

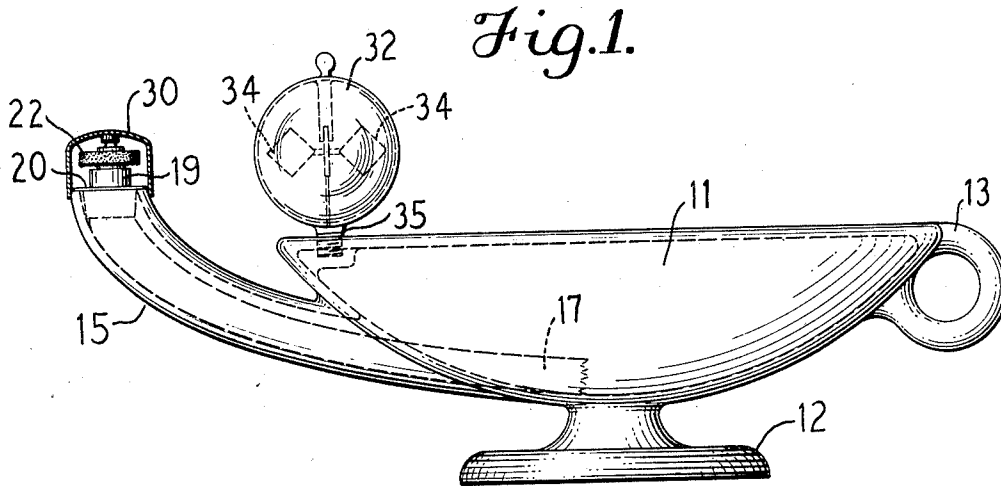
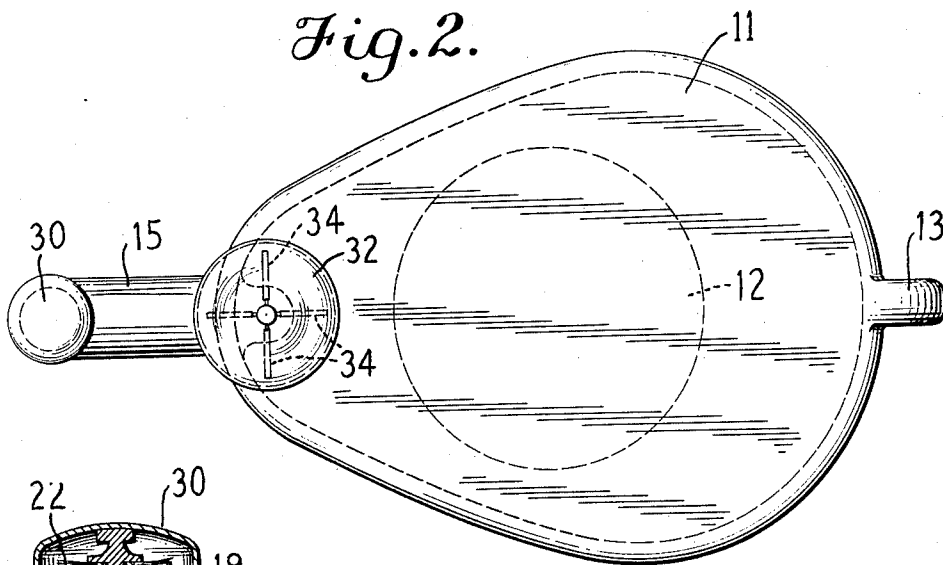
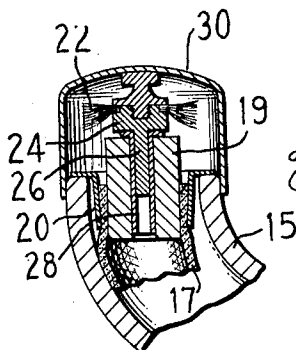
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VAPOR DISPENSING APPARATUS

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VAPOR DISPENSING APPARATUS

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2 Claims. (Cl. 167—3)

This invention relates to vapor dispensing apparatus of the class in which vapors of a volatile, combustible liquid, such as alcohol, rise into contact with an adsorbent catalyst, such as platinized asbestos, which is capable, after initial heating, of continuing to glow in the presence of the alcohol vapor and air, thereby maintaining a flameless reaction which gives off purifying vapors. By partial combustion (oxidation) of methyl alcohol, for example, formaldehyde is formed. If essential oils are blended with the alcohol, these are vaporized and diffuse their pleasing odor. Such devices are used for freshening and/or scenting the air in apartments.

Since the glow of these devices is quite feeble, it is difficult to know whether they are working, or whether the liquid in the reservoir has been exhausted and the reservoir should be re-filled. The object of this invention is to provide a vapor dispenser of this type having means for indicating whether it is in operation. This is accomplished by combining with a vapor emission apparatus of the kind described a device capable of responding in a pronounced fashion to the heat waves generated by the slight heat of the reaction. The device that I have found admirably suited for the purpose is a Crookes radiometer.

In the drawing—

Fig. 1 is a side elevation of a vapor dispenser made in accordance with this invention;

Fig. 2 is a top plan view of the device shown in Fig. 1; and

Fig. 3 is an enlarged sectional view of a part of the device shown in Fig. 1.

The vapor dispenser comprises a reservoir 11 having a base 12. A handle 13 is connected with one end of the reservoir. The top of the reservoir is closed and a spout 15 extends from the front of the reservoir. An evaporator comprising a sleeve wick 17 extends from a low point of the reservoir to the top of the spout 15.

The construction at the top of the spout 15 is shown in Fig. 3. The wick fits over the lower end of a core 19 and is held against the core by a flanged annulus 20.

The flange of the annulus 20 rests on the top edge of the spout 15 and prevents the wick and core from dropping down into the spout.

A pad 22 is carried by a pad-holder 24, having a stem 26 which fits into a bushing 28 in the core 19. A portion of the surface of the pad 22 is covered with spongy platinum, or some other material which, after being initially heated, will continue to glow in the presence of a mixture

of alcohol vapor and air (oxygen). Other materials, having this same heat-producing property, are well known to chemists and may be substituted for the platinum used in the preferred embodiment of this invention. The body of the pad 22 is made of heat-resisting material such as asbestos. This platinized asbestos pad is one of the known forms of catalytic elements employed in vapor generating devices of this type.

A cap 30 fits over the top of the spout 15 and contacts with the top of the pad-holder. A radiometer 32 is attached to the reservoir at one side of the catalytic pad. The radiometer is made detachable from the reservoir for convenience in shipping, and is attached to the reservoir by a base 35 which threads into a socket in the top of the reservoir. The radiometer should be close enough to the pad 22 so that its vanes 34 will respond to the small amount of radiant energy resulting from the reaction, but must not be close enough to the wick so that the flame will damage the glass casing of the radiometer when the wick is lighted.

When the device is to be operated to dispense vapor, the cap 30 is removed and the wick 17 is lighted. The flame heats the platinum coating on the pad 22 and the heat causes active evaporation of liquid from the wick. The flame is then extinguished and the vapor rising from the wick mixes with air and flows against the platinum on the pad causing the platinum to glow and an exothermic reaction to take place. This heat causes active evaporation from the wick to continue as long as there is liquid in the reservoir, or until the cap 30 is replaced on the spout.

As long as the coating on the pad continues to glow the radiometer will rotate under influence of the heat radiated from the region of the pad. If the wick was not lighted long enough to heat the platinum sufficiently, or if the liquid supply becomes exhausted so that there is no longer any vapor rising from the wick, or if, for any other reason, the flow of vapor past the pad is stopped, the radiation of heat becomes less and the radiometer turns slower, or stops, thereby indicating that the device is not operating in the intended manner. The cap 30 can be replaced at any time to stop the operation of the device.

Although primarily designed for generating and diffusing vapors from a liquid containing alcohol, it will be evident that the invention is also applicable to dispensers using any other liquid having a vapor that will give rise to a similar phenomenon when contacted with a catalyst such as platinized asbestos. Changes and modifica-

tions in the preferred embodiment of the invention may be made without departing from the spirit of the invention as set forth in the appended claims.

5 I claim:—

1. A vapor dispenser of the type having a reservoir to hold a volatile, combustible liquid, a wick, and a catalytic element above the wick capable of maintaining flameless combustion of the vapor rising in contact with the element, said dispenser also having an indicator sensitive to heat radiated from the region of the catalytic element, said indicator consisting of a radiometer disposed in such relation to the catalytic element as to be

actuated by the radiant energy of the reaction only when the dispenser is operating to evaporate the liquid.

2. A vapor dispensing device of the type having a reservoir to hold a volatile, combustible liquid, a wick, and a catalytic element above the wick, in combination with a radiometer applied to the device at one side of the catalytic element, and in sufficient proximity thereto to be energized by radiation from the flameless reaction which continues in the presence of the catalytic element only as long as the device is operating to evaporate the liquid.

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