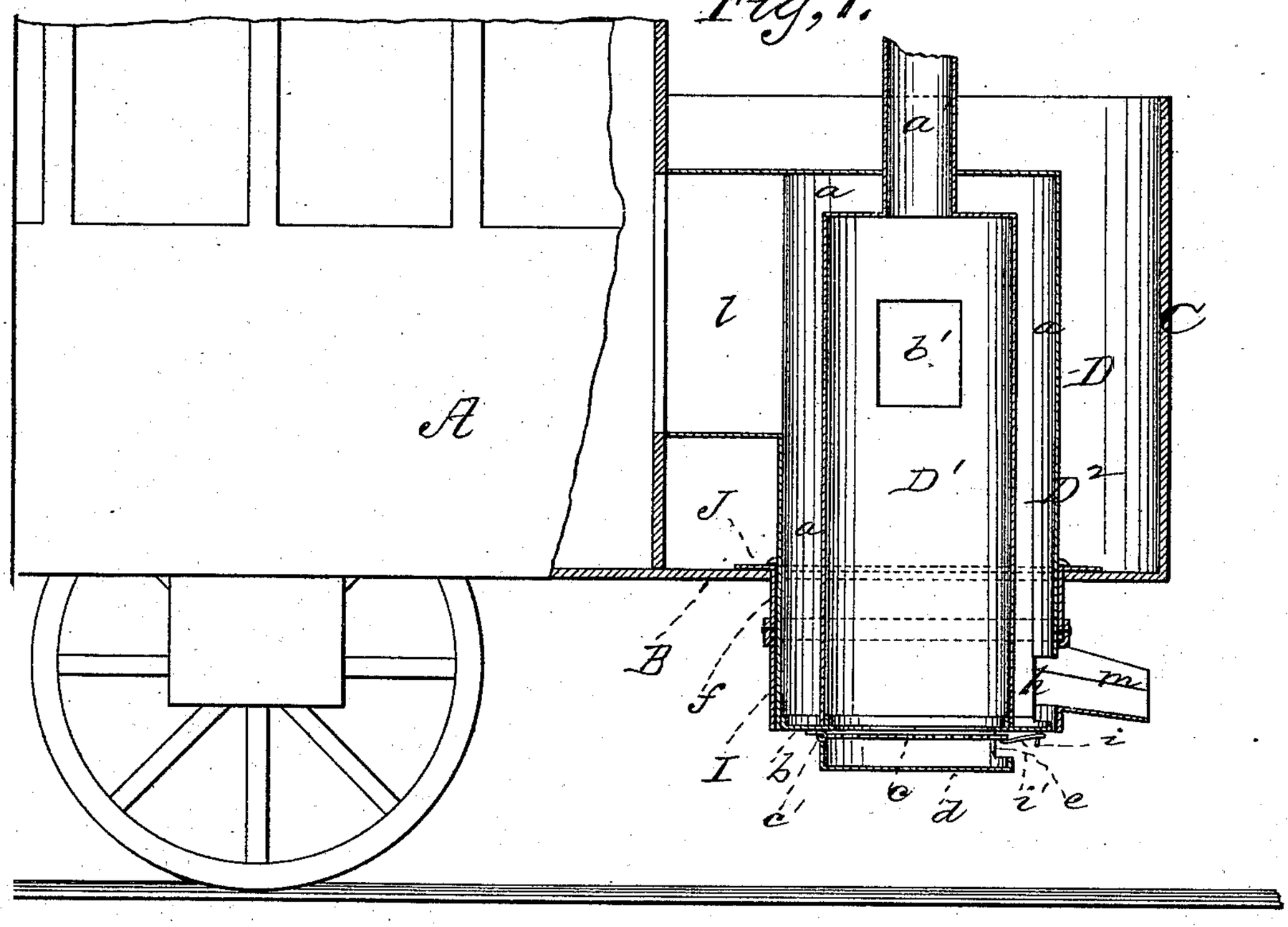
W. D. De RUSH.

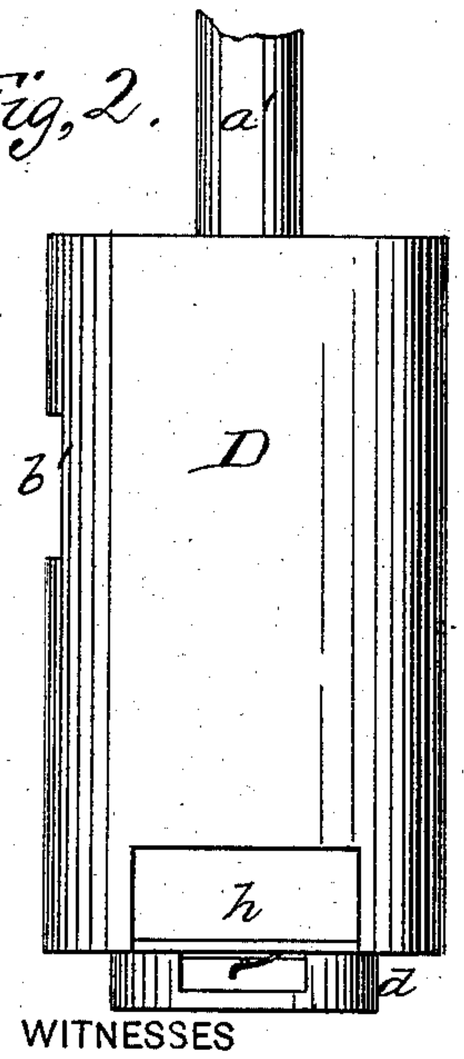
Car-Heater.

No. 215,335. Patented May 13, 1879.

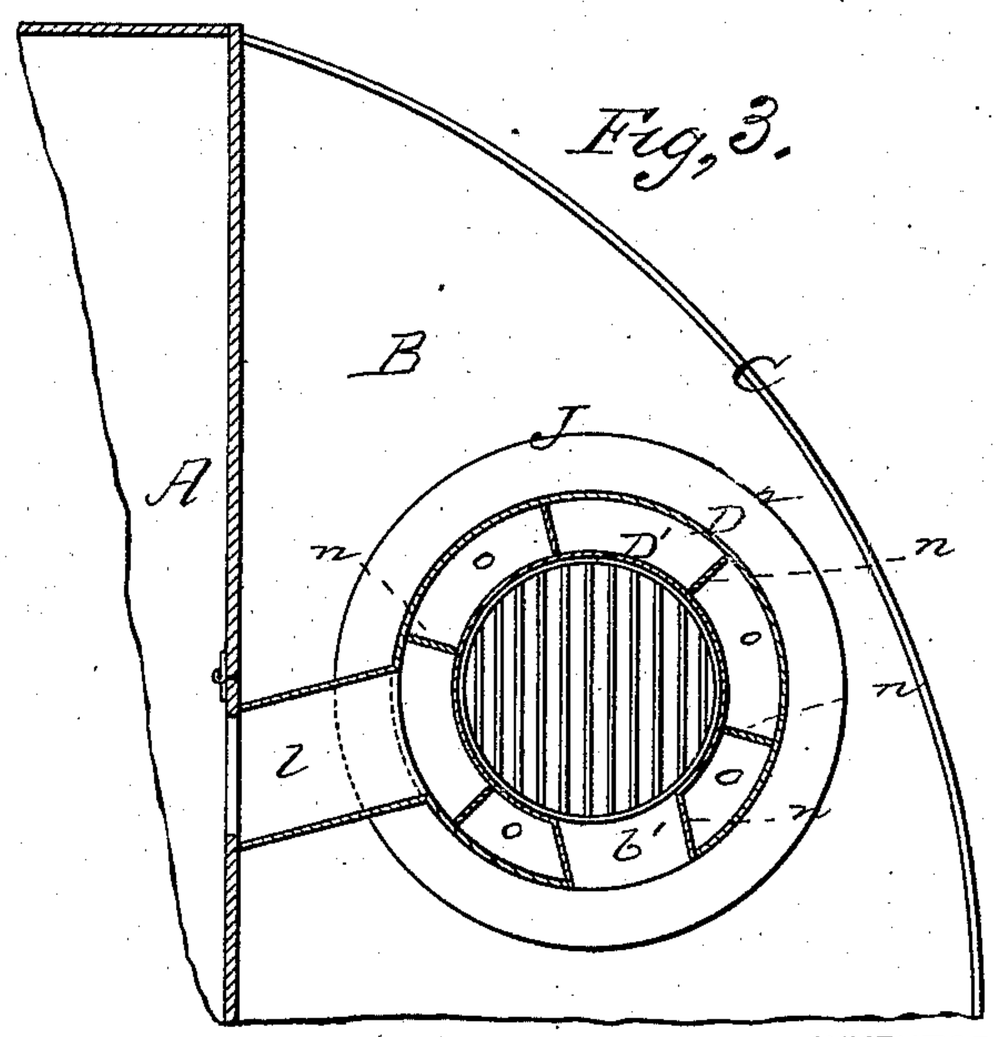
Fig, 1.



Fig, 2.



Fig, 3.



WITNESSES

Mary A. Kelley.

R. J. Clasi.

INVENTOR

W. D. De Rush

by E. W. Anderson.

ATTORNEY

UNITED STATES PATENT OFFICE.

WERTER D. DE RUSH, OF GREENVILLE, OHIO, ASSIGNOR OF ONE-HALF HIS RIGHT TO JAMES M. LANSDOWNE, OF SAME PLACE.

IMPROVEMENT IN CAR-HEATERS.

Specification forming part of Letters Patent No. **215,335**, dated May 13, 1879; application filed March 8, 1879.

To all whom it may concern:

Be it known that I, WERTER D. DE RUSH, of Greenville, in the county of Darke and State of Ohio, have invented a new and valuable Improvement in Car-Heaters; and I do hereby declare that the following is a full, clear, and exact description of the construction and operation of the same, reference being had to the annexed drawings, making a part of this specification, and to the letters and figures of reference marked thereon.

Figure 1 of the drawings is a representation of a central vertical section of my improved car-heater applied. Fig. 2 is a side elevation thereof detached, and Fig. 3 is a horizontal section of the same.

This invention has relation to improvements in means for heating street-cars by the introduction of hot air; and the invention consists in an air-heater located on the driver's platform, having its lower end covered by a guard provided with a conduit attached thereto, as will be hereinafter more fully set forth.

In the accompanying drawings, the letter A designates the end of a street-car, B its platform, and C a spatter-board extending around the front of said platform.

D indicates my improved heating device, consisting, essentially, of a cylindrical metallic fire-box, D^1, having a cylindrical metallic jacket, D^2, forming with the fire-box at its sides and top the air-chamber *a*. This is closed at bottom by a metallic annulus, *b*. *a'* indicates a smoke-stack, extending through the jacket and opening into the fire-box, as shown in Fig. 1.

Fuel is introduced into the fire-box through a cased opening, *b'*, in the jacket and fire-box, which opening is closed by a suitable hinged door.

c designates a circular grate hinged to the bottom of the fire-chamber, and having secured to it an ash-pan, *d*, provided with an opening, *e*, through which it may be cleared of ashes. This grate and pan are secured to the fire-chamber at a point usually diametrically opposite the hinge *c'* by means of a spur, *i*, projecting from the grate, and a vibrating latch, *i'*, pivoted to the bottom of the air-chamber, and adapted to catch the said spur when the grate is up; or I may use any other equivalent device.

J indicates a base-ring, having a downwardly-projecting flange, *f*, that is secured to the driver's platform, with the said flange extending downward through a corresponding opening in the platform several inches.

The heating device above described is passed from above downward through the opening in the base, and is secured thereto in any suitable manner. In this position the lower part of the heater—in which is the opening *h*, letting fresh air into the air-chamber, and the grate and its ash-pan—is under the platform, so that ashes may be raked out without littering the floor of said platform; and on entering the car-shed the contents of the fire-chamber may be dumped on the ground by swinging out the latch and dropping the grate.

The heated air in chamber *a* is carried into the car by means of a conduit, *l*, opening at one end into the said chamber, and at the other into the car, the supply being regulated, if desired, by means of a damper in the said conduit. There may also be a damper in the smoke-pipe, if it be deemed necessary.

I indicates an annular metallic guard that is passed over the end of the heater underneath the car, and is secured to the flange *f* in any suitable manner. This guard is above the grate, and is provided with a funnel-shaped conduit, *m*, coinciding with the air-supply opening *h*, which not only increases the draft, thus accelerating the passage of hot air into the car, but also excludes mud from the said opening.

It will be seen that all the refuse resulting from the consumption of fuel is discharged from the heater upon the ground directly, instead of upon the platform, that before entering the car-shed the unconsumed fuel is dropped upon the ground, and, being extinguished, may be used a second time.

The fire-chamber may be lined with fire-clay or brick, and may be constructed of wrought

or cast iron. This device, being on the platform, serves to warm the driver as well as the occupants of the car.

What I claim as new, and desire to secure by Letters Patent, is—

A hot-air heater consisting of the fire-chamber D^1, a jacket surrounding the same, and forming therewith an air-space, the base-ring J, secured to the platform, and provided with a flange extending below the same, an annular guard passed over the lower end of the said heater and secured to the flange, and a funnel-shaped conduit leading to the air-supply aperture and secured to said guard, substantially as specified.

In testimony that I claim the above I have hereunto subscribed my name in the presence of two witnesses.

WERTER DAVIS DE RUSH.

Witnesses:

J. R. KNOX,

CHARLES CLEMENS.