

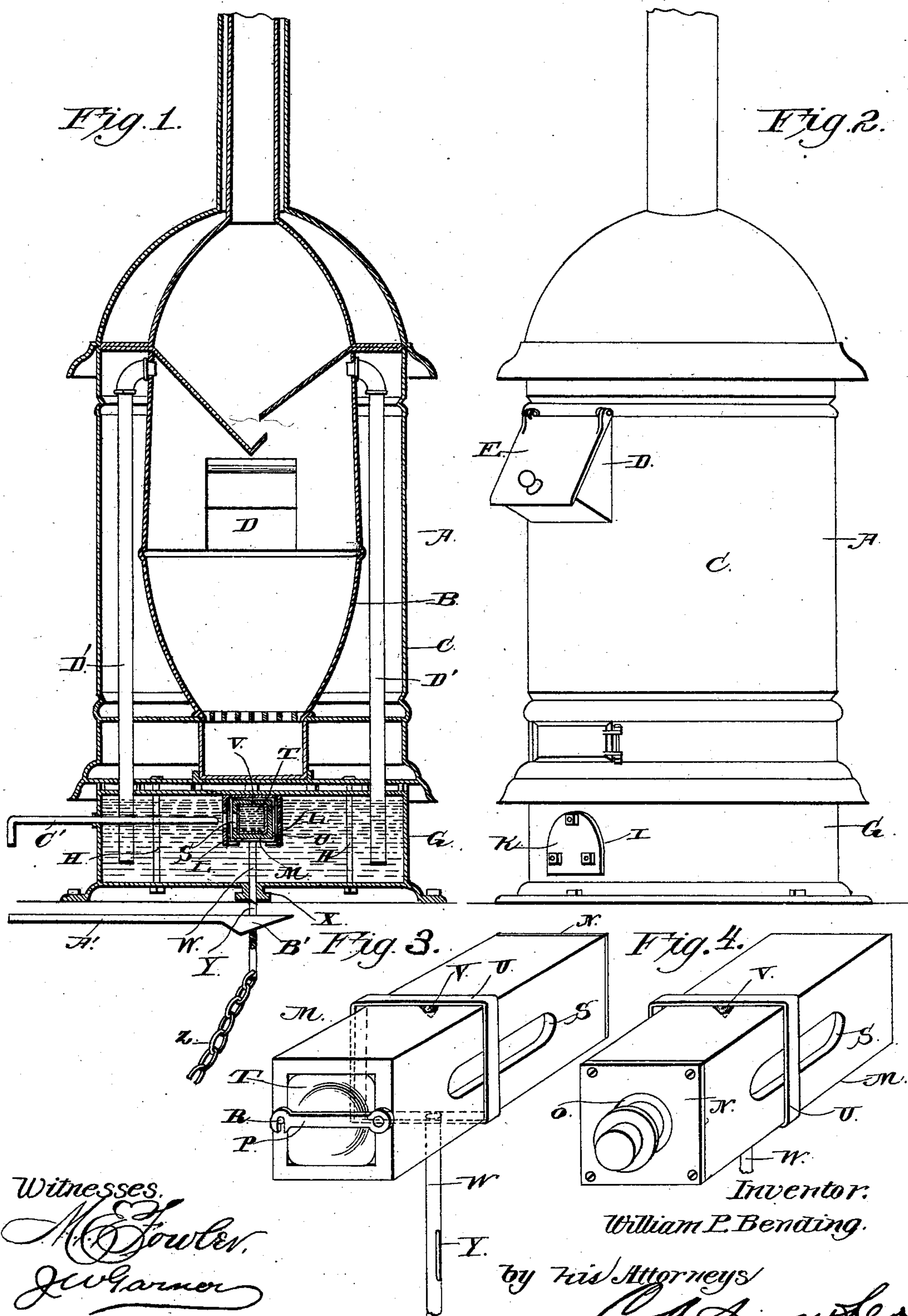
(No Model.)

W. P. BENDING.

FIRE EXTINGUISHER.

No. 393,606.

Patented Nov. 27, 1888.



Witnesses.  
*M. C. Fowler.*  
*J. W. Garner*

Inventor.  
*William P. Bending.*

by His Attorneys  
*C. A. Snowdon*



# UNITED STATES PATENT OFFICE.

WILLIAM P. BENDING, OF COLUMBUS, OHIO.

## FIRE-EXTINGUISHER.

SPECIFICATION forming part of Letters Patent No. 393,606, dated November 27, 1888.

Application filed February 27, 1888. Serial No. 265,444. (No model.)

*To all whom it may concern:*

Be it known that I, WILLIAM P. BENDING, a citizen of the United States, residing at Columbus, in the county of Franklin and State of Ohio, have invented a new and useful Improvement in Fire-Extinguishers, of which the following is a specification.

My invention relates to an improvement in fire-extinguishing devices for railway-car heaters; and it consists in the peculiar construction and combination of devices that will be more fully set forth hereinafter, and particularly pointed out in the claims.

In the drawings, Figure 1 is a vertical sectional view of a car-heater provided with a fire-extinguishing device embodying my improvements. Fig. 2 is an elevation of the same. Figs. 3 and 4 are detail perspective views of the frangible vessel, the case inclosing the same, and the vertically-movable rod having the strap inclosing the case and provided with a stud to split the case and break the frangible vessel when the rod is moved.

A represents a car-heater, such as described in my patent, No. 382,507, dated May 8, 1888. The said heater comprises an inner case, B, and an outer case, C, enveloping the same. The lower portion of the inner case, B, forms the fire-box, and said inner case has, at a suitable distance from its lower side, an inclined chute, D, which extends through the outer case, C, and is provided on its outer end with a hinged door, E. Coal or other fuel is fed to the fire through the chute D by first opening the door E.

Arranged below the base of the heater, and secured to the same by bolts H, is a reservoir or vessel, G, which is nearly or entirely filled with water, and is provided on one side with a man-hole, I, which is covered by the plate K, that is bolted to the reservoir. From the upper side of the latter, at the center of the same, depend a pair of stirrups, L.

M represents a rectangular case, which is made of soft wood, the grain of which extends in the direction of the length of the sides of the case, so that the latter may be readily split longitudinally. One end of said case is covered by a thin sheet of wood, N, which has a central opening, O, and the other end of said case is

open, and is provided with a bar, hook, or keeper, P, which has one end pivoted to one side of the case, and has a slot in the other end, which is adapted to engage a pin, R, which project from the opposite side of the case.

S represents a pair of longitudinal openings which are made in opposite sides of the case. The said case M is inserted between the stirrups L, and is supported by the same in the upper side of the reservoir, and the open end of said case is arranged opposite the man-hole I.

T represents a bottle or vessel of suitable size to fit in the case M, said bottle or vessel being made of glass or other frangible material. The said bottle or vessel is first filled with a suitable chemical compound adapted to develop an expansive gas of great power when in contact with water, and the same is then corked and is inserted through the man-hole into the case M. The bottle or vessel is moved lengthwise in the said case until its neck is passed through the opening O, as shown in Fig. 5, and the keeper, bar, or hook P is then turned downward and caused to engage the pin R, and is thus arranged transversely across the outer end of the bottle or vessel, and serves to secure the same against accidental displacement from the case, and retains the same firmly therein.

U represents a rectangular strap which passes loosely around the sides of case M at the center thereof, said yoke or strap being adapted to play slightly in a vertical direction on said case. From the upper side of the strap or yoke depends an inverted conical stud, V, the point of which normally bears upon the upper side of the case, and to the lower side of said yoke or strap is secured a vertical depending rod, W, which passes through a stuffing-box, X, in the bottom of the reservoir, and also passes through the bottom of the car in which the heater is located, and is provided at a suitable distance from its lower end with a vertical slot, Y. To the lower end of said rod is attached a chain, Z, which serves to connect said rod to one of the car-trucks.

A' represents a rod which is rigidly secured to one end of the car and is arranged under the bottom of the same. The said rod has its



inner end made wedge shaped and is thereby provided with a cam, B', which extends through the slot Y of rod W, and the lower inclined side of said cam bears against the lower end of said slot.

C' represents a supplemental endwise-movable rod, which extends through an opening in one side of the reservoir, has its outer end rigidly secured to one end of the car, and has its inner end arranged opposite one of the openings S of case M.

The heater is provided with a pair of vertical pipes, D', the lower open ends of which are submerged in the water of the reservoir and extend nearly to the bottom of the same, and the upper open ends of which communicate with the heater at a suitable distance above the fire-box, as shown.

The operation of my invention is as follows: In the event that one end of the car is smashed in in a railway accident the rod A' will be driven inward, so as to cause its cam B' to force the rod W downward, and thereby cause the yoke or strap U to descend and cause the conical stud V of said strap or yoke to pass through the upper side of the case M, split the same from end to end, and enter and break the frangible vessel T, so as to liberate the chemical contents thereof. The said chemicals as soon as they come in contact with the water in the reservoir develop an expansive gas of great power, and thereby force the water up through the pipes B' into the heater and thoroughly and instantaneously extinguish the fire therein.

In the event that the car should topple from an embankment, that one of its wheels or axles should become broken, or that it should be overturned in a collision or jump the track, the truck as it leaves the car-body will exert a powerful pull on the rod Z and thereby operate the rod W with the result before stated. The supplemental rod C' may be employed in lieu of the cam-rod A', or it may be employed in addition thereto, as here shown. It will be readily understood that said supplemental rod will, when the end of the car is smashed in, be driven through the opening S in the case and through one side of the frangible vessel, so as to break the same.

I am aware that it is broadly old to construct a fire-extinguisher with a bottle filled with acidulated water, which bottle is adapted to be broken by a ball, and this I disclaim. My device differs from anything that has preceded it in that the bottle is held rigidly in a case and is not displaced from its position, but is broken by the movement of the rods. Thus

in my device there is no likelihood of the bottle being broken by a sudden jar such as which all trains are subjected to in ordinary course of travel. This would, however, happen were the bottle to be broken by its fall or by the displacement of a ball, as in the construction referred to.

Having thus described my invention, I claim—

1. The combination, in fire extinguishing devices for railway-car heaters, of the reservoir, the frangible vessel for containing acid secured therein, the rod W, connected to said frangible vessel and adapted to break the same when said rod is forcibly moved, and the chain connecting the said rod with the car-truck, substantially as described.

2. The combination, in fire-extinguishing devices for railway-cars, of the reservoir, the frangible vessel for containing chemicals supported in the reservoir, the rod W, connected to the said frangible vessel and adapted to break the same when the rod is forcibly moved, the chain or link to connect said rod to one of the car-trucks, and the rod A', adapted to be secured to one end of the car and having the cam engaging said rod W, substantially as described.

3. The combination, in fire-extinguishing apparatus for railway-cars, of the reservoir, the case M, secured therein, the frangible vessel for containing chemicals secured in said case, the strap or yoke around the case having the stud adapted to puncture or split the case and to break the frangible vessel when the strap or yoke is moved forcibly, and connections between said strap or yoke and the sides, end, or truck of the car, substantially as described.

4. The combination, in fire extinguishing devices for railway-car heaters, of the case M, secured in the reservoir and adapted to be readily split, the frangible vessel for containing chemicals secured in said case, the strap or yoke U, inclosing the case and having the stud V bearing on the top of the latter, depending rod W, extending from the yoke or strap through the bottom of the car and having slot Y, and the rod A', attached to the car and having the cam B' extending through slot Y, substantially as described.

In testimony that I claim the foregoing as my own I have hereto affixed my signature in presence of two witnesses.

WILLIAM P. BENDING.

Witnesses:

CHARLES H. CURTIS,  
JOHN BENDING.