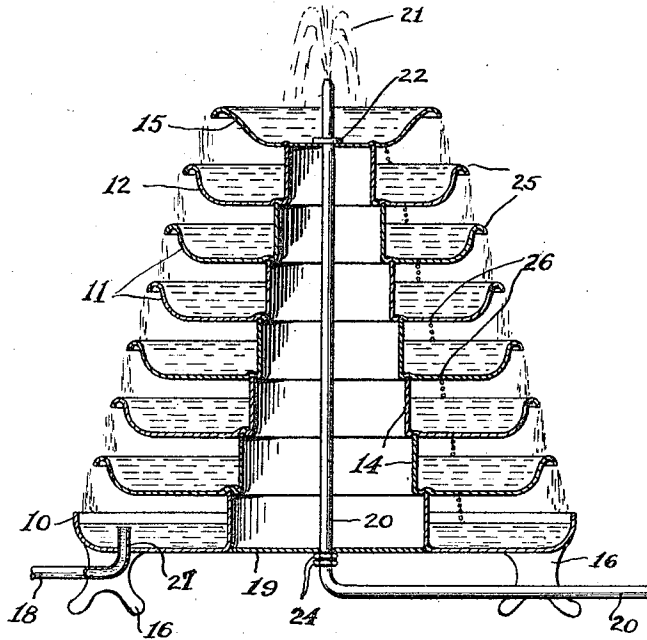


B. MACFADDEN.
RADIATOR.
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1,322,803.

Patented Nov. 25, 1919.



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UNITED STATES PATENT OFFICE.

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RADIATOR.

1,322,803.

Specification of Letters Patent.

Patented Nov. 25, 1919.

Original application filed April 19, 1917, Serial No. 163,307. Divided and this application filed December 18, 1918. Serial No. 267,379.

To all whom it may concern:

Be it known that I, BERNARR MACFADDEN, a citizen of the United States, residing in New York city, in the county of New York and State of New York, have invented certain new and useful Improvements in Radiators, of which the following is a specification.

This invention relates to means for humidifying and heating the air of rooms, buildings and the like; and the invention relates particularly to matter divided from my co-pending application Serial No. 163,307 filed April 19th, 1917, for heating and humidifying systems.

One object is to provide a radiator whereby the air is humidified and heated by direct contact with water exposed in open troughs or fountain jets of the radiator.

Another object is to provide a convenient, efficient and economical construction for such a radiator.

These and other objects will appear as the description proceeds, and it is particularly noted that various changes may be made in the construction and details thereof without departing from the scope of the invention as claimed.

In the accompanying drawing, showing by way of example, one of many possible embodiments of the invention, the figure is a central vertical sectional view showing the open trough radiator.

The radiator has as its principal feature the exchange of heat from water by direct contact of the water with the air of the room to be heated.

As shown, the radiator comprises a plurality of annular troughs 10, 11, and 12, each provided with an upwardly extending flange 14, on which rests the trough next above, except in the case of the top trough 12 which supports thereon the bowl 15.

The lowermost trough 10 is provided with supporting legs 16 and an outlet pipe 18 leading to a heater or any convenient point of discharge.

Extending across the opening formed by the bottom annular trough 10 is a disk-like web 19 provided with a central perforation through which passes the inlet pipe 20, in turn passing through the bottom of the bowl 15 and terminating with a small orifice for furnishing a spray 21. The pipe 20 also serves for holding together the various

sections of the radiator by means of the collar 22 and the nuts 24.

The bowl 15 and the troughs 11 and 12 are provided with lips 25 whereby the water may drip to each trough below, the troughs gradually increasing in diameter downwardly for this purpose.

The bowl and the troughs 11 and 12 are provided with small bleed holes 26. For the trough 10, the bleed hole 27 is in the outlet pipe 18. By these bleed holes the troughs are entirely drained out when the radiator is to be put out of use, but they are not large enough to interfere with the normal operation of the radiator when in use.

The radiator may be supplied with hot water by any suitable means or apparatus whereby water may be kept flowing in at the inlet pipe 20. Such apparatus is shown in my said co-pending application, but the invention is in no way limited to use with said apparatus, nor is the apparatus limited in its uses to heating or moistening.

When in use, the radiator not only humidifies the air enough to make it most pleasant and healthful for breathing; but the direct contact of the air with the water makes the transfer of heat to the air very efficient, thus saving fuel, and cost in installation.

I claim—

1. In combination, a plurality of superposed troughs; and inlet means for holding all of said troughs together.

2. In combination, a plurality of superposed troughs each resting upon the trough beneath; an inlet pipe; and means on said pipe for holding all of said troughs together.

3. In combination, a lower trough; a plurality of superposed intermediate troughs each resting upon the trough beneath, the lowermost intermediate trough resting upon said lower trough; a bowl resting upon the uppermost trough; an inlet pipe; and means on said pipe and engaging the bowl and said lower trough for holding all of said troughs together.

4. In combination, a lower annular trough provided across its mid-part with a cross-piece provided with a perforation; a plurality of superposed intermediate annular troughs each resting upon the trough resting upon said lower trough; a bowl having an opening and resting upon the uppermost

trough; an inlet pipe passing through said perforation and opening and terminating above said bowl; and means on said pipe and engaging the bowl and said cross-piece for holding all of said troughs together.

5 5. In combination, a lower annular trough provided with a web formed across the mid-part of the trough and provided with a central perforation; a plurality of superposed intermediate annular troughs each resting upon the trough beneath, the lowermost intermediate trough resting upon said lower trough, a bowl having a central opening, and resting upon the uppermost trough; an inlet pipe passing through said perforation and opening and terminating above said bowl in a small orifice; and means on said pipe and engaging the bowl and said web for holding all of said troughs together.

20 6. In combination, a lower annular trough provided with an inner upwardly projecting flange and a web formed across the mid-part of the trough and provided with a central perforation; a plurality of superposed intermediate annular troughs each provided with an upwardly extending inner flange, and resting upon the trough beneath, the lowermost intermediate trough resting upon the flange of said lower trough; a bowl having a central opening, and resting upon the uppermost flange; an inlet pipe passing through said perforation and opening and terminating above said bowl in a small

orifice; a collar fixed on said pipe and resting in the bowl on the bottom thereof; and a nut on said pipe and pressing beneath said web.

7. In combination, a lower annular trough provided with supporting legs, an inner upwardly projecting flange and an integral disk-like web formed across the mid-part of the trough as a whole and provided with a central perforation; a plurality of superposed intermediate annular troughs each provided with an upwardly extending inner flange, a lip overhanging the trough beneath, and an annular recess in its lower part receiving the flange of the trough beneath, the lowermost recess receiving the flange of said lower trough; a bowl having an overhanging lip, a central opening, and a lower annular recess receiving the uppermost flange; an inlet pipe passing through said perforation and opening and terminating above said bowl in a small orifice; a collar fixed on said pipe and resting in the bowl on the bottom thereof; nuts on said pipe and pressing beneath said web; an outlet pipe leading from said lower trough; and a heating means communicating with said inlet pipe.

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Witnesses:

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