

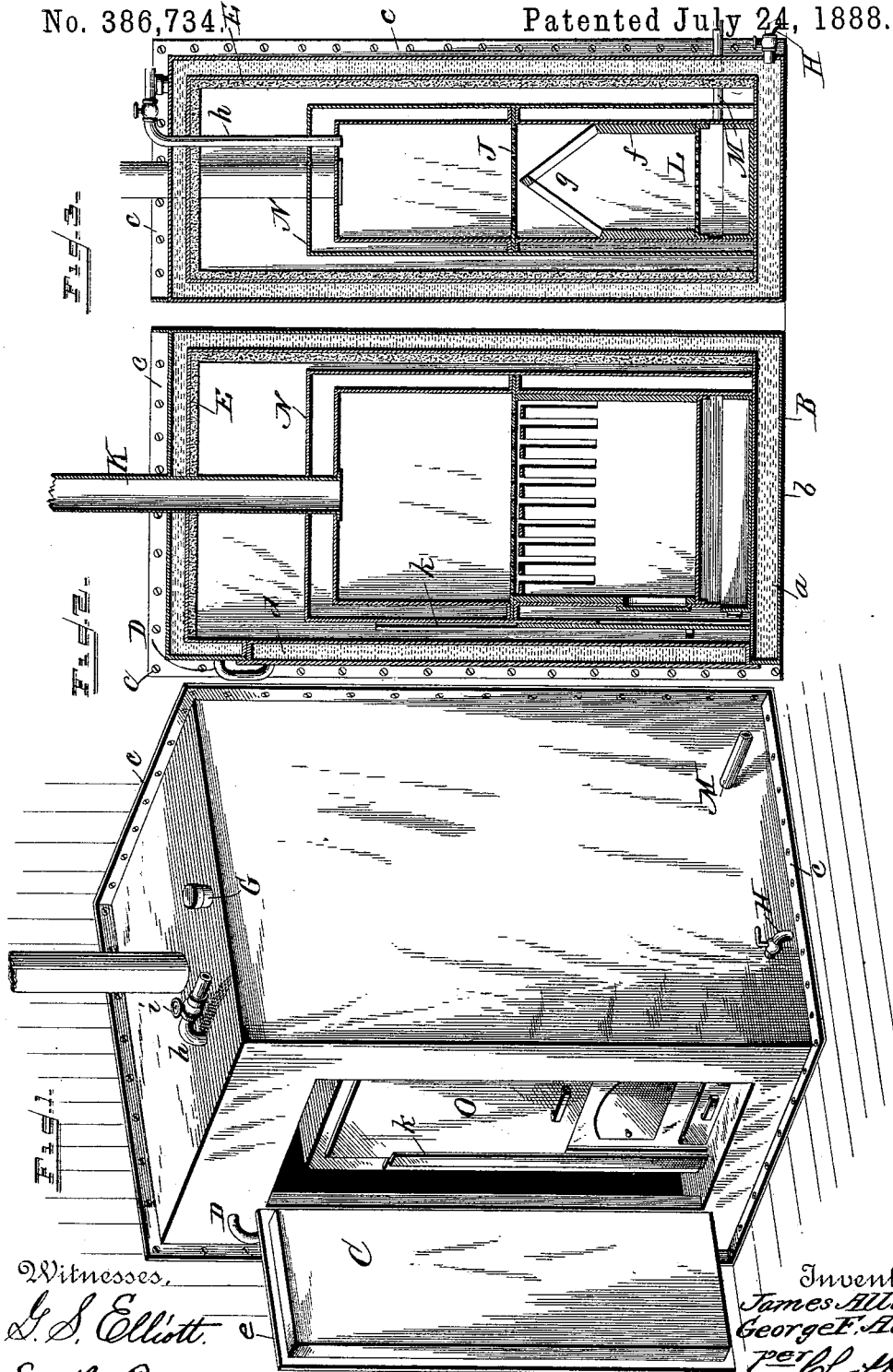
(No Model.)

J. & G. F. ALLEN.

CAR HEATER.

No. 386,734

Patented July 24, 1888.



Witnesses,
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E. H. Bond.

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UNITED STATES PATENT OFFICE.

JAMES ALLEN AND GEORGE F. ALLEN, OF ST. AUGUSTINE, FLORIDA.

CAR-HEATER.

SPECIFICATION forming part of Letters Patent No. 386,734, dated July 24, 1888.

Application filed January 26, 1888. Serial No. 261,990. (No model.)

To all whom it may concern:

Be it known that we, JAMES ALLEN and GEORGE F. ALLEN, citizens of the United States, residing at St. Augustine, in the county of St. John's and State of Florida, have invented certain new and useful Improvements in Car-Heaters; and we do hereby declare that the following is a full, clear, and exact description of the same, reference being had to the annexed drawings, making a part of this specification, and to the letters and figures of reference marked thereon.

This invention relates to certain new and useful improvements in car-heaters; and the novelty resides in the peculiar combinations, construction, arrangement, and adaptation of parts, all as more fully hereinafter described, shown in the drawings, and then particularly pointed out in the claim.

In the accompanying drawings, which form a part of this specification, Figure 1 is a perspective view of our improved heater with the door of the inclosing-case shown open. Fig. 2 is a vertical central section of the same. Fig. 3 is a vertical section at right angles to that of Fig. 2.

Referring now to the details of the drawings, A designates a suitable metal box or case, of copper, zinc, or other suitable material, and composed of an inner and an outer wall, *a b*, respectively, so as to form a water-chamber, B, upon all sides and top and bottom of the case. The outer wall of this case is extended to form a flange, *e*, by means of which the case may be secured in position, ordinarily in the corner of a car. The door C of this case, which is hinged thereto in any suitable way, is formed of double walls, as shown, to constitute a water-chamber, *d*, and with an overlapping flange, *e*. The water-chamber of the door is connected with that of the case by means of a flexible pipe, D, so that the door may be opened and closed without breaking the connection. The inside of the case or safe is lined with asbestos, E.

G is a water-inlet through which the water-space of the case is filled, and H is a cock by means of which the water in said water-space may be withdrawn when necessary;

and, if desired, the water-space of the door may be provided with a similar cock.

I is the heater placed within the case, either permanently or removably secured therein, as deemed best. This heater is composed of two sections, each provided with flanges, and between these flanges is secured the perforated plate J.

K is the smoke-flue carried by the upper section of the heater and extended through the top of the case.

The lower section of the heater is lined with fire-brick, *f*, is provided with a perforated grate, L, and a slatted top, *g*. The upper section of the heater forms a hot-air chamber, from which extends the pipe *h*, designed to be connected with a system of circulating-pipes. (Not shown, but which may be similar to those commonly used in car-heating systems.) M indicates the return-pipe from the said circulating-pipes, and leading under the grate of the heater. The pipe *h* is provided with a suitable cock, *i*, by means of which the quantity of heated air flowing through the pipes may be regulated.

The heater is provided with a suitable feed-door and ash-pan, as shown.

N is a casing surrounding the heater, with an air-space between the two, and also with an air-space between the casing and the inner wall of the case A. This case is provided with a door, O, sliding in suitable guides, *k*, and which may be slid upward to disclose the door of the heater when desired.

In practice the water-space of the case is filled with water, a fire started in the heater, and the door O of the casing and the door C of the case closed and locked. The heat from the heater passes through the pipe *h* and through the circulating-pipes in the car, and is returned into the heater through the pipe M. It will be seen that by this construction the fire cannot be communicated to the car, thus making it absolutely safe, even if the car is upset, and should the car be smashed up the safe would be broken or give way before the heater and the water would tend to put out the fire and prevent any damage from that source.

What we claim as new is—

The combination, with the case having a surrounding water-space, of a door to said case formed with a water-space, and a flexible pipe connecting the water-space of the door
5 with that of the case, substantially as described.

In testimony that we claim the above we

have hereunto subscribed our names in the presence of two witnesses.

JAMES ALLEN.
GEO. F. ALLEN.

Witnesses:

JAMES CONNELLEY,
C. F. HOPKINS, Jr.