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2,431,924

VAPOR DISPENSING DEVICE

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Fig. 1

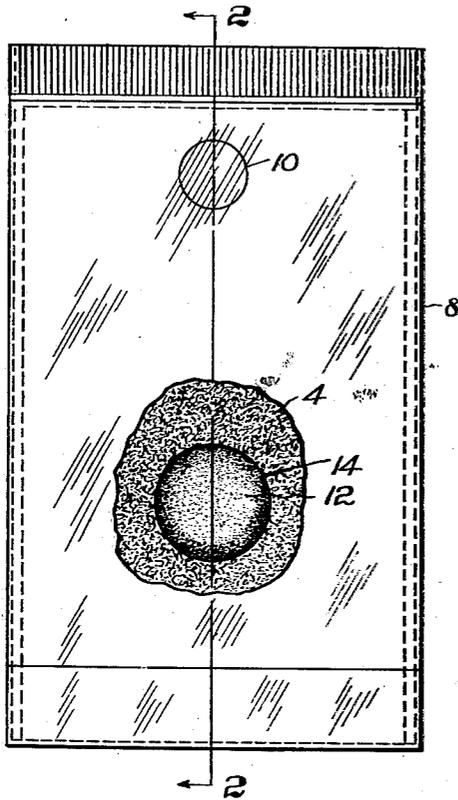


Fig. 2

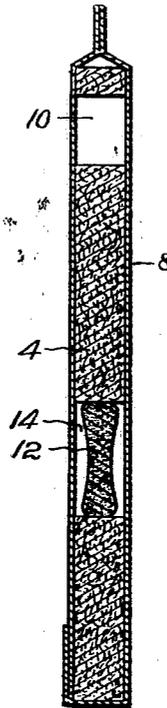
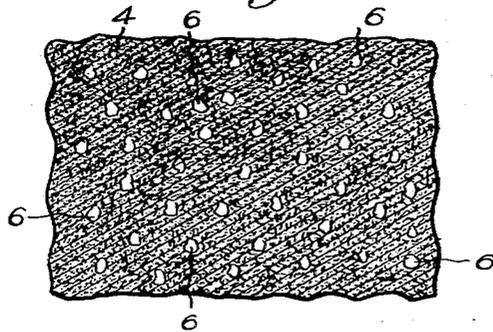


Fig. 3



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VAPOR DISPENSING DEVICE

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4 Claims. (Cl. 299—24)

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This invention relates to a vapor dispensing device intended for use as a means for killing moths and moth worms, by the use of an evaporable moth-killing substance such as paradichlorobenzene existing in a solid state within the cells of a carrying agent such as wall-board comprising matted woody fibers. The invention aims to provide a vapor dispensing device of this character with an evaporable indicating device which shall indicate the extent of exhaustion of the evaporable substance in the pores, so that replacement of the device may be made when it no longer supplies sufficient vapor for the safe storage of woollens.

The invention will be understood by reference to the following description when taken in connection with the accompanying drawings of one specific embodiment thereof, while its scope will be pointed out more particularly in the appended claims.

In the drawings:

Fig. 1 is an elevation of a vapor dispensing device embodying the invention;

Fig. 2 is a sectional view on line 2—2 of Fig. 1; and

Fig. 3 is a greatly enlarged sectional view of a portion of the carrying agent impregnated with the evaporable moth-killing substance.

Referring to the drawings and to the embodiment of the invention illustrated therein as an example, there is shown a vapor dispensing device comprising a porous or pervious body 4 constituting a carrying agent for an evaporable substance 6 filling its pores. In the present example, the porous body is a slab of commercially obtainable fiber-board commonly known as wall-board and comprising matted woody fibers. The one chosen because of its suitability for the purpose is sold under the trade-name "Beaver Board" and is so well known that further description is deemed unnecessary.

The preferred evaporable substance 6 with which the body 4 is impregnated is paradichlorobenzene commercially obtainable in the form of crystals, although naphthalene might be employed if desired. The porous body 4 is impregnated with the desired substance, and is then wrapped in a relatively impervious wrapper or jacket 8 such as a sealed envelope or bag made of Cellophane. The preferred method of impregnating the body 4 with the paradichlorobenzene is to heat the latter to a temperature (around 53° C. or 135° F.) at which it melts, and then immersing the body in the molten paradichloroben-

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zene. When the latter cools, it re-crystalizes in the spaces between the fibers. (See Fig. 3.) It is found in practice that a rectangular piece of wall-board measuring three by five inches and having a thickness of three-eighths of an inch will take up two and one-half inches of paradichlorobenzene, enough to provide moth protection for fifteen cubic feet. After stripping off the wrapper, the slab may be hung on a hook or nail in a closet, chest, or other confined space where the woollens are stored, as by providing the slab with a hole 10.

As the paradichlorobenzene within the cells of the slab is invisible, it is impossible for one to ascertain, by looking at the slab, whether there is any paradichlorobenzene present, and whether the slab should be replaced by another fully charged slab. This problem is solved by providing an evaporable indicator 12 whose rate of evaporation is properly proportioned to the rate of evaporation from the pores of the slab, so that when the indicator is exhausted, or nearly so, the user is warned that the slab should be replaced by a new, fully-charged slab. The best material for the indicator is paradichlorobenzene because it contributes to the output of moth-killing vapor. Crystals can be melted and molded to form a large lozenge-shaped mass or disk which can be snugly fitted into a hole 14 in the slab 4, where it is easily visible and serves as a warning device.

Having thus described one embodiment of the invention, what I claim is:

1. In a vapor dispensing device, the combination of a cellular carrying agent, an evaporable moth-killing substance existing in a solid state within the cells of said carrying agent, and an evaporable indicator carried by said agent without said cells.

2. In a vapor dispensing device, the combination of a cellular carrying agent provided with an opening, a moth-killing substance capable of melting at a temperature above room temperature, and capable of evaporating at room temperature, and existing in a solid state in the cellular structure of said carrying agent, and an indicator within said opening and capable of evaporating at room temperature.

3. In a vapor dispensing device, the combination of a slab of porous material provided with an opening, a crystalline moth-killing substance capable of evaporating at room temperature and existing in a crystalline solid state in the pores of said slab, and an indicator consisting of a solid body of evaporable moth-killing substance with-

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in said opening and having a rate of evaporation comparable with the first-named substance.

4. In a vapor dispensing device, the combination of a body of woody fibers with minute interstices therebetween, said body being provided with an opening, paradichlorobenzene existing in a solid state within said interstices, and an indicator consisting of a solid body of paradichlorobenzene within said opening.

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