M. A. GARRETT.

AIR MOISTENER AND DUST ARRESTER

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1,431,909. **Patented Oct. 10, 1922.**

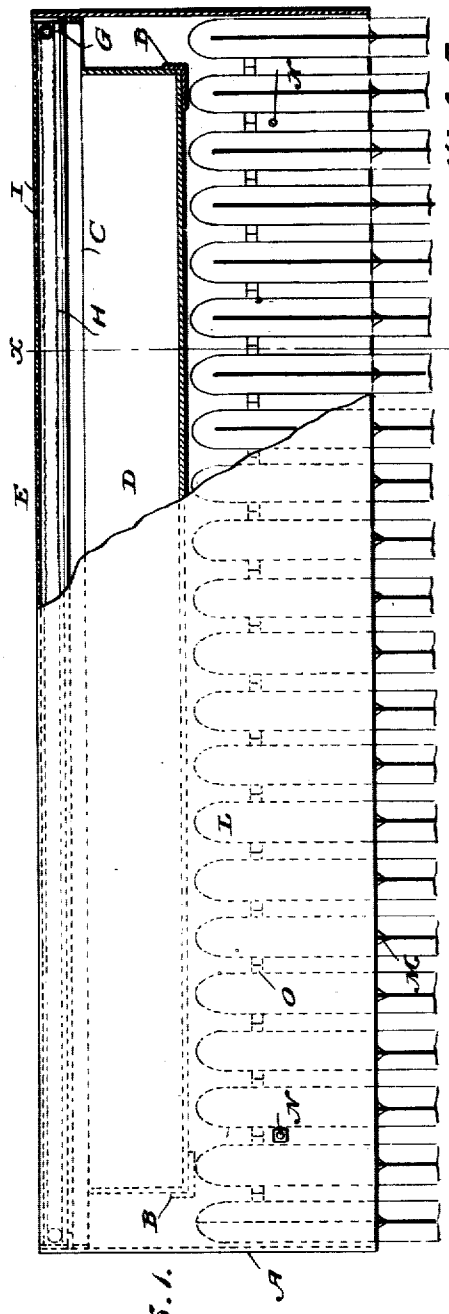


Fig. 1.

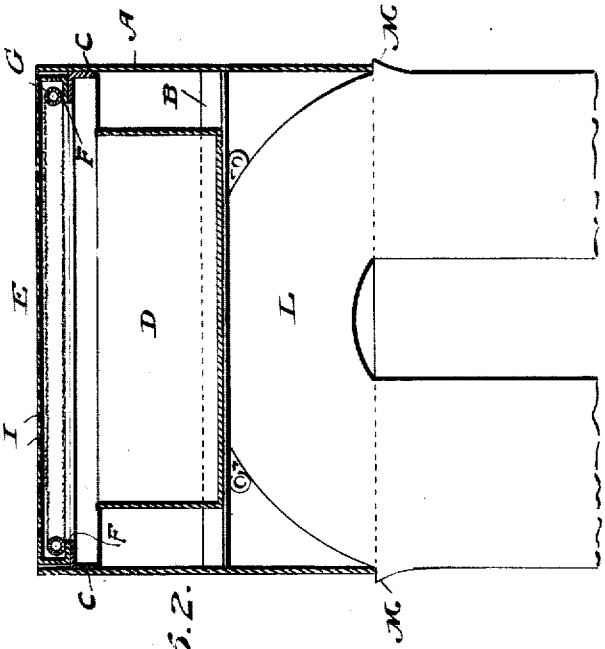


Fig. 2.

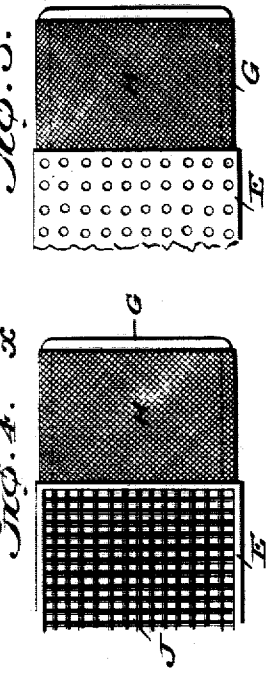


Fig. 3.

Fig. 4.

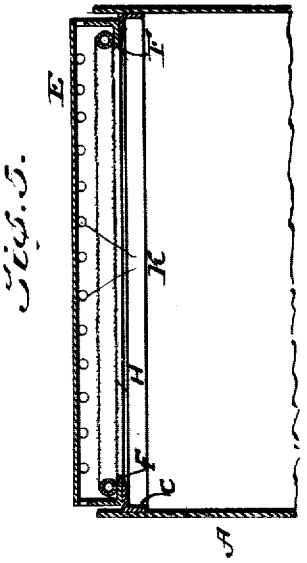


Fig. 5.

Witness

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UNITED STATES PATENT OFFICE.

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AIR MOISTENER AND DUST ARRESTER.

Application filed April 4, 1921. Serial No. 458,362.

To all whom it may concern:

Be it known that I, MYERS A. GARRETT, a citizen of the United States, residing at Chicago, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in Air Moisteners and Dust Arresters; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

The object of my invention is two-fold, to wit: The provision of an effective air moistener or humidifier for the air of rooms heated by steam or hot water through the medium of radiators, and also in connection therewith the provision of means for removing dust and other particles of matter from the air in which they are suspended, both said means functioning simultaneously.

The desirability of humidifying the heated air in a room and removing impurities or dust carried thereby in suspension, in the interests of health and cleanliness, is well known and need not be specified.

The invention consists in certain novelties of construction and in the combination of parts as herein set forth and claimed.

The accompanying drawing illustrates an example of the embodiment of the invention, the parts being constructed and combined according to the best mode of procedure I have so far devised for the purpose.

Figure 1 is a side view in elevation of the top portion of a steam or hot water radiator, with my improved air moistener and dust arrester or remover detachably supported thereon, the right hand part of the device being broken away to show the construction and the relative location of parts.

Figure 2 is a cross section in elevation of part of a radiator with my improved moistener and dust arrester supported thereby, the housing being of less depth than that shown by Figure 1, and the section being taken on a line corresponding to line *x*—*x* of Figure 1.

Fig. 3 is a top plan view of part of the cover of the device, the baffle cloth and frame being partly withdrawn endwise from the cover.

Fig. 4 is a top plan view of a part of a cover having a woven wire or gauze top.

Fig. 5 is a vertical sectional view in elevation illustrating a modified construction of the cover which has holes through the circumferential edge thereof.

Referring to the figures of the drawing, the letter A designates a housing substantially rectangular in cross-section, having open ends and made of sheet metal or other suitable material; B, B two angle irons located inside and adjacent the ends of the housing, the ends of said angle irons being secured to the opposite longitudinal walls or sides of the housing; C, an angle iron with one flange secured to the inner surface of the housing slightly below the top edge thereof and extending entirely around the housing, if so desired, the other flange projecting to form a seat or support for a cover; D, a water pan with open top supported upon the angle irons B, B, so that open spaces are provided on all sides between the sides of the housing and the sides of the pan; E, a cover preferably of metal closely fitting into the top open end of the housing and supported upon one flange of the angle iron C, the cover having flanges F at the opposite longitudinal edges forming seats or supports; G, a rectangular skeleton frame; and H, a baffle cloth of bag shape slipped over the frame thus providing two layers of cloth spaced apart, one above the other.

The top of the cover is provided with a multiplicity of openings when the cover is of sheet metal, consisting of holes I therethrough, or the cover may be of woven wire J as shown by Fig. 4. A modified construction is shown by Fig. 5, where the cover extends slightly above the top edge of the housing and is provided with a series of holes K adjacent the edges, the top of the cover in this instance being imperforate or closed.

The frame and baffle cloth thereon may readily be withdrawn from its seat in the cover by raising one end of the cover above the top edge of the housing, and when the cloth is cleaned, the frame and cloth may be slid into position again and the cover lowered upon the angle iron supports.

L designates a radiator of any design provided with lugs or offsets M, upon which the lower edge of the housing rests when in position. The angle irons B, B also rest upon the top surfaces of the sections of the

radiator and afford an additional support for the housing. To prevent movements of the housing sideways, or its displacements, relative to the radiator, in the embodiment of the invention shown by Figure 1, where the housing is of considerable depth, bolts N may be passed through the housing walls and below the spacing projections O, between the sections of the radiator and removably secured by nuts.

It will be observed that the housing walls are spaced from the radiator a suitable distance so that heated air can freely pass upwardly between the radiator and interior surfaces of the housing on all sides.

When the parts are assembled and the pan supplied with water and the appliance in place upon a radiator, the operation is as follows:

The water becoming heated passes in the form of vapor upwardly to the baffle cloth which becomes moistened, as it retains some of the vapor. The remainder of the vapor mingled with the hot air arising around the pan passes through the holes in the cover, or other openings as the meshes of wire when wire gauze is use, to the atmosphere of the room, which is moistened thereby.

It is well known that the air in a room heated with steam or hot water through the medium of a radiator, when it comes in contact with the hot radiator surfaces, ascends or rises inasmuch as heated air is lighter than cold air and then becomes diffused throughout the air in the room, the constant circulation or movement of the air thus being maintained.

As is also well known, air is a room carries dust which is evidenced by its deposition upon the walls and furnishings of the room. A radiator provided with my appliance obviously will remove the greater part of the dust and light particles of matter held in suspension by the air in a room. The heated air ascending through the open spaces between the radiator and walls of the housing on all sides can escape only by passing through the moistened baffle cloth and out of the openings through the cover, and the greater part of the dust carried thereby will be caught and retained by the moist baffle cloth. As the dust-laden air repeatedly becomes heated and passes through the baffle cloth, nearly all the dust is finally removed therefrom, leaving none to settle on the walls and furnishings, consequently the task of dusting is thereby obviated.

From the foregoing description, taken in connection with the drawing, it is clear that I have provided a means for not only moistening the air in a room to the desired degree of humidity necessary for health, but have also provided in connection therewith means for effectively removing dust and foreign matter from the air which, when present is drawn into the lungs with deleterious effects and is also a source of annoyance when deposited upon the walls and furnishings of a house.

What I claim is:

1. The combination in an air moistener and dust arrester, of a housing closed at the sides and open at the top and bottom; supports inside the housing and extending crosswise thereof secured at their ends to the inner vertical surfaces of the housing, said supports being for the purpose of engaging the top of a radiator and also to hold a water pan; a water pan on said supports; angle irons secured to the inner surface of the housing below the top edge thereof and each having one flange projecting inwardly horizontally, said flanges being for the purpose of supporting a cover; a removable cover with a perforated top for the passage of air; and a dust arrester carried by the cover and removable therefrom; said cover fitting within the open top of the housing, located above the water pan, and resting upon the said inwardly projecting flanges.

2. The combination with a housing having closed sides and open top and bottom, of means extending across the interior of the housing intermediate its open top and bottom to support the housing upon a radiator; inwardly extending flanges secured to the interior surface of the housing and located below the open top thereof, said flanges being for the purpose of supporting a cover and forming a substantially tight joint between the cover and sides of the housing so air cannot pass; a cover, with a plurality of openings through its top and means at its under surface to hold a dust arrester, supported by the said inwardly extended flanges; and a removable dust arrester on the holding means at the under surface of the cover; the said cover fitting within the open top of the housing and held in place by the edge of the housing projecting above the said flanges.

3. In a device of the character described, the combination of a housing having closed sides and open top and bottom; supports for a water pan upon the inside of the housing and intermediate the top and bottom thereof; a removable water pan upon the said supports, there being open spaces on all sides of the pan between the pan and the inner surface of the housing through which air can ascend; a removable cover closing the housing at the edges thereof, said cover having a plurality of openings for the passage of air; means secured to the housing for supporting the cover; and a dust arrester of open meshed material supported by the cover; said cover and dust arrester being located above the removable water pan and closing the housing so that the ascending

air will pass around the water pan and through the arrester and the openings in the cover.

4. The subject-matter of claim 3 when said dust arrester consists of a frame covered with an open meshed fabric and the said cover is provided with flanges at the sides and has an open end to loosely support the dust arrester frame, whereby the dust arrester frame may be removed endwise from the cover for cleaning.

5. The subject-matter of claim 3 when the means in connection with the housing for supporting the cover is located on the inner surface of the housing below the open top thereof so the cover will be held in place by the projecting edge of the housing and the dust arrester and water tank be hidden from view.

In testimony whereof I affix my signature.

MYERS A. GARRETT.