H. M. HUTCHINSON.

Car Heater.

No. 27,449. Patented March 13, 1860.

Fig: 2.

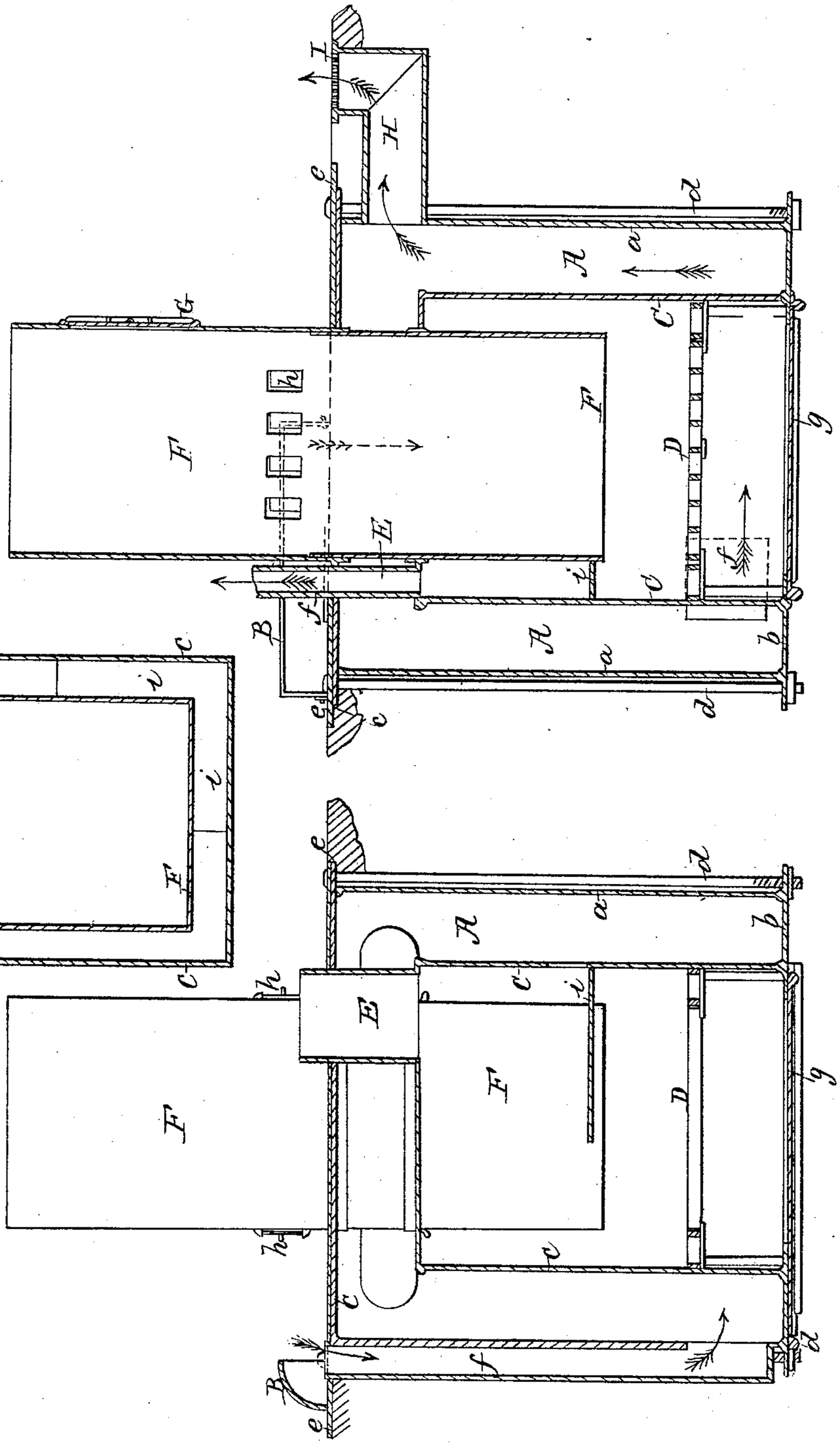

Fig 3.

Fig: 1.

UNITED STATES PATENT OFFICE.

H. M. HUTCHINSON, OF BALTIMORE, MARYLAND.

FURNACE FOR RAILROAD-CARS.

Specification of Letters Patent No. 27,449, dated March 13, 1860.

To all whom it may concern:

Be it known that I, H. M. HUTCHINSON, of Baltimore, in the State of Maryland, have invented a new and useful Improvement in Hot-Air Furnaces for Railroad-Cars; and I do hereby declare that the following is a full, clear, and exact description of the same, reference being had to the annexed drawing, forming part of this specification, in the several figures of which similar characters of reference denote the same part.

Figure 1 is a vertical section of furnace. Fig. 2 is a vertical section taken at right angles with the plane of Fig. 1. Fig. 3 is a horizontal section across fire chamber.

The object of this invention is the warming of rail road cars by heated air: its nature consisting in a certain arrangement of parts hereinafter to be set forth, whereby the desired end may be attained, the details of construction and operation being as follows.

In the drawing A is a chamber, having sides *a*, bottom *b* and top *c*, connected and secured to the floor of the car by bolts *d*. If this chamber is suspended in contact with the floor a single top plate may be used, but if hung below, an additional plate *e* upon the floor of the car, may be used. This constitutes the air chamber and communicates with the interior of the car by the induction flue *f*, over the mouth of which is the movable cowl B, whose mouth being in direction of movement causes the cold air near the floor to descend into the chamber. This cowl may be stationary and so arranged as to receive the air in whatever direction the cars may move.

Within chamber A is the combustion chamber C, having the grate D for the support of the fuel; and the feeder F rising above the floor of the car. The chamber C has the exit flue E for the products of combustion, and the feeder has the draft openings *h*, to be opened or closed according as the direction of motion may be. The front slide being open and the rear one closed. The draft being downward in direction of black arrows.

G is the door for charging the feeder with fuel. Below the grate the outer bottom plate is provided with a slide *g* for the removal of ashes, when hard coal is used and combustion supported by downward draft. This slide will be removed if bituminous coal be employed when the draft must be upward through the grate. Slightly above the lower extremity of the feeder in the combustion chamber, is the plate *i* for diffusing the current through the chamber by preventing its immediate passage to the exit flue.

The operation of the furnace is as follows—The feeder is charged with fuel in the usual manner of stoves of this construction after igniting the fuel on the grate. The slide in the direction the cars move is opened to give the draft, and the cowl adjusted to receive the cold air from near the floor of the car. The register I at the mouth of flue H is opened and the air heated by contact with the external surface of the chamber C, enters the car; the direction of air being shown in the drawing by red arrows.

The hot air register may consist of perforations in the top plate; the flue H being dispensed with if the apparatus be attached directly to the bottom of the car. If it be suspended below, leaving a space between the top of air chamber and the car, the flue H must be used.

Having described my invention and the operation thereof, I claim—

The hot air chamber A, combustion chamber C and feeder F, arranged as described in relation to one another, and to the car, and so that the cold air received by the combustion chamber may be drawn from the interior of the car.

In testimony whereof I have hereunto signed my name before two subscribing witnesses.

H. M. HUTCHINSON.

Witnesses:
GEO. PATTEN,
JOHN S. HOLLINGSHEAD.