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E. S. ANTISDALE.

APPARATUS FOR APPLYING MEDICINAL WASHES TO THE NASAL CAVITY.

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Fig. 3.

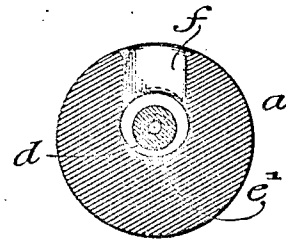


Fig. 1.

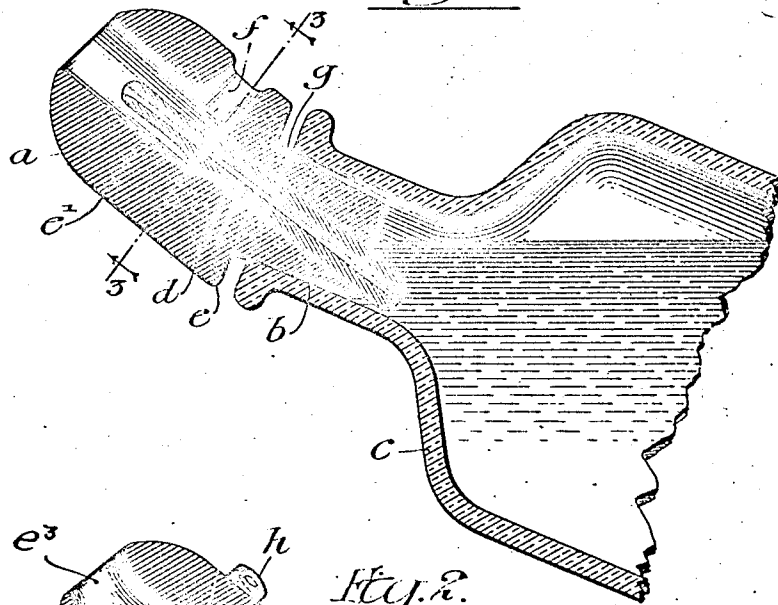
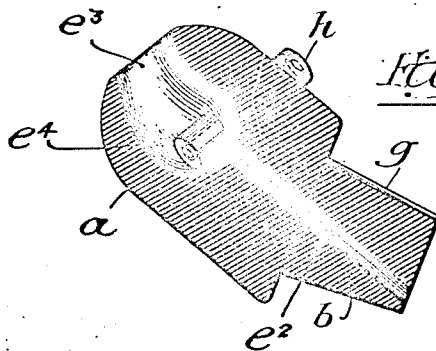


Fig. 2.



Witnesses:

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APPARATUS FOR APPLYING MEDICINAL WASHES TO THE NASAL CAVITY.

No. 895,141.

Specification of Letters Patent.

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To all whom it may concern:

Be it known that I, EDWIN S. ANTISDALE, a citizen of the United States, and a resident of Chicago, county of Cook, and State of Illinois, have invented a certain new and useful Apparatus for Applying Medicinal Washes to the Nasal Cavity, of which the following is a specification.

The improvement relates to an apparatus for applying medicinal washes and seeks to provide a simple construction by which medicinal or antiseptic washes may be readily and effectively applied to the nasal cavity by inhalation.

The invention consists in the features of construction and arrangement of parts hereinafter set forth, illustrated in the accompanying drawing and more particularly pointed out in the appended claims.

In the drawing Figure 1 is a longitudinal section of one form of the improved apparatus shown in the position in which the device is used. Fig. 2 is a similar view of a modified form of the device. Fig. 3 is a detail section on line 3—3 of Fig. 1.

At the present time medicinal and antiseptic washes are usually applied to the nasal cavity by means of a spraying device having a bulb or other means for supplying the air under pressure to the bottle or other receptacle containing the liquid used. The liquid from such a device is sprayed from the nozzle thereof in straight lines only, and cannot be readily directed over the surfaces of the tortuous passage of the nasal cavity. I have found that the suction power of the lungs may be employed for this purpose and that, by substituting the inhalation of the user of the device for the air pressure from the bulb or the like, the liquid or wash will follow the tortuous passage of the nasal cavity and be readily applied to the remote portions thereof.

The improved apparatus comprises a suitable nozzle shaped to snugly fit the nostril of the user and which may or may not be formed upon the receptacle or container for the medicinal liquid or wash. Preferably, however, as shown, the nozzle *a* is formed separately and is provided with a conical portion *b* adapted to fit the mouth of any ordinary bottle *c* or like receptacle which holds the liquid to be applied. The nozzle *a* and portion *b* are preferably formed of comparatively soft rubber and the outer end of the nozzle is rounded and of suitable shape and

size to snugly fit the nostril of the user. By having the part *b* of the nozzle conical, the apparatus may be snugly fitted into bottles or receptacles having mouths of different size. The portion *b* projects from the nozzle *a* at a slight angle to the axis thereof, so that when the apparatus is held in position for use, as shown in the drawing, the nozzle will project upwardly as indicated. The nozzle is provided with a passage for the discharge of liquid therethrough and with an air inlet opening into said discharge passage and preferably also with another air inlet opening into the bottle or receptacle. Preferably, a tube *d*, formed of hard rubber or the like and having a bore of small size, is arranged within the discharge passage *e* of the nozzle. The tube *d* snugly fits the inner portion of the discharge passage, but the outer portion *e'* of the discharge passage is somewhat enlarged, and the outer end of the tube *d* may be slightly reduced, as shown, so that it is spaced or separated from the walls of the outer portion of the discharge passage.

The air inlet *f* for the discharge passage opens into the inner end of the enlarged portion *e'* thereof. This vent leads from the exterior or side of the nozzle *a* and from that portion of the nozzle which is uppermost when the apparatus is held in position for use, as shown in the drawing. This air inlet is preferably somewhat elongated in circumferential direction, as indicated in Fig. 3, so that the flow of air therethrough may be regulated by the user by closing up the inlet *f* more or less with his finger. The outlet end of the tube *d* terminates midway between the outlet of the discharge passage and the air inlet *f*. The outlet portion of the discharge passage is preferably arranged on one side of the center of the nozzle so that, when the apparatus is held in position for use as shown in the drawing, the lower lip of the outlet projects beyond the upper lip thereof. The air inlet to the receptacle or bottle is readily and conveniently formed by providing the conical portion *b* with a shallow, longitudinally extending groove *g* which is in line with the air inlet *f* or on the side of the portion *b* which is uppermost when the apparatus is held in position for use.

In operation, the apparatus will be held in the position shown in the drawing with the air inlet *f* and air vent *g* uppermost, and the nozzle *a* is applied snugly to the nostril of the user at one side, while the other nostril is

closed by pressure of the finger. By inhalation, the liquid or wash is drawn through the tube *d* and air is drawn from the atmosphere through the inlet *f* and about the outlet of the tube *d* so as to break up the liquid issuing therefrom more or less into a spray. With the improved device it is found that the medicinal wash is carried by the air through the passage of the nasal cavity and effectively applied to the surfaces thereof. For effective operation, it will be found that the air inlet *g* and the bore of the tube should be quite small. In the form shown in Fig. 2, the tube *d* is dispensed with and the nozzle provided with a discharge passage, the inner portion *e*² of which is quite small and the outer portion *e*³ of which is enlarged and provided with a depression *e*⁴ on its underside. An air inlet tube *h* extends through the wall of the nozzle and through the part which is uppermost when the device is in position for use and opens below the outlet of the small portion *e*² of the discharge passage and adjacent the depression *e*⁴ of the enlarged portion *e*³ of the discharge passage. The operation of this form is similar to that previously described.

It is obvious that changes may be made in the details set forth without departure from the essentials of the invention.

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

1. An inhaler for applying medicinal washes to the nasal cavity, comprising a receptacle provided with a suitable nozzle having a discharge passage and provided with air inlet passages leading from the atmosphere, one of said air inlet passages opening into said discharge passage intermediate its end, and the other opening into the receptacle, substantially as described.

2. An inhaler for applying medicinal washes to the nasal cavity, comprising a suitable nozzle having a portion adapted to fit

the mouth of a bottle or like receptacle, said nozzle having a discharge passage for the liquid and air inlets leading from the exterior thereof and opening respectively into said discharge passage and into the bottle, substantially as described.

3. An apparatus for applying medicinal washes to the nasal cavity by inhalation, comprising a receptacle provided with a suitable nozzle having a discharge passage extending therethrough and an air inlet leading from the exterior thereof and opening into said passage, a discharge tube in said passage having its outer portion separated from the wall thereof and its outlet end between said air inlet and the outlet end of the passage, substantially as described.

4. An inhaler for medicinal washes, comprising a suitable nozzle having a portion for engaging the mouth of a bottle and provided with a discharge passage extending therethrough, with an air inlet leading from the exterior thereof and opening into said passage and a tube in said passage having its outlet end separated from the wall of the passage and arranged between the outlet thereof and said air inlet, substantially as described.

5. An inhaler for medicinal washes, comprising a suitable nozzle having a conical portion for engaging the mouth of a bottle and provided with a discharge passage extending therethrough and an air inlet leading from the exterior thereof and opening into said passage, substantially as described.

6. An inhaler for applying medicinal washes to the nasal cavity, comprising a receptacle provided with a suitable nozzle having a discharge passage for the liquid and an air inlet leading from the atmosphere and opening into said discharge passage intermediate its ends, substantially as described.

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Witnesses:

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