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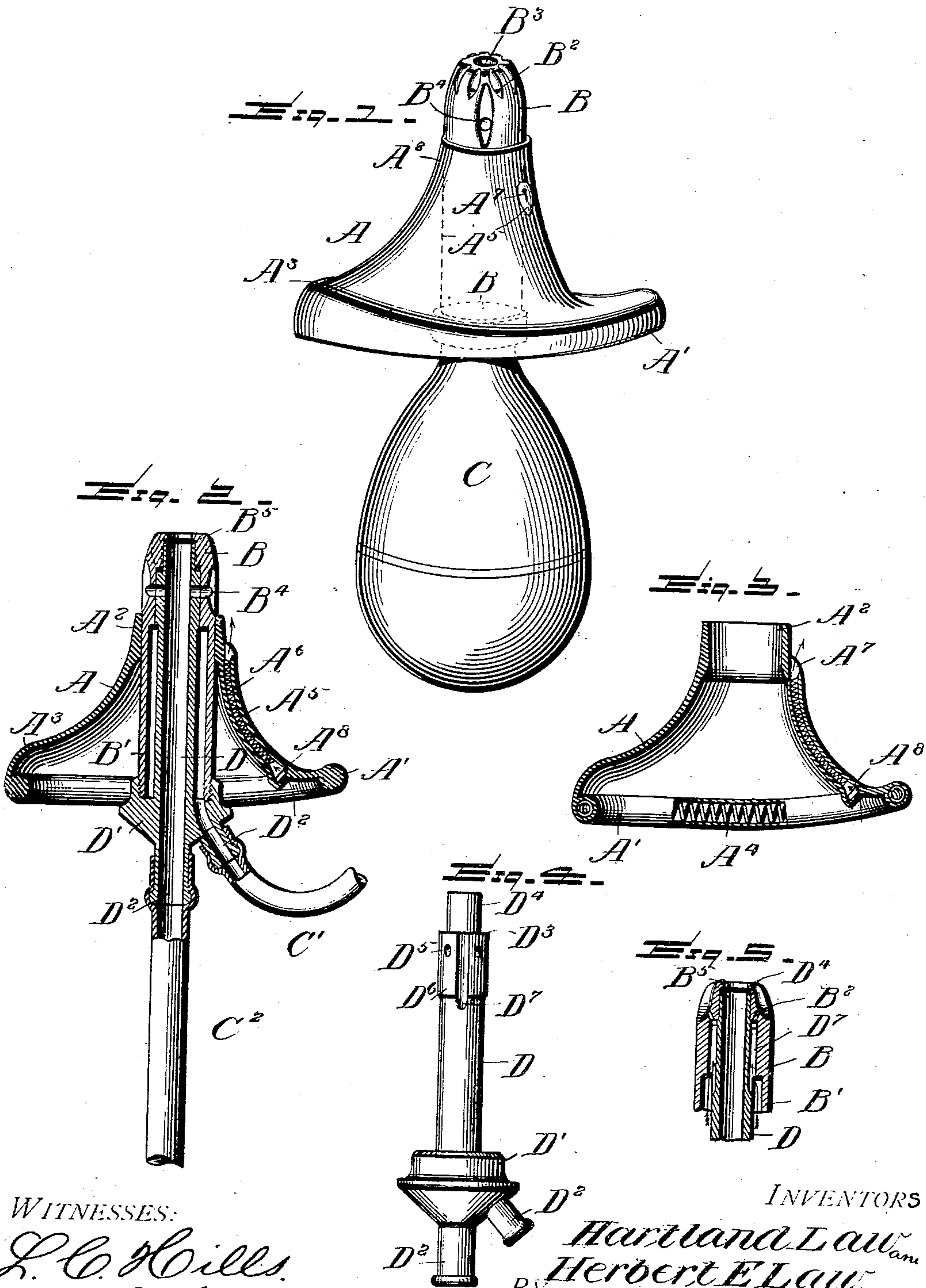
Patented June 25, 1901.

H. & H. E. LAW.

VAGINAL SYRINGE.

(Application filed Jan. 9, 1901.)

(No Model.)



WITNESSES:  
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# UNITED STATES PATENT OFFICE.

HARTLAND LAW AND HERBERT E. LAW, OF SAN FRANCISCO, CALIFORNIA.

## VAGINAL SYRINGE.

SPECIFICATION forming part of Letters Patent No. 677,091, dated June 25, 1901.

Application filed January 9, 1901. Serial No. 42,625. (No model.)

*To all whom it may concern:*

Be it known that we, HARTLAND LAW and HERBERT E. LAW, citizens of the United States, residing at San Francisco, in the county of San Francisco, State of California, have invented certain new and useful Improvements in Vaginal Syringes, of which the following is a specification, reference being had therein to the accompanying drawings.

10 This invention relates to vaginal syringes, and particularly to that class embodying reflux connections by which the wash is injected and ejected through the syringe-nozzle.

15 The invention has for an object to provide an improved construction of shield adapted to form a plug or tampon for the part to be washed and to effect a water-tight connection which will permit the desired movement of the nozzle without escape of liquid or inconvenience to the patient.

20 A further object is to provide this plug with air-inlet means to prevent the formation of a vacuum within the vagina or other part being treated by reason of the reflux action of the syringe.

25 A further important object of the invention is to provide a nozzle or pipe adapted for connection with either a bulb, a recurrent-pipe, or a fountain-syringe having a return discharge.

30 Another object of the invention is to improve the discharge means for this nozzle and also the connecting-pipe for use with a fountain-syringe.

35 Other and further objects of the invention will hereinafter appear in the following specification, and the novel features thereof will be pointed out in the appended claims.

40 In the drawings, Figure 1 is a perspective of the invention having a bulb applied thereto. Fig. 2 is a central vertical section showing the application of the inlet and discharge pipes from a fountain-syringe. Fig. 3 is a vertical section of the shield with parts broken away. Fig. 4 is an elevation of the connecting-pipe for a fountain-syringe, and Fig. 5 is a detail vertical section taken at right angles to the section shown in Fig. 2.

45 Like letters of reference refer to like parts in the several figures of the drawings.

The shield A is formed of any suitable flexible material—such, for instance, as rubber—

and is provided at its enlarged end with a stiffened edge A'. The opposite end of the shield is provided with a neck A<sup>2</sup>, adapted to 55 closely fit the exterior wall of the nozzle B. This shield is substantially oval in shape and formed at the lower posterior end with a raised portion A<sup>3</sup>, the object being to fit the shield to the shape of the body and the vaginal orifice into which the nozzle of the syringe is inserted. The stiffened edge A' may be made 60 solid, Fig. 2, or effected in any desired manner—for instance, by introducing therein a coiled spring A<sup>4</sup>—which renders the edge 65 flexible and permits movement of the nozzle without interfering with the connection of the shield.

In the ordinary syringe, where the shield or plug makes a water-tight closure with the 70 vaginal orifice, the escaping water by the return-pipe produces a throbbing very unpleasant for the patient and causes nervousness. Furthermore, when a bulb-syringe is used and the water is drawn back into the bulb 75 the suction thereby produced is very great and pulls the delicate organs out of position, thus causing permanent injury. To overcome this objection, the shield has been provided with an air-inlet provided with suitable 80 means to prevent the discharge of liquid through the inlet. As illustrating one form of such inlet, we have shown an inlet-tube A<sup>5</sup>, which extends from the interior of the shield to the exterior thereof. This tube may 85 be held open in any desired manner—for instance, by a coiled spring A<sup>6</sup>—and may be provided with any desired means for preventing the escape of liquid therethrough. The discharge end of this tube is shown in Fig. 1 90 as provided with a slit A<sup>7</sup> in its body, at the discharge end thereof, which permits the entrance of air and prevents the escape of liquid. If desired, any preferred form of valve may be placed in the tube—for instance, as 95 shown at A<sup>8</sup>, in Figs. 2 and 3.

The nozzle or pipe B is provided with a tubular extension B' and at its opposite end with injector-jets B<sup>2</sup> and a central discharge-channel B<sup>3</sup>, both of which communicate with 100 said extension. The nozzle is also provided with a discharge-aperture B<sup>4</sup>, disposed at a point back from its end, so as to drain all liquid possible adjacent to the shield. When



the nozzle is used in connection with a bulb, as shown in Fig. 1, the bulb may be applied to the lower threaded end of the extension B'. In this form or method of application the injected and ejected liquid may pass through the same channel.

When the nozzle is used in connection with the inlet-tube C' and discharge-tube C<sup>2</sup> used in connection with a fountain-syringe, a connecting-pipe D is applied by means of a collar D', engaging the threaded end of the extension B' and provided with inlet and discharge nipples D<sup>2</sup>, having independent channels, as shown in Fig. 2. The opposite end of this pipe D is provided with a shoulder D<sup>3</sup> and a plugging-sleeve D<sup>4</sup> beyond the same. Discharge-openings D<sup>5</sup> extend through the flange D<sup>6</sup>, formed at one side of the shoulder D<sup>3</sup>, and communicate with the central discharge-passage within the pipe. The space between the exterior of the pipe D and the extension B' communicates with the inlet-nipple and constitutes a feed-passage. This passage is closed at one end by the contact of the flange D<sup>6</sup> with the wall of the nozzle B; but suitable injector-channels D<sup>7</sup> are formed through the flange D<sup>6</sup>, so as to communicate with the injector-openings B<sup>2</sup>, which are disposed in alinement with the space beyond the shoulder D<sup>3</sup>, so as to secure an even distribution of liquid to the several openings. The plugging end B<sup>4</sup> of the pipe makes close contact with the wall B<sup>5</sup> at the end of the nozzle, thus preventing any communication between the inlet and discharge channel. When the nozzle is thus used, the liquid is injected only through the openings B<sup>2</sup>, and the ejection is solely through the central passage of the pipe D.

The operation and function of the flexible shield is to form a plug or tampon, so that liquid injected into the vagina may be held there at the will of the user, and also to allow the use of a syringe in a sitting or reclining position without wetting the clothing or couch. The thickened edge of the shield holds the same in proper shape to fit the body, and the flexible properties of the shield permit it to be adapted to any variation in the shape or form of the orifice into which it is introduced and also permits the nozzle to be moved into any desired position for washing the parts. An important feature of this shield is the air-inlet into the vagina while the water is being withdrawn therefrom, which prevents all suction or bubbling and the consequent unpleasantness and injury to the patient. The admittance of air allows the vagina to be entirely drained, which cannot be accomplished if a vacuum forms therein, as from one to three ounces will be retained in the body, according to the size of pipe used. It will also be noted that the objectionable suction heretofore experienced in the use of bulb-syringes is entirely obviated by the use of the present form of shield. The form of nozzle is also especially important in this art,

as it permits the use of either a bulb or fountain syringe by the application of the simple attachment for the connection of the inlet and discharge tubes. The use of the discharge-ejectors from the nozzle communicating with the central passage at a point below the injection-jets permits the complete draining of liquid from the vagina, while the tubular extension of the nozzle forms a convenient means of attachment for the coöperative devices. For this reason the invention contemplates the manufacture of the nozzle or the shield independent of the other parts, although in their coöperative relation very efficient results are attained.

It will be obvious that changes may be made in the details of construction and configuration of the several parts without departing from the spirit of the invention as defined by the appended claims.

Having described our invention and set forth its merits, what we claim, and desire to secure by Letters Patent, is—

1. A syringe shield or plug provided with an opening to tightly surround a syringe inlet and outlet nozzle, and an air-tube communicating with the opposite faces of the shield to prevent the formation of a vacuum within a cavity into which the syringe-nozzle is inserted; substantially as specified.

2. The combination with a syringe-nozzle having inlet and outlet ducts, of a shield formed of flexible material and provided with a reduced neck to embrace said nozzle, and an air-inlet tube extending through said shield adjacent to said neck and communicating with the cavity into which the syringe-nozzle is introduced; substantially as specified.

3. A flexible syringe-shield having a neck to embrace a nozzle, an air-tube extending from the inner to the outer surface of said shield to communicate with a cavity into which said nozzle is introduced, and means to prevent the escape of water through said tube; substantially as specified.

4. The combination with a syringe-nozzle having injector and discharge openings, of a shield having a neck to fit said nozzle and a flexible body with a stiffened outer edge, and an air-tube extending through said shield to communicate with a cavity into which said nozzle is introduced and discharging adjacent to said neck; substantially as specified.

5. A syringe-shield comprising a substantially oval body of flexible material having an elastic neck at its center, a coiled wire located within the outer edge of the shield to stiffen the same, and an air-tube extending through the shield and provided with a slit opening adjacent to the neck; substantially as specified.

6. A syringe-nozzle provided with discharge-apertures at its end and on the sides thereof and injection-apertures intermediate of said discharge-apertures, and having at its opposite end a threaded tubular extension for



connection with either a bulb or fountain attachment; substantially as specified.

5 7. A syringe-nozzle comprising a tubular member provided with a main discharge-passage and having at one end injection-apertures and auxiliary discharge-apertures located below the injection-point and communicating with the main discharge from the nozzle; substantially as specified.

10 8. A syringe comprising a tubular nozzle member having at one end injection-apertures and discharge-apertures located at opposite sides of said injection-apertures, a connecting-pipe adapted to be attached to said tubular member and to communicate with all of the discharge-apertures thereof, and an inlet connection communicating with a space between the tubular member and the connection-pipe to supply liquid to the injection-apertures; substantially as specified.

20 9. A syringe comprising a tubular nozzle member provided with injection-apertures and discharge-apertures located at opposite sides of said injection-apertures, a connecting-pipe comprising the discharge-tube and communicating with all discharge-apertures, a cap carried by said pipe and adapted to engage the lower end of the nozzle, and an inlet through said cap communicating with a space between said pipe and nozzle; substantially as specified.

30 10. A syringe comprising a tubular nozzle provided with injection-apertures and discharge-apertures located at opposite sides of said injection-apertures, a connecting-pipe

comprising a discharge-tube and communicating with all discharge-apertures, a cap carried by said pipe and adapted to engage the lower end of the nozzle, an inlet through said cap communicating with a space between said pipe and nozzle, and a shoulder on said pipe provided with apertures communicating with the lower discharge-apertures and having channels at its sides communicating with the injection-apertures; substantially as specified.

11. A syringe comprising a tubular nozzle provided with injection and discharge apertures, a connecting-pipe comprising a discharge-tube, a cap carried by said pipe and adapted to engage the lower end of the nozzle, an inlet through said cap communicating with a space between said pipe and nozzle, a shoulder on said pipe provided with apertures communicating with the discharge-tube and having channels therethrough communicating with the injection-apertures, a plugging-sleeve at the end of said pipe adapted to contact with the inner wall of the nozzle, a flexible shield having a neck embracing the outer wall of the nozzle, and an air-tube through said shield; substantially as specified.

In testimony whereof we affix our signatures in presence of two witnesses.

HARTLAND LAW.  
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Witnesses:

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