

No. 689,818.

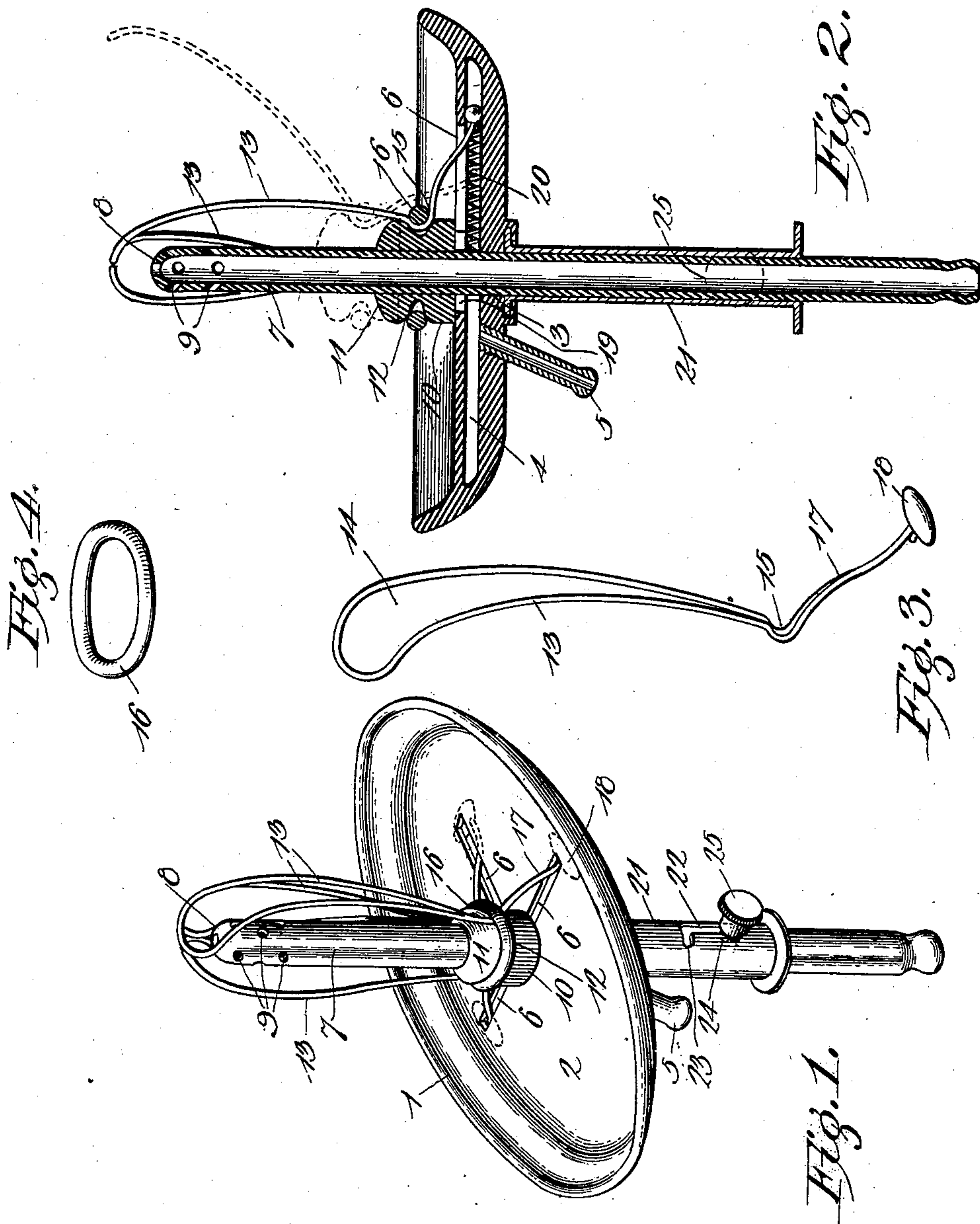
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A. W. HITT.

SYRINGE.

(Application filed Mar. 19, 1901.)

(No Model.)



Witnesses

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SYRINGE.

SPECIFICATION forming part of Letters Patent No. 689,818, dated December 24, 1901.

Application filed March 19, 1901. Serial No. 51,911. (No model.)

To all whom it may concern:

Be it known that I, ADDISON W. HITT, a citizen of the United States, residing at San Francisco, in the county of San Francisco and State of California, have invented a new and useful Syringe, of which the following is a specification.

This invention relates to vaginal syringes, and particularly that class embodying a central injecting-tube surrounded by expansible and contractible dilators; and the object of the present improvement is to provide a strong, durable, and positively-operating device of the class set forth, having a simple construction and wherein the use of metal pivoting devices or metal holding means of any character for the dilators are entirely dispensed with and all the parts shaped to present smooth curved surfaces to avoid injury to the organ treated therewith, and, furthermore, to have the several parts easily separated for cleansing or sterilizing operations and afterward readily assembled.

The invention consists in the construction and arrangement of the several parts, which will be more fully hereinafter described and claimed.

In the drawings, Figure 1 is a perspective view of a syringe embodying the features of the invention. Fig. 2 is a longitudinal vertical section of the syringe, showing a dotted position of portions of the same. Fig. 3 is a detail perspective view of one of the dilators. Fig. 4 is a detail perspective view of the elastic holding-ring for the dilators.

Similar numerals of reference are employed to indicate corresponding parts in the several views.

The numeral 1 designates a support preferably formed of hard rubber or analogous material, and shaped to closely fit over the vulva, the face side of the said support resting next to the latter, being formed with a depression 2 deep enough to inclose the labia and provide a liquid-tight inclosure during the injecting operation. Through the center of the support a tube-opening 3 is formed, and in the body of said support is a slot or chamber 4, with one portion of which a drain-nozzle 5 has communication and projects from that part of the body which will occupy a lower

position when the device is applied, and is disposed at an angle of inclination so as to be more effective in draining, as will be obviously apparent. The bottom wall of the depression 2 is also formed with a series of radial slots 6, which communicate with the chamber 4 and with the opening 3, from which they emanate. In the opening 3 of the support a straight injecting-tube 7 is slidably mounted and is formed with a rounded entrance-terminal 8, having a plurality of spraying-apertures 9 therein, disposed mainly at an angle so as to throw the injected fluid in an upward direction. The opposite end of the said injecting-tube is fully open and constructed to detachably receive a syringe-tube or the like. Secured to the injecting-tube and movable therewith in advance of the support, is a collar or fulcrum-head 10, with a front rounded end 11 and an intermediately-located seat-groove 12 circumferentially encircling the same. The front portion or end of the collar, which is adjacent to the organ when the syringe is applied, is rounded off at all points to avoid the formation of injurious angles or edges, and detachably held in connection with the collar are a plurality of dilators 13, preferably formed of suitable wire and comprising loops 14, that gradually diverge from lower transversely-extending concave seats 15 to the upper free ends, the latter being regularly curved and directed inwardly at a more abrupt angle than the bodies of the loops in relation to the injecting-tube. The loops are longitudinally convexed, and the upper free ends are located in advance of the free or injecting end of the said tube and close against each other when in normal position. The open form of the dilators, as set forth, permits the wall of the vaginal canal or vagina to be fully treated, and will be of such strength as to effectively dilate the portion of the organ with which they engage. The inwardly-extending portions of the seats 15 are disposed in the groove 12 of the collar or head 10, and fitting in and removably holding the seats in the groove and the complete dilators themselves in removable operative position is an elastic band or ring 16, which is circular in cross-section, the tension of the said band or ring being strong enough to maintain the

practical assemblage of the dilators and permit the expanding operation thereof as desired in dilating the organ treated to open up the folds and fully expose the wall of the vagina to treatment. From the seats 15 the dilators continue into outwardly-extending arms 17, which move in the radial slots 6 and have terminal enlargements or heads 18 to retain the arms in proper sliding engagement with relation to said slots, the heads 18 being operatively located in the slot or chamber 4. The enlargements or heads 18 are inserted in or removed from the slot or chamber 4 through an enlarged portion 19 of the opening 3 in the base of the cavity 2, and between the enlargements or heads 18 and the tube 7 springs 20 are interposed and terminally connected to the heads, but loose in relation to the tube 7, so as not to interfere with the operation of the latter, the said springs being compressed when the dilators are expanded and operating to assist in returning the said dilators to normal closed position when free to do so.

The tube 7 is movably mounted in an elongated sleeve 21, attached to the center of the bottom of the support and provided with a longitudinal slot 22, from which a right-angular slot 23 extends in a horizontal plane, the tube 7 having a suitable clamping-screw device having a shank 24 fixed to the said tube and movable in the slots 22 and 23 and engaged by a clamping-head 25 to hold the tube in positive fixed adjustment. The sleeve is rotatable, and hence when the tube 7 is moved longitudinally the shank 24 correspondingly moves in the slot 22, and when said shank is opposite the slot 23 the sleeve is rotated to hold the tube projected as desired.

In applying the improved device the contracted dilators and spraying extremity of the injecting-tube are inserted in the organ until the depression 2 in the support 1 rests over and embraces the vulva completely and is firmly pressed into place by the operator and positively held in this position to provide a tight conjunction of the support with the vulva. The tube 7 is then pushed inwardly in accordance with the adjustment of the syringe and the necessary penetration to effectively perform the injecting operation, and after such movement the tube is fixed by means of the clamping-screw device. When the tube 7 is pushed inwardly, the collar or head 10 is simultaneously moved therewith, and the dilators are caused to assume the position shown by Fig. 2, and thereby expand the wall of the vagina. The medicated or other injecting liquid will then be forced through the tube 7 and into contact with the wall of the vagina and also the neck of the uterus, and after such application the injected liquid will return through the vagina to the depression 2 of the support and pass into the chamber 4 and be carried off through the drain-nozzle 5, which will have a suitable tube attached thereto to deliver the drainage into a nearby receptacle. After the operation is completed the

release and withdrawal of the tube 7 will cause the dilators to return to normal position, and thereby permit the syringe to be removed without obstruction.

By removing the elastic ring 16 the dilators will be disconnected from the collar or head 10, and after removing the screw-shank 24 from the tube 7 the latter can be drawn through the support, and subsequently the dilators may be readily detached, so that all the parts can be easily cleansed and sterilized and afterward reassembled in operative relation. This ready disconnection of the several parts is exceptionally essential in this class of devices and particularly to avoid the use of metal fastening devices and pivots or other analogous small parts which are liable to corrode or oxidize or become lost and deplete the equipment of the device to such an extent as to render the same inconvenient and of small practical value. The improved device is simple and effective in its construction and arrangement, and though the preferred form has been shown changes in the form, size, proportions, and minor details may be resorted to without departing from the principle of the invention.

Having thus described the invention, what is claimed as new is—

1. In a syringe of the class set forth, the combination of a chambered support having drainage means and an inclosing depression extending fully throughout the upper side thereof, an injecting-tube slidable through the support, and dilators mounted above the support and held in free removable connection with relation to the tube and having terminal portions slidably mounted in the support.

2. In a syringe of the class set forth, the combination of a support, having a depression extending fully throughout the upper side thereof to form a liquid-receiving means, an injecting-tube movable through the support and having a collar thereon with a circumferential groove, dilators having parts engaging the groove and other portions slidably engaging the support, the collar and dilators being located above the plane of the bottom of the support, the dilators being freely detachable, and an elastic ring removably surrounding the parts of the dilators engaging the groove.

3. In a syringe of the class set forth, the combination of a support having a depression extending fully throughout the upper side of the same and also provided with a depending rotatable sleeve alining with a central opening, an injecting-tube movably mounted in the said support and sleeve and adapted to be locked in adjusted position to the latter, and dilators movable with the tube and having portions engaging the support.

4. In a syringe of the class set forth, the combination of a support having a depression extending fully throughout the upper side thereof to form a liquid-receiving means

and also provided with a chamber below the depression having a closed bottom and outlet means, an injecting-tube slidably and removably mounted in said support, dilators 5 movable with and freely removable from the said tube and having angular terminal portions removably engaging the support, said dilators being mounted mainly above the support, and means for holding the dilators in 10 operative position.

5. In a syringe of the class set forth, the combination of a support having a depression extending fully throughout the upper side thereof to form a liquid-receiving means 15 and also provided with a chamber below the depression having a closed bottom and outlet

means, an injecting-tube movably mounted in said support, dilators removably carried by the tube and having angular portions slidably mounted in the support, said dilators 20 being mounted mainly above the support, and yielding devices engaging the angular portions of the dilators slidably mounted in the support and operating to return the said dilators to normal position. 25

In testimony that I claim the foregoing as my own I have hereto affixed my signature in the presence of two witnesses.

ADDISON W. HITT.

Witnesses:

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