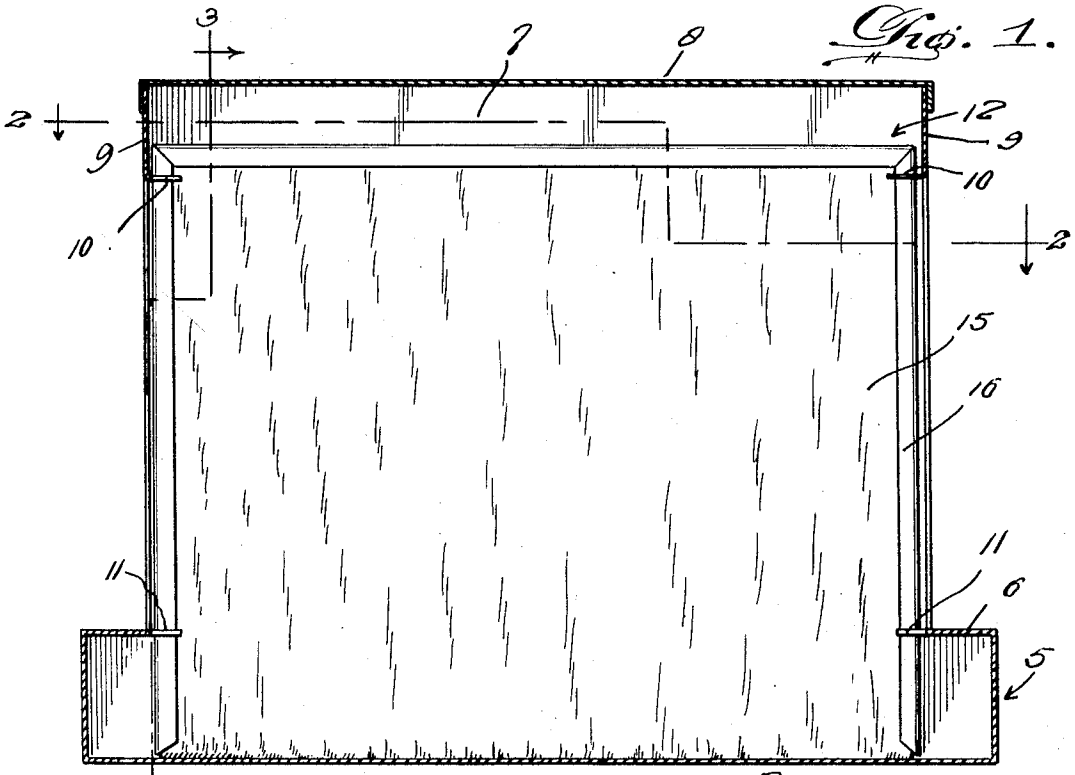
Sept. 10, 1929. R. D. MATTESON 1,727,658

COOLER AND HUMIDIFIER

Filed Dec. 12, 1928 2 Sheets-Sheet 1

Fig. 1.



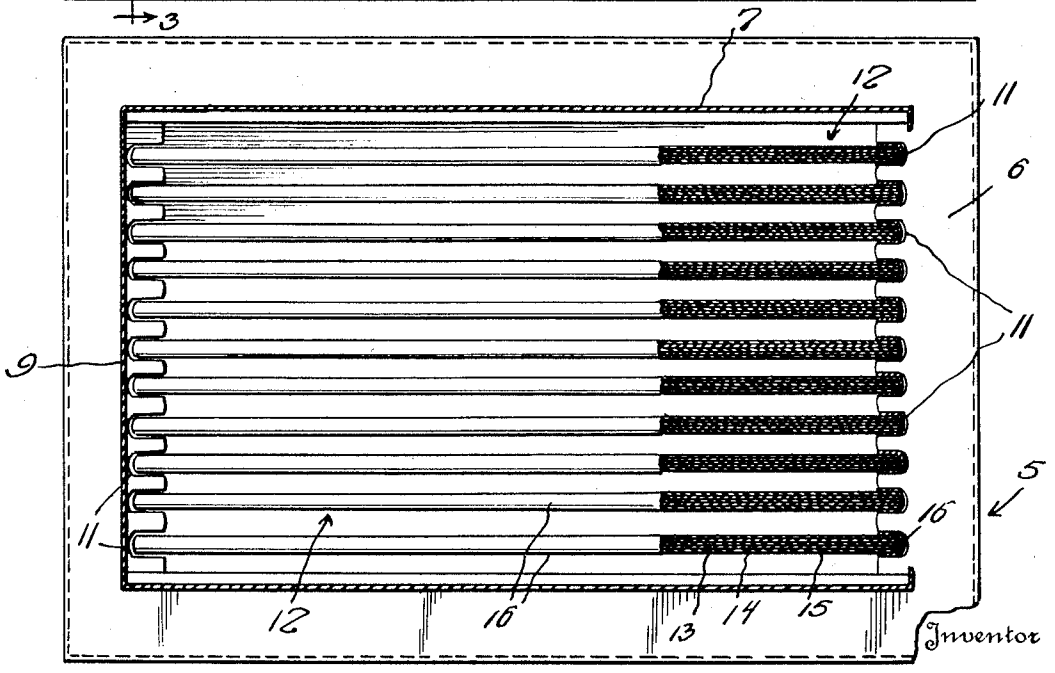


Fig. 2.

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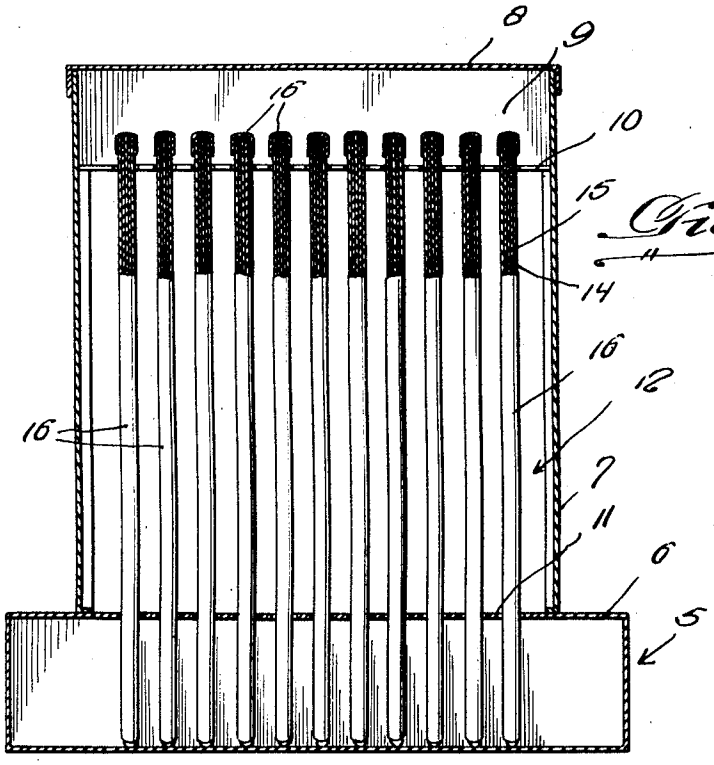
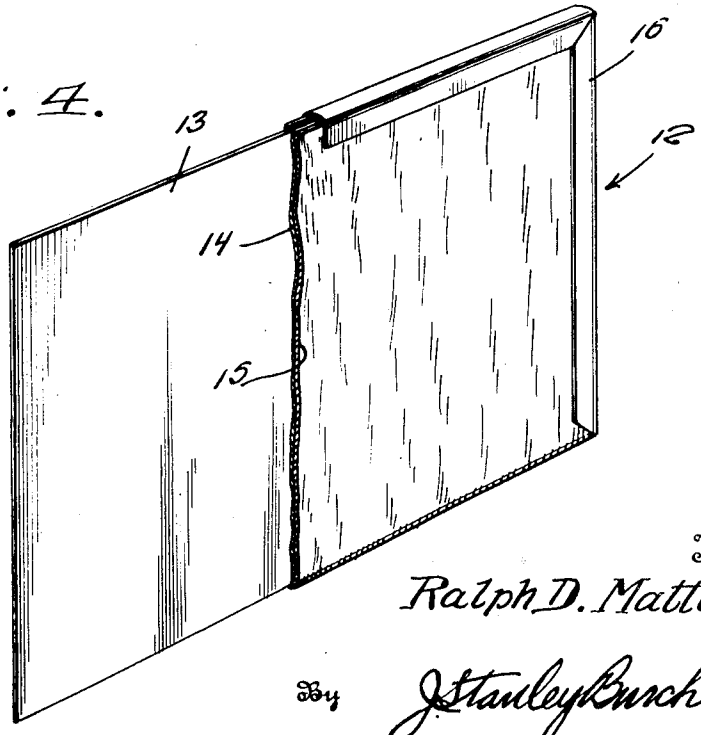


Fig. 3.

Fig. 4.



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UNITED STATES PATENT OFFICE.

RALPH D. MATTESON, OF EAGLE, IDAHO.

COOLER AND HUMIDIFIER.

Application filed December 12, 1928. Serial No. 325,525.

This invention relates to an improved cooler and humidifier adapted to be used for cooling and moistening the air in a room, receptacle or the like.

The invention herein shown and described is an improvement on a co-pending application filed by me under date of June 30, 1928, and designated by Serial Number 289,474.

An object of the present invention, like my prior invention is to provide a small compact humidifier which is characterized by efficient moisture supplying means, wherein a comparatively large moistened surface area is provided.

A brief reference to the co-pending case above indentified will show that it embodies a novel moisture supplying unit in the form of a battery of plates having their surfaces covered by absorbent material, the plates being disposed in spaced relation in order to provide air-circulating passages therebetween, and the unit being arranged so that its lower portion rests within a water pan, with its upper portion projecting above the pan for cooperation with an air-circulating fan or the like.

In the prior structure just analyzed it will be observed that the vertical plates are bolted together in longitudinally spaced relation. It is the object of the present structure, however, to provide a special openened box mounted on top of the pan and forming an enclosure for a plurality of individual plates removably held in place in order that they may be removed for cleaning, repairing or replacement.

Other features and advantages of the invention will become more readily apparent from the following description and drawing.

Figure 1 is a vertical sectional view through the improved structure.

Figure 2 is a horizontal section taken approximately upon the plane of the irregular line 2—2 of Figure 1.

Figure 3 is a transverse vertical sectional view taken approximately on the plane of the line 3—3 of Figure 1.

Figure 4 is a fragmentary perspective view of one of the removable plates.

Referring now to the drawing by reference numerals it will be seen that the reference character 5 designates generally a water pan of appropriate dimensions, having an inturned guard flange 6 at the top. This flange provides an anti-splash guard and also provides a base on which the upstanding box-like casing 7 is mounted. The casing is preferably rigidly fastened to the flange by soldering welding or otherwise. This casing is provided with a removable cover 8 and is open at its opposite ends. In fact at the top are short depending end walls 9 having an inturned flange 10 provided with longitudinally spaced notches forming guide slots. In this connection it will be observed that the inner end portions of the flange 6 of the pan are provided with longitudinally spaced notches as at 11 forming additional guide slots. These register with the first-named guide slots and are thereby adapted for removable reception of the improved plates 12. In this form of the invention I also propose to provide a battery of plates which are spaced apart to function as partitions and to define longitudinal passages for air currents. In this form of the invention it is also proposed to use an air circulating fan or the like (not shown) for producing a rapid circulation of air between the plates. The important point to bear in mind, however, is that the plates are individually removable for cleaning and repairing.

Each plate is of the construction seen in Figure 4. As here represented 13 designates a metallic core member or plate whose opposite faces are covered by a layer of blotter paper or moisture-absorbing material 14. The sheets 14 in turn are covered by sheets of fabric 15 also of an absorbent character. In addition a metal retaining rim 16 is provided around the margin to hold the elements 14 and 15 in place and to render each unit of the battery rigid.

It is obvious that the plates are of a size to permit them to be slipped down through the various guide slots in order that the plates may rest on the bottom of the pan and be submerged in the water in the pan. Incidentally it will be noticed that the metal rim 16 does not extend across the bottom edges of

the plates. The purpose here is to facilitate absorption of the water and spreading of the moisture over the entire surfaces of the plates by capillary attraction. It follows that when the sheets of fabric and paper became thoroughly wetted, and as the moisture evaporates or is absorbed therefrom by the air circulating between the plates, it will emanate from the discharge end of the housing and be forced into the room or other receptacle. Obviously, when the air is rapidly circulated between the plates, a correspondingly rapid evaporation of water takes place with a consequent absorption of heat from the plates, whereby the humidified air emerging from between the plates will be appreciably cooled or lowered in temperature.

In this way a very simple and durable moisture-supplying structure is provided which may be readily and economically manufactured, and disassembled or taken apart for cleaning or repair.

It is also evident that by removing the cover 8 from the box-like casing, the plates 12 are rendered accessible to be removed or replaced, thereby permitting the structure to be maintained in efficient working order at all times.

A structure of this class is highly desirable for use as a moistener in cigar cases. However it is not to be restricted to this use since it may well be adapted for cooling as well as humidifying purposes. It is thought however that by considering the description in connection with the drawing a clear understanding of the invention will be had.

Finally, by way of cantrast, it will be clear that a structure of this class is an improvement upon my co-pending case and upon other known patented and marketed structures for the same or similar purposes. Then too, the structure in addition to being compact and convenient in construction and arrangement, is unusually economical and entirely suitable for accomplishing the desired results in an efficient manner. Therefore, a more lengthy description is regarded unnecessary.

Minor changes in shape, size and rearrangement of details coming within the field of invention claimed may be resorted to in actual practice if desired.

What is claimed is:

1. In a cooler and humidifier of the class described, a water pan having an inturned flange at its top forming an anti-splash guard, the opposite end portions of said guard being provided with longitudinally spaced notches functioning as guide slots, and a plurality of moisture absorbent units having their lower end portions resting in said pan and their vertical end edge portions removably seated in said guide slots, and an open-ended casing resting on said flange and surrounding the upper projecting portions of said units.

2. In a cooler and humidifier of the class described, a water pan, an open-ended casing mounted on said pan, a removable cover for said casing, said casing having short depending end walls at its opposite open ends, said end walls being provided with inturned horizontally disposed flanges equipped with notches functioning as guide slots, and a plurality of longitudinally extending vertically disposed absorbent units having their lower end portions resting in said pan and their upper end portions engaged in said guide slots.

3. A cooler and humidifier comprising a water pan having an inturned top flange, a plurality of spaced vertical plates removably resting in and projecting upwardly from said water pan to provide horizontal air passages between the projecting upper portions thereof, absorbent coverings on said plates for supplying moisture from said pan to the air flowing through said passages, and a cover mounted over the tops of said plates, said inturned top flange of the water pan having spaced notches in opposed portions thereof forming guide slots in which the vertical edges of the lower portions of said plates are removably seated.

4. A structure as specified in claim 1, wherein the casing is provided at opposite ends and near the top with inturned flanges having notches forming guide slots in which the upper portions of said plates are engaged.

5. A cooler and humidifier comprising a water pan having an inturned top flange, a plurality of spaced vertical plates removably resting in and projecting upwardly from said water pan to provide horizontal air passages between the projecting upper portions thereof, absorbent coverings on said plates for supplying moisture from said pan to the air flowing through said passages, and a cover mounted over the tops of said plates, and an open-ended casing secured on the top flange of said water pan and surrounding the upper projecting portions of said plates, said cover being fitted on and closing the top of said casing.

In testimony whereof I affix my signature.

RALPH D. MATTESON.