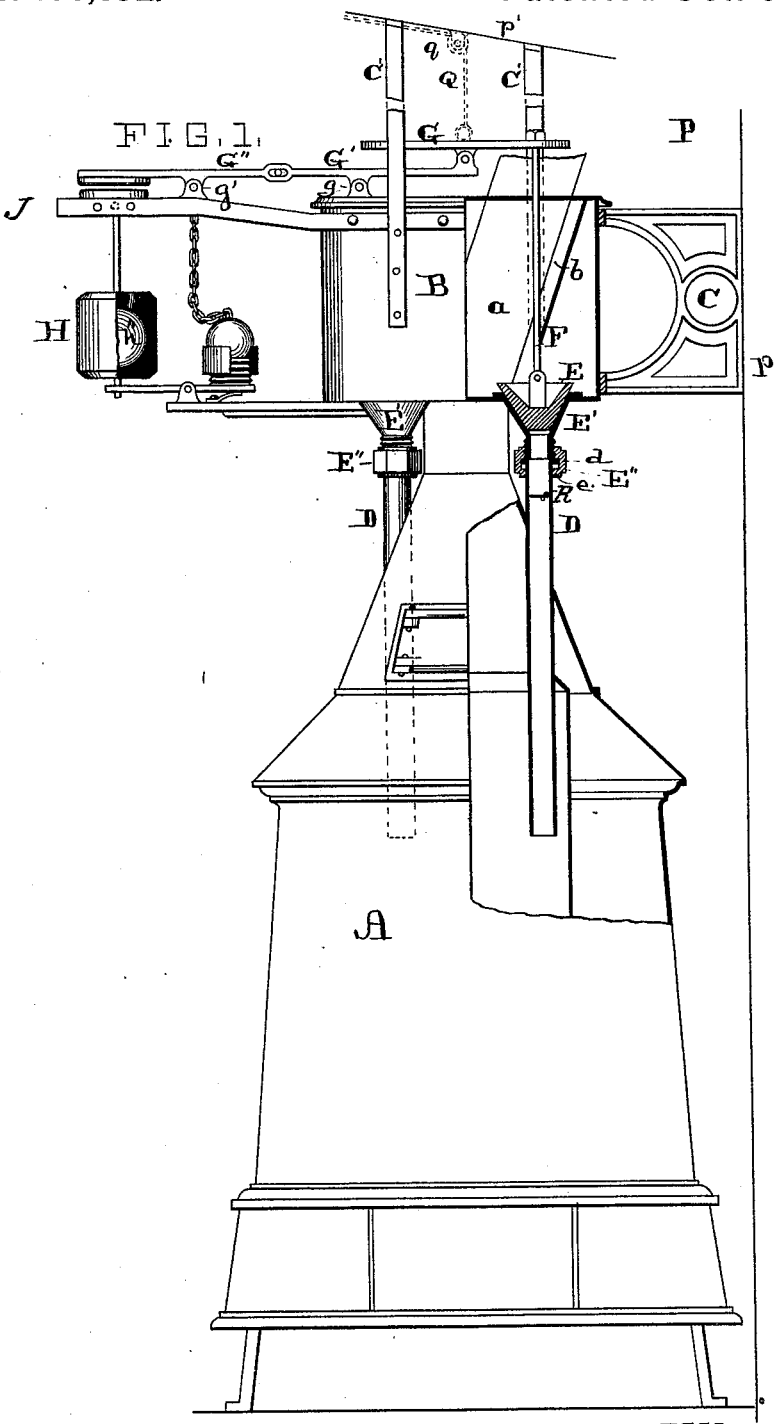
2 Sheets—Sheet 1.

W. H. HOTCHKISS & W. D. PEGRAM.

Railway-Car Fire-Extinguishers.

No. 195,892. **Patented Oct. 9, 1877.**

FIG. 1.



ATTEST,

Chas. M. Whitney

Henry M. Day

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2 Sheets—Sheet 2.

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FIG. 2.

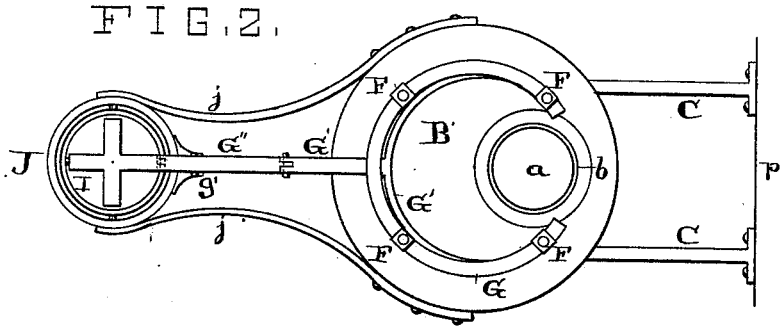


FIG. 3.

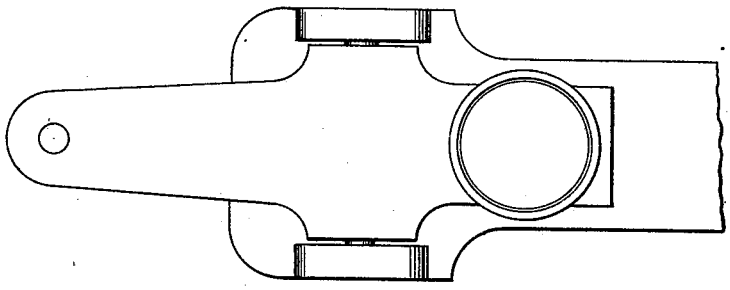
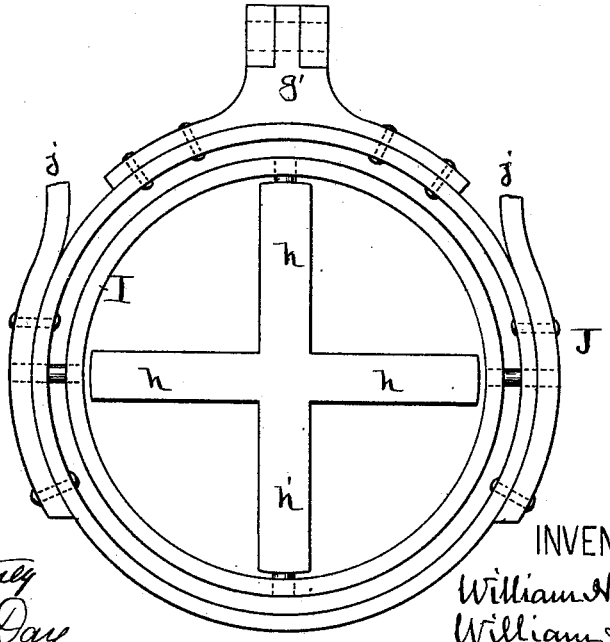


FIG. 4.



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UNITED STATES PATENT OFFICE.

WILLIAM H. HOTCHKISS AND WILLIAM D. PEGRAM, OF MOBERLY, MISSOURI.

IMPROVEMENT IN RAILWAY-CAR FIRE-EXTINGUISHERS.

Specification forming part of Letters Patent No. **195,892**, dated October 9, 1877; application filed August 2, 1877.

To all whom it may concern:

Be it known that we, WILLIAM H. HOTCHKISS and WILLIAM D. PEGRAM, residents of Moberly, Missouri, have made a new and useful Improvement in Railway-Car Fire-Extinguishers, of which the following is a full, clear, and exact description, reference being had to the annexed drawing, making part of this specification, in which—

Figure 1 is an elevation, partly broken away, showing the invention in position; Fig. 2, a plan; Fig. 3, a detail, being a plan of the pendulum-locking lever and its support; and Fig. 4, a detail, being a plan of the frame that supports the pendulum and the parts immediately therewith connected.

Like letters refer to like parts.

We have heretofore, May 15, 1877, patented an improved construction for extinguishing the fire of a railway-car stove, consisting, substantially, of a water-reservoir elevated above the stove, and having tubes leading down into the latter, through which the water is discharged onto the fire whenever the stove is inclined sufficiently from an upright position to cause a pendulum that is arranged to swing freely above the reservoir, and that is provided with arms extending laterally from the pendulum-rod, and coming in contact with a frame connected with the valve-stems, to act and lift the valves in the tubes.

The present construction is a modification of the one referred to, being an adaptation to such car-stoves as have the escape-pipe leading directly upward from the body of the stove, and in such manner as to come in the way of the valve-lifting mechanism if placed over the water-reservoir, as above described.

The invention also relates to the means for preventing the vibration of the stove from wearing upon the valve-seats in the reservoir. It also has reference to the means used to shield the valves from the action of the heat of the stove. It further relates to the provision by which the valves can be opened by a person at a distance from the stove, and to the regulation of the weight of the pendulum.

Referring to the drawing, A designates the stove of the description referred to, having an escape-pipe, *a*, extending upward from the top of the stove. The pipe may lead directly upward, or be inclined, as shown.

B represents the water-reservoir. It is arranged above the stove, as before, but is made in an annular form to receive the stove-pipe *a*. The opening *b*, through which the pipe passes, is preferably larger than the latter, to provide an air-space around the pipe. The reservoir does not depend upon the stove for its support, but is held in place by means of the brackets C C and the straps C′ C′, that, in turn, are attached to the side *p* and roof *p′*, respectively, of the car P.

D D represent the pipes, that lead from the reservoir into the stove; but, to prevent the ordinary motion or vibration of the stove from wearing upon and loosening the valve-seats E′ E′, the pipes are not rigidly attached to the valve-seats, as before, but are connected in the manner shown in Fig. 1—that is, the pipes, at their upper ends, are provided with an outwardly-turned flange, *d*, that engages with an inwardly-turned flange, *e*, of a coupling, E″, that is screwed onto the valve-seat E′, the connection being such as to prevent the escape of the products of combustion of the stove, but loose enough to enable the pipes to move slightly in the coupling and to prevent the valve-seats from being strained.

The stems F F of the valves E E extend upward through and above the reservoir, as previously, and at their upper ends are united by, and connected with, the frame G. The latter, as shown in Fig. 2, is shaped so as to avoid the escape-pipe *a*. When the escape-pipe is centrally arranged the frame may be continuous, extending entirely around the pipe; but when the latter is inclined or arranged to be at or toward the side of the reservoir, the frame need not be continuous, the important feature being the union of the valve-stems, to enable all the valves to be opened by the movement of the frame.

G′ G″ represent a compound lever, arranged and connected as follows: The part G′ having its bearing at *g*, and the part G″ at *g′*, and the inner end of the part G′ arranged to bear upward and raise the frame G, and the outer end of the part G′ arranged to extend over, and be raised by, the arms *h h h′ h′* of the pendulum

H. To suit the shape of the frame G, and to lift the latter evenly, the inner end of the lever G′ is forked, as shown in Fig. 2, and the forked ends may be pivoted, as shown, to the frame. The outer end of the lever G″ may be of a suitable form, such as is shown in Fig. 2, to be readily lifted by the arms *h h h′ h′*, or such other construction as may be attached to the pendulum for the purpose of operating the lever G′ G″.

The pendulum H and the parts immediately therewith connected are mainly as in our original patent—that is, the four arms *h h h′ h′* extend laterally from the upper end of the pendulum, and two, *h′ h′*, of the arms are journaled in a ring, I, that, in turn, is journaled to a frame, J, that, by means of the arms *j j*, is fastened, as a preferable support, to the reservoir B. The bearing *g′* is attached to the frame J.

Now, when the stove is inclined in any direction from its proper position, the pendulum preserves its perpendicularity, as before. The effect is to lift the outer end of the lever G″ and to depress the outer end of the lever G′, the inner end of which lifts the frame G, causing the valves E E to open. By this means the mechanism for operating the water-valves can be conveniently placed at the side of the reservoir, and out of the way of the escape-pipe of the stove. The device for preventing the ordinary oscillation of the car from affecting the pendulum is the same as before.

It is desirable to provide means for readily adjusting the power of the pendulum to the intended work. For this purpose the pendulum is made hollow, as shown at *h″*, Fig. 1, and by putting more or less shot therein the weight of the pendulum can be correctly graduated.

To enable the water to be discharged onto the fire when the stove is in an upright position, and conveniently by a person at a distance from the stove, a cord, Q, extends from the frame G upward over a pulley, *q*, and thence along the upper part of the car. By pulling this the frame G is lifted.

As there is no upward draft through the pipes D D, the heat of the fire is generally insufficient to affect the valves or valve-seats E′ E′; but to prevent the latter, even when quite near the fire, from being at all injured, we preferably insert a valve, R, in each of the pipes D D. It is arranged to open downward, to allow the water to pass down, but otherwise is balanced to close upward and shield the upper end of the pipe and the valve from the heat.

We claim—

1. The combination of the stove A, reservoir B, pipe D, valve-seat E′, and coupling E″, as and for the purpose described.

2. The combination of the stove A, reservoir B, brackets C C, pipes D D, valves E E, stems F F, frame G, car P, and cord Q, substantially as described.

3. The combination of the reservoir B, frame G, compound lever G′ G″, pendulum H, and frame J, substantially as described.

4. The hollow pendulum H, in combination with reservoir B, and the mechanism for enabling the pendulum to lift the valves E E, substantially as shown.

5. The annular reservoir B, escape-pipe *a*, frame G, lever G′ G″, pendulum H, and frame J, substantially as described.

Witness our hands.

W. H. HOTCHKISS.
W. D. PEGRAM.

Witnesses:
CHAS. D. MOODY,
PAUL BAKEWELL.