

(No Model.)

J. W. COLLINS.

AIR PURIFIER AND EVAPORATOR.

No. 370,529.

Patented Sept. 27, 1887.

Fig. 1.

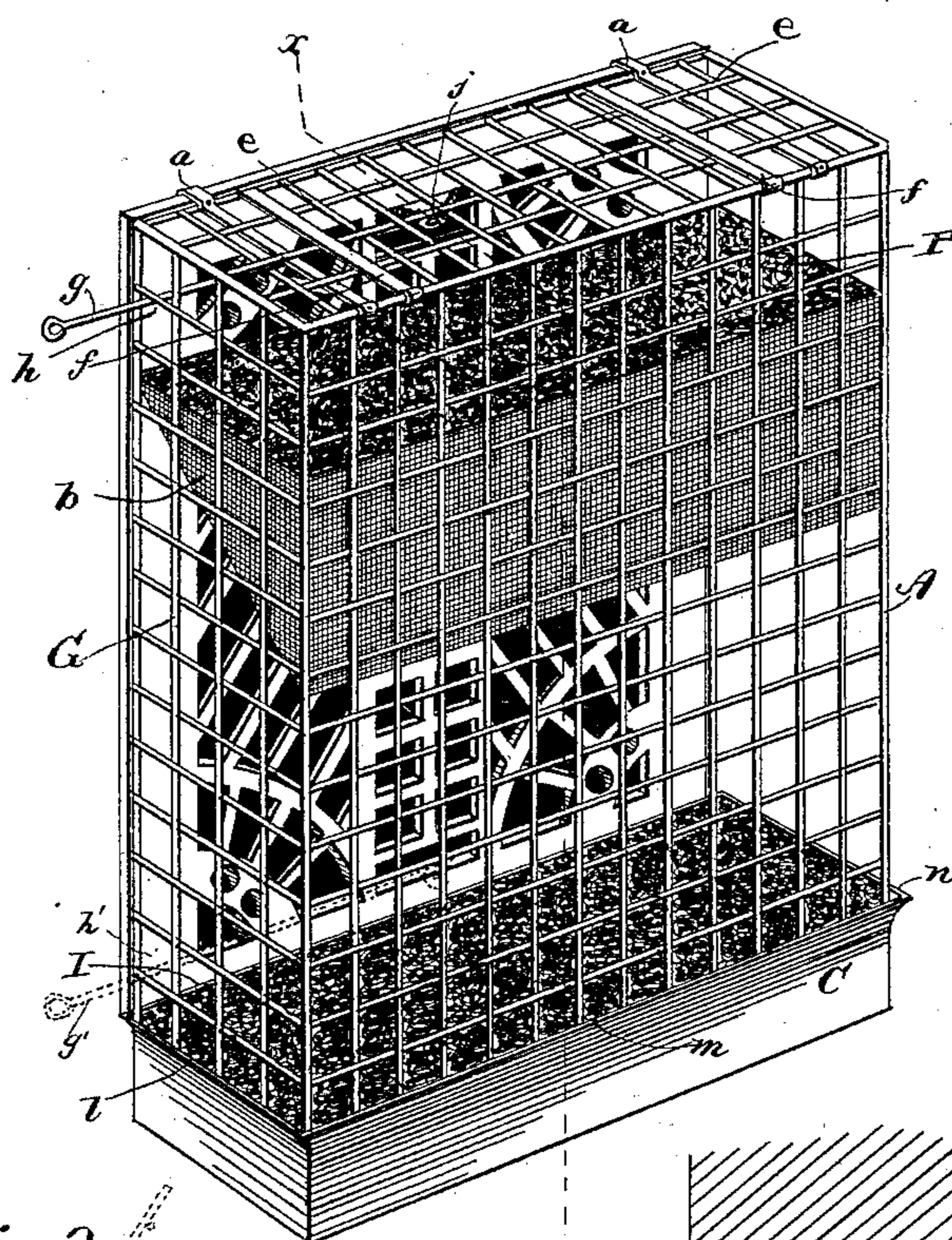
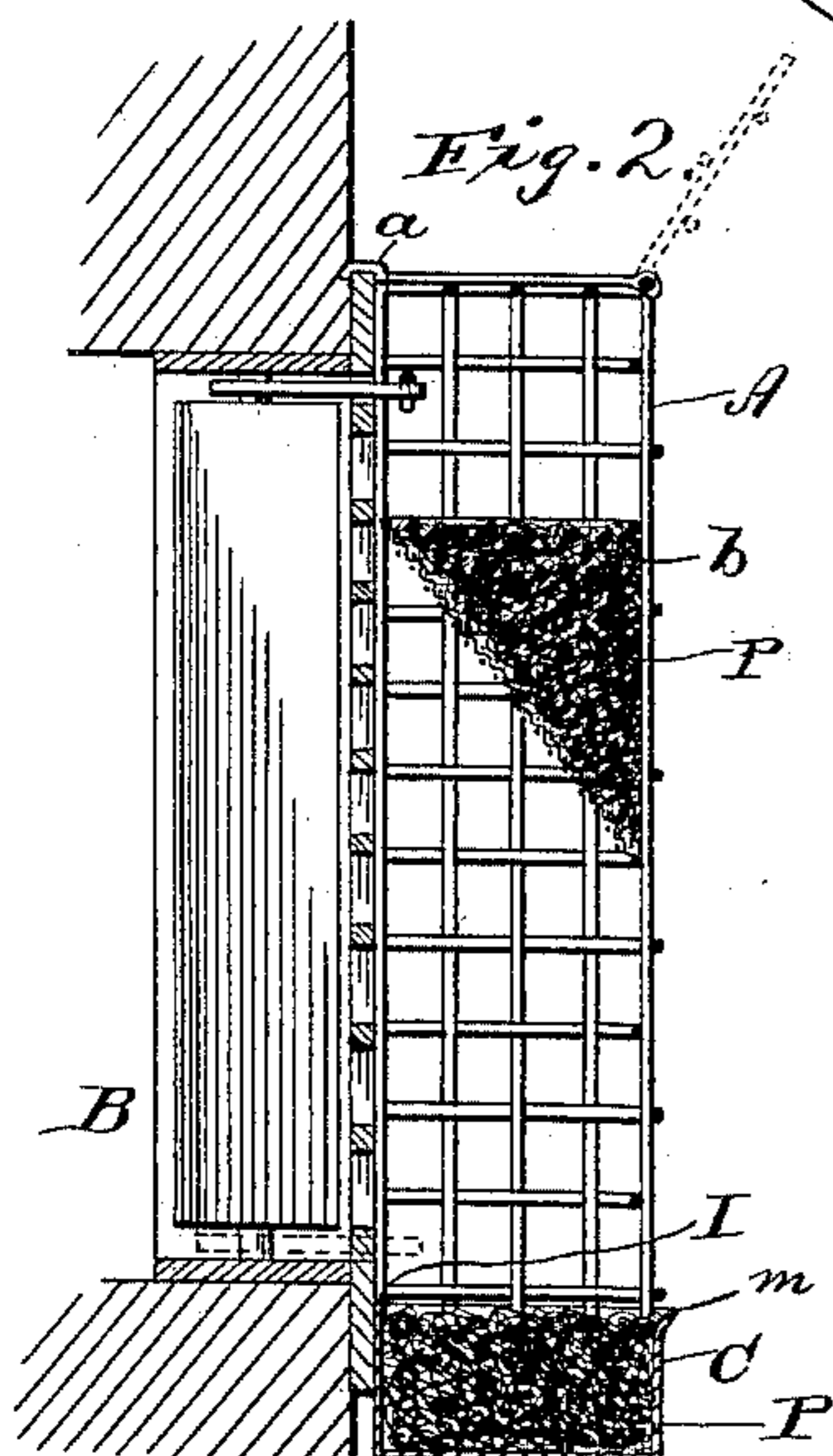


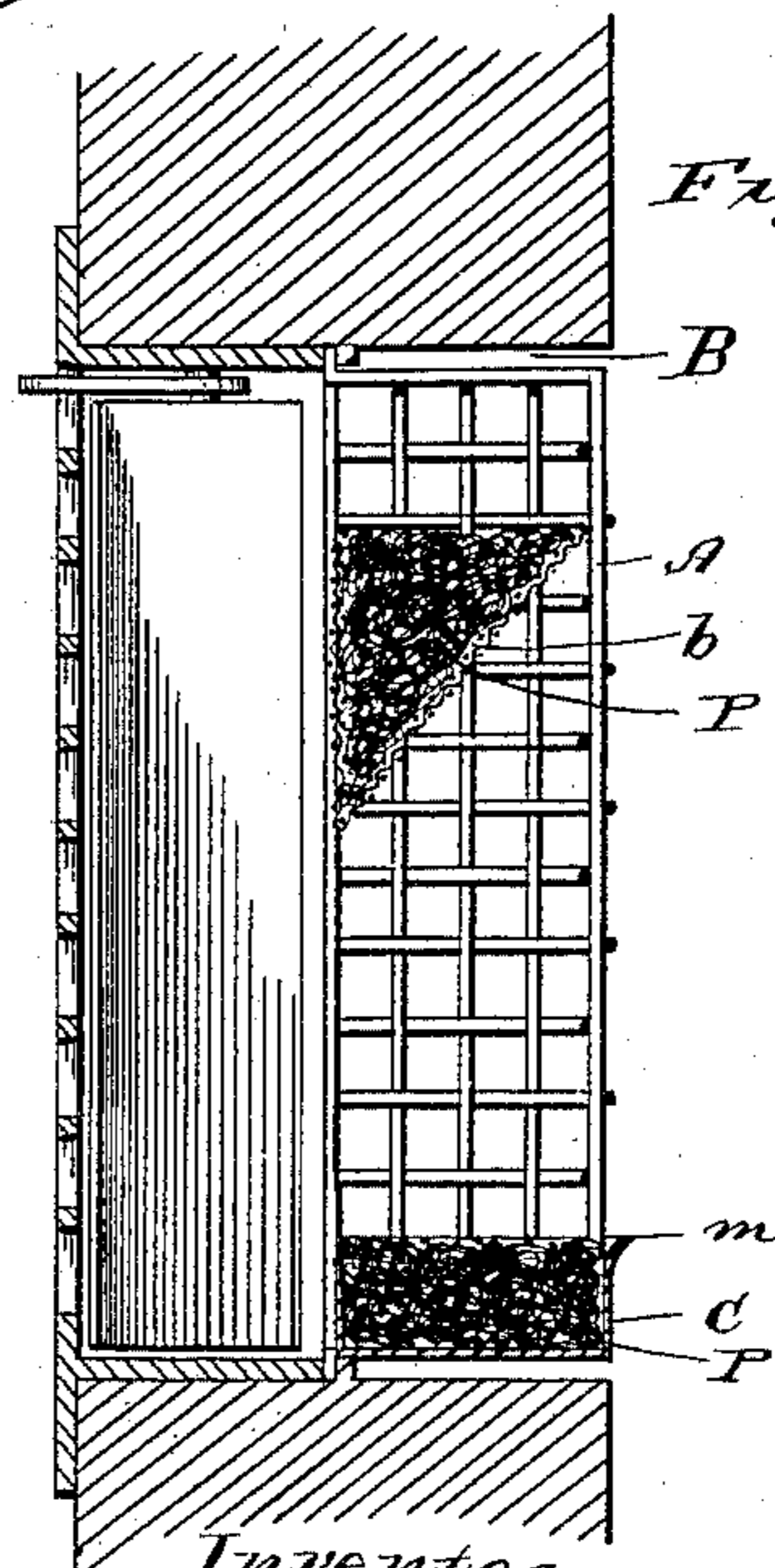
Fig. 2.



Witnesses.

Chas. R. Burr.
A. J. Stewart.

Fig. 3.



Inventor.

John W. Collins
By Meloy & Stewart
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UNITED STATES PATENT OFFICE.

JOHN W. COLLINS, OF WASHINGTON, DISTRICT OF COLUMBIA, ASSIGNOR OF
ONE-HALF TO JOHN FREDERICK ATZELL, OF SAME PLACE.

AIR-PURIFIER AND EVAPORATOR.

SPECIFICATION forming part of Letters Patent No. 370,529, dated September 27, 1887.

Application filed January 6, 1887. Serial No. 223,526. (No model.)

To all whom it may concern:

Be it known that I, JOHN W. COLLINS, a citizen of the United States, residing at Washington, in the District of Columbia, have invented a new and useful Evaporator and Air-Purifier, of which the following is a specification.

My invention relates to that class of evaporators and purifiers that are attached to registers or other flues through which air passes for the ventilation or heating of dwellings; and its object is to provide a simple and inexpensive device for purifying and moistening air.

The following is a description of my invention, reference being had to the accompanying drawings, in which—

Figure 1 is a perspective view of my invention. Fig. 2 is a vertical section on the line *x x*. Fig. 3 shows the application of my invention to registers that have removable fret-work and slats.

Similar figures refer to similar parts throughout the several views.

The evaporator is composed of a wire net, A, made of as fine or coarse a quality as may be desired, which stops large particles of dust or other dirt from escaping into the room. This wire frame A may be made any shape desired, but always of such a size that the interior edges of its sides will fit closely around the exterior edges of the hole in the register or flue to which it is attached by means of the hooks *a a*, fastened over the top of the frame of the register, or by other suitable fastenings.

In the interior of the wire frame A, and about two-thirds of the distance from its base to the top, there is secured a wire-net pocket, *b*, extending from side to side of the wire frame A, and made in any shape desired, but most advantageously made in the shape of an acute-angle triangle with the acute angle down, as shown in the drawings, Fig. 2. In this case it is only necessary to add the diagonal piece of netting, the frame-work itself constituting the other walls of the pocket. There may be one or more of these pockets used, as desired, depending upon the size of the frame A.

The wire frame A rests in and is fastened to the tank C, whose upper edges, *l m n*, curve outward from the sides of the wire frame A,

so as to catch any water that may run down the sides of the net. The inner edge, *l*, of the tank C is made to come flush with the bottom edge of the hole in the flue B.

The pocket *b* and the tank C are filled with pieces of sponge or other porous and absorbing substance. When the air coming through the flue B strikes the pocket *b*, it either passes through the same and the porous substance therein, and is thus purified and moistened, or else it is deflected downward on the moistened substance in the tank C by reason of the inclined edge of the pocket *b*, and is there charged with moisture sufficient to deprive it of its noxious effects on the health.

The top *e e* of the wire frame A may, if desired, be so constructed as to open by means of the hinges *f f*, and water may thus be poured on the substance in the pocket *b* through the opening thus formed, or it may be poured through the wire-gauze at the top of the frame A. When the substance in pocket *b* is saturated, the water will drop on that in the tank C, which, being water-tight, will prevent the water from dropping on the carpet or floor.

By reference to Fig. 2 it will be seen that the lever for working the valves of the register or flue may be worked by opening the top *e e* of the wire frame A, or by means of the rod *g*, which passes through the hole *h* in the side G, and is connected to the lever by means of the slot *j* in its end. When the lever for working the valves of the flue is situated at the bottom of the same, it may be worked by means of the rod *g'*, passing through the hole *h'* in the side G and connecting with the lever by means of the slot *j* in its end.

My evaporator is applicable to registers of fire-place heaters or to registers of air-heaters situated in the cellar of a building and communicating with registers fitted into walls of the different rooms, and wherever there is a current of air to be purified and moistened. It may also be placed in the interior of registers that have removable fret-work and slats, thus resting inside the flue and out of sight, as shown in Fig. 3 of the drawings.

I do not limit my claim to the wire-net pockets and tank fastened to the inside of the wire frame. They may be attached to the outside thereof, if so desired.

What I claim as my invention, and desire to secure Letters Patent for, is—

1. The combination of an air-flue, a wire-net frame and wire net entirely covering the mouth of said flue, and one or more wire-net pockets having inclined walls and absorbent material therein, the pockets being attached to said frame so as to act as deflectors, as described, and a tank secured to the bottom of the wire frame below said pockets, substantially as and for the purposes described.

2. The combination, with an air-flue, of an open-work frame located at or near the mouth thereof, having one or more open-work pockets therein for containing absorbent material, and a tank for catching the drip from said pockets and a removable top or section, whereby the contents of said pocket may be inserted or removed without moving the entire frame, as set forth.

3. The combination, with an air flue or con-

duit and an open-work frame located at or near its mouth, having suitable pockets therein for containing absorbent material, of a tank for catching the drip from said pockets, having its upper edge flared slightly outward away from said frame, substantially as and for the purpose set forth.

4. The combination, with an air flue or conduit, of an open-work frame located at or near its mouth, having a pocket or pockets therein for containing absorbent material, the lower surfaces of which are at an angle to the line of movement of the air, whereby they act as deflectors and deflect the impinging air downward against the upper surface of the next lower pocket or tank, substantially as described.

JOHN W. COLLINS.

Witnesses:

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