

S. S. RUMBERG & F. C. HARTTUNG.
VAGINAL SYRINGE.

APPLICATION FILED JUNE 16, 1911.

1,022,601.

Patented Apr. 9, 1912.

2 SHEETS—SHEET 1.

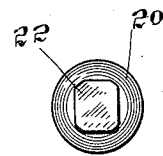
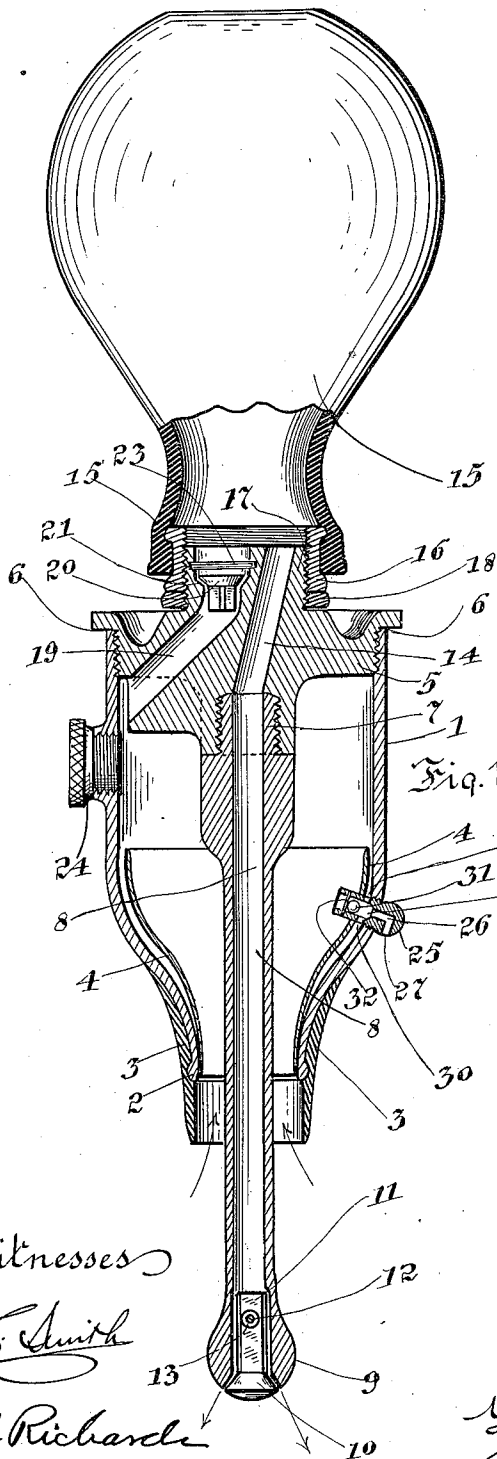


Fig. 2.

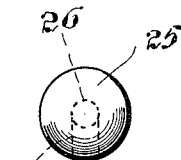


Fig. 3.

Witnesses
W. E. Smith
B. H. Richards

Inventors
Sven S. Rumberg
and
Felix C. Harttung
by Joshua R. Rumberg
their Attorney

S. S. RUMBERG & F. C. HARTTUNG.
VAGINAL SYRINGE.

APPLICATION FILED JUNE 16, 1911.

Patented Apr. 9, 1912.

2 SHEETS—SHEET 2.

1,022,601.

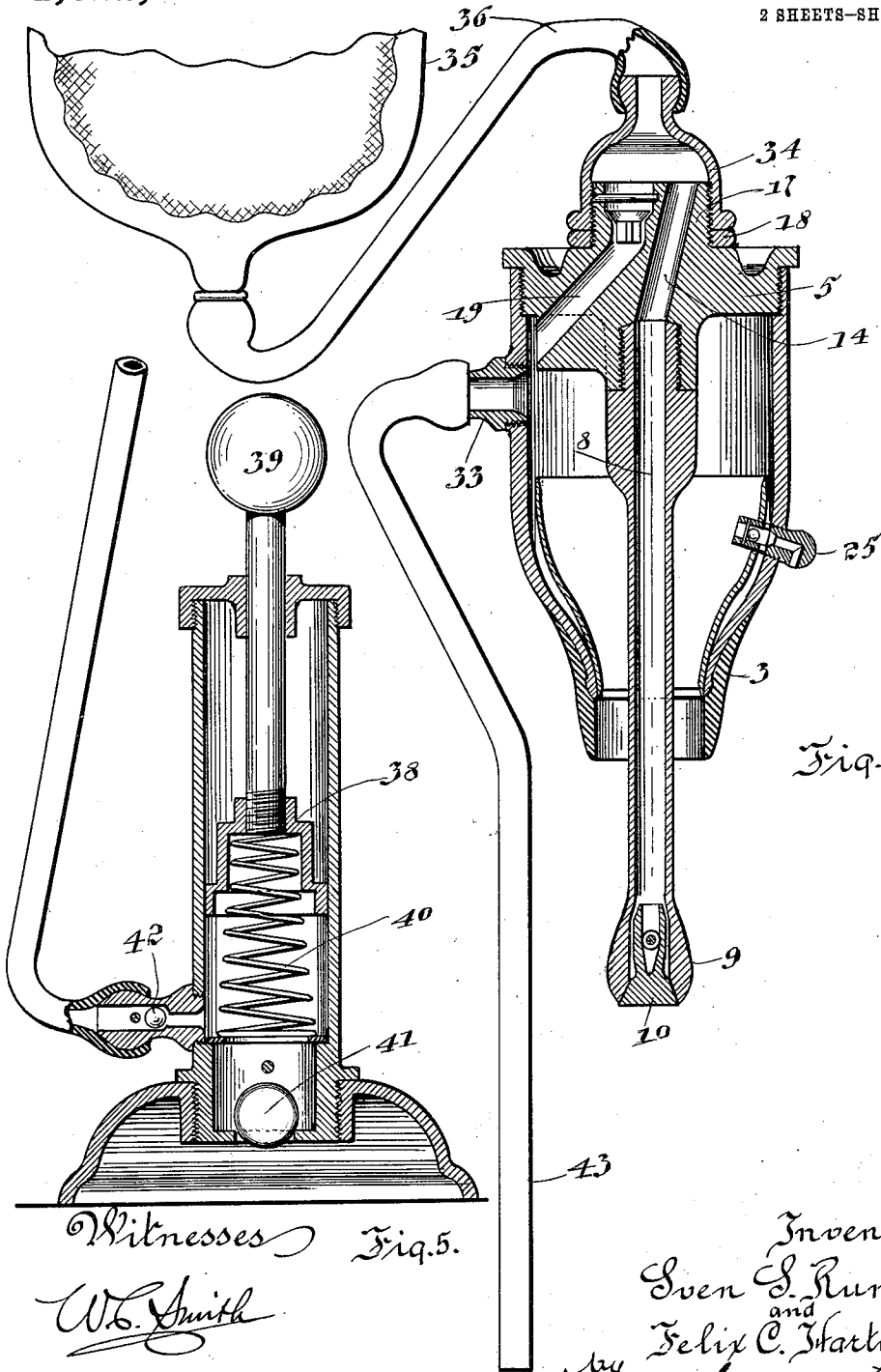


Fig. 4.

Fig. 5.

Witnesses
W. L. Smith
B. G. Richards

Inventors
Sven S. Rumberg
and
Felix C. Harttung
by
Joshua A. Horn
their Attorney

UNITED STATES PATENT OFFICE.

SVEN S. RUMBERG, OF BATAVIA, AND FELIX C. HARTTUNG, OF CHICAGO, ILLINOIS.

VAGINAL SYRINGE.

1,022,601.

Specification of Letters Patent.

Patented Apr. 9, 1912.

Application filed June 16, 1911. Serial No. 633,499.

To all whom it may concern:

Be it known that we, SVEN S. RUMBERG and FELIX C. HARTTUNG, citizens of the United States, and residents of the cities of Batavia and Chicago, counties of Kane and Cook, respectively, and State of Illinois, have invented certain new and useful Improvements in Vaginal Syringes, of which the following is a specification.

10 Our invention relates to improvements in vaginal syringes and has for its object the provision of a syringe of this character which shall be efficient in operation and convenient in use.

15 Our invention consists in the combinations and arrangements of parts hereinafter described and claimed.

Our invention will be best understood by reference to the accompanying drawings forming a part of this specification and in which,

Figure 1 is a sectional elevation of a syringe embodying our invention, Fig. 2 is a detail bottom plan view of a valve employed in the syringe, Fig. 3 is an end elevation of a vent plug, Fig. 4 is a sectional elevation showing a modified form of syringe, and Fig. 5 is a vertical section of a pump used in connection with said modified form.

30 The preferred form of construction as illustrated in the accompanying drawings comprises a cylindrical body portion 1 having a reduced end 2 on which is secured a soft rubber neck 3, the body being preferably of hard rubber. To prevent too rapid radiation of heat through the reduced end 2 and neck 3 a protection lining 4 is provided which substantially conforms to the shape of said reduced portion as clearly illustrated in Fig. 1. Screwed into the body 1 at one end thereof is a plug 5 having a shoulder 6 fitting the end surface of said body and forming a water-tight joint therewith. The interior of the plug 5 is internally threaded at the center thereof for the reception of the threaded end 7 of an axially disposed tube 8 which is smaller than the opening of the neck 3 as clearly shown. The tube 8 passes through the opening of the neck 3 and terminates in a nozzle 9 of rounded form. In this manner an annular passage is formed for the return of fluid into the body 1 as indicated by arrows in Fig. 1. A check-valve 10 having a stem 11 is provided in the nozzle 9,

and to limit the movement of said check-valve a pin 12 is passed through an aperture 13 formed in the stem 11. Fluid is discharged through the nozzle 9 as indicated by arrows, the check-valve 10 automatically closing to prevent return flow of said fluid. Registering with the tube 8 is a passage-way 14 which is inclined to said tube and in open communication with the rubber bulb 15 by means of which fluid contained therein is forced through said passage-way, and tube to the discharge nozzle 9. Inserted in the bulb 15 is an internally threaded nipple 16 which is readily screwed onto or off from a threaded boss 17 disposed axially on the exterior end of the plug 5. A locking nut or washer 18 is provided for effecting a tight connection between the nipple 16 and boss 17. As aforesaid fluid returns to the interior of the body 1 through the annular opening formed between neck 3 and tube 8, and in order that said fluid may return to the bulb 15 an inclined passage-way 19 adjacent the passage-way 14 is provided in the plug 5, there being a check-valve 20 to prevent outflow of fluid from the bulb 15. Check-valve 20 is adapted to seat on a conical seat 21 and is provided with a substantially rectangular stem 22 as shown in detail in Fig. 2. A diametric pin 23 is provided adjacent the check-valve 20 to limit the movement thereof as clearly shown in Fig. 1. A plug 24 is screwed into one side of the body 1, and into the other side is screwed a vent nipple 25 having an axial passage 26 and a radial passage 27 leading from the axial passage to atmosphere. A bore disposed in axial alinement with the passage 26 is formed in the nipple 25, there being a conical valve seat 29 at the juncture of said bore and passage. Diametrically opposite perforations 30 are provided to establish communication between the bore 28 and the space between the lining 4 and wall of the body 1 in order that air contained within said body may pass freely to atmosphere in advance of the return flowing of fluid into said body. A ball 31 limited in movement by a diametric pin 32 is seated on the conical valve seat 29 by means of the impact of the rush of fluid toward the nipple 25 after the air has escaped or partially escaped from the body 1. Thus leakage of fluid is prevented. It is apparent that when the device is held in the proper position during the op-

eration thereof that air will escape freely through the vent without moving the ball 31, but not so with the water or other fluid contained in the body 1 since the inertia of the ball is not sufficient to withstand the impact of the heavy liquid without seating on the seat provided therefor.

The syringe as described in the foregoing is particularly efficient for maintaining a circulation of fluid from the bulb, out through the discharge nozzle, and thence back to the bulb past the return check-valve, the fluid in this manner being used over and over again. But if it is desired to have a continuous flow of water or other liquid, the bulb is omitted and the syringe modified to be used in connection with a water faucet, hot water bag, or a pump as will be presently described.

The modified form of syringe as shown in Fig. 4 is similar in all respects to the preferred form except that instead of the plug 24 a nipple 33 is used. Also a coupling 34 is substituted for the nipple 16 of the preferred form. A water faucet, not shown, may be connected with the coupling 34, or a hot-water bag 35 may be connected therewith by means of a flexible hose 36. A pump comprising a cylinder, plunger 38, operating handle 39, return spring 40, and check-valves 41 and 42 may also be connected with the coupling 34 if it is desired to have an efficient self-contained outfit. In the operation of the modified form of syringe the fluid is continuously discharged through the nozzle 9, whence the same flows back through the annular passage into the body, and then to a suitable receptacle through the flexible hose 43.

Syringes of the construction and design set forth are simple of construction and efficient in operation.

While we have illustrated and described the preferred form of construction for carrying our invention into effect, this is capable of variation and modification without departing from the spirit of our invention. We therefore do not wish to be limited to the precise details of construction set forth, but desire to avail ourselves of such variations and modifications as come within the scope of the appended claims.

Having described our invention what we claim as new and desire to secure by Letters Patent is:

1. In a device of the class described, a hollow body reduced at one end, said body being provided with a vent in its walls, a tube secured in said body and projecting from said reduced end, said tube terminating in a nozzle, a check valve in said nozzle, and a means for forcing fluid through said tube, substantially as described.

2. In a device of the class described, a hollow body cylindrical at one end and re-

duced at the other, there being an opening in said reduced end, a plug inserted in the cylindrical end, a tube secured to the interior of said plug and projecting through said opening, said tube terminating in a nozzle, a check-valve in said nozzle, a passage-way in said plug communicating with said tube, a second passage-way in said plug communicating with the interior of said body, a check-valve in said second passage-way, a bulb connected to said plug and adapted to force liquid through said tube and nozzle, and a vent provided in the walls of said body, substantially as described.

3. In a device of the class described, a hollow body cylindrical at one end and reduced at the other, there being an opening in said reduced end, a plug inserted in the cylindrical end, a tube secured to the interior of said plug and projecting through said opening, said tube terminating in a nozzle, a check-valve in said nozzle, a passage-way in said plug communicating with said tube, a second passage-way in said plug communicating with the interior of said body, a check-valve in said second passage way, a bulb connected to said plug and adapted to force liquid through said tube and nozzle, a vent provided in the walls of said body, comprising a nipple projecting into and out of said body, an axial perforation in said nipple, a radial perforation communicating with said axial perforation and leading to atmosphere, and a bore in said nipple having a ball therein and leading to said axial perforation, substantially as described.

4. A device of the class described comprising a hollow body open at one end, a plug screwed in said body opposite the open end thereof, an axial tube secured to said plug and projecting through said open end, there being an annular opening formed between said tube and said open end, said tube terminating in a nozzle, an automatic check-valve in said nozzle to prevent the return flow of fluid escaping therefrom, two passage-ways in said plug one communicating with said tube and the other with the interior of said body, a check-valve in the last-named passage-way, a bulb coupling screwed to said plug the interior of which is in open communication with said tube and nozzle, a bulb secured to said coupling, and an air-vent plug secured in said body, substantially as described.

5. A device of the class described comprising a hollow body open at one end, a plug screwed in said body opposite the open end thereof, an axial tube secured to said plug and projecting through said open end, there being an annular opening formed between said tube and said open end, said tube terminating in a nozzle, an automatic check-valve in said nozzle to prevent the return

flow of fluid escaping therefrom, two pas-
sage-ways in said plug one communicating
with said tube and the other with the inter-
ior of said body, a check-valve in the last-
named passage-way, a bulb coupling screwed
to said plug the interior of which is in open
communication with said tube and nozzle,
a bulb secured to said coupling, an air-vent
plug secured in said body comprising in-
wardly and outwardly projecting portions,
a central bore, a ball in said bore, radial
openings connecting said bore with the in-
terior of the body, and a perforation leading
from said bore to atmosphere, said ball be-
ing adapted to close said perforation, sub-
stantially as described.

6. The combination of a syringe having a
hollow body, a plug in one end of said body,
a tube centrally secured in said plug and in

open communication with a passage extend-
ing therethrough, said tube passing through
an open end of said body, said opening being
of sufficient size to form an annular passage
around said tube, a discharge nozzle on the
end of said tube, means for forcing liquid
through said plug passage, tube and nozzle,
an outflow pipe in operative connection with
the interior of said body, and an air-vent
for the latter, substantially as described.

In testimony whereof we have signed our
names to this specification in the presence of
two subscribing witnesses.

SVEN S. RUMBERG.
FELIX C. HARTTUNG.

Witnesses:

JOHN BECKER,
AUGUST BARTELS.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents,
Washington, D. C."