

(No Model.)

S. P. CANFIELD.

FIRE EXTINGUISHER FOR CAR HEATERS.

No. 365,237.

Patented June 21, 1887.

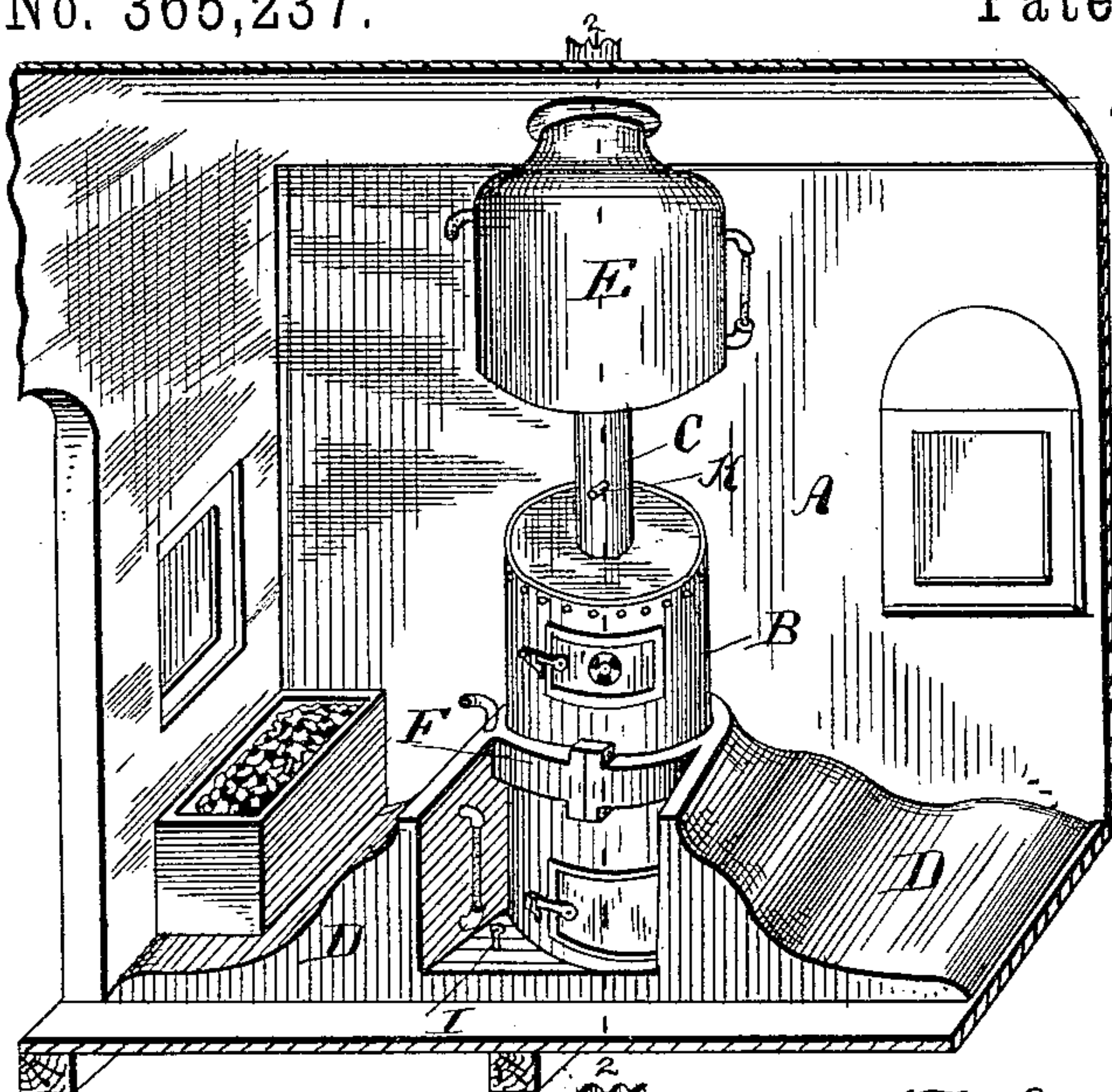


Fig. 1.

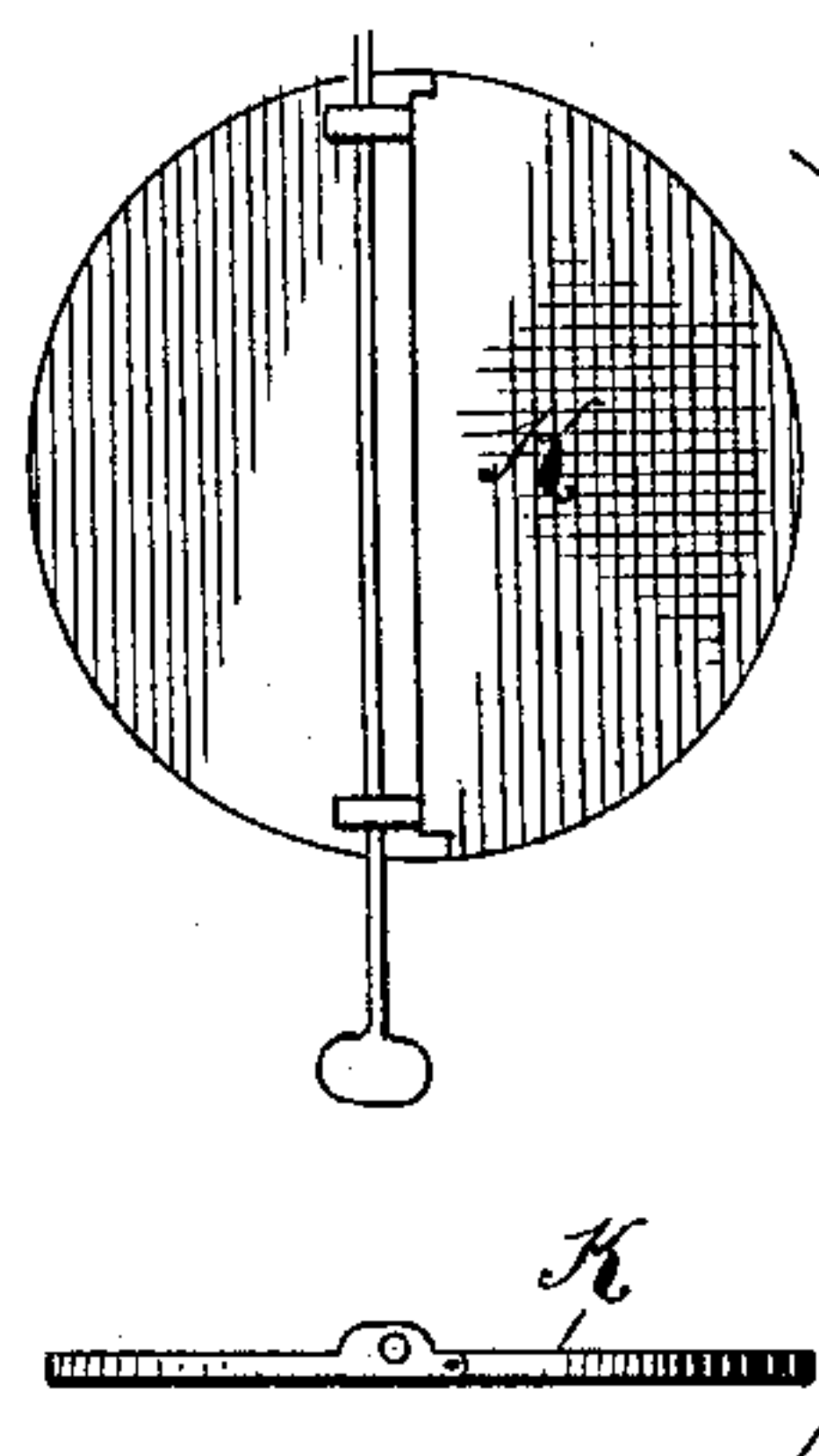


Fig. 4.

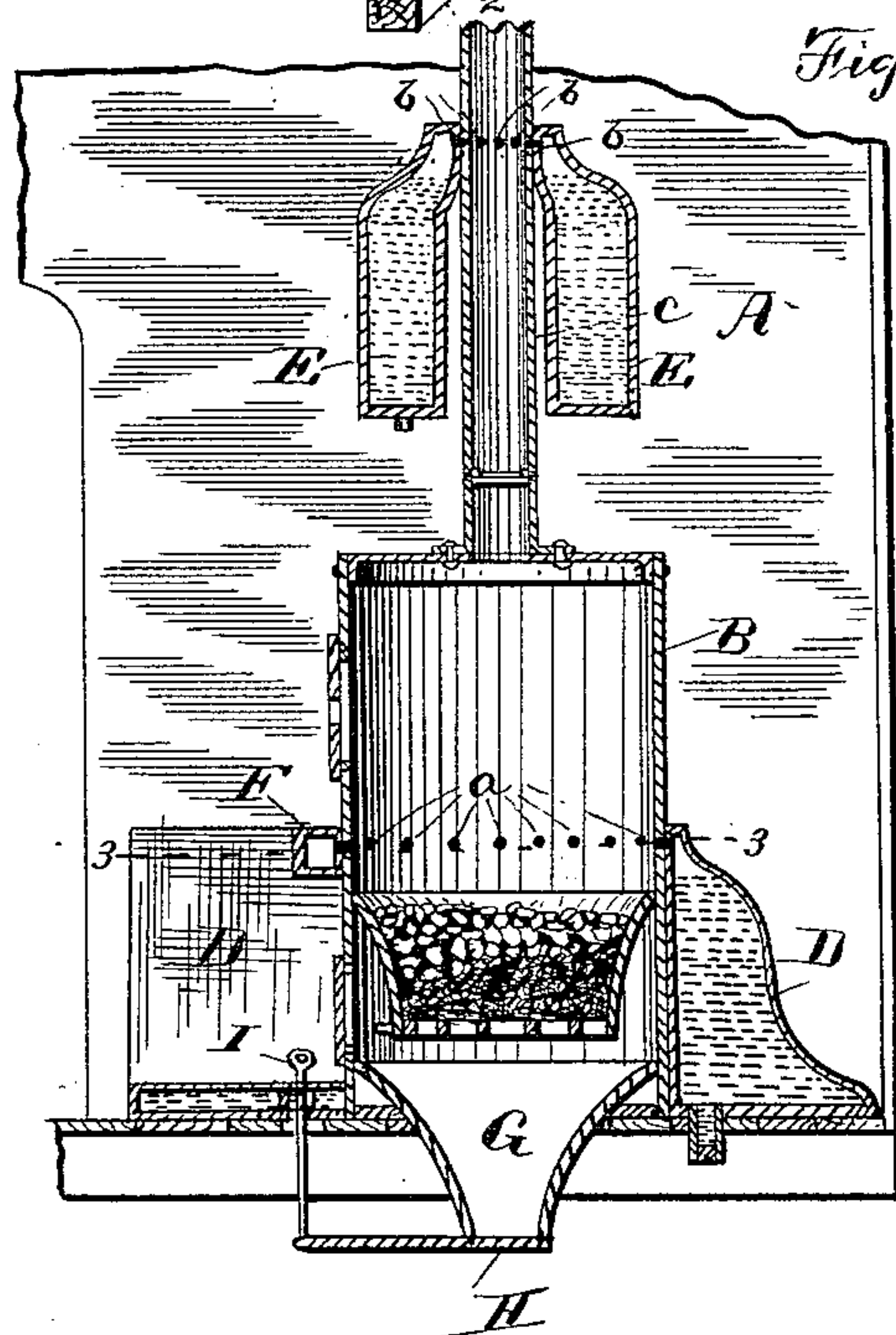
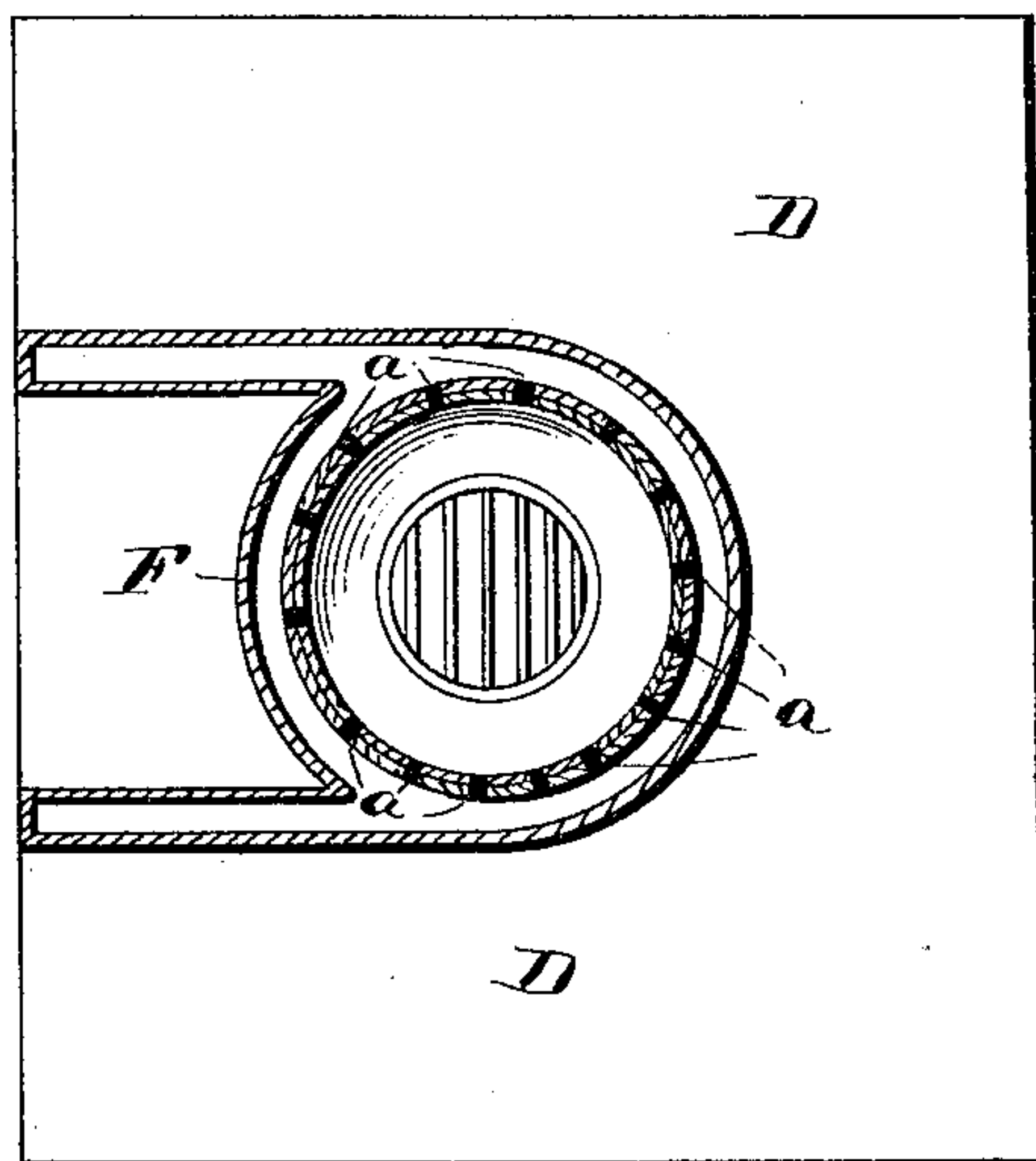


Fig. 2.

Fig. 3.



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UNITED STATES PATENT OFFICE.

STEPHEN P. CANFIELD, OF RICHMONDVILLE, NEW YORK, ASSIGNOR OF
ONE-HALF TO A. B. STEVENS, OF SAME PLACE.

FIRE-EXTINGUISHER FOR CAR-HEATERS.

SPECIFICATION forming part of Letters Patent No. 365,237, dated June 21, 1887.

Application filed March 5, 1887. Serial No. 229,821. (No model.)

To all whom it may concern:

Be it known that I, STEPHEN P. CANFIELD, a citizen of the United States, residing at Richmondville, in the county of Schoharie and State of New York, have invented certain new and useful Improvements in Fire-Extinguishers for Car-Heaters; 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 appertains to make and use the same.

Heretofore car-heaters have been provided with devices for extinguishing the fires therein in case of accident to the train, which devices usually consist of receptacles for holding an extinguishing-fluid, and from which the fluid may flow to the interior of the heater when the car is derailed or overturned. These devices do not always prove operative, partly on account of their construction and partly on account of the material of which they are formed. Heretofore, though having been constructed so as to surround the stove, they have not been made to extend to any great distance laterally at the base. The consequence has been that when the car was derailed and thrown to any abnormal position, except that wherein it would be nearly or quite on its side, only a comparatively small portion of the fluid in the reservoir would reach the fire, and therefore the fire would not be entirely extinguished. Then, too, when the car is telescoped or otherwise crushed, the reservoir, because of the material heretofore used in its construction, has been crushed also, and so quickly that the fluid therein contained would run out before it had a chance to reach the fire.

By my invention I propose to remedy these defects and make the extinguishment of fires in car-heaters more certain, whether the car or heater is completely overturned or thrown to any abnormal degree of inclination, or whether the car is telescoped and the stove crushed.

For a full disclosure of the invention reference is to be had to the specification and drawings, and to the claims, which indicate the novel features.

In the drawings, Figure 1 represents in perspective a stove or car-heater in one corner of

a car with the extinguishing-reservoir in position. Fig. 2 is a longitudinal vertical central section on the line 2 2. Fig. 3 is a horizontal section on the line 3 3, and Fig. 4 is a view in detail of the draft-damper in the pipe in both plan and side elevation.

Similar letters of reference designate the same parts in the various views.

A represents the car, in which is located a heater, B, of any of the well-known types, provided with the usual smoke-pipe, C, extending through the car-roof.

Around the body of the stove is a reservoir, D, of preferably annular form, and encircling the smoke-pipe is a similar reservoir, E. These reservoirs communicate near their upper ends with the interior of the stove and with the interior of the smoke-pipe, respectively, openings *a* and *b* being made in the stove body and pipe for this purpose. The reservoirs are preferably made of some flexible material—for example, sheet-copper—so that they may collapse and eject the liquid in case the car is telescoped, and not be ruptured by the pressure.

In the form of apparatus shown the front of the reservoir D is left open to give access to the doors of the stove, the complete annular form being preserved by the pipe or connection F, which communicates with the interior of the stove and at each end with the reservoir. Another pipe, L, also connects the two ends of the reservoir at the bottom.

The annular reservoirs provide for the flow of liquid to the fire in whatever direction the heater may be tilted or overturned, as they always hold a sufficient quantity of water above the level of the openings *a b* when the heater is out of its upright normal position.

The lower reservoir, D, extends on each side from the base of the stove to a greater distance than the vertical height of said reservoir, (provided that the space between the stove and the sides of the car will permit,) so that it will hold a large body of liquid with little surface. Violent movement of the liquid is thus prevented, and it is not therefore liable to prematurely enter the heater and extinguish the fire. There is a further object in making the reservoir in this manner. It is to permit the

level of the liquid to rise above the discharge-openings upon a comparatively slight inclination of the heater. Of course the farther the reservoir projects laterally from the heater the greater will be its movement with relation to that of the heater. Thus if the heater is tilted so as to assume any considerable degree of inclination it will be found that one side of the reservoir has been raised high enough to cause the liquid to flow into the fire-chamber. This result would not be attained were the reservoir close to the body of the heater or under it, as the heater would then have to be almost inverted before the liquid could run from the reservoir.

The reservoir, although cut away at the front, extends beyond the front of the stove, for the same reason that it is extended at the sides and back, so as to provide for the heater tipping backward.

The heater has a discharge pipe or chute, G, which extends through the floor of the car and is provided with a weighted valve, H, controlled by the handle I. Said valve may serve as a draft-regulator, if desired, and permit the escape of steam generated from the extinguishing-liquid when it enters the fire-chamber.

The smoke-pipe C, preferably made of heavy boiler-iron, is securely fastened to the car-roof, so that in case of accident it will not be displaced, but will remain in position above the stove and serve as a conduit to direct the liquid in the reservoir E to the fire in the heater.

The extinguishing-fluid may be water or other liquid, or any semi-liquid.

The tanks or reservoirs are provided with the usual filling-orifices, discharge tubes, and water-gages.

The smoke-pipe is provided with a pivoted damper, K, having a hinged section, L, that opens upward, so that if the damper be closed any steam formed from the extinguishing-liquid in the stove may lift the section and escape to the atmosphere without entering the car.

The doors of the stove are fitted as near steam-tight as possible, so that there will be no outlet for the steam, except through the smoke-pipe or the ash-chute G.

Having fully described my invention, what I desire to claim, and secure by Letters Patent, is—

1. In a car-heater, the combination, with a stove, of a reservoir in open communication with the interior of the stove and formed of flexible material, substantially as described.

2. The combination, with a stove, of a reservoir surrounding the same and communicating therewith on every side, the base of said reservoir extending a greater distance from the base of the stove than the vertical height of the reservoir, substantially as described.

3. The combination, with a stove, of a reservoir surrounding the same and open at the front, said reservoir having a pipe extending from one side thereof to the other across the front of the stove and in communication with its fire-chamber, substantially as described.

4. The combination, with a heater having a pipe or flue leading therefrom, of an annular reservoir surrounding said pipe and located entirely above the stove, said reservoir being of smaller diameter at the top than at the bottom and in communication with the interior of the pipe, substantially as described.

5. The combination, with a stove having an escape-flue, of a reservoir communicating with the interior of said stove, and a pivoted valve in the escape-flue, said valve being formed of two unequal parts hinged to each other at their edges, the pivots of the valve being located on the larger part and at the center of the damper, substantially as described.

In testimony whereof I affix my signature in presence of two witnesses.

S. P. CANFIELD.

Witnesses:

CHAS. C. NORTON,
A. P. STEWARD.