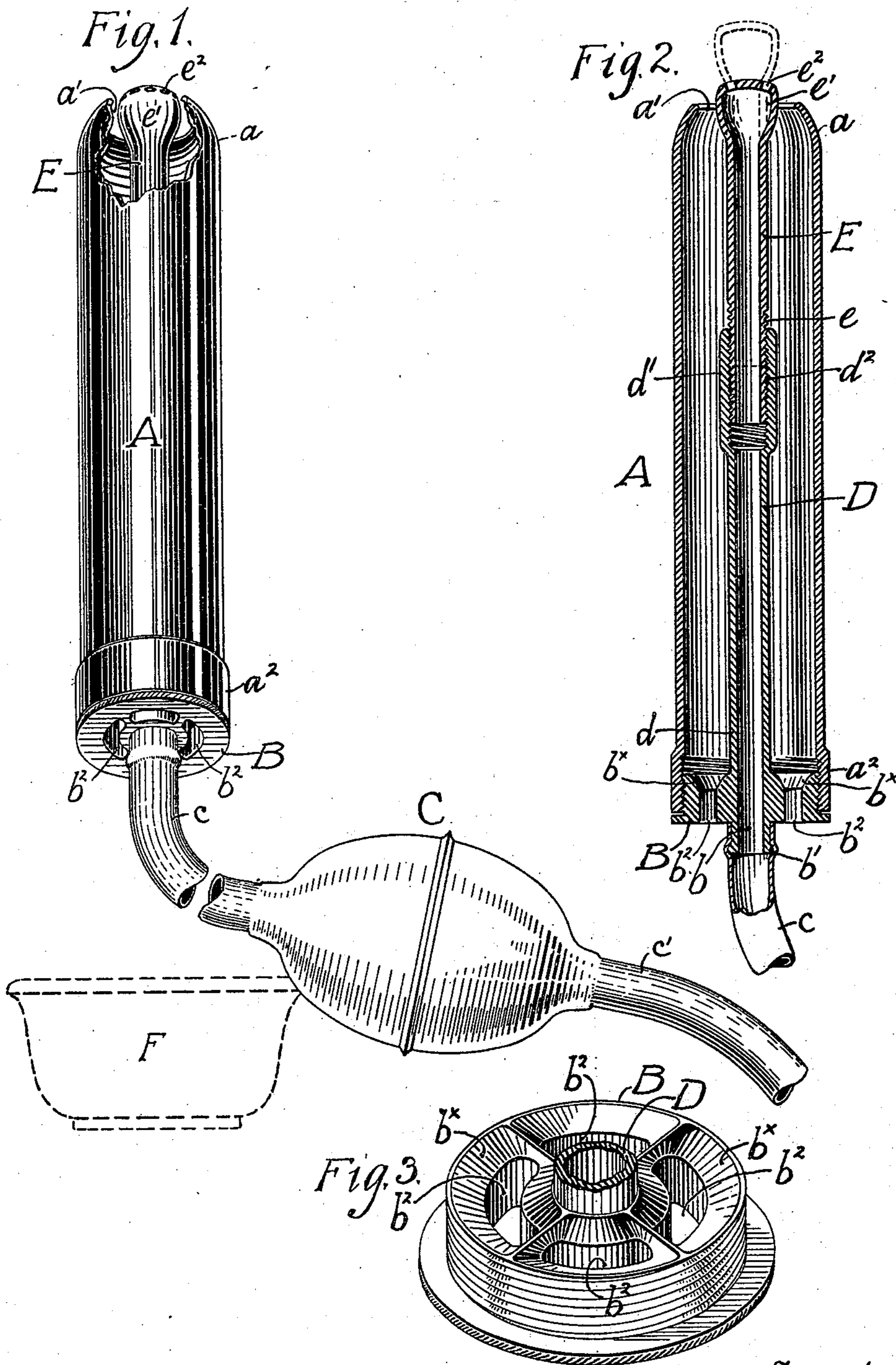


(No Model.)

F. L. WOODFORD.  
SYRINGE.

No. 551,070.

Patented Dec. 10, 1895.



Witnesses  
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# UNITED STATES PATENT OFFICE.

FRANK L. WOODFORD, OF KANSAS CITY, MISSOURI.

## SYRINGE.

SPECIFICATION forming part of Letters Patent No. 551,070, dated December 10, 1895.

Application filed January 5, 1895. Serial No. 533,958. (No model.)

*To all whom it may concern:*

Be it known that I, FRANK L. WOODFORD, a citizen of the United States, residing at Kansas City, in the county of Jackson and State of Missouri, have invented certain new and useful Improvements in Syringes; and I do hereby declare that the following is a full, clear, and exact description of the same, reference being had to the accompanying drawings, forming a part of this specification.

The object of my invention is to prevent the currents of water in a vaginal syringe to obstruct the discharge of the fluid from the syringe and the lodgment of foreign matter in the discharge-openings, and also to utilize the syringe for the application of liquid medicaments.

The invention consists in the novel combination and construction of parts, such as will first be fully described, and specifically pointed out in the claims.

In the drawings, Figure 1 is a view in perspective of the improved syringe with a portion of the end of the case broken away to show the bulb on the extensible portion of the syringe-nozzle and the orifice in the case, and also showing the liquid compression-bulb. Fig. 2 is a vertical sectional view in detail of the case and syringe-nozzle. Fig. 3 is a detail view in perspective of the threaded syringe-nozzle.

Similar letters of reference indicate corresponding parts in all the figures.

A represents a longitudinal case of any suitable rigid material which is of the same diameter from the end  $a^2$  nearly to the end portion  $a$ . In one end  $a$  of the case A is a circular fluid-return opening  $a'$ . The other end  $a^2$  is screw-threaded a short distance and said end is fitted with an externally-threaded boss B. Through the central portion of the boss B extends an opening  $b$ . To the outer end portion of the boss B and extending around the opening  $b$  is a flanged neck  $b'$ . Over the neck  $b'$  is fitted one end of a flexible conducting-pipe  $c$ . The other end of pipe  $c$  is connected with an elastic compression-bulb C. To the compression-bulb C is also connected one end of a fluid-supply pipe  $c'$ , the other end of which pipe extends to a proper source of supply of the liquid. To the inner portion of the boss B and extending around the opening  $b$  is rigidly

attached one end  $d$  of an extensible syringe-nozzle D. The other end  $d'$  of the syringe-nozzle D extends in an upward direction to a point about two-thirds the described distance toward the other end of the case A.

The diameter of end portion  $d'$  of syringe-nozzle D for a short distance is increased, so as to form a sleeve, which sleeve is provided with an internal screw-thread  $d^2$ . Within the sleeve formed by the end portion  $d'$  of the syringe-nozzle D is fitted the external screw-threaded end  $e$  of an extensible portion E, the other end of which extensible portion extends to the upper end of the case A and partially through the circular opening  $a'$  and is provided with a bulb  $e'$ , which is laterally perforated at  $e^2$ .

In the boss B in a line concentric with the syringe-nozzle D are a series of curved openings  $b^2$ , each opening extending through the boss in the longitudinal direction of the case A. The upper edges of the sides of the openings  $b^2$  extending from the circular screw-threaded edge portion of the boss are inclined in a downward direction toward each other, as at  $b^x b^x$ . The sides of the other openings  $b^2$  are inclined in like manner.

The case A is introduced within the vagina the required distance and the flow of liquid induced on the operation of the compression-bulb C, which liquid is ejected through the openings  $e^2$  in the bulb  $e'$  on the outer end of the extensible portion E of the syringe-nozzle D. The distention of the walls of the vagina by the case A is therefore uniform and coextensive with the said case, so that the discharge-openings in the bulb  $e'$  of the extensible portion of the syringe-nozzle D are kept perfectly free. Upon the discharge of the liquid from the bulb C through the syringe-nozzle D and bulb  $e'$  its escape is through the opening  $a'$  in the end  $a$  of the case and within the said case and also through the opening  $b^2$  in the boss B, and the eddying of the liquid is prevented by the inclined sides of said opening. The openings are thus unobstructed, and the liquid as it passes through the opening falls into the vessel F or other convenient receptacle beneath. The extension of the syringe-nozzle D to convey the bulb to a position beyond the end of the case is effected by turning the extensible portion E in the proper di-

rection. This enables direct application of liquid medicaments and laterally from the bulb. The adjustment of the syringe-nozzle and bulb to a position within the opening of the case A retards the quantity of the liquid ejected, so that a direct application of the liquid under the force communicated by the compressible bulb C will escape through the openings in the boss B unobstructed, while the area of irrigation is confined to that described of the fluid-return opening *a'*, and the regularity of the quantity of liquid ejected and discharged through the discharge-opening *b*<sup>2</sup> constantly maintained.

My invention is applicable to other drenching devices, nasal syringes, &c., and particularly such as employ return conduits for the fluid.

Having fully described my invention, what I now claim as new, and desire to secure by Letters Patent, is—

1. A vaginal syringe consisting of a longitudinal case having a fluid return opening at one end, a boss in the other end of said case having a central opening and a fluid induc-

tion pipe connected with said boss within said central opening, a syringe nozzle within said case connected with said induction pipe having separate parts one of said parts having one end portion provided with an interior screw threaded sleeve, and the other part provided with a screw threaded end adapted to fit within said sleeve, and perforations in its outer end said boss having curved discharge openings extending in a line concentric with said induction pipe and the sides of said openings inclined at an angle to each other and downwardly substantially in the manner and for the purpose described.

2. A nozzle supporting device for syringes consisting of a boss having curved discharge openings extending in a line concentric with and upon both sides of said syringe nozzle and the sides of said openings inclined at an angle to each other and downwardly substantially as and for the purpose described.

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Witnesses:

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