

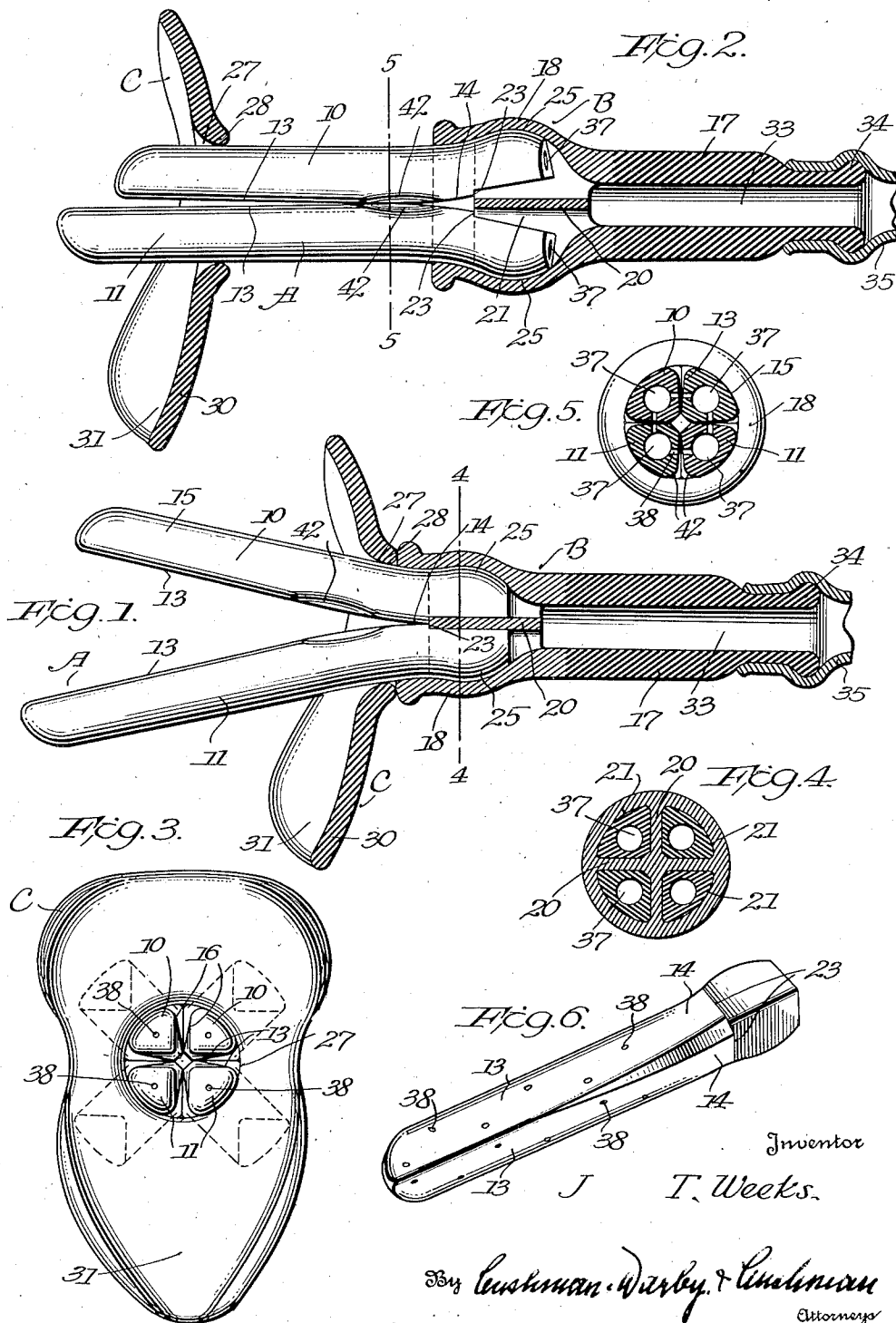
April 20, 1937.

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2,078,111

MEDICATOR

Filed May 9, 1934



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UNITED STATES PATENT OFFICE

2,078,111

MEDICATOR

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Application May 9, 1934, Serial No. 724,787

7 Claims. (Cl. 128—251)

The present invention relates to medicators, and, particularly, a medicator adapted for use in treating the vagina, cervix, uterus and adnexa.

The objects of the invention are to provide such a medicator of simple construction and of a minimum number of parts, which is characterized by the ease and facility with which it may be used.

In the drawing, herewith, is shown one form of the invention, but it will be understood that the drawing is illustrative and in no sense restrictive, as the invention may be developed in various mechanical ways:

Figure 1 is a vertical sectional view of the device, showing it in expanded condition.

Figure 2 is a vertical sectional view of the device, showing it in contracted condition.

Figure 3 is an end view of the device.

Figure 4 is a vertical sectional view along the line 4—4 of Figure 1.

Figure 5 is a vertical sectional view along the line 5—5 of Figure 2, and

Figure 6 is a view of one of the dilating members.

The device comprises a dilating spray nozzle A, a holder B, and a guide plate C.

The nozzle A is composed of a plurality of nozzle sections, each section constituting a dilating arm or member. Referring to Figure 5, the upper pair of sections constitute anterior dilating members 10, while the lower pair of sections constitute posterior dilating members 11. The dilating members may be made of any suitable material having sufficient rigidity to dilate and retain dilated the walls of the cavity being treated. Metal or hard rubber will adequately serve this purpose.

The sections are in the form of 90° segments of a cylinder, each segment being bent outwardly in a radial direction from a point adjacent its inner end. The sections are shown in abutting relation, each section having abutting faces 13 and 14, and an outside cylindrical wall 15. The abutting surfaces 13 and 14 may be curved longitudinally of the sections, or they may be plane. In either case, the longitudinal surface plane of each abutting surface changes direction where the surface 13 merges into the surface 14, by reason of the outward radial bend near the inner end of each section.

As shown in Figure 2, the surfaces 13 of each dilating member taper inwardly as they approach the distal end of the member, so that the distal end of each member is of slightly less cross sectional area than the main body portion of the

member. Furthermore, as shown particularly in Figure 3, the surfaces 13 taper inwardly in a radial direction from the center of the nozzle to the outer walls thereof as at 16. This construction precludes the possibility of the device pinching the tissues of the cavity being treated between the edges of the dilating members.

To retain the dilating members in the position shown in Figure 1, the holder B is provided. This holder comprises a handle portion 17 of relatively hard rubber, and a cupped portion 18 of relatively soft and very elastic rubber. The cupped portion carries interiorly thereof an integral crossed web 20 of rubber, said web forming with the wall of the cup a plurality of sockets 21, as shown in Figure 4.

At the inner ends of the dilating members 10 and 11, the abutting surfaces 14 are cut away to form shoulders 23, said shoulders serving to limit the inward movement of the inner ends of the dilating members when they are forced into the sockets 21. The outer cylindrical wall of the dilating members near the inner ends thereof are provided with enlarged portions 25, which serve to distend the wall of the elastic cup 18 when the members are inserted therein. When the dilating members are inserted into the sockets 21 as shown in Figure 1, the elastic cup 18 will be stretched and will retain the inner ends of the members in their sockets. The shoulders 23 of the dilating members abutting against the end of the web 20 will prevent the members from being inserted too far into their sockets.

The normal condition of the dilating members and the holder is shown in Figure 1. It will be noted that because of the elasticity of the cup 18, the stretched condition of the latter will hold the inner ends of the dilating members compressed against the web 20. Thus, the distal ends of the dilating members 10 and 11 will normally be maintained in expanded condition.

To facilitate the insertion of the dilating members, the guide plate C is provided. Plate C may be made of any suitable material, such as hard rubber, and is of such shape as to conform to the shape of the body surrounding the cavity to be treated. The guide plate is apertured substantially at the center of its surface, as at 27, the aperture being of an area slightly greater than the combined cross sectional areas of the dilating members. The lip of the aperture 27 is flared outwardly as at 28, to assist smooth co-operation of the parts during insertion and withdrawal. The lower body portion of plate C is directed outwardly as at 30, forming a channel way 31 when

the plate is placed against the body of the user, for a reason which will later appear.

The handle portion 17 of the holder B is hollowed to form a material inlet passage 33, and the outer end of the handle is provided with a bead 34 for attachment with a suitable source of material, such as a hose end 35.

If water is to be used, hose 35 may be connected to a spigot, or to a three way connection having a hose leading to both hot and cold water spigots, in order to regulate the temperature of the water. If a medicant is to be used, hose 35 may be connected to a container which is supplied with the same.

Each of the dilating members constitutes a nozzle section, in that they are provided with a longitudinal bore 37 through which the material may flow. All of the surfaces of the dilating members 10 and 11 are provided with a plurality of small spray orifices 38, which extend from the bore 37 to the outer wall of the sections. It will be noted that a spray orifice 38 is disposed in the distal end of each nozzle section.

When the device is used, the guide plate is placed against the body with the channel 31 extending downwardly. The distal ends of the dilating members are then manually compressed sufficiently to permit their insertion into the aperture 27, as shown in Figure 2. When the distal ends of the members are forced together, the outer ends thereof will distend the cup 18, and said cup will exert a centrally directed force tending to expand the distal ends. When the device is in this condition, the dilating members will be pivoted, one against the other, at approximately the transverse plane 5-5 indicated in Figure 2. As the device is then further inserted through the aperture 27 and into the cavity, the distal ends will gradually be permitted to expand, thus dilating the walls of the cavity. As the dilating arms expand, their pivot points will move toward the holder B until the device is in the condition shown in Figure 1, wherein the arms are shown completely expanded. Referring to Figure 3, it will be apparent that the dilating arms, as shown by the dotted lines, will dilate the walls of the cavity so that all of its folds are exposed.

In this connection, it will be observed that the posterior dilating members 11 are of materially greater length than the anterior members 10. This feature is desirable in that the posterior wall of the vagina connects to the outer wall of the lower uterus above where the anterior wall of the vagina connects to the uterus. That is, the curve of the vagina results in its posterior side being longer than its anterior side. Consequently, the provision of longer posterior dilating members insures that the pocket of the vagina posteriorly of the cervix is exposed to the treating material.

When the vagina is thus dilated, the four dilating arms will surround, and provide a pocket for the cervix. The material used in the treatment is then forced through the inlet 33, through the bore 37, and is sprayed through the spray orifices 38. Because of the dilation of the vagina, all of the inner surface thereof will be treated and the entrance to the uterus will also be thoroughly treated.

The material being used will flow out through the entrance of the orifice and will pass through the channel 31 of plate C to a suitable receptacle. The material will flow freely from the orifice between the dilating arms, this flow being assisted by the tapered portions 16 where the arms abut

one another, said tapered portions forming outlet channels. To facilitate this flow, the longitudinal edges of the dilating arms may be slightly cut away for a short distance, as at 42.

When the treatment is completed, the flow of material may be stopped, and the device removed by withdrawing the dilating members outwardly through the aperture 27, this movement contracting the members to permit easy removal.

It will thus be seen that the invention provides a device of simple construction, and one having a minimum number of parts, which will dilate the cavity with the user performing only one operation, that of insertion. Furthermore, the device is so constructed as to co-operate with the natural shape of the vagina, and thus to insure that all of the parts thereof are exposed for treatment.

Such departure from the construction here disclosed as amounts only to mechanical skill may be made without departing from the range of the invention.

I claim:

1. In a dilator for a cavity of the body, a plurality of dilating arms having inner and distal ends, the ends of said arms extending outwardly from one another, and a holder for said arms comprising a resilient sleeve surrounding the same, said holder serving to support said arms at their inner ends and to normally compress the same to dilate the distal ends of said arms.

2. In a dilator for a cavity of the body, a plurality of dilating arms, said arms being normally expanded, and a guide plate for said arms adapted to be held in fixed position at the entrance of the body cavity for contracting said arms as they are longitudinally slid in contact with said plate into the body cavity.

3. In a dilator for a cavity of the body, a plurality of dilating arms, said arms being normally expanded, and a guide plate for said arms having an opening therethrough adapted to be held in fixed position at the entrance of the body cavity for contracting said arms as they are longitudinally slid through the opening in said plate into the body cavity.

4. In a dilator for a cavity of the body, a plurality of dilating arms, said arms being normally expanded, a guide plate for said arms having an opening therethrough adapted to be held in fixed position at the entrance of the body cavity for contracting said arms as they are longitudinally slid through the opening in said plate into the body cavity, and means for spraying the body cavity with fluid after insertion of said arms.

5. In a dilator for a cavity of the body, a plurality of dilating arms, said arms being normally expanded, a guide plate for said arms having an opening therethrough adapted to be held in fixed position at the entrance of the body cavity for contracting said arms as they are longitudinally slid through the opening in said plate into the body cavity, means for spraying the body cavity with fluid after insertion of said arms, and means included in said plate for conveying away the fluid discharged from the body cavity.

6. In a dilator for a cavity of the body, a plurality of dilating arms having inner and distal ends, the ends of said arms being bent outwardly from one another, a holder for said arms, said holder serving to support said arms at their inner ends and to compress the same to dilate the distal ends of said arms, and a guide plate having an opening therethrough adapted to be held in fixed position at the entrance of the body cavity

for contracting said arms as they are longitudinally slid through the opening in said plate into the body cavity.

7. In a dilator for a cavity of the body, a plurality of dilating arms, having confronting surfaces and with inner and distal ends, said arms being normally expanded, and a guide plate sur-

rounding and slidably mounted on said arms, said arms being expanded when the guide plate is at or near the inner ends of the arms, said plate being adapted to contract said arms when said arms are slid through said plate.

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