

Oct. 26, 1926.

1,604,518

E. KALLMEYER

CATHETER

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Fig. 1.

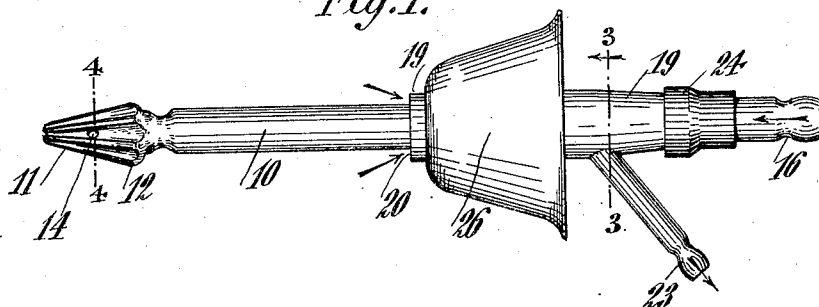


Fig. 2.

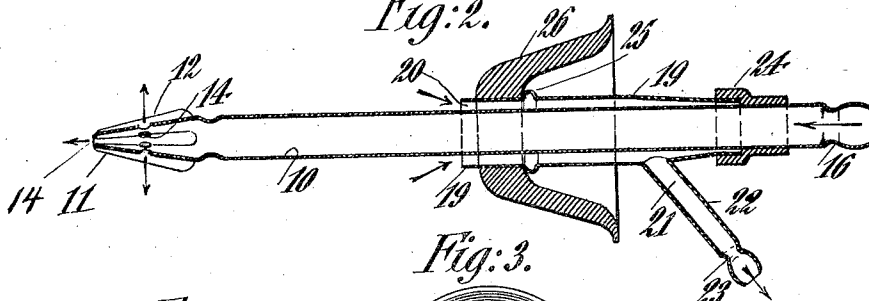


Fig. 3.

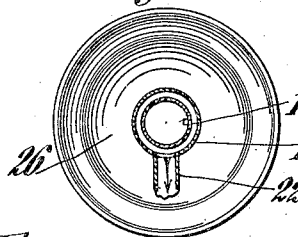


Fig. 4.

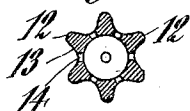
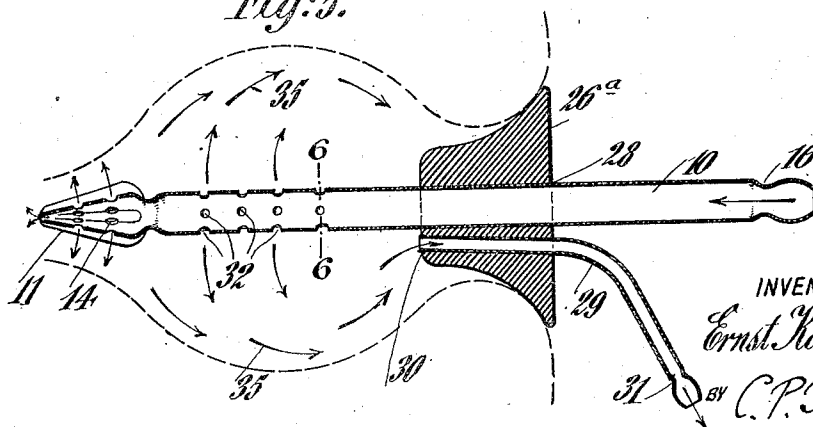


Fig. 5.



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UNITED STATES PATENT OFFICE.

ERNST KALLMEYER, OF MUNICH, GERMANY.

CATHETER.

Application filed November 27, 1923, Serial No. 677,225, and in Germany October, 1923.

This invention relates to catheters and more particularly to irrigating catheters for women and has for its object to provide an improved catheter having special advantages as will hereinafter appear.

With the invention it is intended to produce a catheter which is more reliable than those heretofore proposed, in that it enables a thorough cleansing of the interior of the vagina, including also the orifice of the uterus. It is well known that the membranes adjacent the interior of the vagina are exceedingly rich in folds, so that impurities, excretions of mucus and disease germs may safely lodge therein, and remain uninfluenced by cleansing fluids. This difficulty has heretofore been recognized and it has been attempted to smooth out the folds by using spreading devices, hoping thereby to irrigate the adhering impurities and germs, but by the use of such spreading devices, parts of the membranes were covered by the device, and the irrigating liquid was prevented from coming in contact therewith.

The invention provides the use of a catheter whose special characteristic resides therein that an inlet tube is set and may be longitudinally shifted in a closing member which blocks the opening of the vagina, and which has inlet holes with an area which enables the entrance of fluid of greater volume into cavities of the vagina than can pass out. This is brought about by having the area of the inlet openings of greater aggregate size than the area of the outlet openings of the catheter. Thereby it is attained that in the interior of the vagina, an additional pressure is produced, causing an inflation of the interior thereof, which smooths out the folds, and thereby makes the condition perfect for an easy cleansing of the entire surface. Impurities and disease carrying bodies or germs may thereby readily be removed. The inlet tube has a rinsing head or catheter proper out of which the liquid flows and enters the body. Additional inlet openings may be provided along the shaft of the tube, if desired, as long as the inward flow is greater than the outward flow.

Another important feature of my improved invention is to enable the inlet tube to be shifted longitudinally through the vagina opening blocking body so as to enable the catheter proper to be brought in-

wards as far as possible in close proximity to the orifice of the uterus.

In constructions heretofore proposed the fluid entered the vagina near the front thereof, which brought with it the great disadvantage of carrying inwardly into the delicate parts the various germs and impurities, as the current of the cleansing fluid moved inwardly. This is fundamentally wrong in its operation, and in my improved catheter the fluid passes from the inner parts outwardly thereof. It is particularly wrong to have the outlet openings in proximity to the uterus, as then all the fluid with its impurities passes by the uterus. Furthermore, by the withdrawal of such catheters, all germs, etc., are dragged along the interior of the vagina.

The object of the present invention, contrary to the forms heretofore proposed, is to start the cleaning at the head of the catheter as the fluid enters the body at the head of the catheter. This causes the current of the cleansing fluid to be directed from within to the outer opening of the vagina. By the use of my improved invention not only the entire surface of the interior of the uterus and vagina obtains a thorough cleansing, but it is also certain that the head and adjacent parts of the catheter when being removed will not track along impurities, as otherwise the cleansing would be illusory. In embodiments of my invention the inlet tube and the outlet tube may be arranged, one in the other, or may be arranged side by side.

My invention will be more fully described hereinafter and shown in the drawings and finally pointed out in the claims.

In the accompanying drawings,

Fig. 1 is a side view in perspective of an embodiment of my invention,

Fig. 2 is a central longitudinal section of Fig. 1,

Fig. 3 is a transverse section taken on line 3—3 of Fig. 1,

Fig. 4 is a transverse section taken on line 4—4 of Fig. 1,

Fig. 5 is a sectional view showing a modified form and the application of my improved structure, and

Fig. 6 is a section taken on line 6—6 of Fig. 1.

Similar characters of reference indicate corresponding parts throughout the various views.

Referring to the drawings and more particularly to Figs. 1-4 thereof, the structure there shown consists of an inner inlet tube 10, which is provided at its front portion 5 with the catheter proper indicated by 11 and preferably made in accordance with the structure shown, described and claimed in my co-pending application Serial No. 556,352, filed by me on April 24, 1922. Essentially this catheter proper consists of tapering ribs 12, having grooves 13 therebetween and openings 14 in said grooves as shown particularly in Fig. 4. Other forms of heads may be used instead of the one just 15 described. The other end of the inlet tube 10 is provided with a constricted portion 16 to which may be readily attached a rubber hose or tube connected with the supply of liquid. Exterior to the inlet tube 10 is an outlet tube 19 which surrounds the tube 10 and is made of larger diameter so as to provide a sleeve-like space between the tube 19 and the tube 10, such space being indicated by 20. This space 20 extends rearwardly and is in communication with the channel 21 formed by an extension tube 22, also having a constricted portion 23, to which may be readily fastened a tube or hose leading to a discharge container. The tube 19 extends rearwardly and engages a member 24 surrounding the inlet tube 10, this member being capable of being shifted longitudinally along the tube 10. Exterior to the tube 19 there is arranged an outwardly projecting annular collar 25, against which is seated a blocking member 26 preferably of the shape shown in Figs. 1 and 2, which when in use, blocks the exterior front of the vagina, to hold liquid in the vagina. This blocking member 26 surrounds the inward portion of the tube 19, and may be moved close up to the head 11 or away therefrom as desired. The blocking member is movable with the tube 19, when the tube 19 is moved by the member 24. Thereby the said parts are movable along the full length of the inlet tube 10.

In the embodiment shown in Figs. 5 and 6, the blocking member 26^a, has a central opening 28 in which is movable the inlet tube 10. Instead of having the outer tube surrounding the tube 10 in the telescopic manner described in connection with Fig. 2, the tube 10 is surrounded by the body 26^a, sufficiently tight to prevent the passage of liquid therethrough, but sufficiently loose to permit the movement of the body 26^a along the tube 10 from end to end thereof. The outlet or discharge tube 29 passes through the blocking member 26^a from the front to the rear thereof so as to provide a free communication from the in-

ner side 30 of the blocking member to the discharge container, to which the discharge fluid may pass by means of a hose or tube 65 attached at the constricted portion 31 of the tube 29. The head or catheter proper 11 is of substantially the same construction as that heretofore described in connection with Figs. 1, 2 and 4; but any other head might be used. If desired, a plurality of openings 32 70 may be provided in the tube 10, as long as the inflow is larger than the outflow through channel 29. In the embodiment shown in Fig. 5 the aggregate orifice area of the openings 14 and 32 is larger than the orifice area of the outlet tube 29, and the same rule applies to the embodiment in Fig. 2, in which the aggregate orifice area of the openings 14 is larger than the orifice area of the outlet space 20 to the end in both cases that a greater volume of liquid enters the vagina and proximate parts than discharges from the catheter. 75 80

In Fig. 5 the dotted lines show generally 85 how the hydraulic auxiliary pressure causes an inflation of the walls of the vagina and also shows by the arrows 35 how the liquid takes a direction from the inward portion of the body toward the outer portion thereof. 90

In the use of the improved catheter the inlet tube is first withdrawn outwardly of the blocking member 26, in the direction of the right hand side of the drawing sheet, then the blocking member is applied to the vagina in a reasonably tight position, and thereupon the inlet tube is moved gently inwardly to the desired extent, whereupon the cleansing liquid may be supplied, which then acts automatically from the inward parts of the vagina to the outward parts thereof, with consequent greater inflow than outflow. 95 100

I have shown various embodiments of my invention, but changes may be made therein without departing from the spirit of the same as defined in the appended claim. 105

I claim:

A catheter comprising an inlet tube having a perforated head on its inner end and a supply tube connection on its outer end, a longitudinally shiftable blocking member surrounding the inlet tube, and an outlet member in the blocking member and opening through the inner end thereof adjacent the inlet tube, the cross-sectional area of the outlet member being less than the combined areas of the perforations in the head to produce in operation a pressure of the fluid passing between the head and the outlet member. 110 115 120

In testimony that I claim the foregoing as my invention, I have signed my name hereto.

ERNST KALLMEYER.