



## RAILROAD CAR HEATING AND VENTILATING APPARATUS,

[From *Scientific American* N. Y.]

### “NOVEL DEVICE FOR HEATING AND VENTILATING RAILROAD CARS.

The object of the device seen in the accompanying engraving is to utilize the heat of the boiler and fire box of a railroad locomotive to warm a train of cars in cold weather, and to ventilate the cars with pure air free from dust or cinders in summer. The arrangement is quite simple. The front of the locomotive is provided with a funnel-shaped mouth, from which a pipe leads down under the boiler, and in close contact therewith.— At the forward end of the fire box it divides into two branches; one passing along each side and through the tender, at the rear of which they again unite. Each car is furnished with similar pipes passing along under the seats, and fitted with registers that may be opened and closed at will. The union between the pipes of the different cars is plainly seen in the engraving, a bell mouth containing a packing for the end of the pipe but sufficiently yielding to allow of lateral motion in rounding curves, etc. The front end of the pipe has a hood inside the funnel mouth, to prevent rain or snow from entering.

It is evident that if the pipes were left exposed to the atmosphere, but little heat could be realized; but to overcome this difficulty the inventor, for winter service, proposes to put a heavy non-conducting jacket entirely around the boiler and fire box, or sufficient to enclose the larger portion of the heating surface and the pipes. The other exposed portions of the pipe are also similarly protected. In the summer the jacketing of the locomotive is removed, and the pipe exposed to the external air.”

SIR :

The recent railroad accidents which have not only resulted in alarming loss of life, but have increased the terrors of travel by the not unfrequent torture of burning to death by over-turned stoves and ignited wood, have led to the invention of a new and simple method for warming cars in winter, and, at the same time, supplying what, up to the present moment, might be called, a moving prison, with a fresh current of pure air.

This I have accomplished by using the boiler of the engine, and its fire, as a furnace, by surrounding it with a jacket; and by catching the air, in front of the train, which is forced through a cone, then passes around the boiler and through and about the fire of the Engine. It is then collected into two tubes and runs through the floor of each car. By means of a register placed at each seat, every passenger can be warmed. A register, in front of each door warming the cold air which finds its way more or less into the car.

A few of the great advantages to be derived from my invention may be enumerated as follows :

#### IN WINTER.

1. No danger of fire from an upset stove.
2. Uniform temperature all through each car, instead of intense heat in the vicinity of the stove, and intense cold away from it.
3. Warmth to the feet instead of the head. This Furnace is far superior to steam pipes, for, in case of an accident, the passengers would be scalded by hot water or its vapor. They are moreover freed from such serious accidents as the following: “The Pullman palace car Dexter, was badly shattered yesterday at Denver, Col., by the explosion of the hot water heater. The car, fortunately, was unoccupied.” —Daily Graphic, N. Y. Dec. 11, 1873.
4. The pipes of each car are easily attached and detached.
5. A saving of the fuel, now used to heat cars; which amounts to no small item.
6. The cost of applying said improvement would be more than paid by not only the saving of fuel; but the gain of the room each stove now occupies, that is two seats, or four passengers which, on a fair train of 10 cars, would equal 40 passengers, or one extra car, &c.

#### IN SUMMER.

1. The jacket is removed from the boiler of the engine and a pure current of air, free from dust, cinders and smoke is taken from the front of the engine and carried into each car. By this means the windows need not be raised; and all those serious annoyances of dust and drafts are at once remedied.
2. Any company using this method of heating and ventilating cars would command a monopoly; for it is a fact in life that those who travel seek despatch, economy and comfort.

I am prepared to treat with companies or responsible individuals, for the sale of my invention, and the patent; for all or parts of the United States.

A liberal per centage will be paid to any agents who succeed in disposing of a right or rights.

Address all communications to

YOURS RESPECTFULLY,

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NEWPORT, R. I., U. S. A.

Box “240,” P. O.



RAILROAD CAR HEATING AND VENTILATING APPARATUS

[From Scientific American, N. Y.]

"NOVEL DEVICE FOR HEATING AND VENTILATING RAILROAD CARS"

The object of the device is to furnish the heat of the boiler and the heat of a railroad locomotive to warm a car in cold weather, and to ventilate the car with pure air free from dust or other impurities. The arrangement is quite simple. The front of the locomotive is provided with a funnel-shaped mouth, from which a pipe leads down under the boiler, and in close contact therewith. At the forward end of the box it divides into two branches; one passing along each side and through the tender, at the rear of which there is a large tank. Each car is furnished with similar pipes passing along under the seats, and fitted with registers that may be opened and closed at will. The union between the pipes of the different cars is a plain joint, and a bell mouth retaining a packing for the end of the pipe, but sufficiently yielding to allow of lateral motion in rounding curves, etc. The front end of the pipe has a hood inside the tunnel, to prevent any draft of wind from entering.

It is evident that if the pipes were left exposed to the atmosphere, but little heat could be realized; but in arranging this device the inventor has taken the precaution to put a heavy non-conducting jacket entirely around the boiler and the top of the boiler, and the top of the boiler is covered with a layer of insulating material, and the pipes are also so jacketed. In the summer the jacketing of the boiler is removed, and the pipes are exposed to the external air.

The recent railroad accidents which have not only resulted in a large loss of life and property, but also in the loss of a large amount of money, have led to the invention of a new and simple method for warming cars in winter, and, at the same time, supplying what is up to the present moment, a most important desideratum, a means of purifying the current of pure air.

This is accomplished by using the boiler of the engine, and its fire, as a furnace, by introducing it with a jacket, and by causing the air to pass through a coil, then passing around the boiler and through the tender and under the fire of the engine. It is then collected into two tubes and runs through the floor of each car. By means of a register placed at each seat, every passenger can be warmed. A register in front of each door warms the cold air which falls its way more or less into the car.

A few of the great advantages to be derived from my invention may be enumerated as follows:

IN WINTER.

1. The danger of fire from an open stove.
2. Uniform temperature all through each car, instead of intense heat in the vicinity of the stove, and intense cold away from it.
3. Warmth to the feet instead of the head. This furnace is the superior to steam pipes, for, in case of an accident, the passengers would be safe from hot water or its vapor. They are moreover freed from such serious accidents as the following: "The Pullman palace car, No. 1, was derailed yesterday at Denver, Col., by the explosion of the hot water heater. The car, fortunately, was unoccupied." Daily Graphic, N. Y. Dec. 11, 1873.
4. The pipes of each car are easily attached and detached.
5. A saving of fuel, now used to heat cars; which amounts to no small item.
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