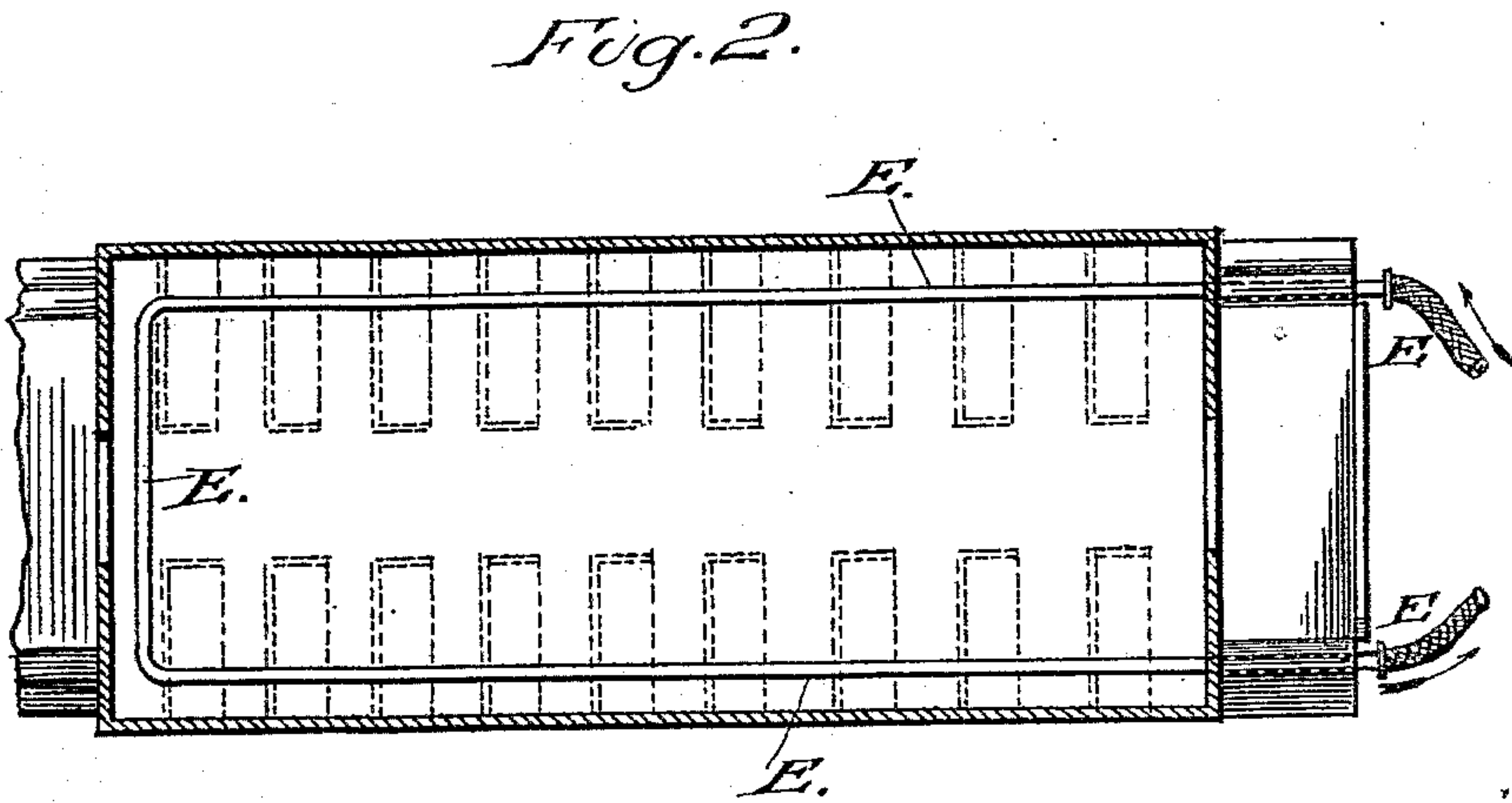
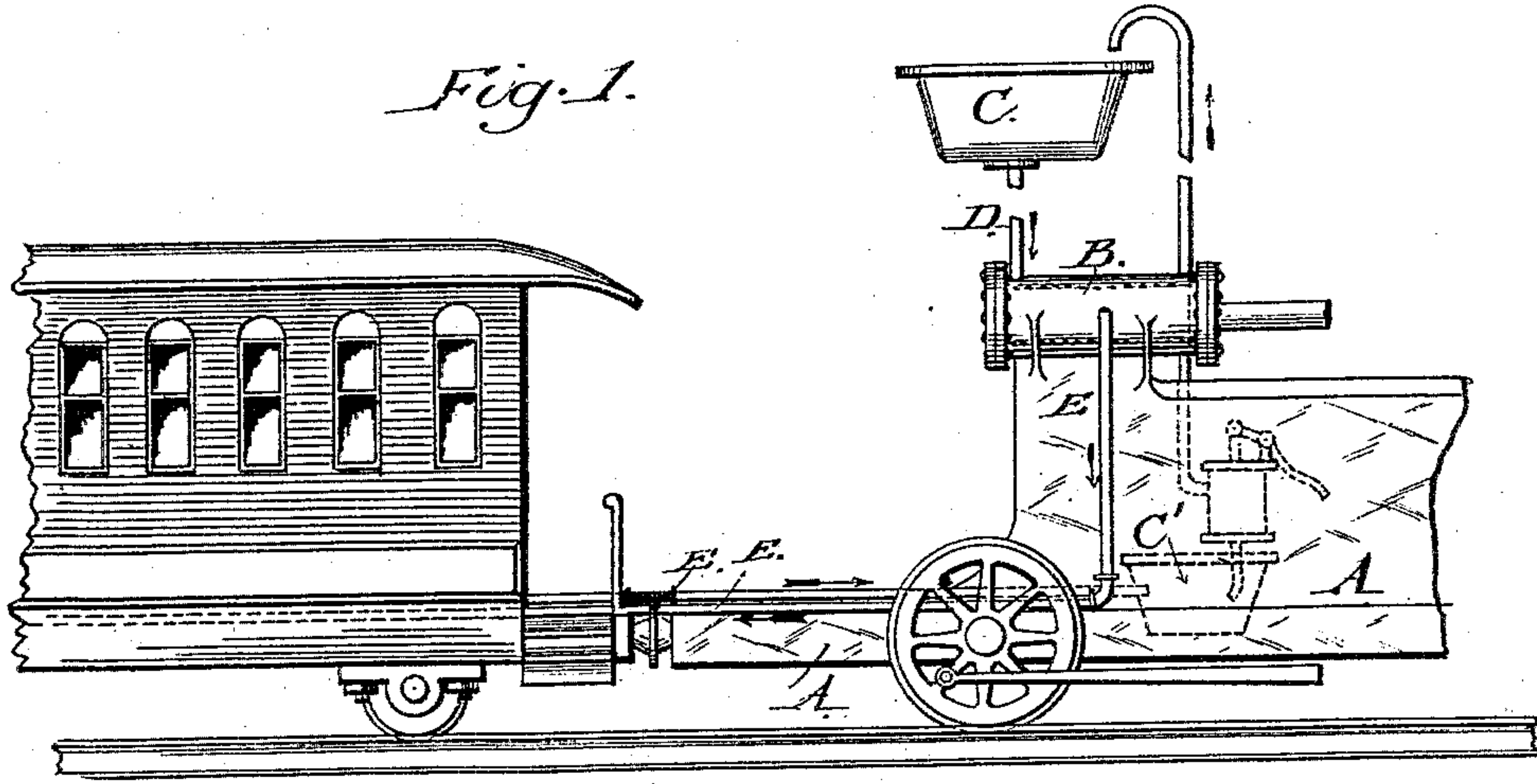


(No Model.)

W. H. PATTON.  
HEATING STREET CARS.

No. 401,205.

Patented Apr. 9, 1889.



WITNESSES,

*T. Walter Fowler*  
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# UNITED STATES PATENT OFFICE.

WILLIAM H. PATTON, OF PUEBLO, COLORADO.

## HEATING STREET-CARS.

SPECIFICATION forming part of Letters Patent No. 401,205, dated April 9, 1889.

Application filed November 12, 1887. Renewed March 5, 1889. Serial No. 302,018. (No model.)

*To all whom it may concern:*

Be it known that I, WILLIAM H. PATTON, a citizen of the United States, residing at Pueblo, in the county of Pueblo and State of Colorado, have invented a new and useful Improvement in Heating Street-Cars, of which the following is a clear, full, and exact description, reference being had to the accompanying drawings, making a part of this specification, in which—

Figure 1 represents a portion of a street-car truck and a portion of a car with my improvement attached thereto. Fig. 2 is a plan view of a portion of a car, showing the heating-pipe entering and leaving the car.

My present invention relates exclusively to heating of street-cars propelled by gas-engines; and it consists in the combination of devices hereinafter explained and claimed.

To enable others skilled in the art to make and use my invention, I will proceed to describe the exact manner in which I have carried the same out.

It is well known that the ordinary gas-engine has its cylinder inclosed in a water-jacket with a view to keeping the cylinder cool. The cold water entering this jacket from a tank necessarily soon becomes heated and is allowed to pass off through a waste-pipe, while a stream of cold water continues to run into the jacket from the tank.

The object of my present invention is, first, to utilize this hot water for heating a car, instead of allowing it to run to waste, and, secondly, to pass the same water back to the tank after it has become cold, to be again used in the water-jacket.

In the drawings, A represents a section of the truck of a street-car with the cylinder B of a gas-engine mounted thereon. Above the

cylinder is placed a tank, C, holding a supply of cold water to be passed through the pipe D into the water-jacket surrounding the cylinder. At any suitable point on the water-jacket I introduce a pipe, E, to lead off the water, after it has become heated, into the cars for the purpose of warming the cars, instead of allowing the heated water to run to waste. The pipe E, provided with a flexible connection, is passed into and around the cars in any desirable or well-known manner, the same as if steam was being introduced from the boiler of a locomotive, the only difference being that the water after it has become cool is led back through the piping to the tank C', whence it is pumped back into tank C, to be again utilized.

It is evident that instead of the hot water the heated air from the gas-engine may be utilized in the same way without departing from the spirit of my invention.

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

The combination, with a gas-engine mounted upon a wheeled frame and having a surrounding water-jacket, of the pipe E, leading from said water-jacket to and through the cars to be heated, a tank, C', into which the returning end of said pipe discharges, a second tank above the gas-machine, into which the water from the tank C' is forced, and a pipe leading from said second tank into the surrounding water-jacket, whereby a continuous circulation is effected, substantially as herein described.

WILLIAM H. PATTON.

Witnesses:

T. WALTER FOWLER,  
JOE C. ELWELL.