

W. E. WILLIAMS.
 DILATOR AND APPLICATOR.
 APPLICATION FILED OCT. 26, 1907.

899,477.

Patented Sept. 22, 1908.
 2 SHEETS—SHEET 1.

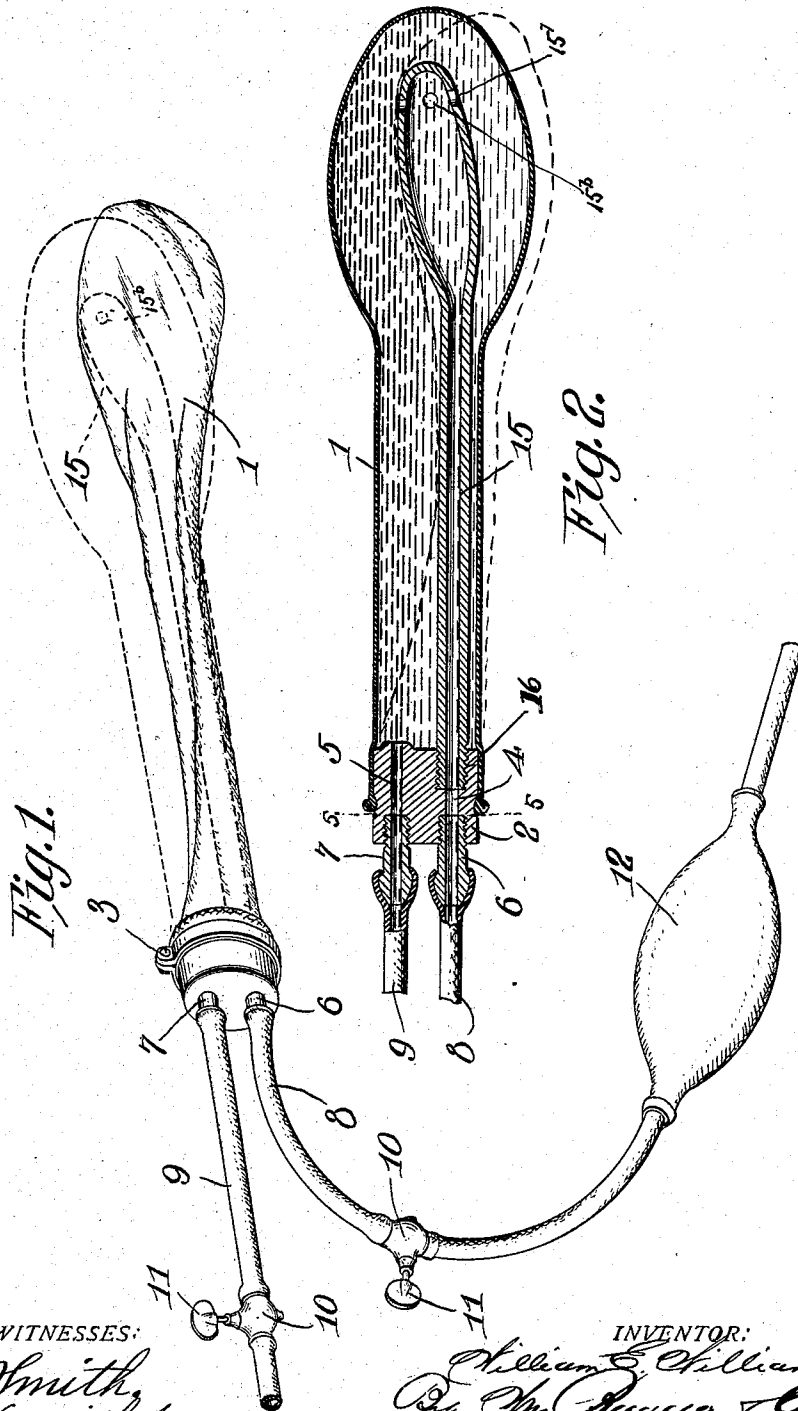


Fig. 1.

Fig. 2.

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Fig. 3.

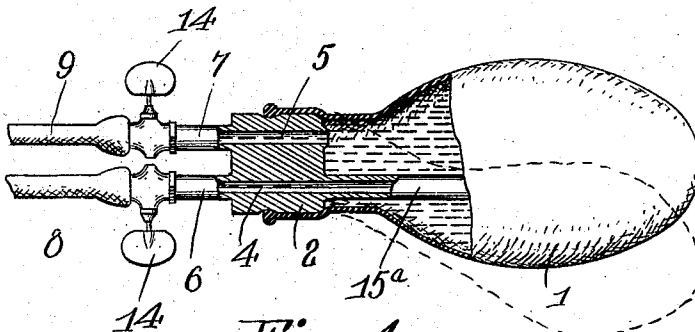
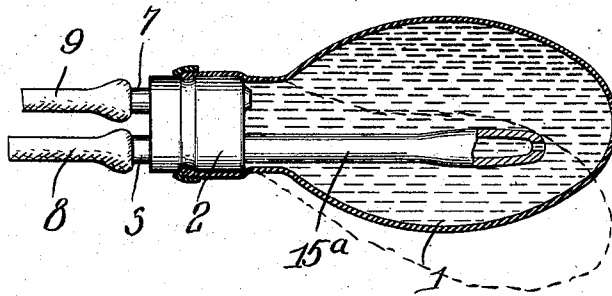


Fig. 4.

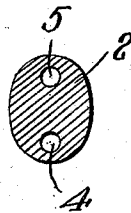


Fig. 5.

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UNITED STATES PATENT OFFICE.

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DILATOR AND APPLICATOR.

No. 899,477.

Specification of Letters Patent.

Patented Sept, 22, 1908.

Application filed October 26, 1907. Serial No. 399,321.

To all whom it may concern:

Be it known that I, WILLIAM E. WILLIAMS, a citizen of the United States, residing at Massillon, in the county of Stark and State of Ohio, have invented certain new and useful Improvements in Dilators and Applicators, of which the following is a specification.

This invention relates to devices for the treatment of diseases of the vagina, the rectum and other cavities of the body by the application of heat or cold accompanied, if desired, by dilation or distention of the parts, and further accompanied, if so desired, by local application of medicaments, such as ointments and unguents.

The invention has for a principal object to provide simple and convenient means for the local application of dry heat or cold, in contradistinction to the common form of such applications which consists in the local application of water or other liquid of the desired temperature, and which, apart from its inconvenience, is far from being effective; principally owing to the difficulty of maintaining for any length of time the desired temperature without at the same time continuing the flow of the liquid.

Another object of the invention is to provide convenient means for effecting local dilation or distention of the parts without danger of rupture or other injury.

A still further object of the invention is to provide a convenient means whereby local application of medicated substances may be made; the same being accompanied and rendered additionally effective by the simultaneous application of heat.

With these and other ends in view, which will readily appear as the nature of the invention is better understood, the same consists in the improved construction and novel arrangement and combination of parts which will be hereinafter fully described and particularly pointed out in the claims.

In the accompanying drawings has been illustrated a simple and preferred form of the invention; it being, however, understood that no limitation is necessarily made to the precise structural details therein exhibited, but that changes, alterations and modifications within the scope of the invention may be resorted to when desired.

In the drawing: Figure 1 is a perspective view, illustrating a preferred form of the invention as constructed with special reference to vaginal use. Fig. 2 is a longitudinal sectional view. Fig. 3 is a sectional elevation, showing the apparatus as constructed with reference to rectal use. Fig. 4 is a similar view, illustrating a modified form of the invention. Fig. 5 is a sectional detail view taken on the plane indicated by the line 5—5 in Fig. 2.

Corresponding parts in the several figures are denoted by like characters of reference.

In carrying out the invention I provide a water bag 1, which is made of distensible material, such as soft rubber, and which may be of any desired size and shape, according to the special purpose for which it is to be used; the bag shown in Figs. 1 and 2 being larger and more elongated than that shown in Fig. 3 of the drawings. It is obvious that bags may be made of different sizes and shapes adapted, for instance, for the nasal cavities or any other cavities of the body to which application is to be made. The bag is open at one end, and it is fitted upon a casing 2 of aluminum, hard rubber or other suitable material, and upon which it may be secured detachably by means of a band or clasp 3, as shown in Fig. 1 of the drawings; or said bag may be secured in position permanently by means of cement or in any other convenient and well known manner. The casing 2 is provided with longitudinal ducts or apertures 4 and 5, constituting, respectively, an inlet and an outlet; at the outer ends of these ducts or channels the casing 2 is provided with nipples or nozzles 6 and 7 which, in turn, may be connected with a source of liquid supply and with a waste receptacle by means of flexible ducts or tubes 8 and 9, said ducts being connected with the nozzles 6 and 7, respectively. In Fig. 1 of the drawings the flexible ducts or tubes 8 and 9 are provided with valve casings 10 having stop-cocks 11, whereby the inlet and outlet flow may be regulated. The supply tube 8 has been shown connected with the bulb of an ordinary bulb syringe, as shown at 12, which is used for forcing the liquid through the nipple 6, from a source of supply, not shown; it is obvious that an ordinary fountain syringe may be substituted

for the bulb syringe, in which event the bag of such fountain syringe will constitute the source of supply.

Under the construction illustrated in Fig. 4 of the drawings, the nipples 6 and 7 are provided with valves or stop-cocks, here designated 14; and the separate valve casings 10 may thus be conveniently dispensed with.

The casing 2 is provided with a nozzle 15 having discharge apertures, 15^b, near its outer extremity, and extending inwardly from the inlet duct 4; the latter may be provided at its inner end with a recess 16 in which the nozzle 15 may be detachably mounted by means of a screw thread or in any other suitable convenient manner. This nozzle may be of considerable length, and it may be suitably curved, as shown in Figs. 1 and 2, when the apparatus is to be used for vaginal treatment; for rectal treatments a smaller straight nozzle will be used, as shown at 15^a in Fig. 3; but, as hereinbefore stated, the size and shape of the nozzle may be varied to any extent without departing from the spirit of the invention. It will, furthermore, be seen that under the construction shown in Fig. 2 of the drawings the nipples 6 and 7 as well as the nozzle 15 are detachably connected with the casing 2, by means of screw threads; under the construction illustrated in Fig. 4, it is the intention to make the casing 2 integral with the nipples 6 and 7 and with the nozzle 15^a; these and other similar structural modifications are regarded as being entirely within the scope of the invention.

The operation of the invention will be readily understood from the foregoing description, when taken in connection with the drawings hereto annexed. It will be seen that the nozzle 15, which is of a size and shape specially adapted for the cavity which is to be treated, projects within the bag 1, and the latter may thus, by properly manipulating the nozzle, be readily introduced into the cavity. After effecting the proper introduction of the bag, liquid, such as water of the desired temperature, is permitted to enter through the duct 4 and nozzle 15, the inflow being regulated by means of the valve or stop-cock provided for the purpose, and the valve or stop-cock governing the outflow being temporarily closed to obstruct the outflow. The inflowing liquid will distend the bag to the desired point, after which the valve controlling the inlet may be closed. The tubular ducts 8 and 9 may now be disconnected from the respective nipples, and the bag may be left in the cavity for any desired period, or until the temperature of its contents has been changed to such an extent as to make renewal desirable or necessary, in which case the contents may be drawn out through the outlet while the bag is still in po-

sition, or the latter may first be removed, if preferred. It is obvious that, if desired, a circulation of liquid through the bag may be maintained while said bag is in position in the cavity that is being treated; and it is further obvious that, by properly regulating the area of the outlet opening, the bag may be maintained in a distended condition while liquid is circulating therethrough; it being likewise seen that the liquid enters the bag through the apertures near the terminal end of the nozzle, while it leaves the bag through the duct communicating with the opposite end; being thus compelled to traverse the entire length of the bag, constantly changing, and thus maintaining the desired temperature.

Local applications of various medicaments may be conveniently effected by applying such medicaments exteriorly to the bag before introducing the same into the cavity to be treated; and it will be well understood that the application of such medicaments will frequently be rendered very effective by the additional application of heat without moisture. The distention of the bag may be profitably utilized not only for the purpose of dilating, distending or stretching the tissues, but also for the purpose of exerting constant local pressure, as is frequently desirable. In brief, it will be found that the improved device will constitute a very simple and thoroughly effective means for treating diseases by the application of heat for the removal of congestive conditions, for the stretching of tissues, and for the application of pressure, when desired.

Having thus described the invention, what is claimed is:

1. In a device of the character described, a casing having two longitudinal ducts, a nozzle connected with one of said ducts and having apertures near its outer terminal, a distensible bag attached to the casing surrounding the nozzle, and means for admitting liquid to said bag through one of the ducts and discharging it through the other duct, whereby said bag may be distended longitudinally and circumferentially while liquid is circulating within the same.

2. In a device of the character described, a casing having inlet and outlet ducts or passages connected with a liquid circulating system, a distensible bag having its mouth or aperture secured upon the casing, said bag being free to expand longitudinally and circumferentially, and a nozzle connected with one of the ducts and extending into the bag toward the free end of the latter, and having apertures near its outer extremity.

3. In a device of the character described, a casing having two longitudinal apertures, nipples fitted in the outer ends of said apertures and a nozzle connected with the inner

end of one of the apertures, said nozzle being perforated at its outer end; a flexible distensible bag secured upon the casing and surrounding the nozzle; a source of water supply connected with one of the nipples; and
5 means for controlling the inflow and outflow of water through the two nipples.

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

WILLIAM E. WILLIAMS.

Witnesses:

GEO. S. LIVINGSTON,
BENNETT S. JONES.