H. L. LOHEIDE.

HUMIDIFIER.

APPLICATION FILED MAY 22, 1915.

1,168,948.

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Fig. 1.

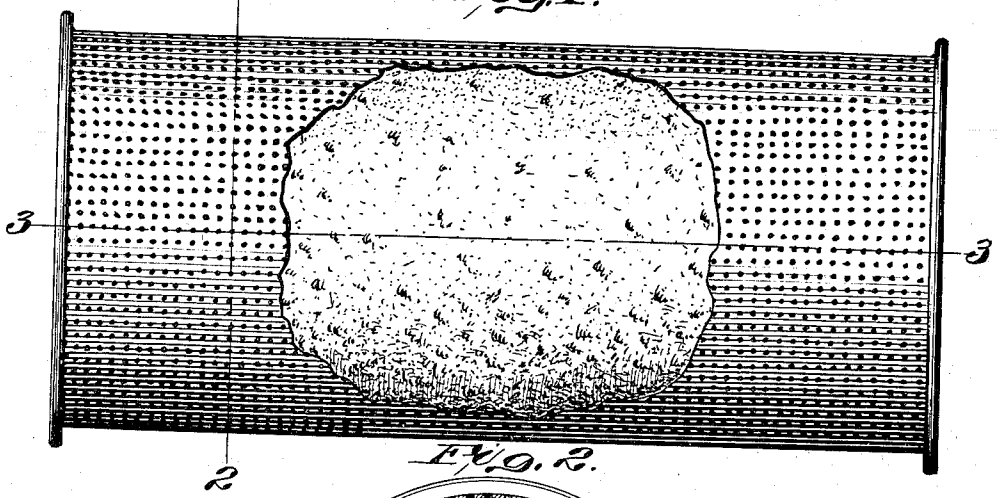
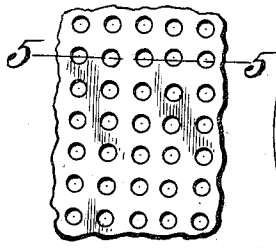


Fig. 2.

Fig. 4.



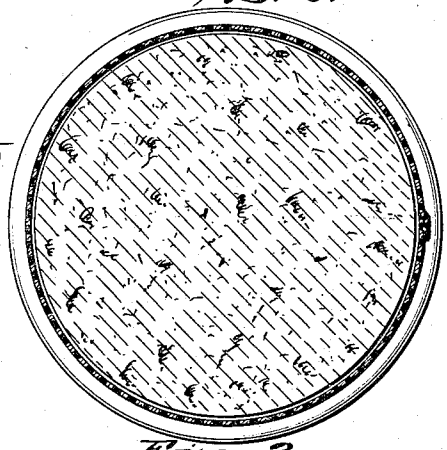
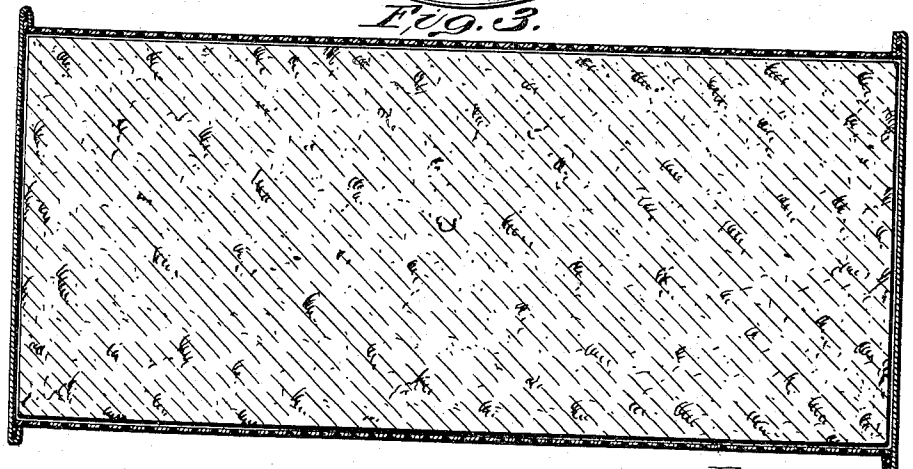


Fig. 5.

Fig. 3.



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UNITED STATES PATENT OFFICE.

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HUMIDIFIER.

1,168,948. Specification of Letters Patent. Patented Jan. 18, 1916.

Application filed May 22, 1915. Serial No. 29,736.

To all whom it may concern:

Be it known that I, HERMAN L. LOHEIDE, a citizen of the United States, residing at the city of St. Louis, State of Missouri, have invented certain new and useful Improvements in Humidifiers, of which the following is a specification.

This invention relates to humidifiers for any useful purpose, but in the form illustrated in the drawings is intended to act as a moistener for cigars in a show-case or store-room or any other situation.

Heretofore scores of different kinds of devices have been suggested and used for this purpose, among which may be mentioned open vessels of water, closed vessels containing water with means for permitting the evaporation thereof into the atmosphere of the show-case or the like, damp sponges, damp cotton, damp mineral wool, damp fibrous materials of various kinds, such, for instance, as felt, wood, etc. One great objection to all such materials is that they mold or rot, and their decomposition taints the atmosphere and imparts thereby an unpleasant taste to the tobacco. In addition, they are awkward to handle and not suitable for shipment in compact form.

The present invention is a prepared package suitable for shipment in most compact form and adapted for instant use upon delivery. It is not made from organic material that will decompose, nor is there in it any material that can rot. Among its features are those of a specially absorbent material which by test has been found especially suitable for this purpose and a close-fitting shell adapted to protect the said absorbent material from fracture, disintegration, or abrasion, and yet adapted to permit of evaporation of the moisture contained within the said absorbent body. On the one hand, this absorbent body is adapted to receive and hold an unusually high proportion of water, and, on the other hand, to evolve the same slowly by evaporation, so as to provide an even moisture for the atmosphere of a show-case without drippings whereby the articles displayed in the show-case may become wet.

In the accompanying drawings forming part of this specification, in which like numbers of reference denote like parts wherever they occur, Figure 1 is a side elevation of my improved humidifier, with the metal casing partly broken away; Fig. 2 is a cross sectional view on the line 2—2, Fig. 1; Fig. 3 is a longitudinal sectional view on the line 3—3, Fig. 1; Fig. 4 is a fragmentary view, on an enlarged scale, of part of the side wall of the metal casing; and Fig. 5 is a sectional view, on the line 5—5, Fig. 4.

The block or core of porous absorbent material 1 is inclosed within an aluminum casing having a body portion 2 and ends 3. The body portion 2 of this aluminum shell is pierced with innumerable perforations 4, through which the moisture contained in the core 1 is allowed to evaporate for the purpose of humidifying the atmosphere in the show-case, room, or other space in which moisture is desired.

Each end 3 and the body portion 2 of the shell fit closely to and around the core 1, thereby preventing its movement in any direction and thus preventing abrasion and disintegration. The shell as a whole, being made of aluminum, is strong enough to protect the core 1 from fracture. The ends 3 have flanges 5, which are adapted to absorb shock and thus to protect the core 1 in case the device as a whole is accidentally dropped upon the floor or similar place, and alights upon one of said flanges 5.

Being of aluminum, the shell as a whole imparts an attractive appearance to the device, making it suitable for display for its useful purpose within a cigar show-case or the like without detracting from the appearance of the show-case or its contents. The presence of wet sponges in saucers or other dishes in a show-case has in the past proved offensive to customers.

The particular material of which the core 1 is composed is a mixture of diatomaceous earth (otherwise known as kieselguhr) and cork, fragments of cork being mixed with the kieselguhr in comminuted form, and heat being then applied to a temperature and for a length of time that will char the cork and then consume the cork charcoal without flame, thus leaving the burnt mass in a more porous condition than if the cork fragments had not been mixed with the diatomaceous earth. The diatomaceous earth is of itself, both in its natural state and when burnt into bricks such as form the core of the present humidifier, extremely absorbent of moisture or water, but this power of absorption is increased by mingling fragments of cork with

the earth before baking. I do not limit myself to a core which has been formed by baking diatomaceous earth with cork or other combustible fragments embodied therein, but merely prefer to use cork or similar material in the manner and for the purpose herein described. The cores that have been tested in these devices have been found to absorb from one and one-fourth ($1\frac{1}{4}$) to one and one-half ($1\frac{1}{2}$) times their weight, and, as their porosity can be increased and regulated, it is likely that in actual practice the same will without much variation be adapted to absorb regularly one and one-half ($1\frac{1}{2}$) times their weight of water.

It is stated by scientific authorities that "kieselguhr absorbs more fluid than any other known material"; I have discovered its consequent especial suitability for the use to which I am applying it as hereinbefore stated. The composition of kieselguhr is of diatoms, which may be generally described as minute vegetable cells which are rendered hard by silica or by being invested with a silicious epidermal covering. While no attempt will be here made to describe with exactness their nature or structure, yet it may be said that diatomaceous earth results from diatoms which, so far as their organic part is concerned, perished ages ago, leaving their impress or cellular form upon their silicious or other inorganic surroundings. Extensive fossil deposits of the silicious remains of diatomaceæ occur in various localities, as at Bilin in Bohemia, and in Virginia, Nevada, and California, and diatomaceous earth is derived from these fossil deposits. Another name for diatomaceous earth is infusorial earth, which is described by authorities as "a very fine white earth resembling magnesia, but composed largely of the microscopic silicious shells of the vegetable organisms called diatoms."

When baked as hereinbefore described, the diatomaceous earth becomes a brick of considerable tensile strength, but of great lightness, being so light that it floats in water. Even when it has absorbed its maximum amount of water, it nevertheless floats in surrounding water.

Besides use in tobacco show-cases or in cabinet humidifiers or in store-rooms for tobacco or in similar places for moistening other articles that become injured by too great dryness of the atmosphere, humidifiers of the kind illustrated in the drawings are adapted to be used to moisten the air in rooms heated by steam radiators or the like or any other means that produce undue dryness of the atmosphere.

Humidifiers of the kind herein described may be laid upon their side, stood upon end, supported by a bracket or brackets, or suspended by chains or other suitable means.

I claim:

1. A core body for humidifiers composed of a mass of diatomaceous earth and particles of cork and baked to incinerate the cork particles.

2. A core body for humidifiers composed of diatomaceous earth and cork, having cells formed therein by incorporating the cork in the mass and subsequently exposing the mass to heat sufficient to incinerate the cork.

In testimony whereof I hereunto affix my signature.

HERMAN L. LOHEIDE.