

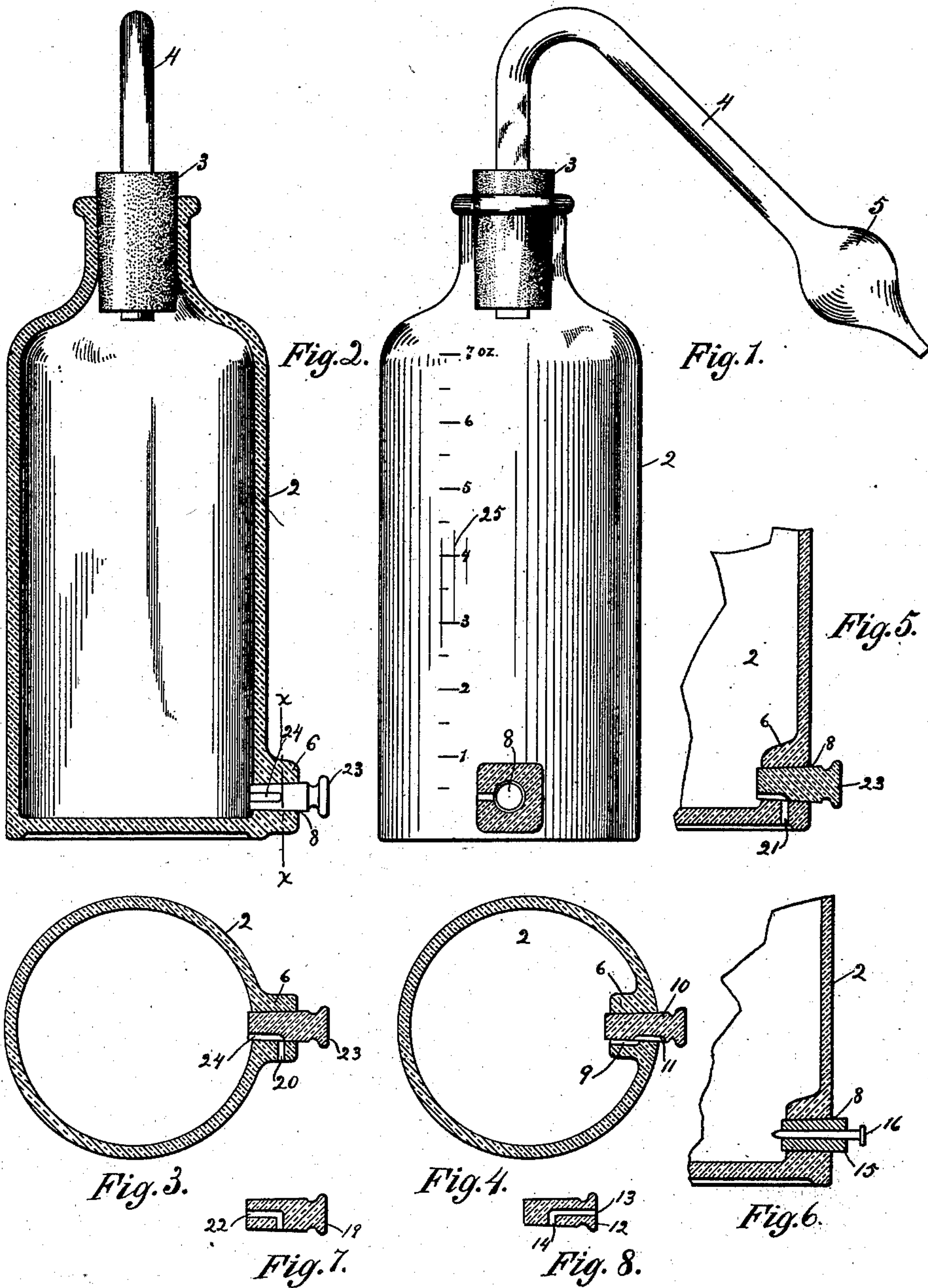
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F. W. MOFFITT.  
NASAL DOUCHE.

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NO MODEL.



Witnesses:  
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## UNITED STATES PATENT OFFICE.

FRED WILBUR MOFFITT, OF CHICAGO, ILLINOIS.

## NASAL DOUCHE.

SPECIFICATION forming part of Letters Patent No. 750,297, dated January 26, 1904.

Application filed February 24, 1903. Serial No. 144,688. (No model.)

*To all whom it may concern:*

Be it known that I, FRED WILBUR MOFFITT, a citizen of the United States, residing at Chicago, Cook county, Illinois, have invented certain new and useful Improvements in Nasal Douches, of which the following is a specification.

This invention relates to medical appliances, and has particular reference to douches and insufflators.

The general object of the invention is to provide a douche conforming structurally, as nearly as possible, to actual requirements and possessing desiderata which have been absent, so far as I am aware, from appliances of this character.

One of the objects of the invention is to eliminate the necessity of tubes projecting into the body of the reservoir, which are an obstruction therein, which are necessarily fragile and liable to break, even with careful handling, which clog up and require frequent cleaning, &c.

Another object of the invention is to provide a douche which shall be convenient to handle and conform to natural service conditions.

Another object is to provide a douche-reservoir which shall be well adapted as a mixing and measuring vessel into which the different medicinal compounds may be poured in correct proportions or in which liquids may be medicated and stirred without thereby obstructing, breaking, or clogging up the air or liquid tube system, whereby not only economy may be effected in the use of valuable drugs by obviating the spilling of medicine in pouring from vessel to vessel in the ordinary manner, but insuring neat and cleanly handling by obviating the spilling of medicine upon the hands and face of the patient through the air-tubes when the douche is applied to nose or ear passage.

So far as I, who am an M. D., am aware, the prevailing form of douche heretofore constructed has required an air-tube extending through the stopper or upper end of the reservoir. The location of the air-inlet at the top of the reservoir has always been considered inconvenient and objectionable on account

of that location being inaccessible or awkward by reason of the fact that the patient must usually regulate or control the flow of liquid through the passages to be medicated by covering and uncovering the end of the air-tube with the thumb or finger. Again, in the common form of air-tube extending into the body of the reservoir some liquid will unavoidably remain therein, which when the reservoir or bottle is reversed during treatment is spilled upon the patient's face. Notwithstanding these generally-admitted faults the old form of construction for transparent or glass douches has been adhered to and no doubt on account of the impracticability heretofore experienced in circumventing the difficulty in connection with glass reservoirs.

In my invention I have overcome the foregoing objections by providing an air-inlet at the most convenient and natural portion of the reservoir and a novel construction of reservoir which permits the drilling of an opening at or near the bottom of a bottle-form reservoir, thus producing a comparatively inexpensive glass douche of the highest efficiency and with a much greater range of uses than that possessed by appliances of this character now in general use.

Generally speaking, my invention consists in a preferably bottle-form reservoir provided with the usual perforated cork or stopper and a liquid or nasal tube extending through said stopper only and said reservoir having at or near its bottom an air-inlet and valve.

The invention further consists in a reservoir having at or near its bottom an enlarged portion, knob, or protuberance suitably apertured for a stopper.

The invention further consists in a reservoir having an enlarged, thickened, or strengthened portion suitably apertured and novel valve means for regulating the admission of air to the reservoir.

The invention further consists of a reservoir, as described, provided with a measuring-scale, and, further, in various details of construction and in combinations of parts, all as hereinafter more fully described, and particularly pointed out in the claims.

My invention will be more readily under-



stood by reference to the accompanying drawings, forming a part of this specification, and in which—

Figure 1 is an elevation of a douche embodying my invention. Fig. 2 is a partly sectional view taken on a plane at right angles to the plane of Fig. 1. Fig. 3 is a section on the line *xx* of Fig. 2. Fig. 4 is a sectional plan view illustrating a modification wherein the enlarged portion is within the reservoir, which would in elevation appear substantially as Fig. 1. Figs. 5 and 6 are fragmentary elevations of the interior enlargement provided with different forms of stoppers and valves; and Figs. 7, 8, and 9 are different forms of valve-stoppers.

In the drawings, 2 represents a bottle-form reservoir provided with a cork 3 or stopper, made of any suitable material, in which is the nasal or ear tube 4, on the end of which is a bulb 5. This tube is bent in the usual manner at a suitable angle of curvature for directing the flow from the reservoir upwardly when the latter's position is reversed. In the lower part of the reservoir 2, which necessarily must be made out of glass or other transparent material, is a boss or thickened portion 6, formed by thickening the wall of the reservoir either inwardly or outwardly, both methods being shown in Figs. 3 and 4, as well as the other reservoir views. Extending through this thickened portion is an aperture 8, which may be drilled in a blown bottle or made by a special process, which will be the subject of a separate application. The boss or thickened portion 6 being preferably a portion of and supported by both the wall and bottom of reservoir is well adapted to withstand the operation of drilling a hole therein, which would not be possible in a thin and highly-transparent body like physicians' appliances of this nature. The enlargement also provides for a valve-seat of the proper depth.

In connection with the enlargement 6 I have illustrated various means of admitting air therethrough by providing lateral apertures communicating with the aperture 8 and suitable valve-stoppers therefor. In Figs. 1 to 5, inclusive, lateral apertures are shown, while in Fig. 6 only the aperture 8 for the stopper is shown. Fig. 9 represents a valve-stopper adapted for the aperture 8 in Fig. 6, and Fig. 4 illustrates a simple and inexpensive method of modifying the simple aperture 8 by providing a small groove 9, extending inwardly from a point about midway in the opening 8. This surface groove is well adapted to be made with the aid of an electric pen, a small grinding-stone, and in numerous other simple ways. A plain stopper 10, provided with a surface groove 11, overlapping the inner end of groove 9 and extending beyond the outer wall of the reservoir, provides an inexpensive and convenient valve. By rotating the stopper 10 so

that the groove 11 does not register with groove 9 the continuous passage formed by said grooves is interrupted by the solid portion of the stopper.

Numeral 12, Fig. 8, represents another form of stopper or valve adapted for the reservoir construction shown in Fig. 4. Same is provided with a central aperture 13, communicating with a side opening 14, adapted to register with the groove 9.

15, Fig. 6, represents a plain cork provided with a simple needle-plug 16, which may be withdrawn to admit air, while the cork 15 itself may be withdrawn for the purpose of cleaning the interior and bottom of the reservoir.

Numeral 17, Fig. 9, represents a valve-stopper adapted to be moved longitudinally to admit air instead of being rotated, as in the case of the valve-stoppers above referred to. The stopper 17 is provided with one or more tapered grooves 18, normally wholly within the outer wall of the reservoir when the stopper is fully seated. This form of valve-stopper is also adapted for the plain opening 8 without lateral apertures. When fully seated, it is obvious that by pulling the stopper 17 outwardly the tapered groove or grooves 18 will be uncovered by the walls of the aperture 8 and the size of the air-passage increased to the extent at which the stopper 17 is pulled out. If a slow discharge through the nasal or ear tube 4 is desired, the small or outer end of the aperture 18 is uncovered, and for a more rapid flow the stopper may be drawn out farther or removed entirely.

19, Fig. 7, represents a form of stopper and valve adapted for the enlargement 6 when same is laterally apertured and when said enlargement is either on the exterior or interior of the reservoir.

Fig. 3 represents the enlargement 6 on the exterior of the reservoir and laterally apertured at 20. Fig. 5 illustrates the same enlargement on the interior of the reservoir and an aperture 21, communicating with the opening 8 from below or the bottom of the reservoir. The end and side aperture 22 in valve-stopper 19 is adapted to register with either the opening 20 or the opening 21. The stopper 23, Fig. 3, is a plain stopper provided with a surface groove on its inner end somewhat similar to the groove 11 in stopper 10. This inner surface groove 24 registers, as shown, at its outer end with the aperture 20, and by rotating the stopper 23 the aperture 20 will be closed by the solid portion of the stopper. The stopper 23 is likewise, as shown in Fig. 5, adapted for use in connection with the bottom aperture 21. In Fig. 1 the groove 24 in stopper 23 is clearly shown. Formed in or on the body of the reservoir 2 by any suitable method is a graduated scale 25, which enables the measurement and mixing of medicaments and solvents in the douche



direct without the employment of a separate vessel and the attendant inconvenience and waste.

As will be noted, there are no frail tubes within the body of the reservoir to obscure and obstruct the interior space, by reason of which the douche is peculiarly adapted to receive the unmixed medicaments and solvents and serve as a mixing vessel. Where an air-tube extends through the stopper 3 and medicine in powder form is poured into the reservoir preparatory to pouring the solvent or liquid thereupon, the powder is apt to clog up the air-tube, or undissolved particles in the latter are held near the end of the tube and wasted with the waste of some liquid unavoidable through such an air-tube. Again, a reservoir with a fragile air-tube is not adapted to be shaken with powder and liquid, as the operation is very apt to break the glass air-tubes. In the old forms of douches, therefore, the powder or medicament and liquid must be mixed in a separate vessel, which not only necessitates the use of a plurality of vessels, but is attended with waste in the mixing and in pouring the mixture into the douche. When, on the other hand, the powder or medicament may be more conveniently mixed with the diluent or liquid in the douche, there is no waste of medicine, as the diluent or liquid may be poured in upon the powder or medicament in exact proportions or quantities with the aid of the graduated scale 25. The comparatively large passage through the nasal or ear tube 4 is not exposed to clogging by the mixing operation, like a tube extending into the mixing-chamber, and being comparatively much stronger is not subject to breakage, like air-tubes, the latter therefore being the chief source of annoyance and expense by reason of their comparative weakness and the necessarily careful handling required in withdrawing or inserting the stopper or in the general handling of the douche.

My douche-reservoir is also very convenient for the operation of cleaning same, all parts of the interior thereof being accessible with the aid of the lower aperture entering the reservoir in a plane at right angles to the plane of the upper opening. With the aid of a tube connection between the aperture 8 and an ordinary faucet a sharp stream of water may be caused to play directly upon the bottom of the reservoir and around its lower interior to dislodge sticky sediment heaviest in that part of the interior, and the larger opening through the neck of the reservoir affords in this connection a free outlet for the water thus injected, so that the full force of the stream may play upon the lower interior of the reservoir without being interfered with by first meeting a greater or lesser quantity of residual water held in the reservoir for want of such free outlet. This is especially

convenient in an apothecary's or physician's laboratory, where douches must be cleaned often and perhaps in large numbers and where the necessary conveniences for such faucet connection as described are available.

The chief advantages of my invention reside in the fact that when the reservoir is inverted for douching the nasal or ear passages the air-opening is conveniently located for manipulation by the hand grasping the douche. Ordinarily both hands must be used—one to hold the reservoir and the other to control the air-opening near the nasal-tube—which awkward, inconvenient, and inaccessible arrangement is obviated in my invention. With the use of the latter, however, the hand that grasps the body of the douche may very conveniently control the air-opening, leaving the other hand free to stop up the nostril, say, not occupied by the nasal tube, when it is desired to temporarily retain a medicated liquid in the head-passages or to force said liquid farther into said passages than would be possible with the unoccupied nostril open.

In addition to functions above described for which my invention is adapted it is also well fitted for use as an insufflator for forcing medical powders upon the membrane of, for instance, the nasal and post-nasal passages by attaching the flexible tube of an ordinary compressible rubber bulb or air-pump to the aperture 8 and placing a suitable quantity of powder in the reservoir. This powder may be supplied to the reservoir in a comparatively large quantity or a very small quantity and the latter disposed either near the lower or near the upper opening or therebetween. By proper manipulation of said air-bulb and by tipping the reservoir at a suitable angle such dry powder may be forced through the tube 4 and the passages to be medicated in large or small quantities or in a dense or rarefied volume and with varying degrees of force. The relative positions of the openings in the top and bottom of reservoir permit the disposition of the powder between the openings, as aforesaid, in a manner permitting the accomplishment of the desired degree of insufflation which would not be possible if the air were forced in near the point of exit of the powder from the reservoir.

The slight additional cost, if any, of the lower enlargement and opening or openings therein is more than compensated for in the saving or omission of the fragile air-tube so frequently broken in service and transportation. It is obvious that while my invention is ordinarily preferably used in the manner above indicated it is well adapted for reversal as to the functions of the openings into the reservoir and that modifications may be made in the minor details thereof by one skilled in the art without departing from the spirit of my invention, and I therefore do not



confine the latter to the specific construction herein shown and described.

Having thus described my invention, I claim as new and desire to secure by Letters Patent—

5 1. A nasal douche comprising a transparent reservoir having openings at its opposite ends, an apertured stopper adapted to contain a nasal or ear tube for one of said openings, a boss near the bottom of said reservoir provided with intersecting apertures, one there-  
10 of communicating with the exterior of said reservoir when the other aperture is closed, a valve seated in one of said apertures and controlling both thereof, and means upon the  
15 body of said reservoir for measuring contents therein.

2. A nasal douche having a boss near its bottom, oppositely-disposed medicine and air inlets in the body of said reservoir, one of  
20 said inlets extending through said boss, said inlets being directed in planes at right angles to each other, an apertured stopper for one of said inlets and a rotary valve seated in said boss-inlet controlling the flow of medicine out  
25 of the other inlet.

3. A nasal douche, comprising a reservoir having an upper mouth and provided with a boss, an air-inlet through said boss, a trans-  
30 verse aperture extending through the side of said boss and communicating with said air-

inlet and a stopper and a tube for the mouth of said reservoir.

4. A nasal douche, comprising a reservoir having an upper mouth and a projecting boss at its bottom, an air-inlet in said boss com- 35 municating with the interior of the reservoir, a transverse valve-aperture extending through the side of said boss and communicating with said inlet and the valve for said inlet controlling said aperture. 40

5. A nasal douche comprising a reservoir having an upper mouth or opening and a lower enlargement provided with an air-inlet extending therethrough and through the wall of said reservoir, a passage extending through 45 one side of said enlargement, an apertured stopper and tube for said mouth adapted, respectively, to serve as a filler-opening and a discharge-outlet and a rotary valve controlling said inlet and passage for admitting and 50 controlling the quantity of air through the lower part of said reservoir.

In testimony whereof I have hereunto set my hand in the presence of two subscribing witnesses.

FRED WILBUR MOFFITT.

Witnesses:

J. W. BECKSTROM,  
W. P. OWENS.