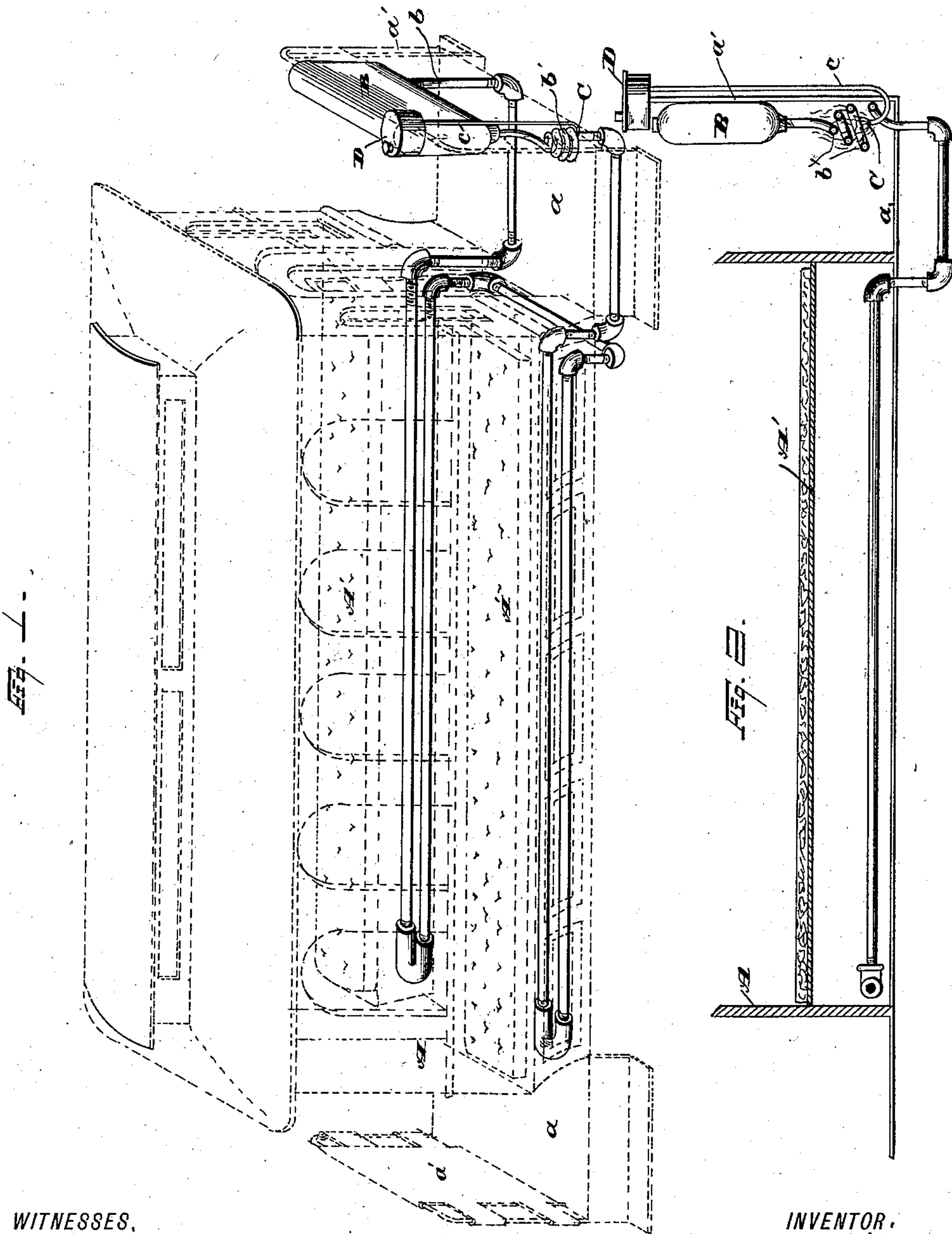


(No Model.)

M. CLEAVE.
STREET CAR HEATING APPARATUS.

No. 384,126.

Patented June 5, 1888.



WITNESSES.

Wm. M. Monroe.
Geo. W. King

INVENTOR.

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UNITED STATES PATENT OFFICE.

MOSES CLEAVE, OF CLEVELAND, OHIO.

STREET-CAR-HEATING APPARATUS.

SPECIFICATION forming part of Letters Patent No. 384,126, dated June 5, 1888.

Application filed November 4, 1885. Renewed January 12, 1888. Serial No. 260,543. (No model.)

To all whom it may concern:

Be it known that I, MOSES CLEAVE, of Cleveland, in the county of Cuyahoga and State of Ohio, have invented certain new and useful Improvements in Street-Car-Heating Apparatus; 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 pertains to make and use the same.

My invention relates to apparatus for heating street-cars, in which a water-tank is located by the side of the dash-board, said tank having connected therewith a water-pipe leading into the car and arranged in coils under the seats and returning from thence back to the water-tank. The return end of the pipe, just below the water-tank, is provided with a coil and vapor-burner torch for heating and establishing a current of hot water through the pipes in the car, the object being to arrange a cheap, convenient, and effective apparatus for heating street-cars.

With this object in view my invention consists in certain features of construction and in combination of parts hereinafter described, and pointed out in the claim.

In the accompanying drawings, Figure 1 is a view in perspective of a street-car with my improved heating apparatus attached, the car being shown in dotted lines and the heating apparatus in solid lines. Fig. 2 is a longitudinal vertical section taken through the center of the heating-coil *b'*.

A represents the body of the street-car, provided in the usual manner with seats *A'*, platforms *a*, and dash-boards *a'*.

B is a small water-tank, preferably made flat and thin, so as to occupy as little space as possible. This tank is arranged by the side of the dash-board, to which it is usually secured, and has attached the water-pipe *b*.

This pipe is arranged in coils under the seats in the car and passes below the car-floor in leading from one coil to the other and passing below the platform in its passage to and from the water-tank. The return end of the pipe *b*, just under the water-tank, is provided with a coil, *b'*, and under this coil is placed a vapor-burner torch, C, the flame of which impinges the folds of the coil to heat the same. The torch is connected by the pipe *c*, the latter leading through a hole in the dash-board and up along the outside thereof, with the oil-supply tank D. As the torch heats the coil the water contained therein is set in motion and rises into the tank B, a corresponding amount of water of course passing down the pipe at the other end of the tank, by means of which a current of heated water is established through the pipes in the car to heat the latter.

This device is simple and easily regulated, and is directly under the eye and supervision of the driver and conductor of the car.

What I claim is—

The combination of a street-car, a water-tank located by the side of the dash-board of said car, a water-pipe leading from the tank into the car arranged in coils under the seats and returning to the water-tank, the return end of said pipe having a coil, and a vapor-burner for heating the coil at the return end of the pipe and establishing a current of hot water through the car, substantially as set forth.

In testimony whereof I sign this specification, in the presence of two witnesses, this 24th day of October, 1885.

MOSES CLEAVE.

Witnesses:

CHAS. H. DORER,
ALBERT E. LYNCH.