C. A. WEST.

SAFETY CAR-HEATER.

No. 170,321. Patented Nov. 23, 1875.

Fig. 1

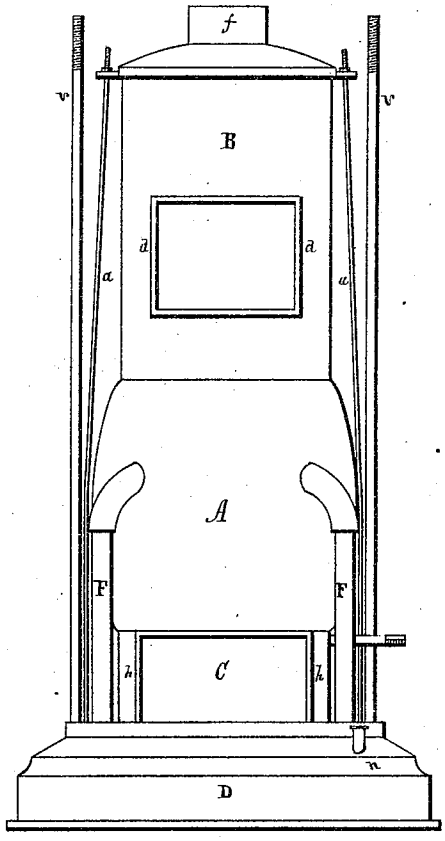


Fig. 2

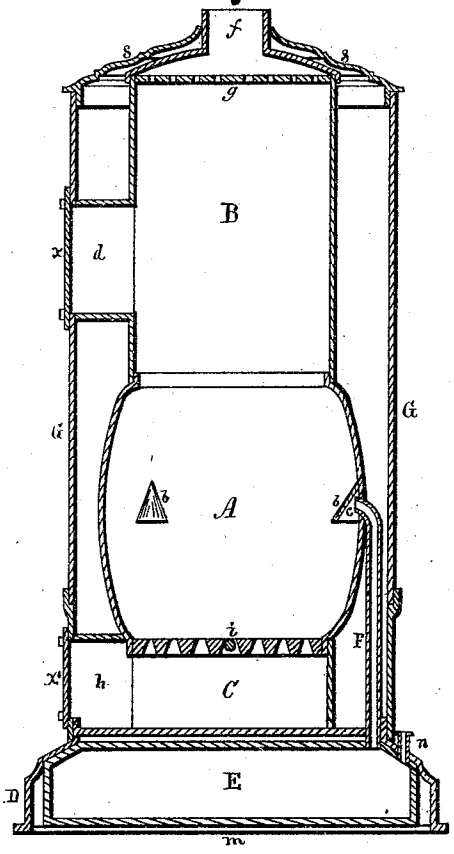
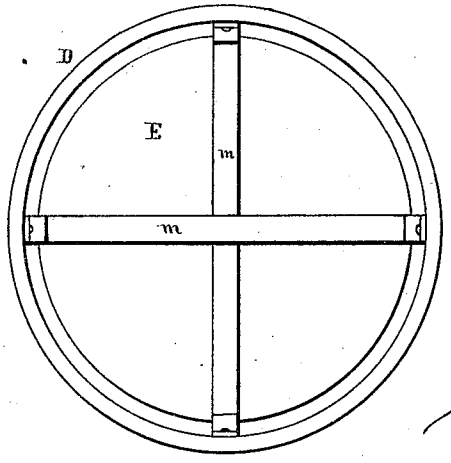


Fig. 3



WITNESSES

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CHARLES A. WEST, OF RICHMOND, VIRGINIA.

IMPROVEMENT IN SAFETY CAR-HEATERS.

Specification forming part of Letters Patent No. **170,321**, dated November 23, 1875; application filed March 22, 1873.

To all whom it may concern:

Be it known that I, CHARLES A. WEST, of the city of Richmond, in the county of Henrico and State of Virginia, have invented a new and useful 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 the letters and figures of reference marked thereon.

Figure 1 of the drawings represents a front elevation of the heater with the outer cylinder or jacket removed. Fig. 2 is a central and vertical cross-section of the same, showing the detachable water-reservoir, the pipes leading therefrom into the fire-chamber, and the hoods projecting over said pipes. Fig. 3 is a bottom view of the same, showing the crossing straps which secure the said reservoir within the base of the heater.

My invention is a railway-car heater; and consists in the novel construction, arrangement, and operation of the same, embracing the following elemental features: an inner or heating cylinder, consisting of a fire-pot, an air-chamber above, and an ash-chamber below; a detachable water-reservoir below the bottom of the ash-chamber; pipes leading from said reservoir, outside said heating-cylinder, into the fire-chamber; hoods within said fire-chamber, and covering over the nozzles of said pipes; and, finally, an outer cylinder or jacket, covering in the aforesaid parts, all of which, and their purposes, is hereinafter more fully described, and illustrated by the accompanying drawings, in which the same letters designate identical parts of my device in the different figures, respectively.

The letter A represents the cast-metal and spheroidal fire pot or chamber, placed between the air-chamber B above and the ash box or chamber C below, all of which, being suitably connected together in a vertical direction, rest and are fastened down upon the top of the hollow base D, which also forms the floor of the said ash-box by the nut-rods *a*. Said fire-pot has cast in the same piece, within its upper portion, several hoods, *b*, of a hollow, semi-conical form, and projecting over the pipe-apertures *c*, as shown, to protect each its own respective pipe-aperture from the entrance of coal or ashes, and the pipe-nozzle itself from injury, although the said pipe-nozzle should project into the said fire-chamber only so far that it will properly discharge its contents, and yet be prevented from being destructively affected by the fire heat. The air-chamber B is the usual cast or sheet metal cylinder, secured to the top of the fire-pot, as aforesaid, and provided with a projecting chute, *d*, through which to pass fuel into the said pot. A short distance below the flue-opening *f* in the top of said air-chamber, and suitably secured within and across it, is a metallic disk or plate, *g*, suitably perforated with holes, so that nothing can escape through said holes and opening besides the smoke. Immediately below said fire-pot is a suitable ash-chamber, C, across the top of which lies the usual stove-grate *i*, and provided also with a projecting opening, *h*, through which to withdraw the ashes. The said base D, upon which the whole of the above superstructure rests, and to which all the other parts are securely fastened, as aforesaid, is a hollow cylinder of sheet or cast metal, of sufficient depth to suitably hold within it the said water-reservoir E. Said reservoir is made of suitable sheet metal, of suitable size and shape, and to contain water. It is secured within said base D and below its top by the metallic straps *m*, crossing underneath, and suitably fastened to, the inner edge of said base, so that the reservoir is protected from the heat of the fire above, or accidental injury, and yet conveniently detachable at will. Said reservoir is also provided with several suitable pipes, F, of sheet metal or otherwise, each suitably connected thereto, and leading vertically upward from the top thereof to convey water, whenever the heater is overturned, from the interior of the reservoir, through the top of the base D outside the ash-box C, into the said-fire-chamber A, underneath the hoods *b*, as shown. A suitable screw-capped opening, *n*, is made into the top edge of said reservoir, and projects upward and above the base D, through which to supply water to said reservoir; and while the heater is in its proper position no water can, or is intended to, rise higher in the pipes F than their connection with, or insertion into, the top of said reservoir. The letter G represents

the said jacket, which is a hollow cylinder of sheet metal, of sufficient size to suitably cover in the whole of the aforesaid parts of my device between the flue *f* and the top of the base D, being held in place by the top or cover *s*, which is secured by the nut-rods *v*. Said jacket is provided with suitable doors *x x'*, to close over the aforesaid side projecting openings *d* and *h*, corresponding openings having been cut through the jacket-shell. Said jacket is also intended to cover in the pipes F, so that passengers will be prevented from coming in contact with their heated surfaces, and the pipes themselves protected from accidental injury.

Having thus described the construction and arrangement of my device, it is intended to operate in the following manner: So long as the heater rests in its proper position, the water will remain in the reservoir; but, whenever it is upset or overturned by accident to the car, the water is readily conveyed from the reservoir, through the pipes F, directly upon the fire, the fuel and hot ashes of which cannot escape, thereby immediately quenching combustion, and preventing further casualty to passengers. Therefore,

I claim as my invention—

1. The water-reservoir E, in combination with the removable securing-straps *m* and the base D, substantially as specified.

2. The hoods *b* of the fire-chamber A, in combination with the pipes F, the base D, and the detachable water-reservoir E, substantially as specified.

3. The covering-jacket G, provided with the doors *x x'*, in combination with the base D, the securing-cover *s*, and the pipes F of the water-reservoir E, substantially as and for the purposes specified.

CHARLES A. WEST.

Witnesses:

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