

UNITED STATES PATENT OFFICE.

WILLIAM C. BAKER, OF NEW YORK, N. Y.

IMPROVED MATERIALS FOR TRANSMITTING HEAT.

Specification forming part of Letters Patent No. **71,948**, dated December 10, 1867.

To all whom it may concern:

Be it known that I, WILLIAM C. BAKER, of the city, county, and State of New York, have invented certain new and useful Improvements in Transmitting Heat, as heretofore patented by me in Letters Patent No. 58,755, and dated the 16th October, 1866; and I do hereby declare and ascertain my said improvements, as follows:

In the before-named Letters Patent, on which this is an improvement, I had used, and so described and claimed, certain hydrocarbon liquids which I had found valuable and efficient; but longer experience has shown certain practical objections thereto, which I now propose to obviate. In the first place, the hydrocarbons are expensive, and the apparatus charged therewith is frequently exposed to depredations, the material being drawn off and stolen. Again, the hydrocarbons being highly inflammable, they produce a certain amount of distrust and fear of danger, whether correct or not, that retards their introduction; and in certain cases of severe railroad accident they might be made to aid in firing the train.

To obviate these difficulties I have essayed certain experiments with other liquids, and have found that water (saturated, or nearly so, with salt) and glycerine answer every practicable purpose of the hydrocarbon liquids as the media for circulating, distributing, and transmitting heat in apartments. In some instances I have used them compounded, and in other cases I have found it best to use them separately.

To enable others skilled in the art to make

and use my improvement, I will say that the liquids referred to may be used in the same manner as ordinary water is now used in water-heating apparatus, only the joints of the apparatus must be perfectly tight, especially in the boiler around the fire, when oil is used.

When salted water is employed, care should be taken to prevent the generation and escape of steam or vapor, which, if to any extent the bulk of the water is diminished, the excess of salt held in saturation will form incrustation on the inner surfaces.

The entire apparatus should be closed from access to external air, while, at the same time, at the highest point of the apparatus should be an air or expansion chamber, which will allow the confined air within it to expand and contract with the body of the heated liquid, thus promoting circulation, and, with a safety valve or vent, render the apparatus safe from danger of explosion.

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

The employment of salted water, glycerine, or their equivalents, to prevent freezing, in transmitting and diffusing heat through ordinary pipes, tubes, or radiators, for the purpose of warming and ventilating railroad-cars, public vehicles, and buildings, substantially as herein described.

WM. C. BAKER.

Witnesses:

FRANCIS WASHBURN,
JOHN BERTCHER.