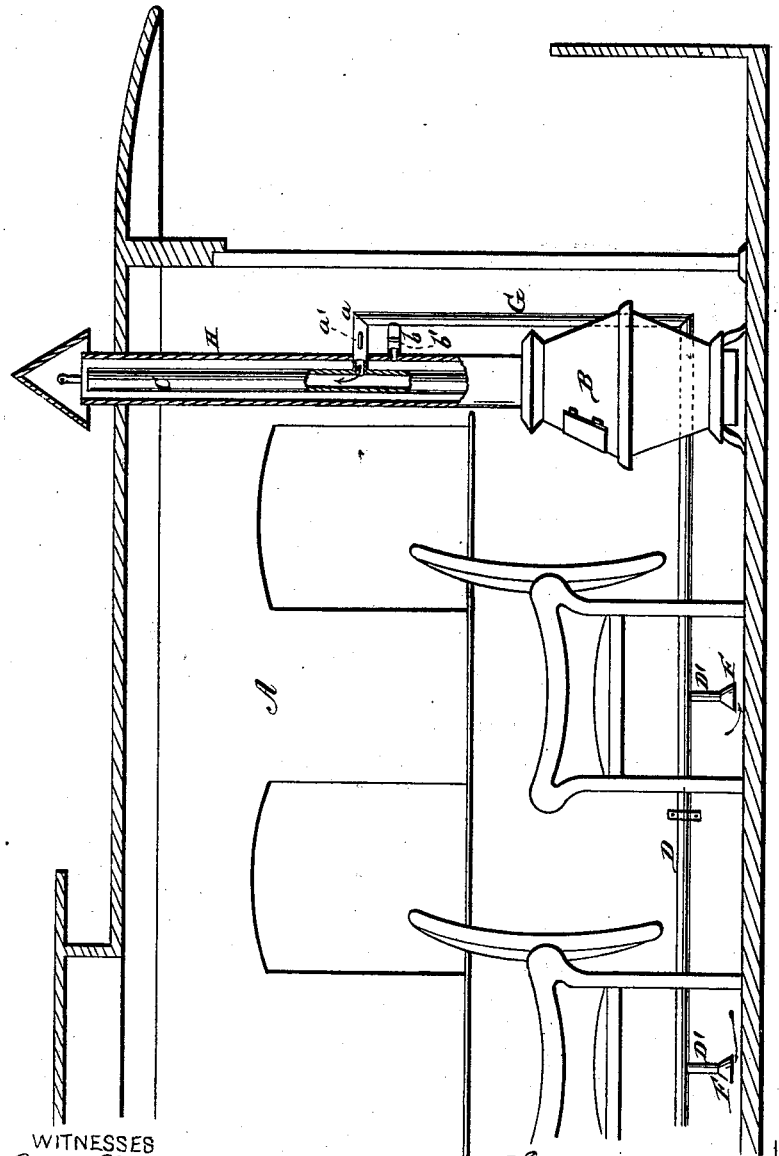
I. L. MAHAN.

Heater and Ventilator.

No. 206,339. Patented July 23, 1878.



WITNESSES

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ISAAC L. MAHAN, OF BAYFIELD, WISCONSIN.

IMPROVEMENT IN HEATERS AND VENTILATORS.

Specification forming part of Letters Patent No. **206,339,** dated July 23, 1878; application filed March 23, 1878.

To all whom it may concern:

Be it known that I, ISAAC L. MAHAN, of Bayfield, in the county of Bayfield and State of Wisconsin, have invented a new and valuable Improvement in Heaters and Ventilators; and I do hereby declare that the following is a full, clear, and exact description of the construction and operation of the same, reference being had to the annexed drawing, making a part of this specification, and to the letters and figures of reference marked thereon.

The figure of the drawing is a representation of a longitudinal vertical section of a car, showing my heater and ventilator.

My invention relates to means for equalizing the temperature in railroad-cars, halls, and other places, as will be hereinafter more fully set forth.

The annexed drawing, to which reference is made, fully illustrates my invention.

A represents a portion of an ordinary railroad-car with heater B, of any suitable construction. C is the smoke-pipe from the heater B.

On one or both sides of the car is arranged a horizontal pipe, D, which is supported a suitable distance above the floor of the car by arms, standards, or other convenient means. This pipe D, is at any desired intervals, preferably under the car-seats, provided with branches D′, extending vertically downward and terminating in inverted funnels F, as shown. One end of the pipe connects with an upwardly-extending pipe, G, and the upper end of this latter pipe communicates, by an elbow, *a*, with the interior of the smoke-pipe C.

It will readily be seen that the smoke passing up through the smoke-pipe C will create a suction through the pipes G and D, which draws up the cold air from the bottom of the car through the inverted funnels F to the smoke-pipe and out at the top thereof.

The object of my invention is not to create or cause a circulation of air, but to carry off the cold air from the bottom of the car at various points—not only at one point, but at as many points as may be deemed necessary to rapidly effect the object designed. As the cold air or the colder strata of air are thus removed the warmer strata of air descend and take their place, thus soon equalizing the temperature and making the car comfortable.

In summer time, when, of course, no fire is made in the heater, I provide the smoke-pipe C with an exterior cylinder, H, of so much larger diameter than the smoke-pipe that a sufficient draft may be created from the top of said cylinder above the roof of the car to accomplish the same object by conducting a small pipe, *b*, from the vertical pipe G into the same, a stop-cock, *a′*, in the pipe or elbow *a* being then closed. The pipe *b* is also provided with a stop-cock, *b′*, to be closed when the pipe *a* is used.

This invention is equally applicable to halls, large buildings, and other places where it is desired to equalize the temperature.

What I claim as new, and desire to secure by Letters Patent, is—

1. The horizontal pipe D, provided with a series of vertical branches, D′, terminating in inverted funnels F, and said pipe connected with the smoke-pipe of a heater, B, substantially as and for the purposes herein set forth.

2. The combination, with the smoke-pipe C, of a heater, B, the exterior cylinder H, forming communication with the horizontal pipe D, having series of branches D′, with funnels F at their lower ends, for the purposes set forth.

3. The combination of a heater, B, with smoke-pipe C, having exterior cylinder H, the horizontal pipe D, having branches D′, with funnels F, and the vertical pipe G, with branches *a b*, having valves or stop-cocks *a′ b′*, respectively, substantially as and for the purposes herein set forth.

In testimony that I claim the above I have hereunto subscribed my name in the presence of two witnesses.

ISAAC L. MAHAN.

Witnesses:

C. H. MCEWEN,

JOHN F. BLACKMAR.