

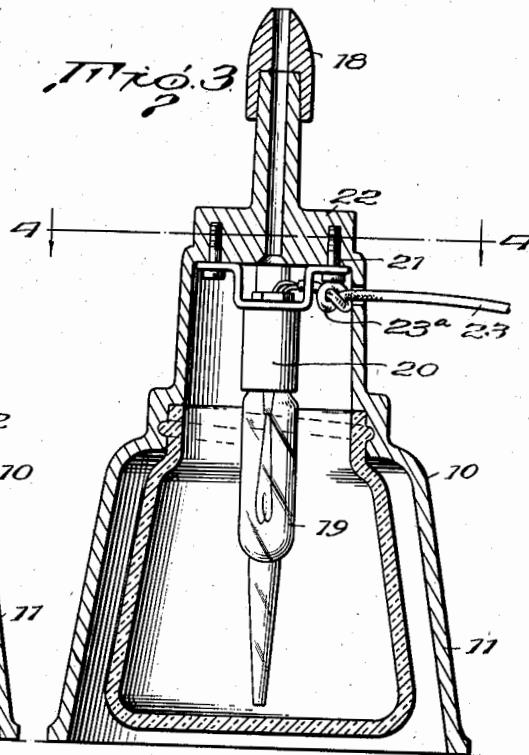
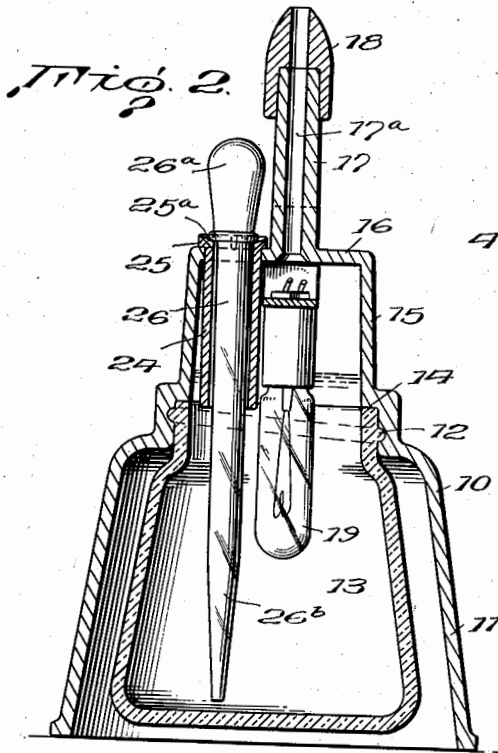
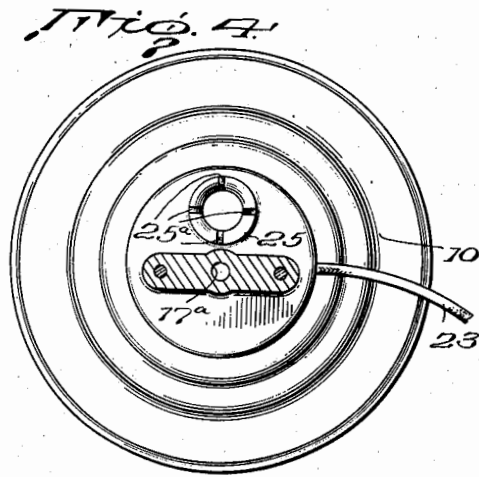
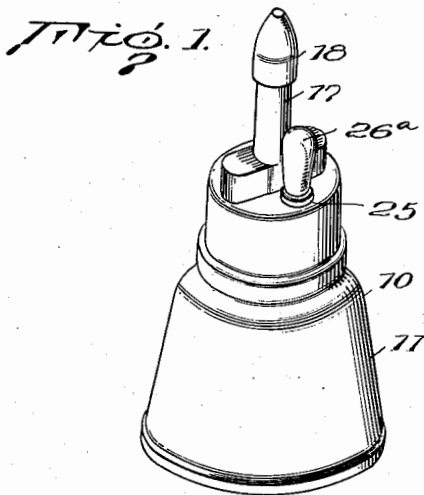
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2,204,312

VAPORIZER

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VAPORIZER

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1 Claim. (Cl. 128—192)

My invention relates to improvements in vaporizers, and has to do more particularly with the provision of a device for the application of volatile medicaments to the respiratory passages of the human nose and throat.

During the past several years a number of preparations for the treatment of rhinitis and sinus trouble have been placed upon the market, most of which are in the nature of fluids or semi-fluids of jelly-like consistency adapted for direct application to the nose and/or throat by means of a swab or, in the case of liquid medicaments, by a dropper or pipette. The technique of such application generally consists in applying the medicament to the mucous membranes of the affected area, while the head is swung backward. In the case of highly fluid preparations, it is practically impossible to prevent the draining of the medicament into the throat and thence into the trachea or esophagus. The access of such therapeutic liquids to the windpipe generally causes coughing and discomfort and, where the fluid drains down into the esophagus, nausea is often induced. To a lesser degree, perhaps, the same is true of the jelly-like preparations now available on the market, for such preparations, under conditions of body temperature, become semi-fluid and incapable of restriction to the nasal passages and upper throat. Because of the recognized difficulty of restricting the medicament to the portion of the respiratory tract to which it is applied and the fact that the ingredients are discomforting and may be actually harmful when reaching the esophagus or trachea, many physicians do not approve of this mode of treatment for the nasal passages, despite the fact that such treatment affords great relief to head congestion and is of recognized benefit in treating catarrhal conditions in the air passages of the human head.

With the foregoing objections to the present mode of applying such preparations in mind, my invention has for its purpose several well defined objects. It is a primary object of my invention to provide an applicator by which liquids or jellies containing volatile healing and therapeutic ingredients may be administered to the human nose and throat without inducing coughing or nausea.

It is an object of my invention to provide an applicator for the administration of nasal medicaments, in which the medicament may be administered either in a vapor form or may be withdrawn and applied to the affected membranes in a liquid state.

It is an object of my invention to provide a device for dispensing vapor-yielding jelly in a warmed condition especially suitable for application externally, for example, to the human chest.

It is an object of my invention to provide a device of the character described which is adapted to receive and support the conventional jar in which such preparations are marketed, and which will conceal the jar and its contents, as well as materially preclude the loss of contents, either through evaporation or spilling.

It is an object of my invention to provide a device of the class described which affords an indication of the requisite fluidity of the jelly prior to administration.

Lastly, it is an object of this invention to provide a device of the character described which may be made at a cost sufficiently low to permit its being given to the user of the jelly, as a premium.

Further objects and objects relating to details and advantages of manufacture and use will appear to those skilled in the art upon a reading of the following specification. In one instance, I accomplish the objects of my invention by the means set forth in the following description. My invention is clearly defined in the appended claim. A structure constituting a preferred embodiment of my invention is illustrated in the accompanying drawing, in which

Figure 1 is a perspective view of a device constituting a preferred embodiment of the present invention;

Fig. 2 is a vertical sectional view through the device illustrated in Fig. 1, illustrating the heating element and moisture-introducing dropper forming a part of the device;

Fig. 3 is a vertical sectional view of the same device taken at right angles to the view shown in Fig. 2; and

Fig. 4 is a horizontal sectional view through the device taken on the line 4—4 of Fig. 2, the dropper being omitted for clarity of illustration.

The same reference numerals refer to the same parts throughout the several views.

In a broad sense, my invention finds embodi-

ment in an inverted cup-like shell, the upper portion of which terminates in a tube adapted for insertion in a nostril of the human nose; the lower, skirt-like portion of which is adapted to receive a conventional jar of therapeutic jelly for the treatment of the mucous membranes; and the intermediate portion of which constitutes a vapor dome or chamber in communication with the open mouth of the said jar and the duct of the nose-entrant-tube. Includes, also, in the broad structure, is a heating element carried by the inverted cup-like shell and depending into the jar to be assembled therewith. Means are also provided for the introduction of water or other diluent into the associated jar of jelly without the necessity of disassembling the jar from the encircling shell. More specifically, said means for the introduction of diluent to the contents of the jar comprises a pipette, the tube of which extends into the inverted shell and terminates in proximity to the bottom of the jar assembled therewith, and the compressible bulb of which is disposed exteriorly of said shell. In such an arrangement, the fluidity or viscosity of the jelly and diluent contained within the jar may be determined by manipulation of the bulb portion of the pipette. Preferably, though not essentially, the association of the pipette and the jar-encasing shell is such that a vent is provided through which atmospheric air may gain access into the vapor chamber of the device, and through which vent, in the case of the use of an incandescent bulb as the jelly-heating element, a ready indication of the operation of the heating element is afforded.

More specifically, and with reference to the accompanying drawing in which I have illustrated a preferred embodiment of my invention, there is shown a shell 10, preferably formed by die-molding of synthetic resinous material, or the equivalent. The lower portion of the hollow shell 10 flares downwardly and outwardly to constitute a skirt-like portion 11, the upper portion of which skirt is provided with an integrally molded screw thread or threads 12 adapted to snugly receive a conventional jar 13 in which nasal jellies are commonly marketed. The edge of the jar mouth seats against a shoulder 14 of the molded shell and affords a liquid-tight seal therewith, while the base of the jar is held in slightly spaced relation with respect to a surface upon which the skirt 11 is adapted to be supported along its lower edge. Extending upwardly from the shoulder 14 is a cylindrical portion 15 of the shell which, with the disk-like portion 16, defines a vapor space in communication with the open mouth of the jar. Extending upwardly from the disk-like portion 16 of the shell is an integral tube 17 provided with a vapor duct 17-a. Upon the upper extremity of the vapor tube 17 is frictionally attached a nose piece 18 of similar synthetic resinous material. This nose piece 18 may be easily detached for cleaning. Preferably, though not essentially, the material of the entire shell 10 and the nose piece 18 is opaque, concealing the incased jar.

Means are provided for the heating of the jar contents, which means consists, in the disclosed embodiment, of a small elongate incandescent bulb 19 of approximately 10 watts rating. The bulb 19 is supported in a socket 20 attached to the disk-like portion 16 of the shell by means of a pair of small, diametrically opposed screws 21 threaded into a boss 22 constituting a thickened portion of the disk 16. Current supply for the

said bulb is furnished by means of a flexible cord 23, the ends of which are suitably connected to the socket 20, which cord passes through the wall 15 and is knotted therewithin at 23-a to prevent inadvertent dissociation from the socket.

Press-fitted into a bore in the disk-like top 16 of the device is a tubular member 24, the upper end of which is provided with a shoulder 25 resting upon the top face of the portion 16. The shoulder portion 25 of said tube is counterbored to provide a tapered entrance to the tube proper, and the tube 24 extends downwardly to a point slightly below the shoulder 14 of the shell. The counterbored edge of the shoulder 25 is further provided with four grooves or notches 25-a, for a purpose later to be explained. The bore of the tube 24 loosely receives the tubular portion of a pipette 26 of more or less conventional form, the rubber bulb 26-a of which pipette seats, at its lower edge, upon the counterbored edge of the tube shoulder 25 without, however, concealing or closing the notches 25-a therein. The tube portion 26-b of the pipette is preferably formed of transparent glass or the equivalent and extends downwardly with its lower tip closely spaced with respect to the bottom of the jar 13. The fit of the pipette 26 with the tube 24 is such as to permit the entrance of atmospheric air to the vapor chamber upon a withdrawal of vapor from the chamber through the tube 17. Moreover, the tubular portion 26-b of the pipette being formed of transparent material, a ready indication of the operation or non-operation of the heating lamp 19 is afforded through the windows constituted by the notches 25-a. In addition, the counterbored nature of the upper end of the tube 24 facilitates the insertion of the pipette therein as well as encourages a drainage of any accumulated jelly or moisture away from the exposed edge of the tube 24.

As thus described, the operation and utility of the device may be readily understood. Assembled with the conventional jar 13 containing a quantity of vapor-yielding jelly, the present device, through the heating effect afforded by the small bulb 19, will effect the reduction of the contained jelly to a highly volatile, fluid condition. A small quantity of water, or other neutral diluent, is then preferably introduced by the pipette 26, preferably bringing the level of the contained mixture to the dotted-line level shown in Fig. 2. When the contained mixture has been heated to the required temperature necessary to effect vaporization thereof (as may be determined by the fact that the bulb 19 has been lit for the required length of time), the device may be lifted from its supporting surface and the nozzle 18 inserted into one of the nostrils of the affected individual. The generated vapors within the vapor space of the device may be withdrawn by inhaling through the nozzle 18 and air will then gain access to the vapor space through the notches 25-a and the space between the tubes 24 and 26-b. Sufficient vapor is contained within the vapor space to afford periodic treatment for each nostril. In addition, the warm and highly fluid jelly may be directly administered to the nose or throat or externally to the chest, by the simple expedient of withdrawing a suitable portion thereof from the jar 13 by means of the pipette 26. In addition, the pipette may be employed as a means for determining the reduction of the jar contents to the proper degree of fluidity simply by squeezing the bulb 26-a

and noting the resistance of the contents to the rapid flexure of the bulb 26—*a*.

The utility and effectiveness of the illustrated embodiment of my invention should be readily appreciated from the foregoing description. Upon a depletion of the supply of jelly in the jar 13, the jar may be replaced with a new jar without contaminating the contents or soiling the fingers. With the skirt 11 of the device formed of the length illustrated, stable support, as well as the preclusion of scratching of the supporting surface for the jar, is assured. Another advantage of the device consists in the ease with which it may be cleansed by the simple expedient of washing with soap and water. Preferably, the contacts of the socket 20 are formed of a material free from tendency to react with or be corroded by the contents of the device. Any suitable switch means may be incorporated with the cord 23, or the end thereof may simply be provided with a conventional plug for attachment to the usual convenience outlet. The device includes no wearing parts, and the small bulb forming a part thereof has a life sufficient to serve for years of use, unless accidentally damaged. If damaged, it may be replaced in the usual manner. The countersunk and notched nature of the upper edge of the tube 24 will, under ordinary use, afford adequate drainage into the jar 13, so that

no smearing of the outside of the case will occur, if reasonable care is exercised.

I am aware that my invention is susceptible of embodiment in many forms and, therefore, the present disclosure is to be regarded as illustrative only, the scope of the invention being determined by the following claim.

What I claim is:

A vaporizer for liquids and semi-liquids embodying volatile therapeutic inhalants, comprising: a bell-like shell consisting of an open-bottomed imperforate skirt and a top closure therefor, said imperforate skirt having its base adapted for support upon a table or similar flat surface and when so disposed substantially sealing the enclosed space to the external atmosphere, means associated with said closure for withdrawing vapors therethrough by direct human aspiration, a radiant heating element carried by said closure and depending within said skirt, and a receptacle adapted to retain a quantity of inhalent-embodying material disposed about said radiant heating element, detachably secured to said closure in air-spaced relation to said skirt and having its lower end suspended therewithin well above the skirt base and any flat surface upon which said base is supportable.

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