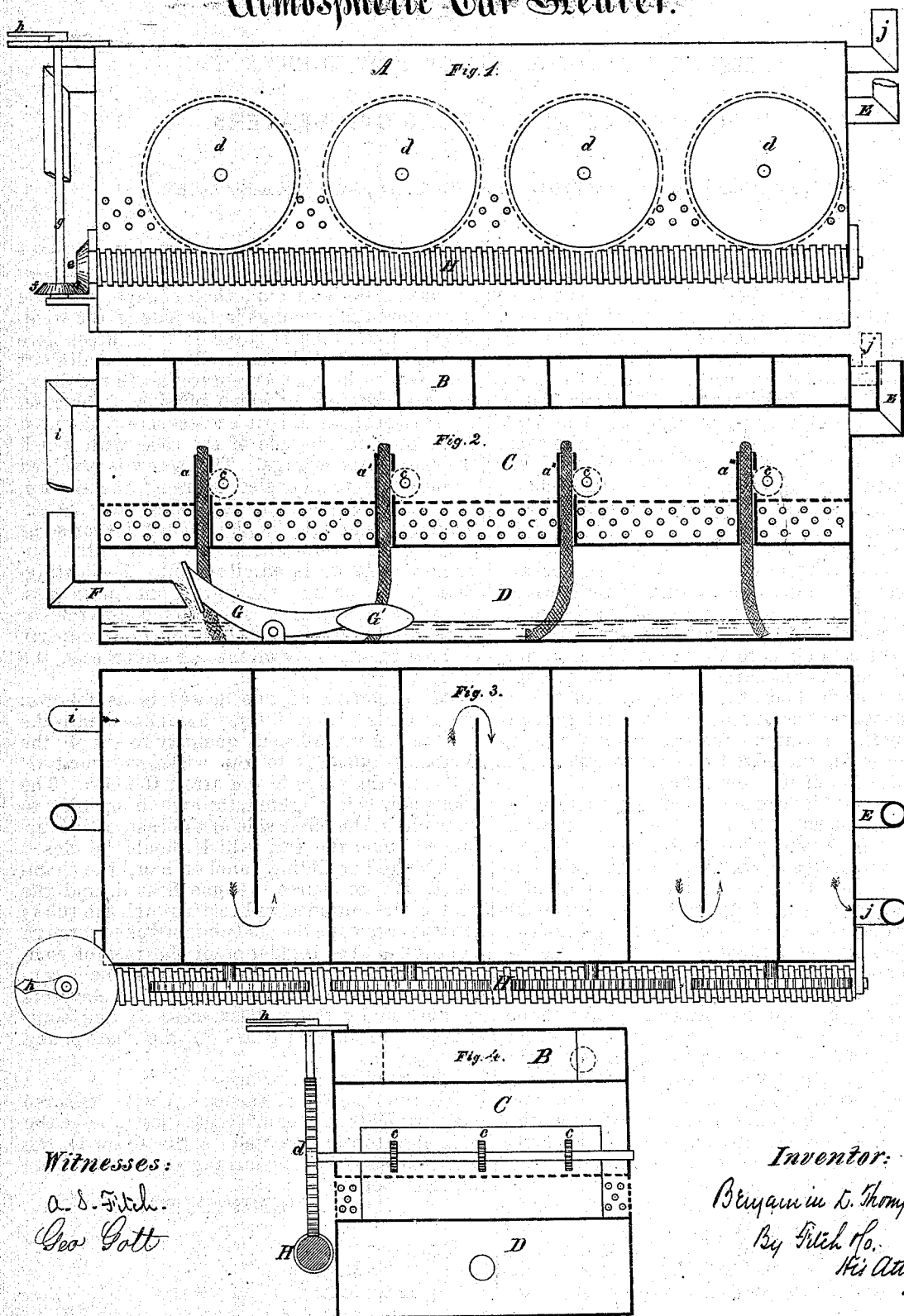


No. 119,249

Patented Sep. 26, 1871.

Benjamin D. Thompson's Atmospheric Car Heater.



Witnesses:
a. S. Fitch.
Geo. Gott

Inventor:
Benjamin D. Thompson.
By Fitch & Co.
His Atty.

UNITED STATES PATENT OFFICE.

BENJAMIN D. THOMPSON, OF NEW YORK, N. Y.

IMPROVEMENT IN RAILROAD CAR-HEATERS.

Specification forming part of Letters Patent No. 119,249, dated September 26, 1871.

To all whom it may concern:

Be it known that I, BENJAMIN D. THOMPSON, of the city of New York, county and State of New York, have invented a new and Improved Atmospheric Car-Heater, of which the following is a specification, reference being had to the accompanying drawing forming part of the same.

Figure 1 is a side elevation of my car-heater. Fig. 2 is a longitudinal central sectional view of the same. Fig. 3 is a top view of the same with the upper plate of the heater removed, exposing to view the partitions in the heating-chamber. Fig. 4 is a detached view of one of the wick-elevators.

My invention relates to the introduction of heated air into railway cars, and more especially horse-cars in cities, by means of a heater in which oil is to be used as fuel, the said heater to be placed underneath the body of the car, into which the cold air is conducted from below, and from which it is discharged into the car through a register in the floor, the combustion of the oil and consequent evolution of heat being regulated by the elevation or depression of the wicks through which the oil is burned by means of the apparatus hereinafter described.

A is a case made of sheet metal, preferably of sheet-iron, of suitable thickness and strength. It should be about three to four feet in length, two or three feet in width, and from twelve to fifteen inches in depth. This case is divided longitudinally into three close compartments, the middle one being again divided into two chambers by a perforated partition. In the upper compartment are inserted sectional transverse partitions, as seen in Fig. 3, arranged in the manner shown in the drawing, thus forming an extended air-passage from one end of the compartment to the other, as indicated by the arrows. C is the combustion-chamber, air being admitted through perforations in the sides and at the ends of the same, and the smoke passing off through the smoke-pipe E. D is the oil-chamber, into which the oil is admitted from a reservoir to be placed at any convenient point in the car, and the flow of the oil into the chamber is regulated by the float-valve G. Flat wick-tubes *a*, four, more or less, extending across the case, are inserted in the partition separating the oil-chamber D from the air-chamber C, holding wicks

that extend downward into the oil. These wicks are elevated and lowered by means of several serrated disks of metal, that engage with the wicks through openings in the side of the wick-tubes. Each wick is supplied with three, more or less, of these disks, secured upon a small shaft mounted in the case, as represented in the drawing, upon one end of which, outside of the case, is a spur-gear, *d*. H is an endless screw, mounted to revolve on the side of the case, with which the spur-gears engage. This screw is revolved by means of the beveled gears *e f*, the shaft *g*, and the lever-index *h*. The shaft may be extended up through the platform of the car so as to bring the lever *h* within easy reach of the conductor. The air is admitted into the heating-chamber B through the pipe *i*, and, after passing through the same, is conducted into the car through the pipe *j*. The heater is to be properly secured to the body of the car underneath the floor.

The operation of this heater is as follows: When oil from the oil-tank has flowed into the oil-chamber in sufficient quantity to supply the necessary quantity to the wicks the float G will close the valve G and arrest the flow. The wicks now being lighted, through an opening to be made in the outer side of the case, as it is arranged under the car, (which should be closed by a hinged or sliding panel or door,) the chamber B will, of course, become heated, and the heated air contained will rise through the tube *j* into the car, while the cold air is supplied through the tube *i*. The regulation of the rate of combustion is of course important, and this is conveniently done by means of the wick-elevators *c*, actuated by the endless screw H and spur-gears *d*, the beveled gears *e f*, the shaft *g*, and the lever *h*.

I claim as my invention—

The combination of the case A with its three compartments, B, C, and D, the wick-tubes *a*, the wick-elevators *c* operated by the screw H, the whole constructed and arranged as and for the purpose specified.

BENJAMIN D. THOMPSON.

Witnesses:

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