

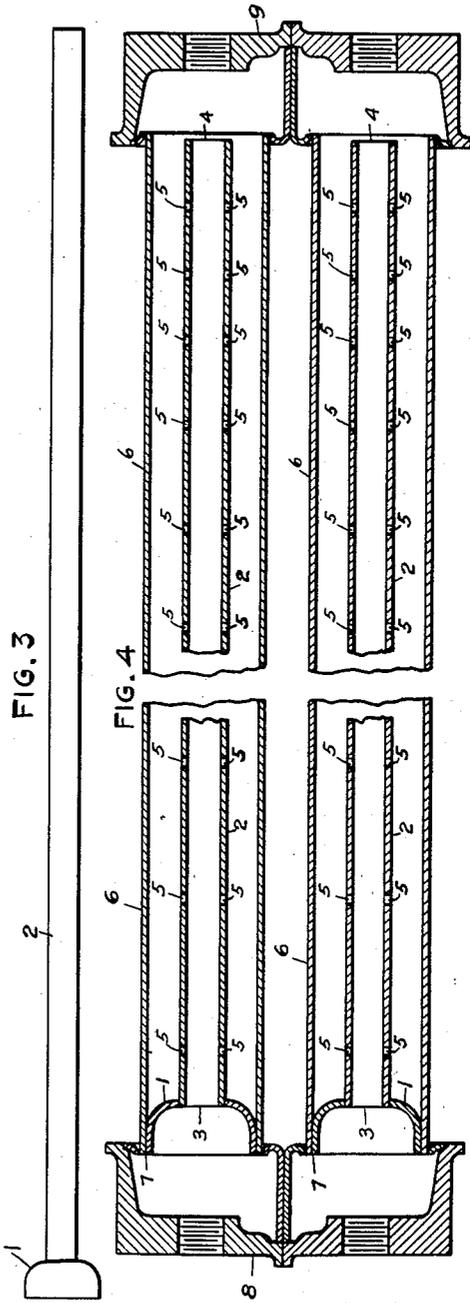
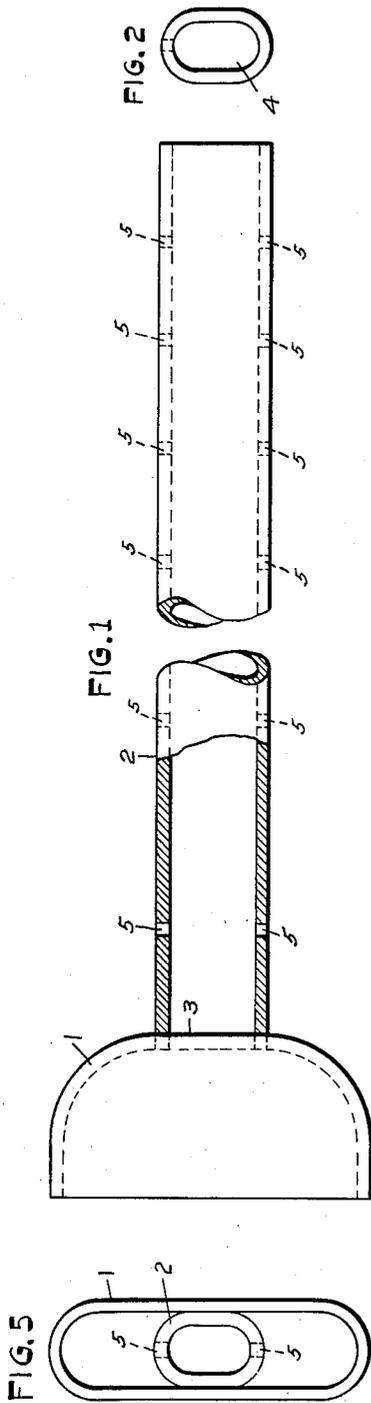
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L. D. HARNETT

1,847,608

RADIATOR

Filed Feb. 8, 1929



INVENTOR
LEWIS D. HARNETT.
BY *Loumin & Loumin*
ATTORNEY

UNITED STATES PATENT OFFICE

LEWIS D. HARNETT, OF COLUMBUS, OHIO, ASSIGNOR, BY MESNE ASSIGNMENTS, TO
BUCKEYE BLOWER COMPANY, A CORPORATION OF DELAWARE

RADIATOR

Application filed February 8, 1929. Serial No. 338,399.

My invention relates to radiators.

It is the object of my invention to provide a radiator in which an even distribution of steam can be obtained when a low head of steam is employed.

Heretofore, when a low head of steam has been employed, one end of the radiator has been hot but the other is cold. This is particularly disadvantageous when radiators are used with unit heaters and blowers in a school house, hospital and the like, as the cold incoming air will tend to condense the steam and possibly lead to freezing in the radiator unless there is an even, quick and thorough distribution of the steam admitted to the radiator. This object my invention accomplishes.

Referring to the drawings, Figure 1 is a side elevation of my distribution pipe enlarged and partially in section.

Figure 2 is an end elevation thereof.

Figure 3 is a complete side elevation.

Figure 4 is a section through the radiator.

Figure 5 is an end elevation of Figure 1 from the cup end.

Referring to the drawings in detail, 1 is a cup to which is connected, at the bottom, a pipe 2, known as the distribution pipe, opening into the bottom of the cup at 3 and open at its other end at 4.

This pipe is provided with a plurality of $\frac{1}{8}$ " openings 5 which are progressively closer to one another as the openings approach the end 4.

This distribution pipe has the cup 1 located within, and previously welded to the radiator pipe 6, as at 7. The pipe 2 is thus maintained in spaced relationship to the main pipe 6, and steam entering the pipe 2 is distributed through the openings 5 evenly throughout the length of the pipe 6. The steam enters the cup 1 and pipe 2 from the header 8 and makes its exit through the header 9.

Thus it is possible with a low head of steam to insure distribution throughout the pipe 6.

I desire to comprehend within my invention such modifications as may be clearly embraced within my claims and the scope of my invention.

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

1. In a radiator, a main pipe, a distribution pipe within the main pipe, a cup-shaped closure for one end of the main pipe fitting around one end of the distribution pipe, and a header for supplying steam to the distribution pipe.

2. In a radiator, a main pipe, a distribution pipe, a cup-shaped closure for one end of the main pipe fitting around one end of the distribution pipe and a header for supplying steam to the distribution pipe, said distribution pipe having a plurality of openings for distributing steam therefrom into the main pipe at intervals.

3. In a radiator, a main pipe, a distribution pipe and a header for supplying steam to the distribution pipe within the main pipe, said distribution pipe having a plurality of openings for distributing steam therefrom into the main pipe at intervals, said openings being located progressively closer to one another towards the end of the distribution pipe away from the source of supply of steam.

4. In a radiator, a pair of concentric pipes, means of positioning the inner pipe with respect to the outer pipe and closing the space therebetween at one end of said pipes, the other end of the outer pipe being open, means of delivering steam to the open end of the inner pipe, said inner pipe having means for distributing steam at intervals throughout its length to the outer pipe.

5. In a radiator, a pair of concentric pipes, means of positioning the inner pipe with respect to the outer pipe and closing the space therebetween at one end of said pipes, means of delivering steam to the open end of the inner pipe, said inner pipe having means for distributing steam at intervals throughout its length to the outer pipe, both of said pipes being open at the other end.

6. In a radiator, a pair of concentric pipes, means of positioning the inner pipe with respect to the outer pipe and closing the space therebetween at one end of said pipes, means of delivering steam to the open end of the inner pipe, said inner pipe having means for

distributing steam at intervals throughout its length to the outer pipe, both of said pipes being open at the other end, a header for supplying steam to the open end of the inner pipe, and a header for conveying away steam from the open ends of the inner and outer pipes.

7. In a radiator, an outer pipe, an inner pipe spaced therefrom, a cup-shaped member mounted on one end of the inner pipe and engaging the inside of one end of the outer pipe, and a header mounted on the outer pipe for supplying steam through said cup to the inner pipe, said inner pipe having a plurality of openings communicating with the outer pipe.

8. In a radiator, an outer pipe, an inner pipe spaced therefrom, a cup-shaped member mounted on the inner pipe and engaging the inside of one end of the outer pipe, and a header mounted on the outer pipe for supplying steam through said cup to the inner pipe, said inner pipe having a plurality of openings communicating with the outer pipe, said openings being arranged progressively closer towards the end away from the source of steam in the header.

9. In a radiator, an outer pipe, an inner pipe spaced therefrom, a cup-shaped member mounted on the inner pipe and engaging the inside of one end of the outer pipe, and a header mounted on the outer pipe for supplying steam through said cup to the inner pipe, said inner pipe having a plurality of openings communicating with the outer pipe, said openings being arranged progressively closer towards the end away from the source of steam in the header, a second header at the other end from the first header adapted to remove steam from the open ends of the inner and outer pipes.

10. In a radiator, an inner and outer pipe of substantially rectangular section in spaced relationship one to the other, means of positioning and sealing said pipes at one end in spaced relationship to the other whereby the inner pipe is open to receive steam and the outer pipe is closed, the other ends of said pipes being open, said inner pipe having a plurality of distribution openings for distributing steam equally throughout the length of the outer pipe.

In testimony whereof, I affix my signature.
LEWIS D. HARNETT.