

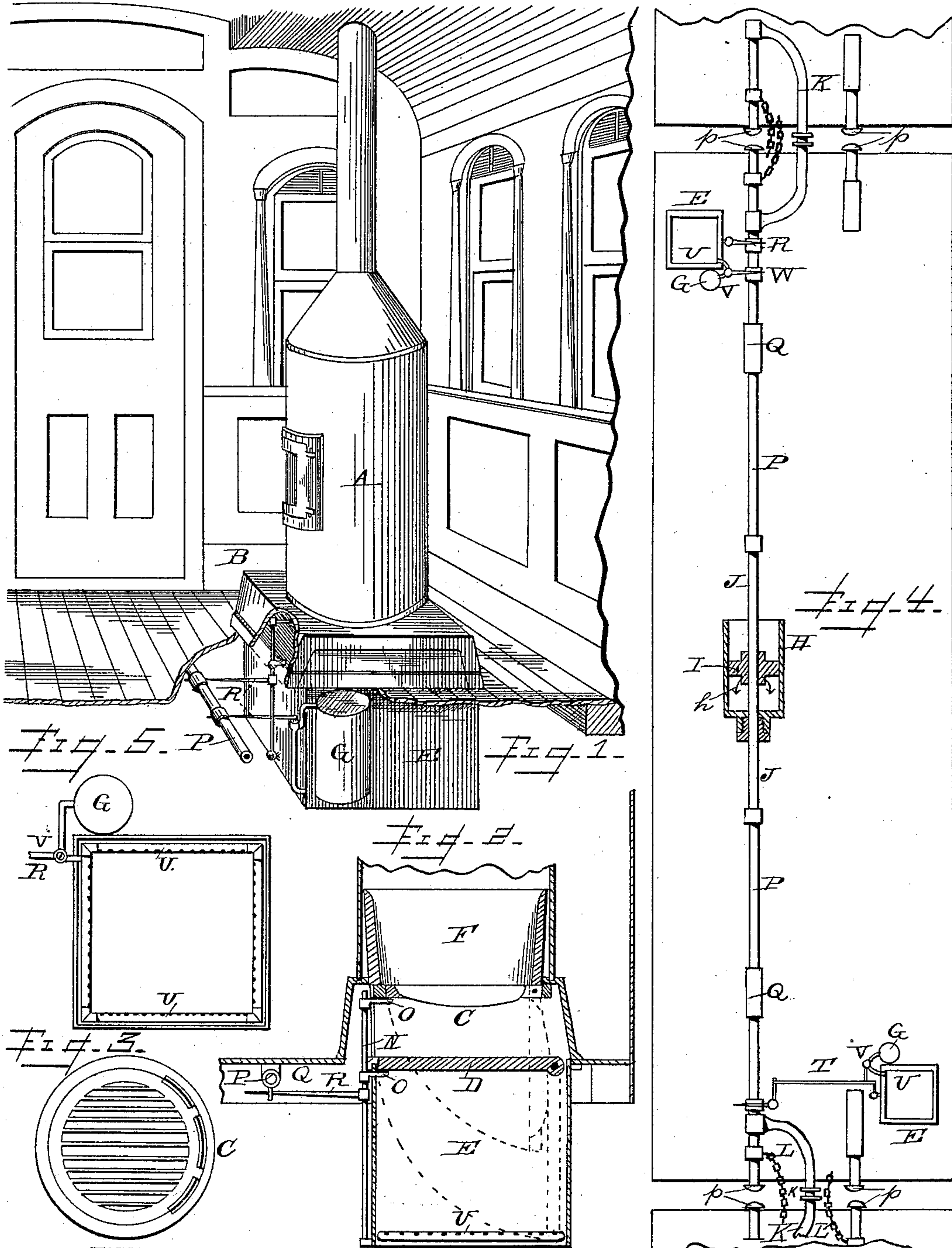
(No Model.)

H. B. FRISBIE & R. J. McAULEY.

HEATER FOR RAILWAY CARS.

No. 387,558.

Patented Aug. 7, 1888.



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HEATER FOR RAILWAY-CARS.

SPECIFICATION forming part of Letters Patent No. 387,558, dated August 7, 1888.

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To all whom it may concern:

Be it known that we, HENRY B. FRISBIE and ROBERT J. McAULEY, both of Cleveland, in the county of Cuyahoga and State of Ohio, have invented certain new and useful Improvements in Heaters for Railway-Cars, of which the following is a specification.

This invention relates to heating-stoves for railway-cars, and has for its object to provide a ready and automatic means of dumping and extinguishing the fires from all the stoves in case of accident of any kind, and thereby obviate the liability and danger of setting fire to the cars. To this end we construct the base of the stove with a mechanism combined and arranged to operate substantially as hereinafter described, and pointed out in the claims.

In the accompanying drawings, Figure 1 is a perspective view of a stove having our improvements attached, as seen located in a railway-car. Fig. 2 is a vertical sectional view of the base and discharge bottomless chamber beneath the floor of the car, showing the manner of dumping the grate and emptying the fire-pot through the floor of the car. Fig. 3 shows the manner of hinging the grate, so that the same may be shaken. Fig. 4 is an under side view of a car, showing the mechanism for dumping the grate. Fig. 5 is an under side view of the bottomless chamber, showing the extinguisher-cylinder attached to it and connected with it by a perforated discharge-pipe leading into and around the lower part.

A represents a stove which may be of the form and pattern of those now in general use. This stove sits on a base which we construct substantially as follows:

B is the base which sits directly onto the floor, in the upper part of which is hinged a grate, C, under the fire-pot F. In the floor of the car is made an opening in which is hinged a trap-door, D, forming the bottom of the base A, and under the floor, directly beneath the trap-door, is attached a bottomless chamber, E, through which the fire falls whenever the fire is dumped.

The grate and trap-door are both held up by a latch connected with and operated simultaneously by a mechanism applied to the underside of the car, which works automatically, or by the engineer on the locomotive, to un-

latch and trip both grate and door for dumping the fire. A chemical fire-extinguisher, G, is also attached to one side of the bottomless chamber E, which is also set off by the same mechanism, discharging its contents into said chamber E, while the fire is falling through it, and thereby kill the fire by the time it reaches the ground. This mechanism is described as follows:

H is a cylinder secured at a suitable position to the under side of the car, in which is a piston, I, fixed on a hollow or tubular rod, J. This rod is made continuous to the full length of the car by coupling thereto gas-pipes P P, which are supported in sleeve-bearings Q Q, secured to the under side of the car. The ends of said pipes P are closed with suitable plugs or caps, *pp*.

Near the ends of the pipes P are attached hose K K, having suitable couplings, *k k*, for connecting them together between the ends of cars. The pipes P also have chains with hooks L L attached near the ends, whereby the ends of the pipes may be linked to the adjoining car.

The latch mechanism for the grate and trap-door consists of a small vertical shaft, N, fixed in the side of the base B, having arms O O attached, which reach just under the edges of the grate and door, supporting and holding them up in place. Said shaft N is connected by means of a lever, R, to the aforesaid pipe P, as seen at one end of the car. As will be seen, the latch-operating mechanism is located at one side of the center line of the car. This is made necessary, so as not to interfere with the car-couplings, so that the said latch-lever R at one end of the car may connect directly with the pipe P, while at the other end the latch-lever is connected by means of a bell-crank and connecting-rod, T, to the pipe P.

Within the lower side of the bottomless chamber E is placed perforated pipes U, connected with the extinguisher, and provided with a cock, V, connected by lever W to the pipe P direct, or to the connecting-rod T, as may be required, so that the extinguisher may be discharged at the same time that the fires are dumped.

This mechanism for operating the latches, consisting of pipes or tubular rods, is to be

connected to the compressed-air receiver on the locomotive, from whence said mechanism may be operated just as the engineer operates the brakes. The air when admitted to the pipes finds an exit into the cylinder H through openings at *h* within the cylinder, and by its force therein the piston is moved. This is one method of operating the mechanism. Another method of operating this mechanism is that in case the cars become uncoupled by accident the chains will pull on the pipes and move them; and another method is in case cars are forced together, as in collisions, the pipes bump together and thus move them.

The operation of dumping the grates and the trap-doors is performed, as will be seen from the foregoing, by means of the mechanism described, by either of the methods stated, in the following manner: The movement of the said pipes imparts a movement to the latches, which, when moved, are turned, so that the arms O O are turned from under the grates and doors, which, being thus relieved of their support, fall and hang perpendicularly, as seen by dotted lines in Fig. 2, resulting in a sudden discharge of the fires through the floor of the car to the ground, at the same time setting off the extinguishers. By this means the engineer, if he sees danger ahead, may as readily dump all the fires from the stoves, as he can set the brakes or close the throttle-valve, and thereby prevent the danger of the cars catching fire in case they are overturned; but should he neglect to apply the air the separating of the cars or the colliding of the cars will accomplish the purpose.

Should it be desired to again light the fires in the stoves in such cars as are not injured, the grates and the trap-doors may be again drawn up and latched in place, and such cars again warmed.

Having described our invention, what we claim, and desire to secure by Letters Patent, is—

1. The combination, in a railroad-car stove or heater, of one or more downwardly opening or dumping bottoms, catches for holding the same raised or closed, and a cylinder and piston mechanism for releasing the catches, substantially as described.

2. In a railway stove or heater, the combination of a dumping-bottom, catches for hold-

ing the same raised or closed, a shaft, N, to which the said catches are connected, a lever, R, connected with said shaft, and a movable rod or pipe, P, connected directly with said lever R, whereby said dumping-bottom may be automatically operated by the movement of said rod or pipe, substantially as described.

3. In stoves for railway-cars, the combination, with the fire-pot, of a base having a hinged grate, and a hinged trap-door in the bottom of said base, covering an opening through the car-floor, and a bottomless chamber beneath said opening, the said grate and trap-door being held up by a latch mechanism, a coil of perforated pipe arranged in said bottomless chamber and connected with a chemical fire-extinguisher, substantially as described.

4. The combination, substantially as described, of a stove-base having a hinged grate, a hinged trap-door in the bottom of said base, covering an opening through the car-floor, a bottomless chamber beneath said opening, and a coil of perforated pipes in said bottomless chamber, connected with a chemical fire-extinguisher, and a latch and latch-operating mechanism for tripping the grate and trap-door, consisting of an air-cylinder secured to the underside of the car, provided with a piston having hollow piston-rods extending the full length of the car, and connected near each end with levers connected with and operating the latches of the grates and trap-doors, and the cocks of the extinguishers, all constructed and arranged to operate as and for the purposes specified.

5. The combination of the air-cylinder H, secured to the under side of the car and provided with a piston, I, having hollow piston-rods J J extending full length of the car, and provided with bumpers on each end, and hose with couplings K for connecting with adjacent cars, also connected, by cranks, levers R and W, and connecting-rod T, with the latches O O, and the valve V on extinguisher G, all constructed and operating substantially as and for the purpose specified.

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