(No Model.)

J. W. COLLINS.

AIR PURIFIER.

No. 447,942. Patented Mar. 10, 1891.

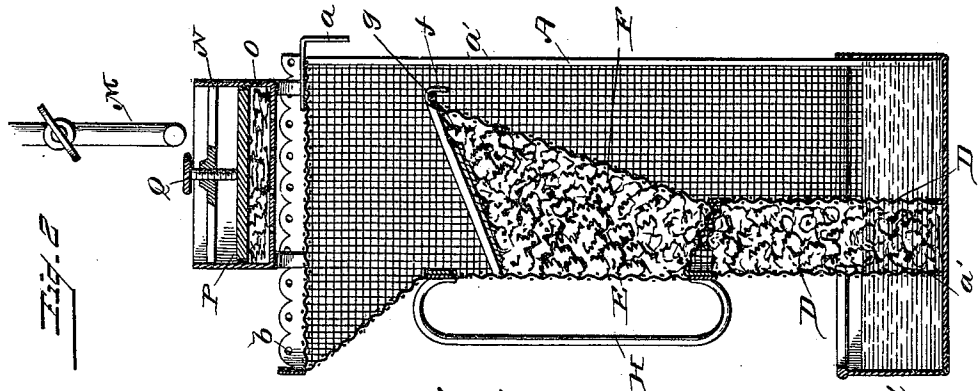


Fig. 2.

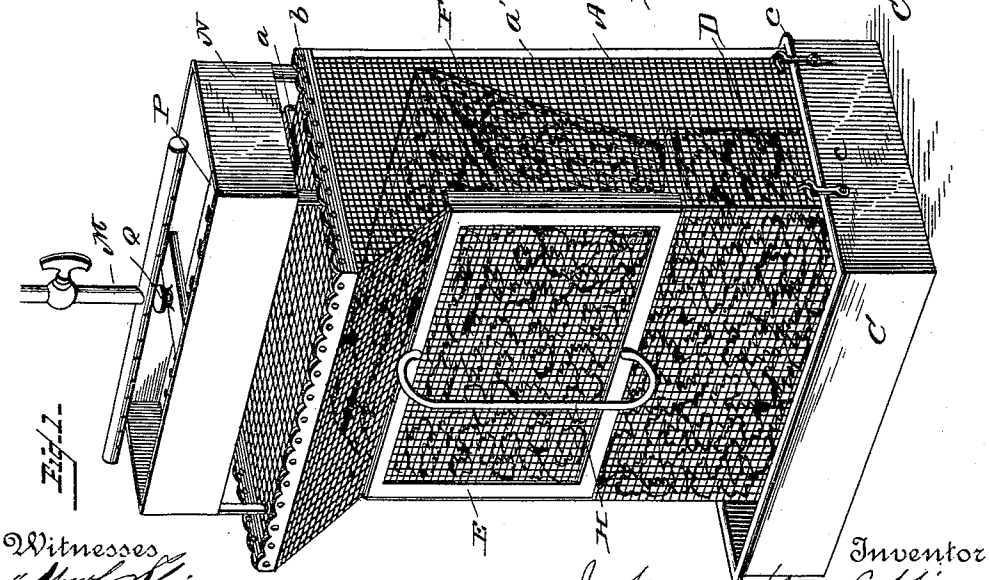


Fig. 1.

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UNITED STATES PATENT OFFICE.

JOHN W. COLLINS, OF WASHINGTON, DISTRICT OF COLUMBIA.

AIR-PURIFIER.

SPECIFICATION forming part of Letters Patent No. 447,942, dated March 10, 1891.

Application filed July 8, 1890. Serial No. 358,083. (No model.)

To all whom it may concern:

Be it known that I, JOHN W. COLLINS, of Washington, in the District of Columbia, have invented certain new and useful Improvements in Air-Purifiers and Evaporators; and I do hereby declare the following to be a full, clear, and exact description of the same, reference being had to the accompanying drawings, forming a part of this specification, and to the letters of reference marked thereon.

This invention relates to improvements in air-purifiers or evaporators, such as are primarily adapted to be placed in or over the mouth of the flues leading from a furnace or other heater of any description into a compartment or room to be heated, the object being to provide a means for disseminating vapor for simply moistening the air or for disinfecting and killing disease-germs in the air, &c., and at the same time effectually prevent the entrance of any impurities through the heating-flue.

The invention consists in certain novel details of construction and combinations and arrangements of parts to be hereinafter described, and pointed out particularly in the claims at the end of this specification.

Referring to the accompanying drawings, Figure 1 is a perspective view of a purifier and evaporator constructed in accordance with my invention. Fig. 2 is a vertical section through the same.

Like letters of reference in all the figures indicate the same parts.

By referring to the drawings it will be seen that a wire net or open-work frame A is shown, which is of substantially rectangular shape and is adapted to fit over the mouth of a register and be held in place by hooks *a a*, which pass in behind or through the face-plate, such construction of the device being the one adapted for general public use, and as it illustrates the points of novelty claimed it is the only form which it is deemed necessary to show, while it is obvious that its form may be modified to suit any situation or the public taste.

The rectangular frame, or "open-work basket," as it may be called, is open at the back and, preferably, also at the bottom, all the free edges being bound by metal strips *a'* and the top by an ornamental frieze *b*, the latter performing the double function of strengthening the upper corner and also giving a highly ornamental appearance. At the bottom of the basket a tank C is provided of any desired depth, but preferably extending some distance in front of the basket, and is detachably connected thereto, preferably by hooks *c c* or some other well-known fastening means. The tank, it will thus be seen, can be easily and quickly removed, cleaned, replenished, and replaced without the necessity of removing the whole open-work basket. Within the basket a pocket for the reception of pieces of sponge, absorbent cotton, or other absorbent substance is formed, which at the lower end dips into the tank, so as to keep the absorbent material constantly wet when there is water in the tank. This pocket is preferably formed by an open-work or wire-net partition D, which extends straight up a short distance, then inclines back to a point near the top of the flue opening or basket, leaving, however, a good space over the top for the passage of a part of the heated air, which is purified and dampened by contact with the surface of the absorbent material at the top of the pocket. The air impinging against the absorbent material in the pocket not passing through the same is deflected and escapes at each side, or else is deflected down onto the surface of the water in the tank and is subjected to an additional purification thereby.

In the preferred construction (shown in Figs. 1 and 2) the pocket, or the upper portion thereof, is made removable, and for this purpose a removable section or panel E is formed in the front of the basket, and the part F of the pocket to be removed is formed on or attached to this panel, and a handle H is provided for convenience in removing the same. When in the basket the pocket is held in position by a hook *f* on its upper rear edge, which hooks over a rod *g*, passing across the basket. With this construction, should the absorbent material in the pocket become dry it is only necessary to remove the whole section of pocket and plunge the same into a vessel of water and return it to its place, or if there be any water in the tank the same will be fed up by capillary attraction, the absorb-

ent material in the removable section of the pocket making contact with that in the lower section through the meshes of the net-work.

If desired, the device may be kept constantly supplied with water through a supply-pipe M, having a perforated T end and a stop-cock, as shown, or a reservoir N, having a perforated bottom, may be placed on the top of the basket and adapted to drip its contained water down onto the top of the pocket, the rate of supply being regulated by locating a pervious substance in the bottom of the reservoir over the perforations and compressing the same more or less by the plate P and set-screw Q, as will be readily understood.

Having thus described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. In an air-purifier and evaporator such as described, the combination, with the open-work basket having a removable section and a tank, of the pocket mounted on such removable section and containing absorbent material, whereby the pocket, with its contents, may be removed and recharged, substantially as described.

2. In an air-purifier and evaporator such as described, the combination, with the open-work basket having the removable section and the tank, of the pocket containing absorbent material having the lower section dipping into the tank and the upper section mounted on the removable section of the basket, with the absorbent material of the two sections in contact, substantially as described.

3. In an air-purifier and evaporator such as described, the combination, with the open-work basket having the removable panel in the front, of the pocket mounted on said panel and adapted to be removed therewith, and the tank, substantially as described.

4. In an air-purifier and evaporator such as described, the combination, with the open-work basket and tank, of the rod *g*, extending across the basket, and the pocket hooked on said rod, substantially as described.

5. In an air-purifier and evaporator such as described, the combination, with the open-work basket having the tank and pocket containing absorbent material, of the reservoir located above the pocket and having the perforated bottom, the pervious material over said perforations, and the plate and set-screw for compressing said material, substantially as described.

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