thereof, the path of said recess being downwardly and thence upwardly for merging at its forward end into the upper surface of the blade whereby said recess is adapted to coveringly shield the urethral passage during operation of the speculum for preventing the incidence of normally pain-causing pressures thereon.

3. In a vaginal speculum having first and second dilator blades, the improvement comprising said second blade being provided in its outer surface with a medially disposed, relatively narrow, smooth surfaced, outwardly opening canal-like recess, said recess extending from the rearward end of said blade to a point adjacent the forward end thereof, the path of said recess being downwardly from the rearward end and thence upwardly in arcuate character with the forward end of said recess merging into the upper surface of the blade whereby said recess is adapted for encasing the urethral passage during operation of the speculum to protect same against pain-causing pressures normally effected by extension of the speculum blades.

4. A vaginal speculum adapted for self-retention when in operative position comprising a first dilator blade, a second dilator blade, means for pivoting said blades with relation to each other for dilating the walls of the vaginal passage, said second dilator blade having a relatively constricted section and a forwardly adjacent enlarged portion causing the formation of a shoulder, said enlarged portion inclining downwardly and forwardly from the shoulder, said second blade being further provided with an outwardly opening canal-like recess extending along its medial line through the constricted section and into the enlarged portion thereby breaking through the shoulder with the forward end thereof merging into the upper surface of the blade, said first dilator blade being provided with an unbroken shoulder whereby upon movement of the blades into operative dilating position the shoulder of the second blade will be retentively engaged upon the pubic arch of the pelvic bone and the shoulder of the first blade securely disposed against the musculature of the posterior portion of the vaginal passage so that the blades will be maintained in operative position wherein the canal-like recess of the second blade will encasingly protect the urethral passage against pain-causing pressures normally effected by the extension of the speculum.

5. A vaginal speculum adapted for self-retention when in operative position comprising a first dilator blade, a second dilator blade, means for pivoting said blades with relation to each other for dilating the walls of the vaginal passage, said second dilator blade having a relatively constricted section and a forwardly adjacent enlarged portion causing the formation of a shoulder, said enlarged portion inclining downwardly and forwardly from the shoulder, said second blade being further provided with an outwardly opening canal-like recess extending along its medial line through the constricted section and into the enlarged portion thereby

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breaking through the shoulder with the forward end thereof merging into the upper surface of the blade, said first dilator blade being similarly provided with a constricted neck-like section and forwardly adjacent enlarged portion creating a shoulder, said shoulder on said first dilator blade being unbroken and being disposed forwardly of the shoulder on said second dilator blade whereby said shoulders are offset with relation to each other so that upon movement of the blades into operative dilating position the shoulder of the second blade will be retentively engaged upon the pubic arch of the pelvic bone and the shoulder of the first blade will be securely disposed against the musculature of the posterior portion of the vaginal passage for permitting said speculum to be self-maintained in extended position with the offset relation of the shoulders assuring positive engagement with their related anatomical parts; said canal-like recess encasingly protecting the urethral passage when said speculum is in operative position against any pain-causing pressures normally created by the operation of the speculum.

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6. In a vaginal speculum having first and second dilator blades, the improvement comprising said second blade being provided with an outwardly opening canal-like recess for encasingly protecting the urethral passage during operation of the speculum.

TAYLOR C. GILBERT.

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