

(No Model.)

F. E. SQUIRE.

FIRE EXTINGUISHER FOR RAILWAY CARS.

No. 388,738.

Patented Aug. 28, 1888.

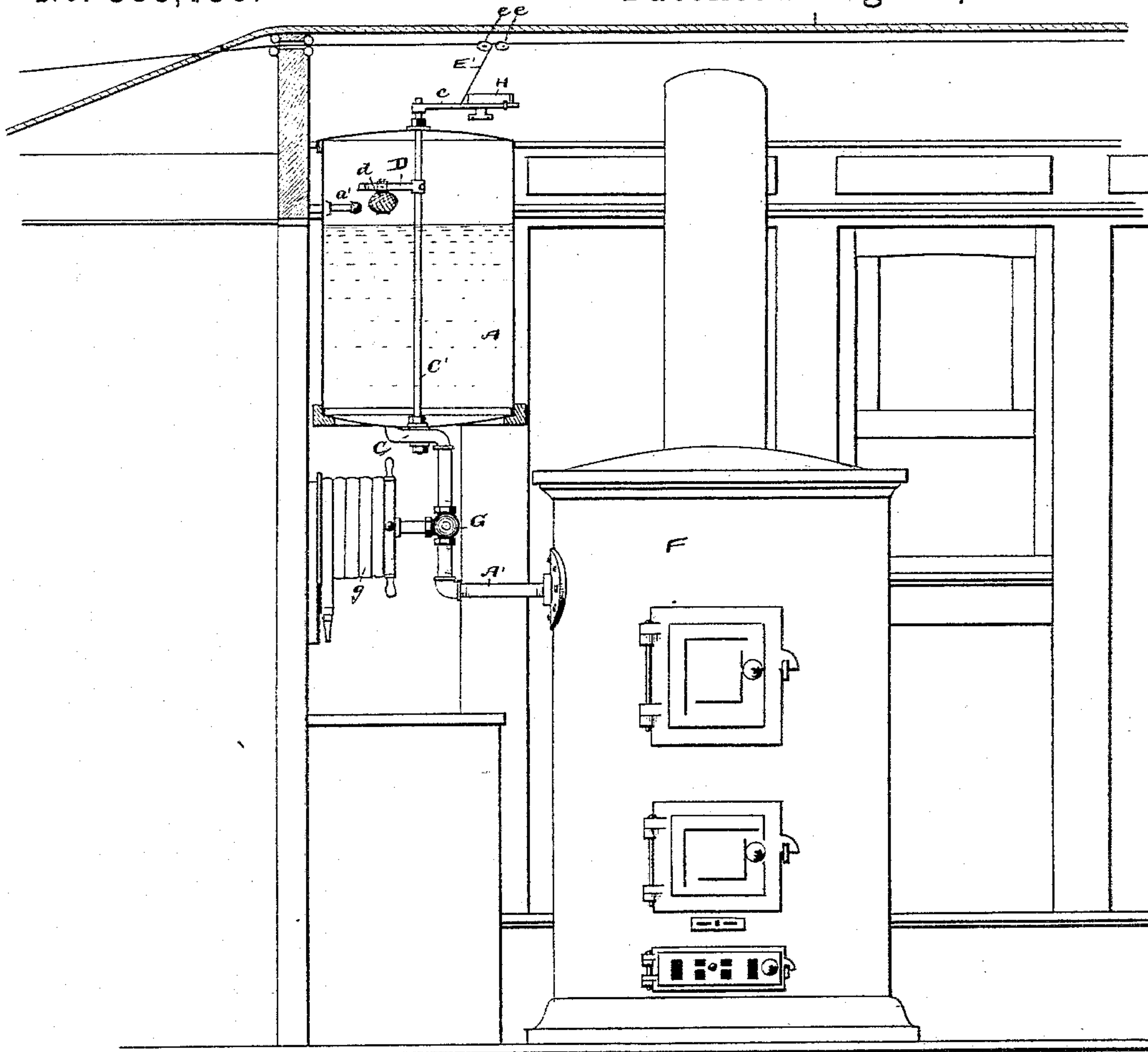


Fig. 1

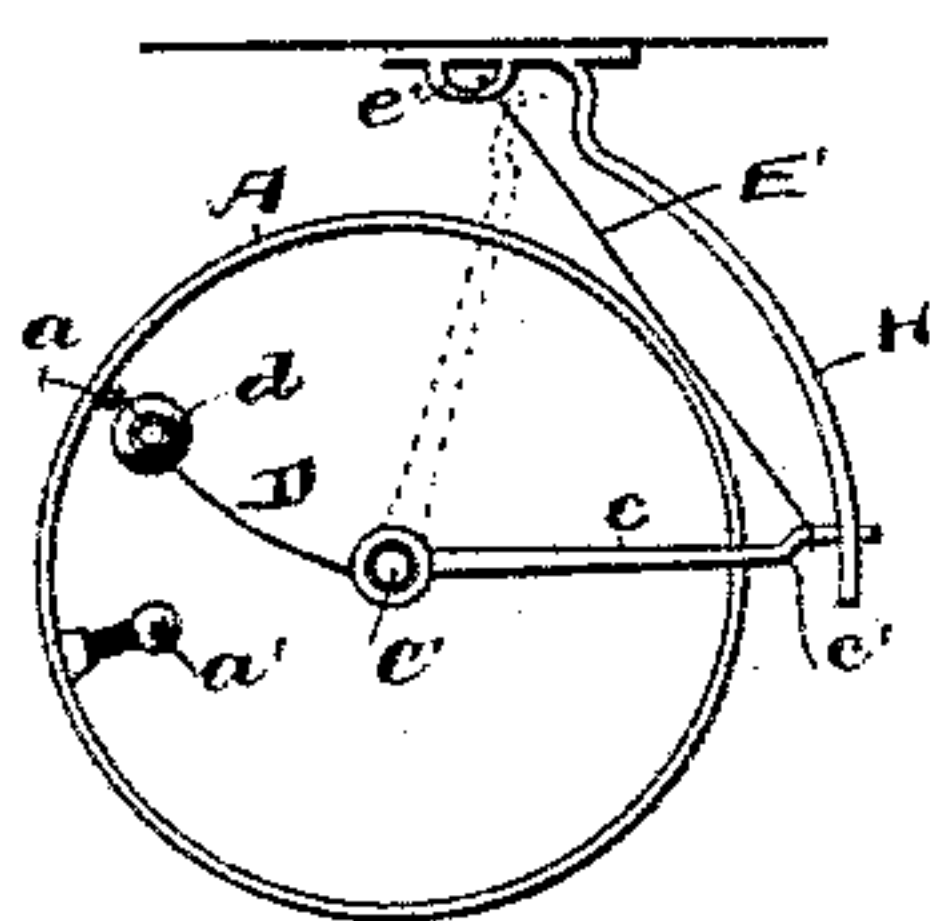


Fig. 2

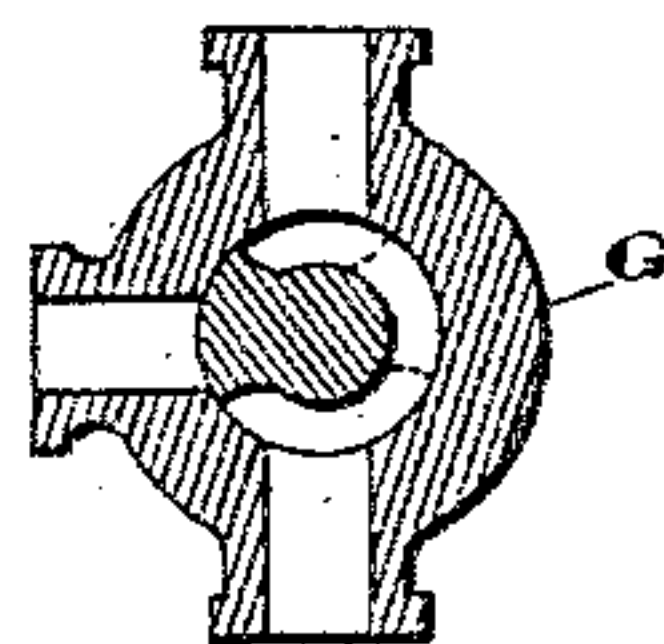


Fig. 3

WITNESSES

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FRANK. E. SQUIRE, OF CLEVELAND, OHIO.

FIRE-EXTINGUISHER FOR RAILWAY-CARS.

SPECIFICATION forming part of Letters Patent No. 388,738, dated August 28, 1888.

Application filed April 19, 1887. Serial No. 235,368. (No model.)

To all whom it may concern:

Be it known that I, FRANK. E. SQUIRE, of Cleveland, in the county of Cuyahoga and State of Ohio, have invented certain new and useful
5 Improvements in Fire-Extinguishers for Railway-Cars; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it pertains to make and use
10 the same.

My invention relates to improvements in fire-extinguishers for railway-cars, in which an extinguisher is located above each heating-stove with a cord made to extend through the train
15 and other cords connected therewith, the latter in turn being connected with the respective levers for operating the different extinguishers, to the end that the engineer, fireman, or any other person at any part of the train can, by
20 pulling on the main cord, extinguish the fires in the different stoves on the train. A three-way cock and hose is connected with the discharging-pipe of the extinguisher, by means of which gas may be shut off from the stove and
25 directed through the hose to any part of the car.

In the accompanying drawings, Figure 1 is an elevation in section of a device embodying my invention. Fig. 2 is a plan view. Fig. 3
30 is a detail of the three-way cock in section.

A represents the reservoir or body of the fire-extinguisher, the same being located on a higher plane and in convenient proximity to the stove F. A discharge-pipe, A', leads from the reservoir and discharges into the stove.
35 The inner end of this pipe is provided with a suitable valve, preferably of the stop-cock variety, the stem C' of which extends out through the top of the reservoir, and outside has a lever, c, mounted thereon for operating the valve.
40 The valve-stem inside and near the top of the reservoir has a flat spring, D, attached, the free end of which extends to near the inner periphery of the reservoir, and in its normal position—that is, with the valve closed—rests against a
45 lug or stop, a. Attached to the spring D, and located near the outer end thereof, is a glass bottle or breakable reservoir, d, containing acid, usually sulphuric, while the reservoir A is partially filled with salt of soda. Of course
50 other chemicals may be used, if preferred. In turning the valve-stem to open the valve the

spring D is bent back by its engagement with the stop a until the spring draws off of the latter, when the recoil of the spring will carry the bottle d forward and dash it against a breaker, 55
a', and with such force as to break the bottle, and just as this occurs the valve C commences to open, thereby discharging the gas from the extinguisher into the stove to quench the fire. An ordinary three-way cock, G, is connected 60
in the pipe A', the one opening of the cock having attached the hose g. This cock is left in the position shown in solid lines, Fig. 3, leaving the passage-way to the hose closed and the passage-way to the stove open. 65

In case a fire should occur in any part of the car—as, for instance, from a hot journal or from a broken or overturned lamp—the cock G can be turned to shut off the passage-way to the stove, thereby opening the passage-way to 70
the hose, after which, by turning the lever c, as aforesaid, the gas, by means of the hose, can be directed to any part of the car, as may be found necessary.

A primary cord, E, is made to extend through 75
the train, being coupled, preferably, between the cars for convenience in making up the train. A series of small secondary cords, E', are spliced or otherwise attached to the cord E opposite the different extinguishers. A pair 80
of grooved wheels, e, are set close together and serve as a support for the cord E, and between these wheels a cord, E', leads down toward the reservoir. This cord, when opposite the lever c, passes through a loop, e', and from thence 85
passes to the free end of the lever c, the cord being provided with a loop for embracing the end of the lever. The lever has a shoulder, c', that prevents the cord-loop from slipping on the lever toward the fulcrum of the latter. 90

A curved plate, H, is rigidly attached to the car or reservoir, and is made to fit so close to the end of the lever as to prevent the cord from slipping off of the end of the lever until the latter has reached the position shown in 95
dotted lines, Fig. 2, in which position the valve is supposed to be open, and the cord E', having passed by the end of the plate H, draws off from the lever c. With this arrangement of parts, by drawing on the cord E the cord 100
E' is actuated and in turn moves the lever c to open the valve C. Considerable slack in the

cord E must be had between the cars, so that this cord will not be tightened in starting the train, and it would be impracticable to arrange the cord E' in the different cars so that they would all be actuated in unison; but with the arrangement shown, whenever a lever c is turned to open the connected valve, the cord E' slips off the lever and can move along with the cord E. If, therefore, the cord E is drawn far enough, all the attached cords E' and connected levers c will in turn be actuated. With the construction shown, the engineer, fireman, or any of the officials on the train may draw the cord E and extinguish all the fires on the train. Any person in any part of the train may do the same, or by drawing on any one cord E the fire may be extinguished in the adjacent stove, and the same may be done by manipulating the lever c. The operation of the class of fire-extinguishers in which by commingling suitable chemicals gas is generated for extinguishing fires is too well known to require further description here.

The bottle d might be made stationary, and the spring D, or a hammer attached to or actuated by the spring, might be made to strike and break the bottle with the recoil of the spring. These and various other modifications in the mechanical structure of the device might be made without departing from the spirit and purpose of my invention.

What I claim is—

1. The combination, with a car-heating stove, reservoir, valve, and discharge-pipe, the latter leading into the stove, of a valve-stem extending through the chamber of the reservoir, a spring connected with the valve-stem inside the reservoir, a frangible vessel carried by the spring, a stop for engaging and giving tension

to the spring in opening the valve, and a breaker made to engage the frangible vessel with the recoil of the spring, substantially as set forth.

2. The combination, with stove-fire extinguisher, valve, lever, and primary and secondary cords, of a curved plate for holding the cord on the valve-lever in opening the valve, and removed at its rear end from the arc of the circle described by the lever to permit of the cord drawing off of the lever when the valve is open, substantially as set forth.

3. The combination, with a stove, a reservoir having therein a frangible vessel containing a chemical, a lever adapted, when moved, to break the frangible vessel containing a chemical and liberate the chemical, and a discharge-pipe connecting the reservoir with the stove, of a hose connected with the discharge-pipe and a three-way cock, the latter adapted to shut off the contents of the reservoir from the hose or stove, as desired.

4. The combination, with stove, reservoir, discharge-pipe, valve, and valve-stem, of a spring connected with the valve-stem, a stop for engaging and giving tension to the spring in opening the valve, a bottle or frangible vessel located inside the reservoir in position to be broken by the recoil of the spring or spring attachment when the spring is drawn off the stop, substantially as set forth.

In testimony whereof I sign this specification, in the presence of two witnesses, this 5th day of March, 1887.

FRANK. E. SQUIRE.

Witnesses:

CHAS. H. DORER,
ALBERT E. LYNCH.