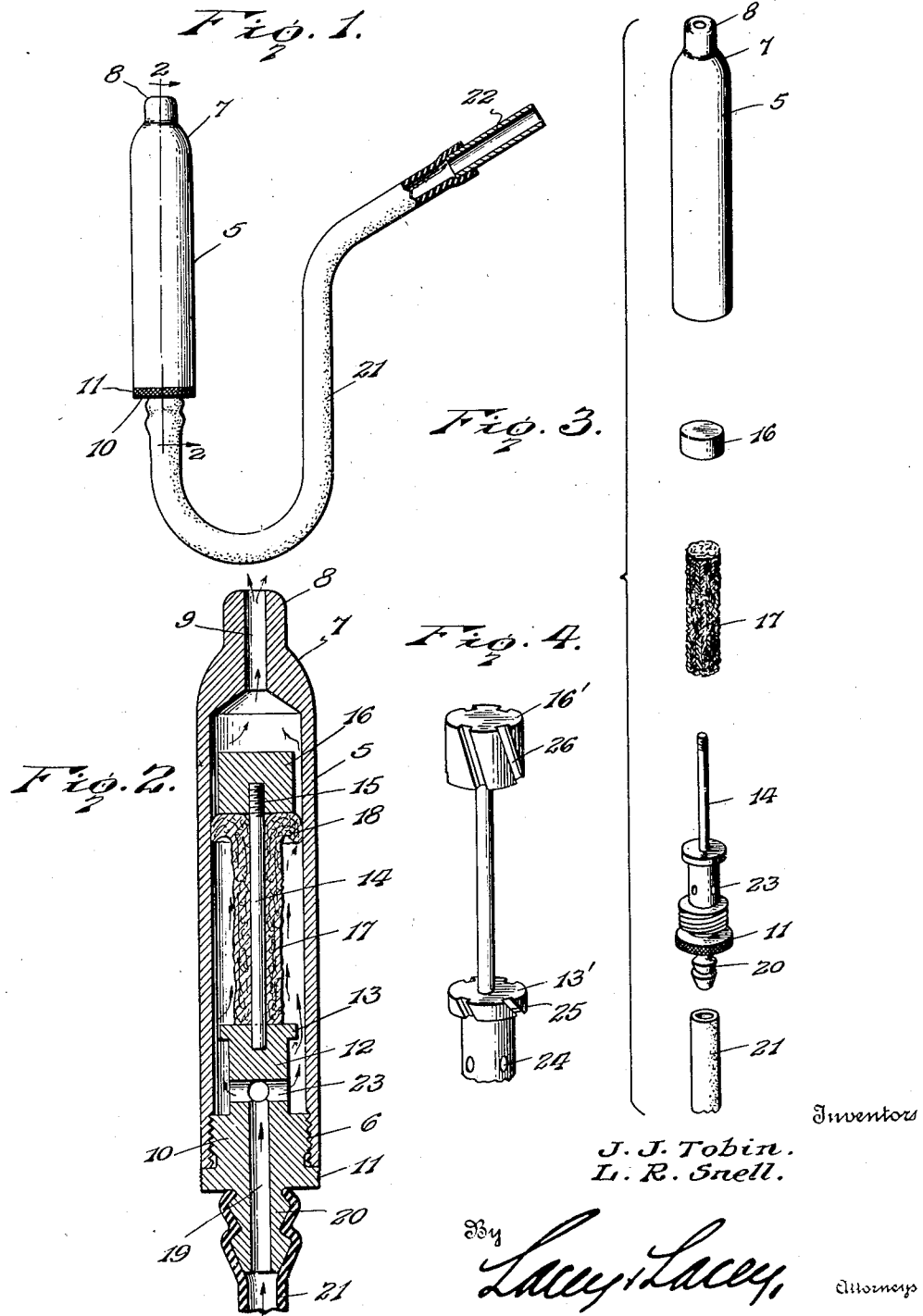


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VAPORIZING APPLICATOR
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VAPORIZING APPLICATOR

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3 Claims. (Cl. 128—199)

This invention relates to medicine applicators, and more particularly to a device for applying medicated vapor to the nasal passages in the treatment of sinusitis and other inflammation or irritation of the mucous membrane.

Heretofore it has been proposed to inject medicated vapor into the nasal passages by passing a current of air through absorbent material saturated with liquid medicament and blow the medicated vapor into the nasal passages and in contact with the affected parts. As the passage of air through the saturated absorbent material is generally in a straight or direct path, it often happens that only a small quantity of the healing fluid is taken up and combined with the air and, consequently, the medicated vapor is of insufficient strength to produce the best results. Moreover, if excessive air pressure is exerted on the mouthpiece of the applicator, small globules of liquid are sometimes forcibly injected with the vapor into the nasal cavities and find lodgement therein causing injurious effects.

The object of the present invention, therefore, is to provide a medicator in which these objectionable features are eliminated by causing the air to take a circuitous passage through and around the fluid saturated wick so as to cause the air to take up or absorb a maximum quantity of the medicated fluid for delivery in a vaporized condition to the affected parts without danger of small globules of liquid being injected into the nasal passages.

A further object of the invention is to provide a vaporizing applicator including a casing or outer shell having means at one end thereof for insertion within the nostril and provided at its other end with a mouthpiece, means being disposed within the shell for retarding the passage of air therethrough so as to insure a thorough mixture of air and healing fluid before delivery in an atomized form within the nasal passages.

A further object is to provide an applicator of simple and inexpensive construction, the parts of which may be readily separated to permit saturation of the wick and replacement thereof when necessary.

A further object is to provide an applicator having an inner member provided with lateral ports or passages communicating with the interior of the shell and formed with a rod on which the wick is fitted, means being provided for retaining the wick in position on the rod and causing the upper end of the wick to expand laterally in contact with the inner wall of the outer shell or casing so as to act as a plunger and prevent direct passage of air through the applicator.

A still further object of the invention is generally to improve this class of devices so as to increase their utility, durability and efficiency.

In the accompanying drawing forming a part of this specification in which similar numerals of reference indicate corresponding parts in all the figures of the drawing,

Figure 1 is a side elevation of a vaporizing applicator constructed in accordance with the present invention.

Figure 2 is an enlarged vertical sectional view. Figure 3 is a perspective view showing the elements comprising the applicator detached and ready to be assembled.

Figure 4 is a perspective view illustrating a modified form of the invention.

The improved vaporizing applicator forming the subject-matter of the present invention comprises an outer shell or casing 5 preferably formed of aluminum and cylindrical in shape, as shown, the lower end of the casing being open and interiorly threaded, at 6, and the upper end thereof curved inwardly, at 7, so that it can be conveniently inserted in the nostril. The curved portion 7 preferably terminates in a relatively small nipple 8 to permit the applicator to be used by children, said nipple being provided with a discharge orifice 9 which communicates with the interior of the casing. Threaded in the lower end of the casing is a closure plug 10 having a laterally extending stop flange 11 which bears against the adjacent end of the casing and forms a tight joint between the parts. The closure plug 10 is provided with a reduced cylindrical barrel 12 spaced from the inner wall of the casing 5 and terminating in a lateral flange 13 also spaced slightly from the inner wall of the casing, as shown. Secured in any suitable manner to the upper end of the closure plug 10 is a wick receiving rod 14, the upper end of which is threaded at 15 for detachable engagement with a substantially cylindrical head 16. The wick 17 is formed of absorbent material and is fitted over the rod 14, said wick being saturated with a liquid medicament which will have a soothing and healing effect on the mucous membrane of the nasal passages of the head when the liquid is atomized and injected into the nasal passages. The wick 17 is preferably slightly longer than the length of the rod 14 so that when the wick is threaded on the rod and the plug is introduced within the casing 5, the upper end of the wick will be flared laterally in contact with the inner wall of the casing, as indicated at 18, so as to confine air between said flared portion of the wick and the flange 13 and thus permit the air to become thoroughly impregnated with the medicament.

The plug 10 is provided with an intake passage 19 which also extends through a corrugated nipple 20 over which is fitted a flexible tube 21, as best shown in Figure 1 of the drawing. The free end of the tube 21 is provided with a mouth-

piece 22 also preferably formed of aluminum so that by blowing into the mouthpiece, air will pass through the tube and into the intake passage 19. The barrel 12 is provided with a transverse opening 23 which intersects the intake passage 19 and causes the air entering the passage 19 to pass laterally on each side of the barrel and thence over the flange 13 in contact with the saturated wick 17 where it will take up and vaporize the medicament on the wick and thence pass upwardly through the flared portion 18 of the wick and around the head 16 to the discharge passage 9 and thence into the nasal passages. It will here be noted that the flared portion 18 of the wick in conjunction with the head 16 forms, in effect, a plunger to prevent the direct passage of air through the applicator and inasmuch as the air flows upwardly on opposite sides of the barrel, it is retarded or confined between the plunger and barrel so that the air will become thoroughly saturated with the fumes from the wick and a rich vaporized mixture delivered to the affected parts. It will furthermore be noted that inasmuch as the air takes a circuitous passage through the applicator and the flared portion of the wick 17 contacts with the inner wall of the applicator, said flared portion of the wick acts as a screen and serves to prevent small globules of fluid on the wick being forcibly injected through the discharge passage into the nasal cavities.

In using the device, the casing 5 is unscrewed from the plug 10 after which the head 16 is removed and the wick 17 threaded over the rod 14. The head 16 is then replaced on the rod and the wick saturated with the desired healing fluid or other medicament, after which the plug with the wick in position thereon is inserted in the casing 5 so as to cause the flared upper end of the wick to contact with the inner wall of the casing, as previously described. By then inserting the mouthpiece 22 between the lips with the small end of the casing introduced within the nostril and blowing slightly through the tube 21, the air will pass laterally through the passages 23 and in contact with the wick 17 and thence upwardly through the discharge passage 9 into the nostrils. If it is desired to replace or renew the wick, it is merely necessary to detach the head 16 and thread a new wick over the rod 14 and in which position the wick will be firmly held between the flanged end of the barrel 12 and said head.

In Figure 4 of the drawing, there is illustrated a modified form of the invention, in which a plurality of openings 24 intersect the intake passage so as to deliver the air on all sides of the barrel. In this form of the device the flange 13' is preferably formed with inclined or spiral grooves 25 for imparting a circuitous movement to the air and likewise the head 16' is formed with similar passages 26 for imparting a whirling motion to the vaporized air as it is discharged through the nipple. The device is extremely simple in construction and inasmuch as the component parts thereof may be readily separated and cleaned when necessary, the applicator may be kept in a sanitary condition at all times.

An applicator constructed in accordance with the present invention will insure the proper delivery of a maximum amount of medicament in

a vaporized condition into the nasal passages and other head cavities, and, at the same time, effectually prevent small globules of liquid being taken up by the air currents and clogging the nasal passages to the injury or discomfort of the user. It will, of course, be understood that the applicators may be made in different sizes and shapes and constructed from any suitable material without departing from the spirit of the invention.

Having thus described the invention, what is claimed as new is:

1. A device of the class described comprising a casing having one end thereof reduced to form a nipple pierced by a longitudinal discharge orifice, a closure plug removably fitted in the other end of the casing, said closure plug being provided between its fitted portion and its inner end with a reduced barrel terminating in a laterally extending flange, the plug being formed with a longitudinally extending intake passage terminating intermediate the length of the barrel and also provided with lateral passages leading from the inner end of the longitudinal passage and communicating with the interior of the casing, a rod extending from the inner end of the plug, a wick about the rod, a head of less diameter than the casing carried by the rod and bearing against the wick, the inner end of the wick being flared laterally in contact with the head and the inner wall of the casing to close the space between the head and casing.

2. A device of the class described comprising a casing having a discharge orifice at one end thereof, a closure plug fitted in the other end of the casing and provided with a longitudinal passage leading from its outer end and terminating in spaced relation to the inner end of the plug, said plug also having lateral passages leading from the inner end of the longitudinal passage and discharging into the interior of the casing, said plug being provided at its inner end with a lateral flange having inclined grooves formed in the peripheral edge thereof, a rod extending from the inner end of the plug, a wick adapted to receive a liquid medicament fitted over the rod and having its inner end flared laterally, and a substantially cylindrical head carried by the inner end of the rod in abutting engagement with the inner end of the wick and having its peripheral wall provided with inclined grooves.

3. A device of the class described comprising a casing having a discharge orifice at one end thereof, a closure plug removably fitted in the other end of the casing, said plug being provided with a longitudinally extending intake passage and with lateral passages leading from the inner end of the longitudinal passage, said plug being formed at its inner end with a lateral flange spaced inwardly from the laterally extending air passages with its marginal edge face spaced from the wall of the casing, a rod secured to the plug and projecting from the inner end thereof, a wick fitting over the rod and having an end bearing against the plug in spaced relation to the marginal edge of the rim of the flange, the inner end of the wick being flared laterally to contact with the inner surface of the wall of the casing, and a head carried by the inner end of the rod and bearing against the flared portion of the wick.

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