(No Model.) 2 Sheets—Sheet 1.

T. WISEMAN.

STREET CAR HEATER.

No. 353,108. Patented Nov. 23, 1886.

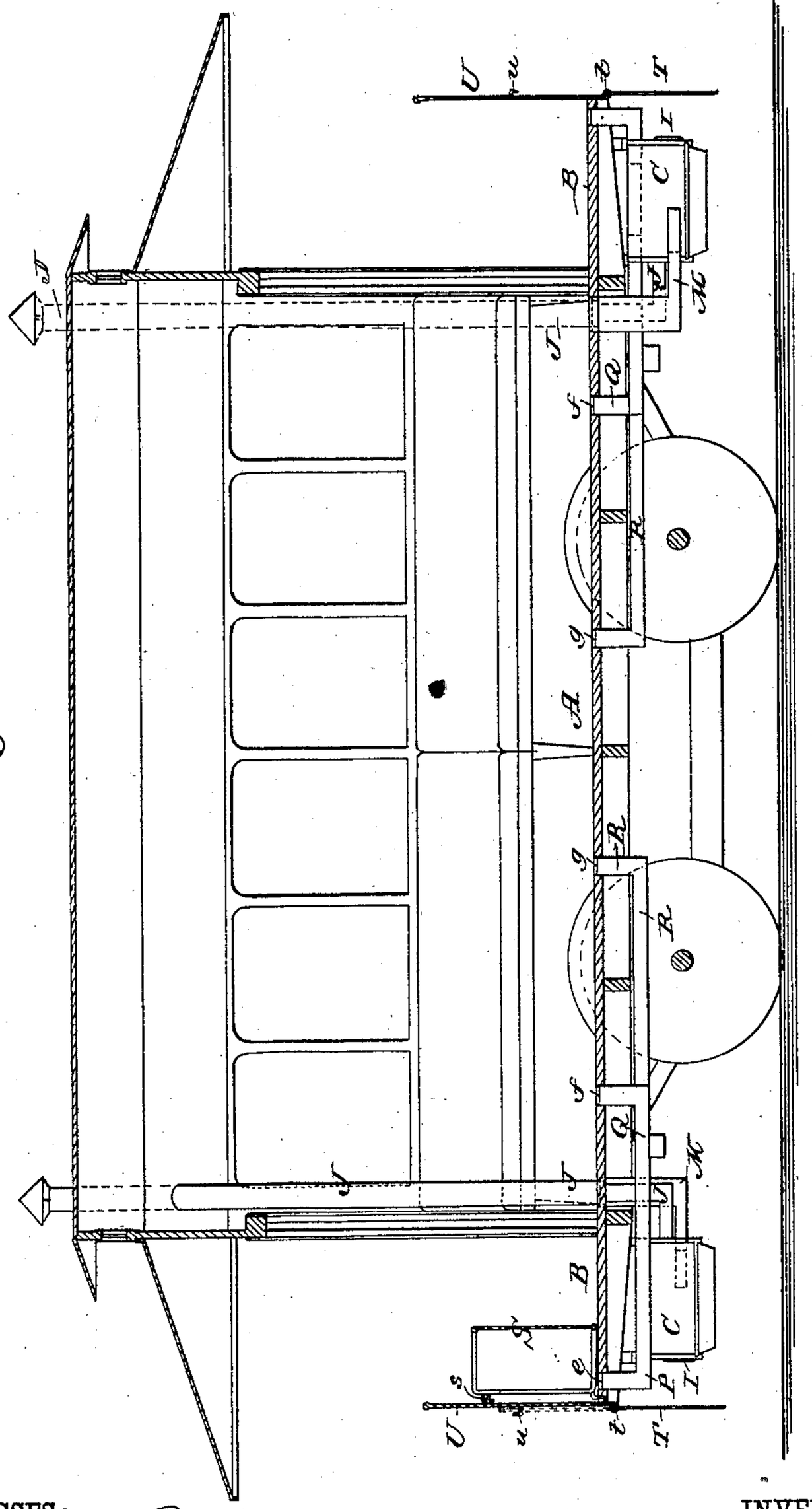

Fig. 1.

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C. Bedgwick

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(No Model.) 2 Sheets—Sheet 2.

T. WISEMAN.

STREET CAR HEATER.

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Fig. 2.

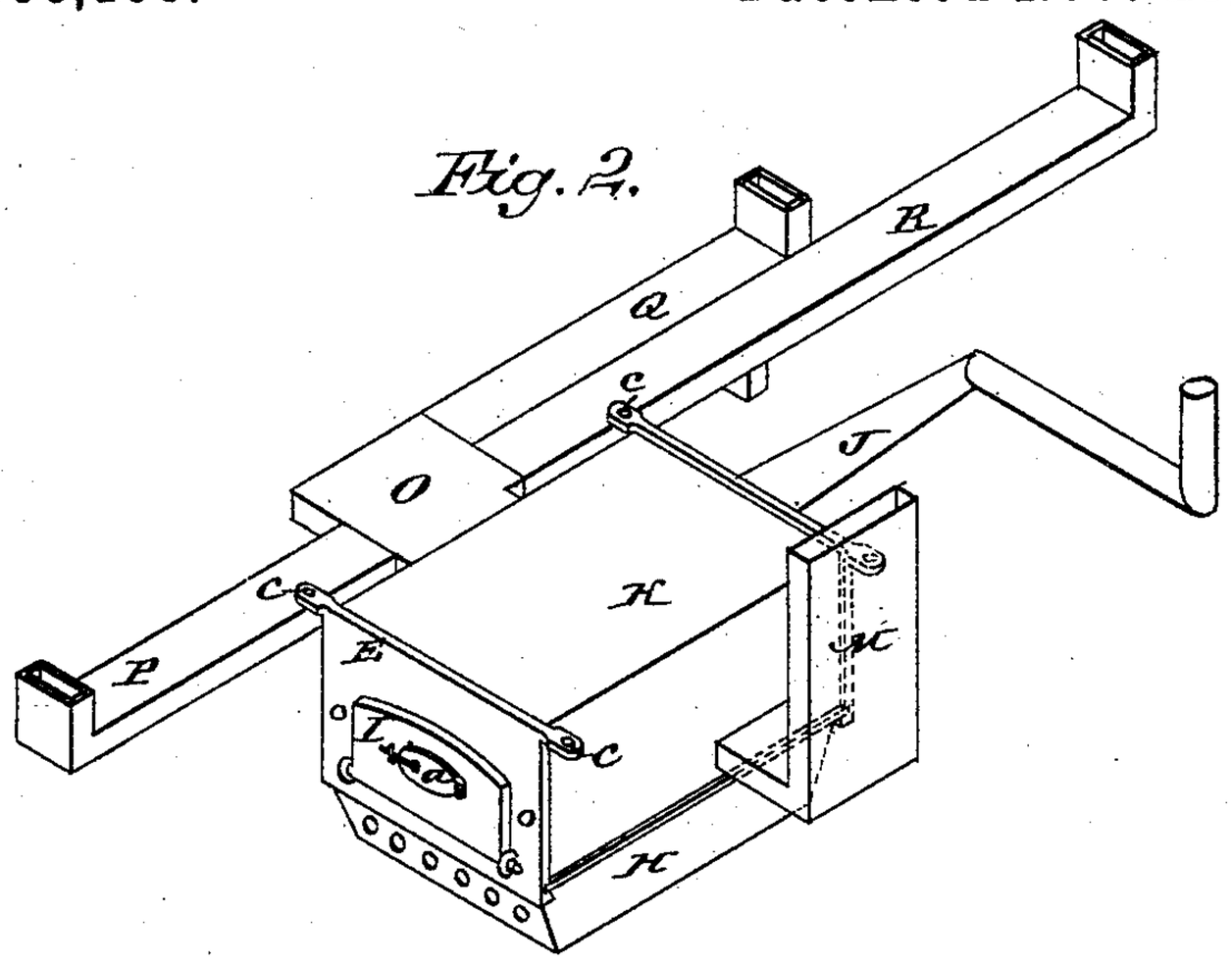


Fig. 3.

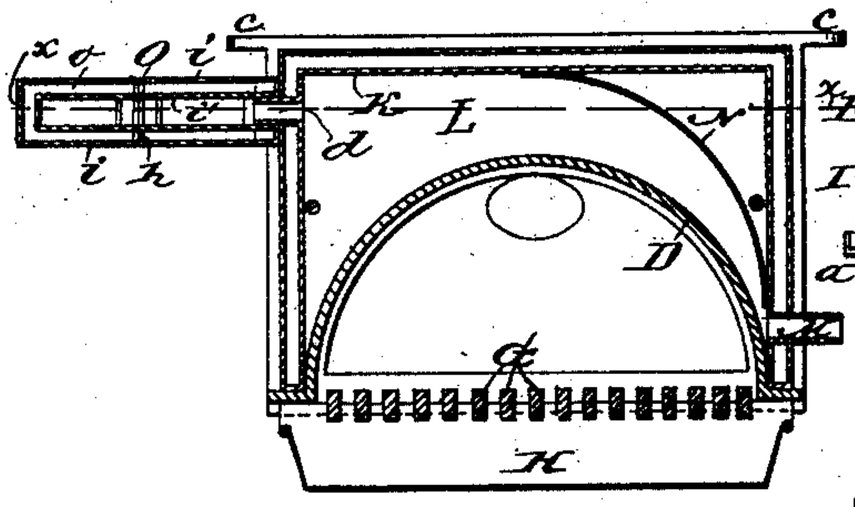


Fig. 4.

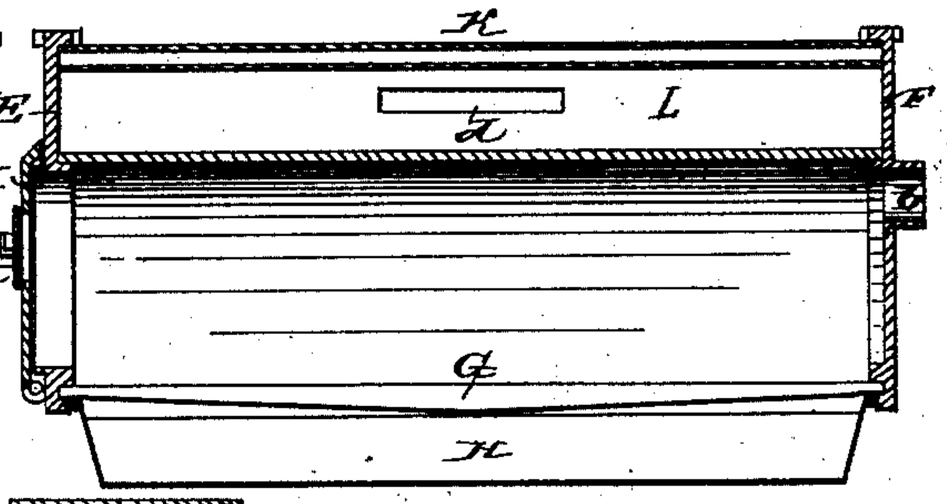


Fig. 5.

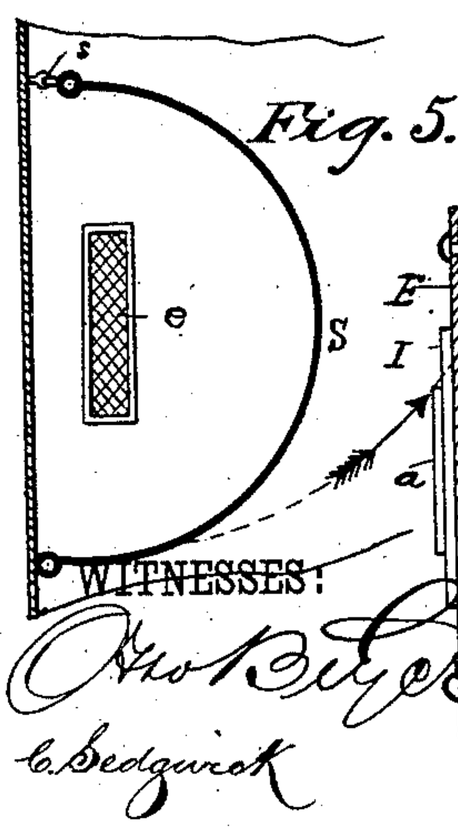
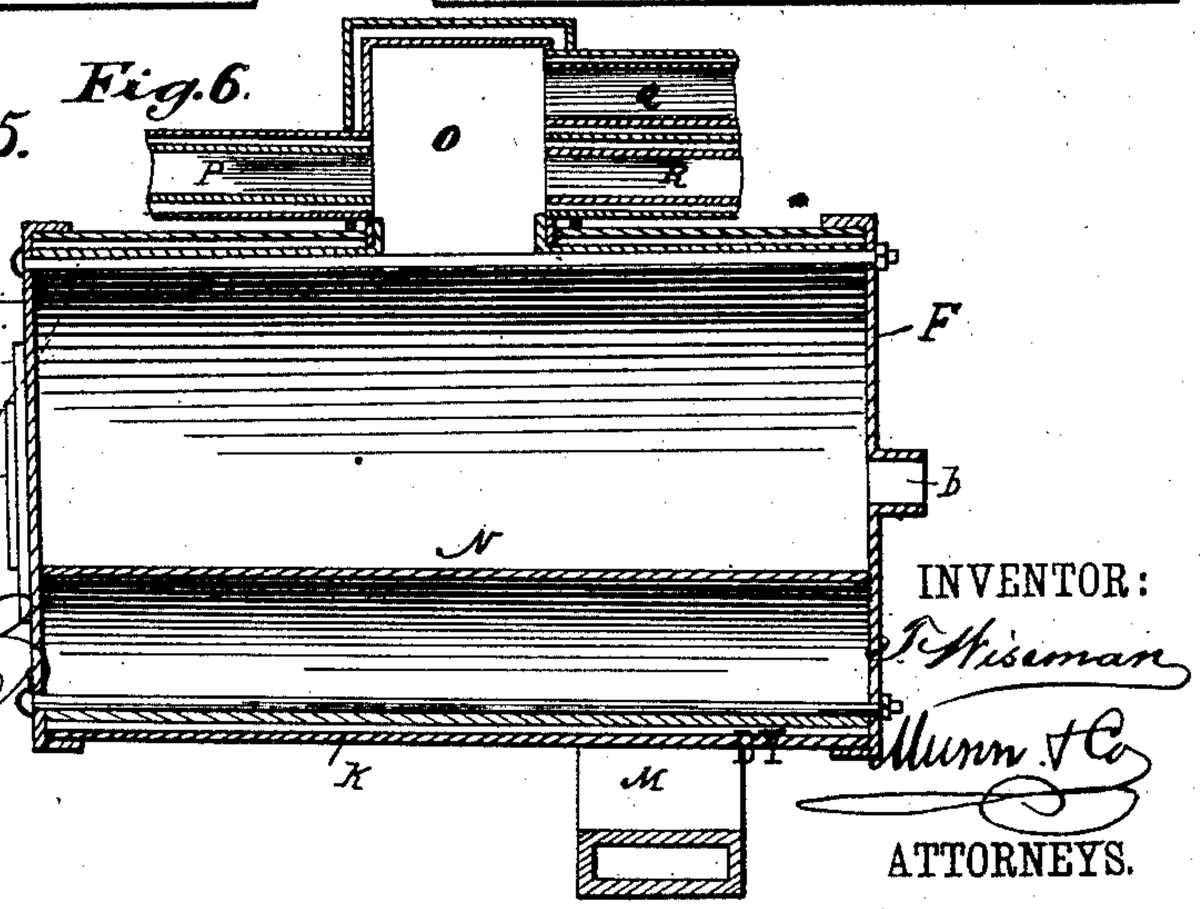


Fig. 6.



WITNESSES:

Arthur Eyer

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UNITED STATES PATENT OFFICE.

THEODORE WISEMAN, OF LAWRENCE, KANSAS.

STREET-CAR HEATER.

SPECIFICATION forming part of Letters Patent No. 353,108, dated November 23, 1886.

Application filed December 19, 1885. Serial No. 186,199. (No model.)

To all whom it may concern:

Be it known that I, THEODORE WISEMAN, of Lawrence, in the county of Douglas and State of Kansas, have invented a new and Improved Street-Car Heater, of which the following is a full, clear, and exact description.

My invention consists in the construction and arrangement of parts, as will be hereinafter fully described and claimed.

Reference is to be had to the accompanying drawings, forming a part of this specification, in which similar letters of reference indicate corresponding parts in all the figures.

Figure 1 is a longitudinal, vertical, sectional view of a street-car provided with my improved form of heater. Fig. 2 is a perspective view of the heater removed from the car. Fig. 3 is a cross-sectional view of the heater on the line *x x* of Fig. 4. Fig. 4 is a longitudinal sectional view of the same on line *y y* of Fig. 3. Fig. 5 is a plan view of a portion of one of the platforms. Fig. 6 is a horizontal sectional view on the line *z z* of Fig. 3.

Referring now to the general construction illustrated in the drawings, A represents the flooring of the car, and B B the platforms of the same, beneath which platforms there are secured the heaters C. These heaters consist of a cast-iron arch, D, the ends of which are closed by rectangular front and rear castings, as E and F, which serve as supports for the grate G and for the ash-pan H, which is suspended beneath the grate. In the end piece E there is the usual fire-door, I, which door is mounted so as to swing outward and downward, the connection between the door and plate being made at the two lower corners of the door, as clearly shown in Fig. 2. In the main door I there is a peep-hole, *a*. The end piece F is provided with a flange, *b*, to which the stove-pipe J is attached. The arch-shaped fire-box D is covered by a double-wall box-like structure, K, which is fitted tightly against each of the end castings, thus forming the air-chamber L above the furnace D. The furnaces C are secured beneath the platforms B, as shown in Fig. 1, connection being made by means of bolts which pass through apertures formed in lugs *c c*, which project from castings E and F. The cold air to be heated is led into the chamber L through a flue, M, which leads up through an opening formed in the flooring of the car, and in order that the entering air may be deflected and caused to pass over the surface of the furnace I place a semicircular deflecting plate, N, within the chamber L. After the air has been heated it passes out of the chamber L through an opening, *d*, which leads into a distributing-chamber, O, from which the hot-air flues branch out.

Each furnace is preferably provided with three hot-air delivery-flues, as P, Q, and R, the flue P leading to a register, *e*, in the platform, while the flues Q and R lead to registers *f* and *g* in the flooring of the car, the two flues Q and R being divided by a longitudinal partition, *h*.

In order that the hot air passing through the flues may not be too quickly cooled, I prefer to form the flues with double walls, as *i i'*, so that each will be surrounded by an air-space.

On the platform of the car I arrange a folding semicircular protector, S, which is hinged to the dash-board at *s* and arranged to swing as indicated in Fig. 5, the idea being to protect the driver and retain the hot air delivered through the register *e*.

In order that the furnace may be protected from mud and dirt likely to be thrown up by the horse's feet I arrange a heavy piece of sheet metal in front of each furnace, thus forming an apron which will intercept any matter thrown by the horses. These aprons T are hinged to the platform at *t*, so that they may be folded up against the dash-boards U, in which position they will be held by catches *u*.

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

1. A street-car heater comprising the casting D, its end plates, E F, the grate supported by said end plates, the double-wall air-chamber supported by the casting, the horizontal pipe *d*, leading to the outside of the air-chamber, the horizontal double-wall distributing-chamber O, communicating with said pipe *d*, the separate and independent horizontal register-pipes P Q R, leading from the ends of the distributing-chamber, the air-supply pipe M, leading from above the heater down to the lower part of the air-chamber, and the smoke-outlet J, substantially as set forth.

2. The furnace for heating cars, comprising the arched casting D, having outward-extending flanges along its lower edges, the grate G, the end plates E F, having flanges on their inner sides to receive the ends of the grate and casting D, the door I in the end plate E, and the smoke-outlet in the end F, the double-wall structure K, resting on the flanges of the casting D, to form the chamber L, having inlet-pipe M and outlet *d*, the distributing-chamber O, and separate register-pipes leading therefrom, substantially as set forth.

3. The combination, with the car having a register in its platform, of the swinging protector M, forming a space to receive the driver over the register, substantially as set forth.

THEODORE WISEMAN.

Witnesses:
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