J. J. MOYER.

SPECULUM.

APPLICATION FILED MAY 8, 1918.

1,300,756. Patented Apr. 15, 1919.

Fig. 1.

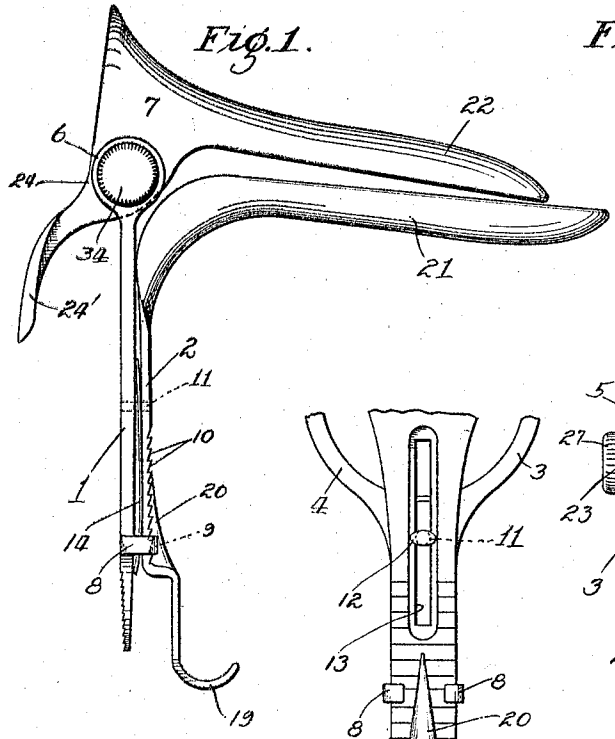


Fig. 4.

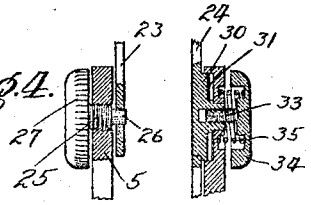


Fig. 3.

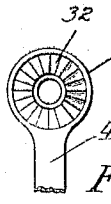


Fig. 5.

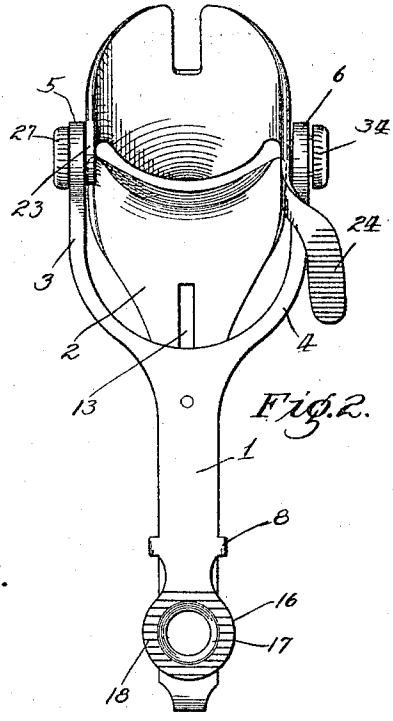


Fig. 2.

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SPECULUM.

1,300,756. Specification of Letters Patent. Patented Apr. 15, 1919.

Application filed May 8, 1918. Serial No. 237,150.

To all whom it may concern:

Be it known that I, JONAS J. MOYER, a citizen of the United States, residing at Oakland, in the county of Alameda and State of California, have invented certain new and useful Improvements in Specula, of which the following is a specification.

This invention relates to improvements in vaginal specula and has as its principal object the construction of an improved device of this character having two adjustments each of which may be effected by the use of one hand and in which the relatively movable parts will remain in their adjusted position without the use of clamping nuts or screws.

A further object of the invention is to so construct the holding means that it may be released by a slight pressure so as to allow the parts to collapse. In general I aim to provide an improved speculum of the character set forth which is convenient to apply and which gives the maximum amount of effective working opening.

With these and other objects in view, the invention consists of certain novel features of construction, combinations and arrangements of parts hereinafter described and more specifically pointed out in the appended claims; it being understood that changes in form, proportion, size and minor details of construction within the scope of the claims may be resorted to without departing from the spirit of the invention or sacrificing any of the advantages thereof.

Referring to the drawings forming a part of the specification,

Figure 1, is a view in side elevation of my improved speculum.

Fig. 2, is a view in front elevation of the same.

Fig. 3, is a view in rear elevation of the lower part of the device.

Fig. 4, is a view in section through the ends of the forks of one member showing the manner in which one of the movable parts is pivotally mounted therein.

Fig. 5, is a view in side elevation of the upper end of one of the arms of the forked member showing the ratchet holding means formed therein.

Referring to corresponding parts of the several views by the same numerals of reference, my invention consists of the members 1 and 2 which are longitudinally slidable one on the other. The member 1, at the upper end, is forked, the arms 3 and 4 being spread apart somewhat wider than the throat of the speculum. These arms terminate in the enlarged heads 5 and 6 wherein is pivotally mounted a movable member 7 hereinafter described in detail.

Near the bottom of member 1, on each of the lateral edges, are provided lugs 8 which are bent rearwardly and then laterally so as to extend over the rear surface of member 2. These lugs, on the inside, are provided with the inclined surfaces that form teeth 9 which are adapted to engage the ratchet teeth 10 on the rear surface of member 2.

To further guide the member 2 on member 1, I provide, near the upper end of the latter, a pin 11 having an elongated head 12 that when the members are parallel, engages the slot 13 formed in member 2.

A bowed flat spring 14 is interposed between the adjacent surface of members 1 and 2 in order to force the members apart and consequently the teeth 10 into contact with the tooth 9 on the inner surface of lugs 8. This spring is held against longitudinal movement on member 1 by means of an opening which engages the pin 11.

The lower end of member 1 is enlarged as shown at 16 and provided with a concave opening 17 which is adapted to fit the ball of the thumb and in addition the outer surface of this portion is knurled or otherwise roughened as shown at 18 to further increase the effective gripping of this portion of the device.

The lower end of member 2 is bent laterally and then again parallel to the main portion and the lower end terminates in the curved tip 19. In the angle where the bottom of the member 2 is offset, a reinforcing rib 20 is provided, this rib being disposed in the center of the member so as not to interfere with the lugs 8 where they embrace member 2. The upper end of member 2 is curved at substantially a right angle thereto and is formed into a concave holding member 21.

The member 7 previously mentioned, at the pivoted end, is substantially semi-circular in outline and from this semi-circular portion the member extends forwardly above the member 21 in a similarly shaped holding member 22. On the sides of 7 are formed ears 23 and 24 which are adapted to lie adjacent the lugs 6 and one of these ears

is extended to form a handle 24′ by which the member 7 may be manipulated.

To pivotally attach the member 7 to the member 1, I provide the threaded screw 25, which is in threaded engagement with the lug 5. The one end of this screw is provided with the pin 26 on which one of the ears 23 is pivotally mounted and the other end has an enlarged knurled head 27 which enables the screw to be removed so that the member 7 may be detached for sterilization.

On the opposite ear of member 7 is provided a circular boss 30 on the outer surface of which is cut radial ratchet teeth 31 which are adapted to mesh with similar ratchet teeth 32 within the lug 6.

A screw 33 is provided having a head 34 similar to the head 27. This screw extends through the lug 6 and is in threaded engagement with boss 30. The adjacent surfaces of the lug 6 and the head 33 are recessed and within the latter is mounted a helically coiled spring 35.

The disposition of the ratchet teeth 31 is such that when the portion 22 of member 7 is pulled apart from the member 21, the teeth engage and hold the two parts from moving toward each other.

In use the ends 21 and 22 are inserted into the vagina and the parts 1 and 2 are grasped in the hand with the ball of the thumb resting on the end 16 and one of the fingers resting in the curved end 19. Then by an upward movement of the thumb the member 1 is caused to slide on member 2 forcing apart the members 21 and 22.

The spring 14 interposed between the two members serves to draw the teeth 9 into contact with the ratchet 10 and the teeth are aranged so as to prevent the elasticity of the body from forcing the member 1 downwardly on member 2.

When the speculum is thus opened as far as possible the thumb is pressed on the handle 24′ which raises the outer end of member 22 and thus spreads apart the interior vaginal walls. Both of these adjustments may be made by the use of one hand only and when the limit of movement is reached the parts are retained in their adjusted position by means of the spring actuated ratchets.

When it is desired to remove the instrument the button 34 is pressed inwardly which moves the ear 30 and the teeth thereon out of contact with the teeth 32 in lug 6. Then the natural elasticity of the body will cause the blade 22 to collapse toward the blade 21. Then by pressing inwardly on the enlarged portion 16 the teeth 9 are disengaged from ratchet 10 allowing the member 1 to likewise slide on the member 2 to the lower end of the ratchet.

Each of these operations are quickly and effectively performed by one hand and furthermore, there are no screws, nuts, or other parts which project from the instrument and are more or less in the way when using the instrument.

Having thus described my invention, I claim as new and wish to cover by Letters Patent:—

1. A speculum of the character described comprising two flat, longitudinally movable members, ratchet teeth formed on the back of one of said members, coöperating engaging members formed on the other of said members and embracing the member with said ratchet teeth, a flat spring between said members to hold said ratchet means in engagement, and curved blades extending substantially at right angles to said members.

2. A speculum of the character described comprising two flat members longitudinally movable on each other, guides for holding said members in parallel relation, means for holding said members in opposition to movement in one direction, a flat spring between said members and curved blades extending substantially at right angles to said members.

3. A speculum of the character described comprising two flat longitudinally movable members, guide lugs extending from one of said members and embracing the other member, ratchet teeth formed on said last mentioned member and adapted to be engaged by said guide lugs to hold said members in opposition to movement in one direction, a flat spring between said members to hold said ratchet in engagement with said lugs, a curved blade extending at substantially right angles to one of said members, and an overlying, curved blade pivotally mounted on the other of said members.

4. A speculum of the character described comprising two members longitudinally movable one on the other, ratchet teeth formed on the back of one of said members, guide lugs formed on the other of said members and embracing said last mentioned member, ends formed on said lugs adapted to engage said ratchet teeth, a spring interposed between said members for holding said lugs in engagement with said teeth, a curved blade extending at substantially right angles from one of said members, arms extending from the adjacent end of the other of said members, and a curved blade pivotally mounted in said arms and overlying said first mentioned blade.

5. A speculum of the character described comprising two members longitudinally movable one on the other, ratchet means for holding said members in adjusted relation, a curved blade extending at substantially right angles from one of said members, arms extending from the other of said members, bosses on said arms, a curved blade pivotally mounted in said bosses, coöperating ratchet

teeth formed on the adjacent face of said pivoted blade and on one of said bosses, an adjusting screw extending through said boss and engaging said blade, an enlarged head on said screw, spring means interposed between said boss and said screw head for holding said coöperating ratchets in engagement, and means for releasing said coöperating ratchets.

6. A speculum of the character described comprising two members slidably mounted one on the other, a toothed ratchet carried by one of said members, and engaging means carried by the other of said members, a flat spring between said members normally holding said ratchet and engaging means in contact, a fixed blade carried by one of said members, a pivotally mounted overlying blade carried by the other of said members, coöperating ratchet teeth carried by the adjacent face of said pivotally mounted blade, and its holding member and spring means normally holding said ratchet teeth in engagement.

In testimony whereof I affix my signature.

JONAS J. MOYER.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."