April 5, 1960 M. H. KNOCH 2,931,359

HYGIENIC DEVICE FOR CLEANSING THE VAGINA

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Fig. 1

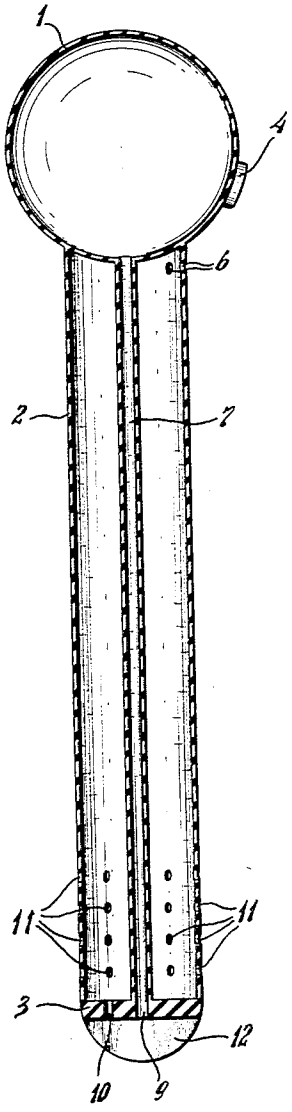


Fig. 2

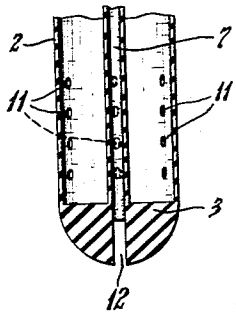
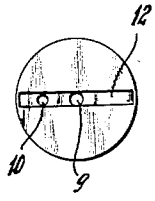


Fig. 3



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HYGIENIC DEVICE FOR CLEANSING THE VAGINA

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7 Claims. (Cl. 128—251)

This invention relates to a kind of vaginal syringe constituting a hygienic device for cleansing the vagina, comprising a flexible ball and a tube to be inserted into the vagina and communicating with said ball, said tube comprising a channel for drawing up cleansing liquid by suction with the ball and injecting it into the vagina.

Well-known hygienic devices for cleansing the vagina up to the present are the irrigator and the vaginal syringe. The first drawback of these devices consists in that the user has to employ a basin, a bed pan, a pail or the like for collecting the cleansing liquid. Expensive cleansing liquid thus tends to be lost, and in any case it is not possible directly to cleanse repeatedly with the same quantity of liquid. A second drawback of these devices is that the possibility cannot be altogether avoided that the opening of the supply tube may enter the orifice of the os uteri and that owing to the overpressure during the cleansing operation there is a risk of the cleansing liquid entering the uterine cavity and the abdomen. A third drawback of these devices consists in that the tube that is inserted into the genital organ is rather pointed and hard, so that an inexpert user may cause injuries with it. A fourth drawback is formed by the fact that inexpert users are often apt to cleanse the vagina to insufficient depth, so that the vicinity of the os uteri fails to be cleansed. Finally some well-known devices often cannot be effectively employed by the patient herself without assistance.

The invention has for its object to obviate these drawbacks. To achieve this object, a hygienic device as referred to in the preamble according to the invention is characterized in that the tube has a second channel, which does not communicate immediately with the interior of the ball and which, near the ball and near the outlet of the first channel, has one or more outwardly directed openings, said second channel having a volume at least equal to the volume of the ball and the first channel together, the first channel opening through the head of the tube into a countersunk part of said head, which covers a much smaller projected area than said head and into which also one or more of the openings of the second channel discharge.

In this way a kind of suction and pressure device is formed, which offers great advantages, as will be described more fully with reference to the annexed drawing. Fig. 1 thereof gives a full-size longitudinal cross-section through a device according to a preferred embodiment of the invention, by way of example only.

Fig. 2 is a longitudinal cross-section through the part near the head of this device, at right angles to the cross-section of Fig. 1, and

Fig. 3 is a front elevation of the head.

The device consists of a hollow rubber ball **1**, to which has been attached a hollow cylinder **2** with a nozzle **3**. On the rubber ball a knob **4** has been provided, which marks the front of the device. Extending through the cylinder is a tube **7**, which connects the interior of the ball **1** with the opening **9** in the nozzle. The nozzle has

a head in the form of a hemisphere with the same diameter as the cylinder. The convex surface has a countersunk part in the shape of a deep groove **12**, situated in the plane through the axis of the cylinder and through the knob **4** and the tube **7**, into which discharge two openings; a central opening **9** of the tube **7** leading to the interior of the ball and an opening **10** arranged further towards the rear, of smaller diameter, leading to the space in the cylinder. Further a number of openings **11** have been made all around in the wall of the cylinder **2** near the nozzle. In addition two openings **6** have been provided, closely beneath the ball in front, in the wall of the cylinder **2**, only one of which openings is visible; the other is situated at the same level beside it.

The space in the cylinder **2** is slightly larger than the volume of the ball **1** together with the volume of the interior of the tube **7**.

The device operates as follows. By compressing and releasing the rubber ball while the nozzle is placed in the cleansing liquid the ball is filled with said liquid. After insertion into the vagina of the recumbent patient, the device being introduced with the head pointed obliquely downwards, the cleansing liquid is introduced into the vagina by compressing the ball. In this way the vagina is cleansed, without the possibility of a dangerous overpressure arising, since the excess of liquid can flow through the opening **10** and the openings **11** into the cylinder **2**. When the rubber ball **1** is released, it sucks up the liquid again from the vagina and the space in the cylinder **2**. In this way an oscillatory flow of liquid is attained. This can take place when the device is stationary each time at different depths, or also with the device moved to and fro. During the treatment the knob **4** is situated on the upper side. In consequence the groove **12** has a vertical position, which is the most effective means to prevent cleansing liquid entering the uterine cavity. The device can easily be embodied in such a way that the nozzle just reaches to the os uteri when the device cannot be inserted to greater depth.

By all these means it has become possible repeatedly to inject the same cleansing liquid into the vaginal cavity and suck it up again, in spite of contractions of the vaginal wall, mucous folds, and mucous secretion.

The cleansing operation is effect quickly and easily with a minimum of the requisite cleansing liquid by repeated use of the same quantity, without any overpressure, since the space in the groove **12** communicates via the cylinder, via the openings **6**, with the atmosphere, and without any spilling of the liquid, since the use cleansing liquid is taken up in the device itself, while the use of additional vessels such as irrigator, pail, bed pan or the like is superfluous, since the functions of the latter are performed by the device itself, without any risk of injury or of liquid being injected into or entering the uterine cavity, while even the deepest parts of the vagina are cleansed.

The whole device preferably consists of soft rubber.

Instead of a knob **4**, any desired mark, e.g. a trade mark, can be used to mark the upper side of the device, so that the groove **12** always has a vertical position and the openings **6** lie on the upper side.

The dimensions of the device may be adapted to the physique of the patient and the quantity of cleansing liquid desired to be used.

Instead of or complementary to the openings **11** in the wall of the tube **2** one or more such openings may be provided in the hemispherical head face of the device to the side of groove **12**.

What I claim is:

1. A hygienic device for cleansing the vagina, comprising in combination a flexible ball and a tube to be inserted into the vagina and communicating with said

ball, said tube comprising a channel for drawing up cleansing liquid by suction with the ball and injecting it into the vagina, a second channel in the tube, which does not communicate immediately with the interior of the ball and which, near the ball and near the outlet of the first channel, has one or more outwardly directed openings, said second channel having a volume at least equal to the volume of the ball and the first channel together, the first channel opening through the head of the tube into a countersunk part of said head, which covers a much smaller projected area than said head and into which also one or more of the openings of the second channel discharge.

2. A hygienic device for cleansing the vagina, comprising in combination a flexible ball and a tube to be inserted into the vagina and communicating with said ball, said tube comprising a channel for drawing up cleansing liquid by suction with the ball and injecting it into the vagina, a second channel in the tube, which does not communicate immediately with the interior of the ball and which, near the ball and near the outlet of the first channel, has one or more outwardly directed openings, said second channel having a volume at least equal to the volume of the ball and the first channel together, the first channel opening through the head of the tube into a countersunk part of said head, which covers a much smaller projected area than said head and into which also one or more of the openings of the second channel discharge, the second channel having near the outlet of the first channel one or more additional outwardly directed openings, which discharge outside the said countersunk part.

3. A hygienic device according to claim 2, characterized in that said additional openings are situated in the peripheral wall of the second channel.

4. A hygienic device for cleansing the vagina, comprising in combination a flexible ball and a tube to be inserted into the vagina and communicating with said ball, said tube comprising a channel for drawing up cleansing liquid by suction with the ball and injecting it into the vagina, a second channel in the tube, which does not communicate immediately with the interior of the ball and which, near the ball and near the outlet of the first channel, has one or more outwardly directed openings, said second channel having a volume at least equal to the volume of the ball and the first channel together, the first channel opening through the head of the tube into a countersunk part of said head, which covers a much smaller projected area than said head and into which also one or more of the openings of the second channel discharge, the head of the tube being approximately hemispherical, with the same diameter as the tube.

5. A hygienic device for cleansing the vagina, comprising in combination a flexible ball and a tube to be inserted into the vagina and communicating with said ball, said tube comprising a channel for drawing up cleansing liquid by suction with the ball and injecting

it into the vagina, a second channel in the tube, which does not communicate immediately with the interior of the ball and which, near the ball and near the the outlet of the first channel, has one or more outwardly directed openings, said second channel having a volume at least equal to the volume of the ball and the first channel together, the first channel opening through the head of the tube into a countersunk part of said head, which covers a much smaller projected area than said head and into which also one or more of the openings of the second channel discharge, the second channel being formed by the space in the tube to be inserted into the vagina, inside which space extends a thin tube forming the first channel.

6. A hygienic device for cleansing the vagina, comprising in combination a flexible ball and a tube to be inserted into the vagina and communicating with said ball, said tube comprising a channel for drawing up cleansing liquid by suction with the ball and injecting it into the vagina, a second channel in the tube, which does not communicate immediately with the interior of the ball and which, near the ball and near the outlet of the first channel, has one or more outwardly directed openings, said second channel having a volume at least equal to the volume of the ball and the first channel together, the first channel opening through the head of the tube into a countersunk part of said head, which covers a much smaller projected area than said head and into which also one or more of the openings of the second channel discharge, the device consisting of soft and flexible material, such as soft rubber.

7. A hygienic device for cleansing the vagina, comprising in combination a flexible ball and a tube to be inserted into the vagina and communicating with said ball, said tube comprising a channel for drawing up cleansing liquid by suction with the ball and injecting it into the vagina, a second channel in the tube, which does not communicate immediately with the interior of the ball and which, near the ball and near the outlet of the first channel, has at least one outwardly directed opening, said second channel having a volume at least equal to the volume of the ball and the first channel together, the first channel opening through the head of the tube into a countersunk part of said head, which covers a much smaller projected area than said head and into which also one or more of the openings of the second channel discharge said countersunk part having the shape of a diametrical groove, said ball having a mark in a plane through the axis of the tube and through said groove and said outwardly directed opening of the second channel near the ball is situated approximately in the same plane on the side corresponding to said mark on said ball.

References Cited in the file of this patent

UNITED STATES PATENTS

764,996	Ellis	July 12, 1904
2,576,766	Sokolik	Nov. 27, 1951