

Feb. 6, 1923.

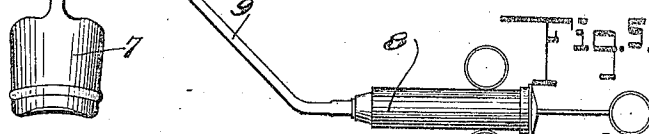
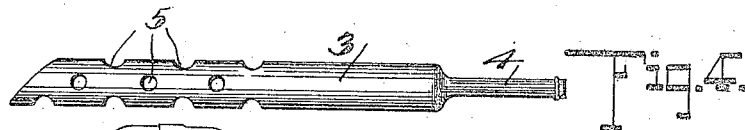
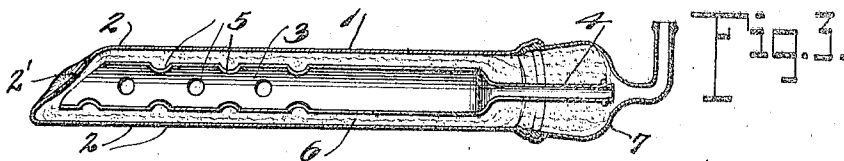
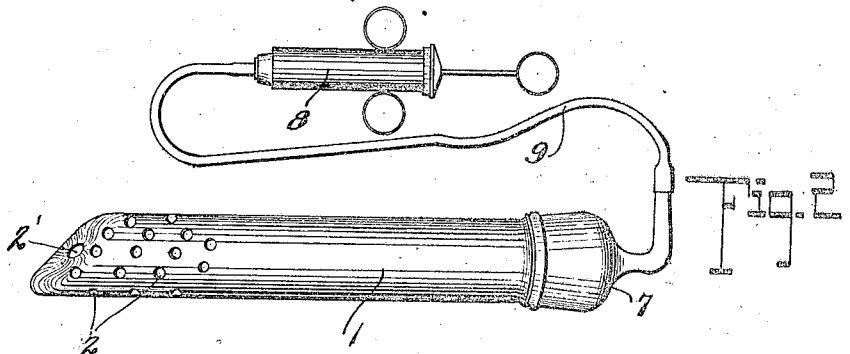
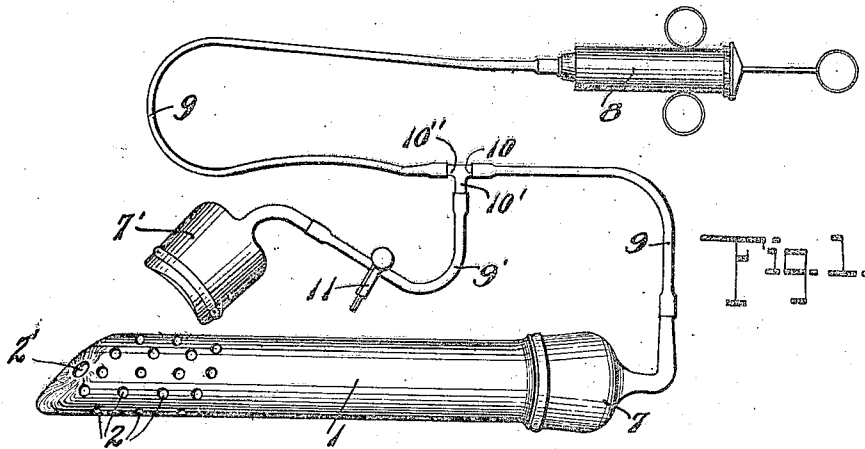
1,444,714

M. TESHIMA

MEDICAL APPLIANCE OF SUCTION TYPE

Filed June 30, 1920

2 sheets-sheet 1



Witness:
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By *M. Teshima*
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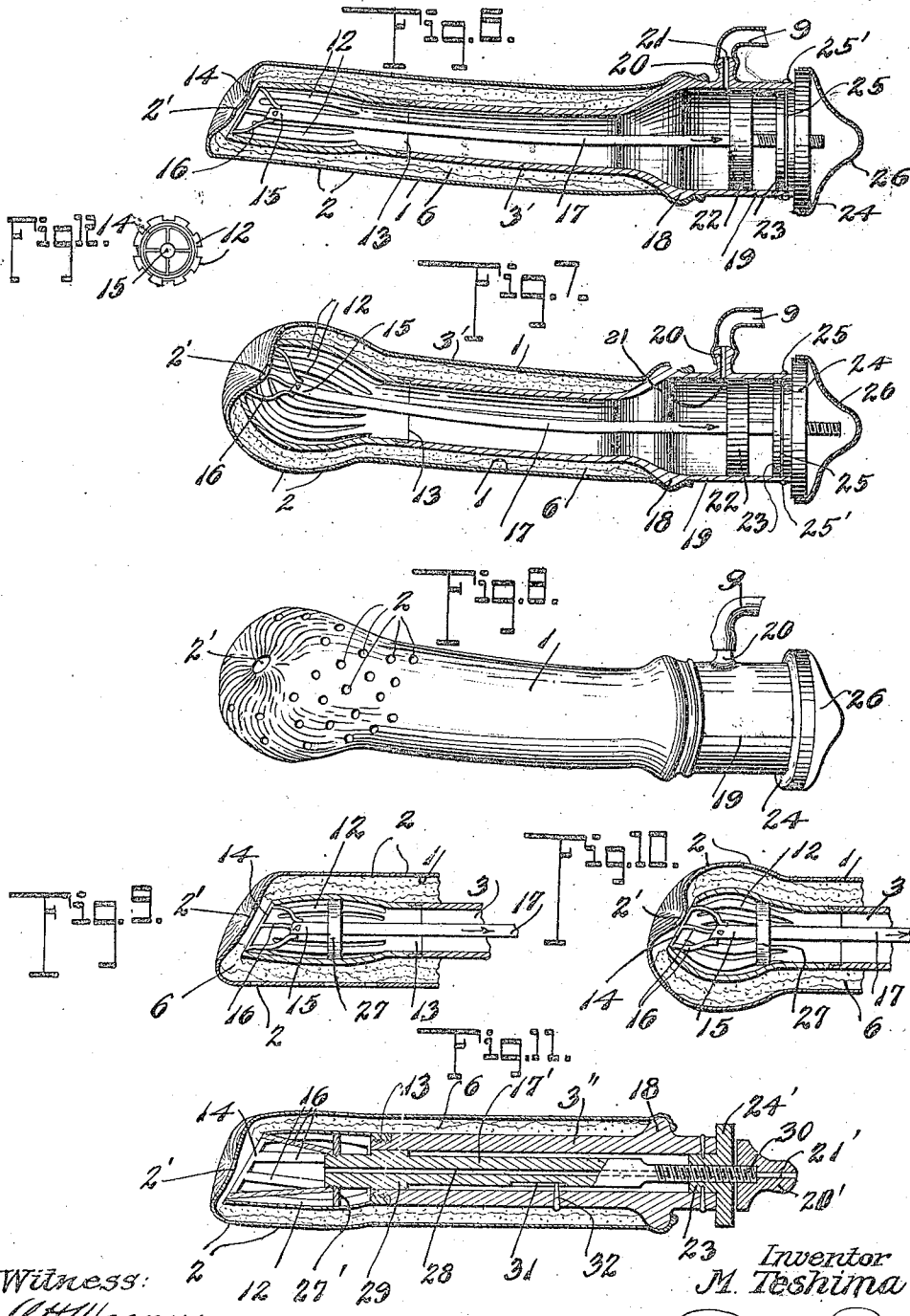
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MEDICAL APPLIANCE OF SUCTION TYPE

Filed June 30, 1920

2 sheets-sheet 2



Witness: *W. Wagner*

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UNITED STATES PATENT OFFICE.

MASAKICHI TESHIMA, OF TOKYO, JAPAN.

MEDICAL APPLIANCE OF SUCTION TYPE.

Application filed June 30, 1920. Serial No. 393,082.

To all whom it may concern:

Be it known that I, MASAKICHI TESHIMA, a manufacturer of and dealer in medical appliances, a subject of the Emperor of Japan, residing at #25, 3-chome, Honzai-moku-cho, Kyobashi-ku, in the city of Tokyo and prefecture of Tokyo, Japan, have invented certain new and useful Improvements in Medical Appliances of Suction Type, of which the following is a specification.

This invention relates to improvements in medical appliances which are especially adapted for use in the treatment particularly of diseases of the generative organs of women.

The primary object in view is to provide a device of this character by means of which the secretions produced by the diseased condition may be removed effectively and the parts so acted upon through pulsations as to induce an improved circulation of the blood in the parts leading to an amelioration or cure of the disease.

In carrying out the invention, I provide a novel nozzle-like body adapted to be introduced into the vagina, said body being provided with an absorbent medium to receive and retain the gonococci, leucorrhoea and like virus drawn therein, suction means being employed to accomplish this operation and to operate upon the parts for the additional purpose of improving the blood circulation thereof as aforesaid.

It is further an object to use in association with the above means an auxiliary attachment whereby both internal and relatively external parts may be treated or manipulated, so to speak.

The above object and subsidiary objects which will be made clear hereafter, are attained by the construction illustrated in the accompanying drawings, in which:

Figure 1 shows an elevation of a complete embodiment of the medical appliance of this invention;

Figure 2 is a similar view of the appliance modified by the omission of one of the elements;

Figure 3 is a longitudinal sectional view of the tubular body portion or nozzle of the medical appliance;

Figure 4 shows separately the inner suction tube of the nozzle;

Figure 5 shows a single suction cup con-

nected with a suction pump, by means of a rubber tube;

Figures 6 and 7 are longitudinal sections of modified forms of the tubular body provided with an expander which is shown closed in Fig. 6 and expanded in Fig. 7;

Figure 8 is an external perspective view of the modification shown in Figs. 6 and 7;

Figures 9 and 10 are fragmentary sectional views of a part of the tubular body provided with a modified expander;

Figure 11 shows in a longitudinal section a further modification of the tubular body; and

Figure 12 is an end view of the expander. Similar references indicate same or similar parts throughout the drawings.

Referring to Figs. 1, 2, 3, 4 and 5 inclusive of the drawings, 1 indicates a thin rubber sac, which is circular in cross section, fully open at its mouth and provided with many small holes 2 around the opposite end portion and further provided with a relatively large hole 2' at the middle point of the apertured extremity of the sac. 3 indicates an inner suction tube, the ends of which are fully open but one end 4 is reduced a portion of its length while the other end portion is provided with plurality of holes 5 passing through the wall of the tube 3. The inner tube 3 may be made of either rigid or flexible material such as glass, rubber, celluloid, ebonite and the like. As shown in Figs. 3 and 4, the larger end of the inner tube 3 is cut obliquely for the purpose which will be explained hereafter. The inner tube 3 is wrapped in a cushion of either absorbent cotton or gauze 6 as clearly shown in Fig. 3, and inserted into the thin rubber sac 1 in such a manner that the larger open end of the inner tube 3 reaches the bottom end of the sac 1, at the center of which end a relatively large hole 2' is formed opposite the open end of the tube 3. The bottom end of the sac 1 is preferably formed of a shape corresponding to that of the larger end of the inner tube 3, so that the sac 1 may be expanded in an oblique shape when the inner tube 3 is inserted into the sac 1. 7 indicates a suction cup, which is connected with the fully open end of the rubber sac 1, and on the other hand connected with a suitable suction pump 8, by means of a usual connecting rubber tube 9.

In the form shown in Fig. 1, a T-shaped

connector having branches 10, 10', 10'', is interposed in the conduit 9 for the purpose of combination of the suction cup 7 in the appliance. A pinch-cock 11 may be applied on either of the connecting tubes 9 or 9' leading to the suction cup 7.

In the modification illustrated in Figs. 6, 7 and 8, the construction of the tubular body is entirely different except for the thin rubber sac 1 which is employed similarly to its use as shown in Figs. 1, 2 and 3. The inner tube 3, which is inserted into the thin rubber sac 1, is modified in its construction. In this form, the inner tube 3' is provided with an expander 12 which is made of a plurality of strips of any suitable elastic material. The respective ends of the strips 12 are fixed on the two rings 13 and 14, one at each end of the strips 12, so that an expander of cylindrical shape in which the strips 12 are longitudinally arranged is formed. The expander is suitably fixed at one end of the inner tube 3'; for instance one end ring 13 of the expander is screwed at the end of the tube 3 as shown. The other end ring 14 is provided with radial arms 16, the outer ends of which arms are fixed to the end ring 14 of the expander. The inner or central ends of the radial arms 16 are connected at one end of an axial rod 17.

As shown, the other end of the inner tube 3' is conically enlarged and an annular shoulder 18 is formed around the foot of the conically enlarged part. From this shoulder 18, the inner tube 3' extends in a uniformly enlarged cylinder 19. A nipple projection 20, through which an air passage 21 is formed, is provided at a point near the shoulder 18. The nipple projection 20 is connected with one end of the connecting rubber tube 9, the other end of which may be connected directly to the suction pump 8 as shown in Fig. 2 or connected to a branch of the T-shaped connector as shown in Fig. 1. In either case, the inner space may be exhausted by the operation of the suction pump 8. In order to close in air tight one end of the inner tube 3', a stopper 22 is provided within the cylinder 19. The axial rod 17 passes through the stopper 22 and is keyed to the stopper 22 in such a manner that the rod 17 is prevented from revolving but is capable of sliding in a longitudinal direction.

Furthermore a revolvable stopper 23, formed with an annular flange 24 is provided at the extreme end of the enlarged cylinder 19. An annular groove 25 is formed around the revolvable stopper 23. The free end of the axial rod is threaded for some length and passes through the center of the revolvable stopper 23. A cap 26 is secured on the outside of the stopper 23 so that the end of the axial rod may move within the cap 26. The revolvable stopper 23 is kept in

the place by means of one or more small pins or screws 25' which pass through the wall of the cylindrical part 19 and engage into the annular groove 25.

In the construction as above described, the stopper 23 may be revolved in either direction. The axial rod 17 may be moved in either longitudinal direction according to the direction of the revolution of the stopper 23.

If the threaded end of the axial rod 17 is gradually drawn in the direction of the arrow shown, by manipulation of the flange 24 of the revolvable stopper 23, the end ring 14 of the expander is also gradually drawn in the same direction or inwardly. In the meantime the expander is gradually expanded outwardly and finally will take shape somewhat as shown in Fig. 7. Then the outer casing of the tubular body will be accordingly expanded as shown in Fig. 8. If the axial rod 17 is moved in opposite direction from the position shown in Fig. 7, the end ring 14 of the expander will be moved in the same direction, that is outwardly. The expander will be closed or contracted as shown in Fig. 6, and the outer portion of the tubular body will be accordingly reduced in size.

The only difference in the modification shown in Figs. 9 and 10 from the modification as above described, lies in the provision of an internal disc 27 within the expander. The disc 27 is fixed to the axial rod in such a position that the disc will be placed at about midway of the expander when it is contracted as shown in Fig. 9. The disc 27 is preferably made in such a size as to normally keep each strip 12 of the expander somewhat curved or expanded outwardly even when the expander is contracted.

In this modified construction, the movement of the axial rod 17 is accompanied by corresponding movement of the disc 27, so that when the axial rod 17 is drawn in the direction of the arrow shown, the disc 27 is also moved in the same direction, and all the longitudinal strips 12 of the expander are forced outwardly. Thus the expander will finally take the shape as shown in Fig. 10.

The modification illustrated in Fig. 11 only differs in the following points from those modified forms as above described. The inner tube 3'' is formed of uniform size throughout its length except for the annular shoulder 18 upon which the open end of the thin rubber sac 1 is secured. The axial rod 17', which is fitted within the inner tube 3'', is provided with a longitudinal passage 28. In this case, the inner end of the axial rod 17' is made somewhat shorter than those shown in Figs. 6 and 10 inclusive, and the disc 27' has connected thereto the inner ends of the radial arms 16. The axial rod 17' is formed with a collar 29 which may be moved within the inner tube

3'' in an air tight contact with the internal surface of the inner tube. The opposite end 30 of the axial rod is threaded and passes through a revoluble stopper 23' which is attached at the extreme end of the inner tube in the same manner as that shown in Figs. 6, 7 and 8. A nipple connector 20' is screwed at the extreme end of the axial rod 17 and connected with a suitable suction pump by means of rubber tube. This connector 20' is formed with a passage 21' which communicates with the passage 28 formed through the axial rod 17'. A longitudinal groove 31 is formed on the external surface of the axial rod 17'. In order to prevent revolving of the axial rod 17' the end of a small pin 32 which passes through the wall of the tube 3'' is engaged in the longitudinal groove 31.

In this modification, the axial rod 17 may be drawn out or forced by the manipulation of the flange 24' of the revoluble stopper 23, but it is prevented from revolving. Thus the expander may be expanded or contracted as desired.

The medical appliance of this invention is used in the following manners. In general, the tubular body forming the nozzle of this appliance is gradually inserted until the end of the tubular body reaches the cervix uteri in the vagina, after the external surface of the thin rubber sac 1 has been oiled with any suitable substance. Then the suction pump 8 is operated, the pump being connected as shown either in Fig. 1 or in Fig. 2. In the beginning of the operation, the inner tube will be exhausted first and then the cervix uteri will be drawn to the end of the tubular body, and the canalis cervix will communicate with the opening 2' of the same. At the same time, plicæ vaginales also will be drawn to the end portion of the tubular body, where the plurality of small holes 2 are formed in the thin rubber sac 1. By the further operation of the suction pump 8, gonococci, leucorrhœa and the like existing in the canalis cervix and in the mucosa of the plicæ vaginales, will be sucked into the absorbent cushion such as cotton or gauze passing through the openings 2 and 2' of the thin rubber sac 1.

Pulsating action, which is generally caused with single acting pumps, may be applied on the uterus and the internal part of the vagina, where these parts contact with the outer end portion of the tubular body, and the said parts of the generative organs may be congested.

When an appliance of the form shown in Fig. 1 is used, the suction cup 7 may be applied on the clitoris at the same time as the tubular body is inserted in the vagina, the pinch-cock being released. Otherwise omitting the T connector, the suction cup 7 may be directly connected with the suction

pump as shown in Fig. 5, and it may be applied on the clitoris separately. By such use of the suction cup 7 pulsating action may be applied on the clitoris so that the latter may be congested. The congestion caused by such pulsating action may stimulate the circulation of blood, which is effective in curing several diseases of women.

The modifications shown in Figs. 6 to 12 inclusive, are also used in combination with the suction pump in either of the connections shown in Fig. 1 or in Fig. 2, and as fully described referring to these figures of the drawings.

In any of the modifications, the outer portion of the tubular body can be expanded as described by the manipulation of the flange of the revoluble stopper 23, after the tubular body has been inserted into the vagina. Thus the inner surface of the vagina may be stretched so that the suction may be effectively applied on the said surface.

I do not desire to be confined to the exact construction of the appliance as herein described and illustrated, as such may be varied within wide limits to meet the requirements of the device which is used for curing diseases of the generative organs of women.

What I claim is:

1. A medical appliance of the class described comprising a nozzle-like body including a suction tube, a casing therefor and absorbent means intermediate said tube and casing, and suction means connected to said body.

2. A medical appliance of suction type for use in generative organs of women, comprising in combination with a tubular body which is adapted to be inserted into the vagina, of a suction pump, a free suction cup, a T shaped connector and connecting tubes, wherein the tubular body consists of a thin rubber sac provided with a plurality of openings around the bottom end thereof, an inner tube having a connecting nipple, a revolving stopper fitted at one end of the inner tube, an expander suitably fixed at the opposite end of the inner tube, an axial rod one end of which is connected to the expander and the other screw-threaded end of which passes through the revolving stopper, and an absorbent cushion interposed between the rubber sac and the inner tube.

3. A medical appliance of suction type for use in generative organs of women, comprising in combination with a tubular body which is adapted to be inserted into the vagina, of a suction pump and a connecting rubber tube, wherein the tubular body consists of a thin rubber sac provided with a plurality of openings around the bottom end thereof, an inner tube having a connecting nipple, a revolving stopper fitted at one end of the inner tube, an expander suitably fixed

at the opposite end of the inner tube, an axial rod one end of which is connected to the expander and the other screw-threaded end of which passes through the revolving stopper, a disc provided within the expander and fixed on the axial rod and an absorbent cushion interposed between the rubber sac and the inner tube.

4. A medical appliance of suction type for use in generative organs of women, comprising in combination with a tubular body which is adapted to be inserted into the vagina, of a suction pump, a free suction cup, a T shaped connector and connecting rubber tubes, wherein the tubular body consists of a thin rubber sac provided with a plurality of openings around the bottom end thereof, an inner tube having a connecting nipple, a revolving stopper fitted at one end of the inner tube, an expander suitably fixed at the opposite end of the inner tube, an axial rod one end of which is connected to the expander and the other screw-threaded end of which passes through the revolving stopper, a disc provided within the expander and fixed on the axial rod, and an absorbent cushion interposed between the rubber sac and the inner tube.

5. A medical appliance of suction type for use in generative organs of women, comprising in combination with a tubular body which is adapted to be inserted into the vagina, of a suction pump and a connecting rubber tube, wherein the tubular body consists of a thin rubber sac formed with a

plurality of openings around the bottom end thereof, an inner tube, a revolving stopper fitted at one end of the inner tube, an expander suitably fixed at the opposite end of the inner tube, an axial rod having a longitudinal opening throughout its length, a disc provided within the expander and fixed on the axial rod, a connecting nipple attached to the screw-threaded end of the axial rod and an absorbent cushion.

6. A medical appliance of suction type for use in generative organs of women, comprising in combination with a tubular body which is adapted to be inserted into the vagina, of a suction pump, a free suction cup, a T shaped connector and connecting rubber tubes, wherein the tubular body consists of a thin rubber sac formed with a plurality of openings around the bottom end thereof, an inner tube, a revolving stopper fitted at one end of the inner tube, an expander suitably fixed at the opposite end of the inner tube, an axial rod having a longitudinal opening throughout its length, a disc provided within the expander and fixed on the axial rod, a connecting nipple attached to the screw-threaded end of the axial rod, and an absorbent cushion.

In testimony whereof I affix my signature in presence of two witnesses.

MASAKICHI TESHIMA.

Witnesses:

S. Ito.

M. A. HOFER.