

A. DAVIDSOHN,

Car Heater.

No. 84,735.

Patented Dec. 8, 1868.

Fig. 1.

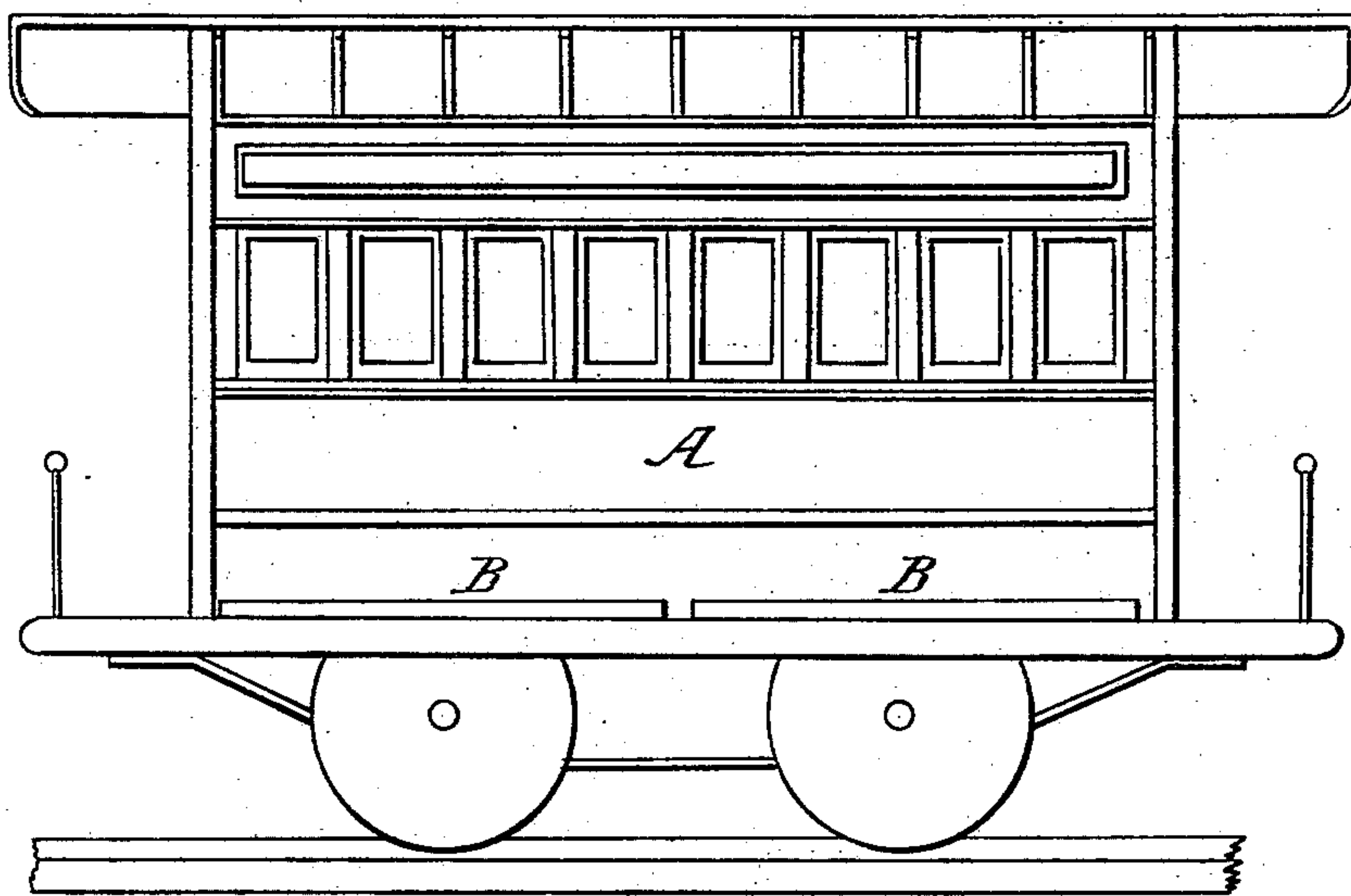
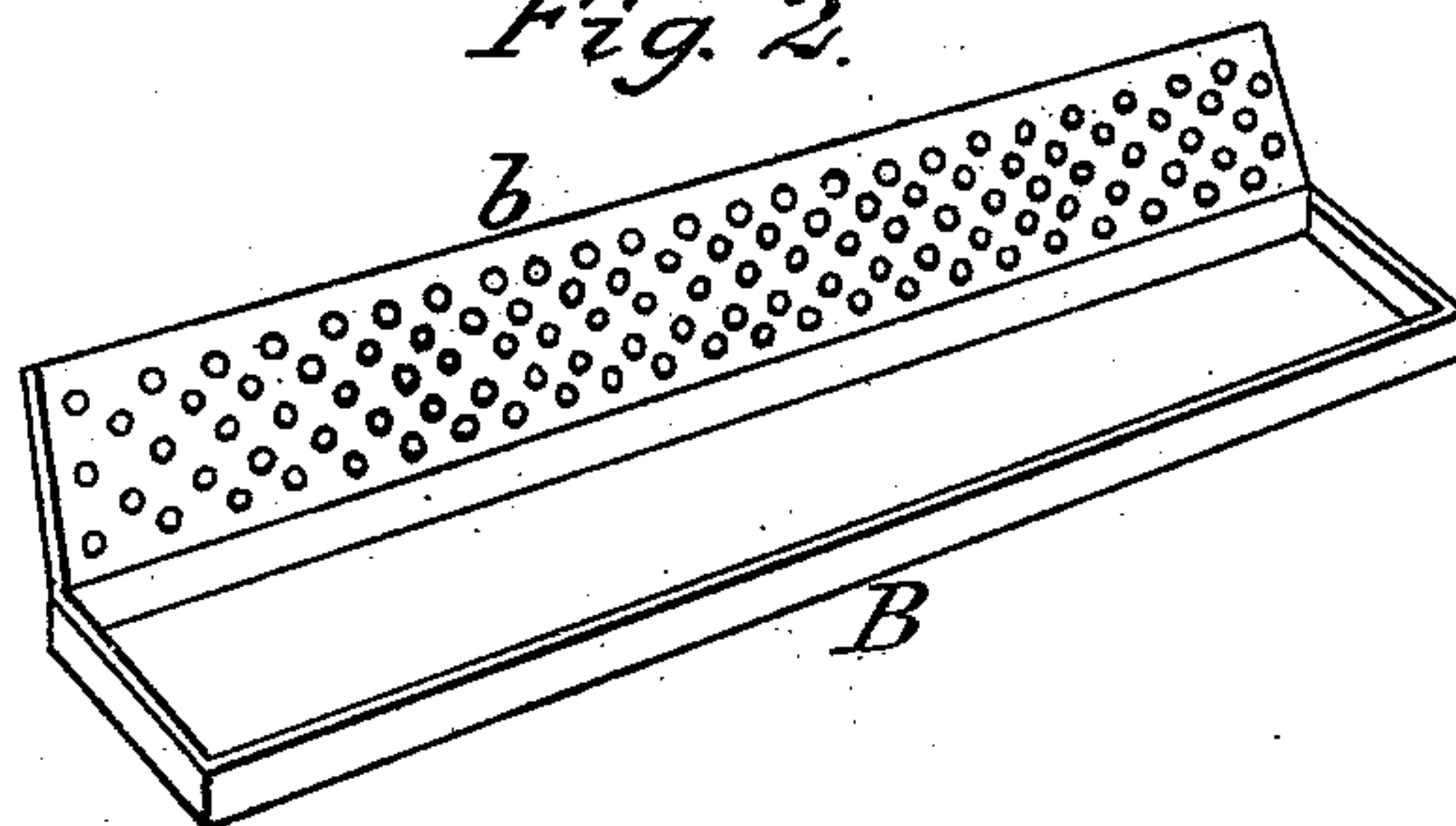


Fig. 2.



Witnesses.

W. Randolph.

Geo. W. Herbert.

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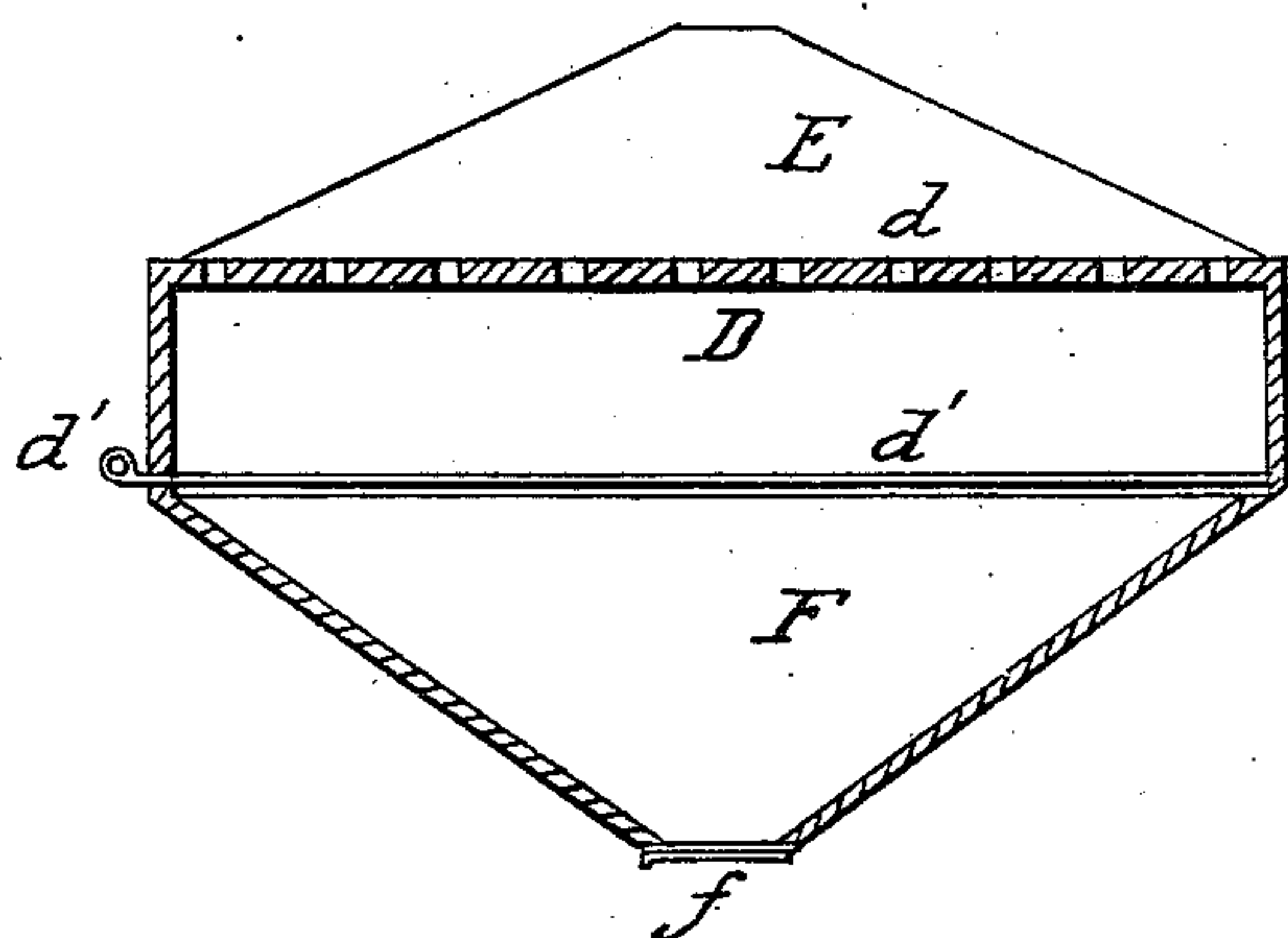


Fig. 2.

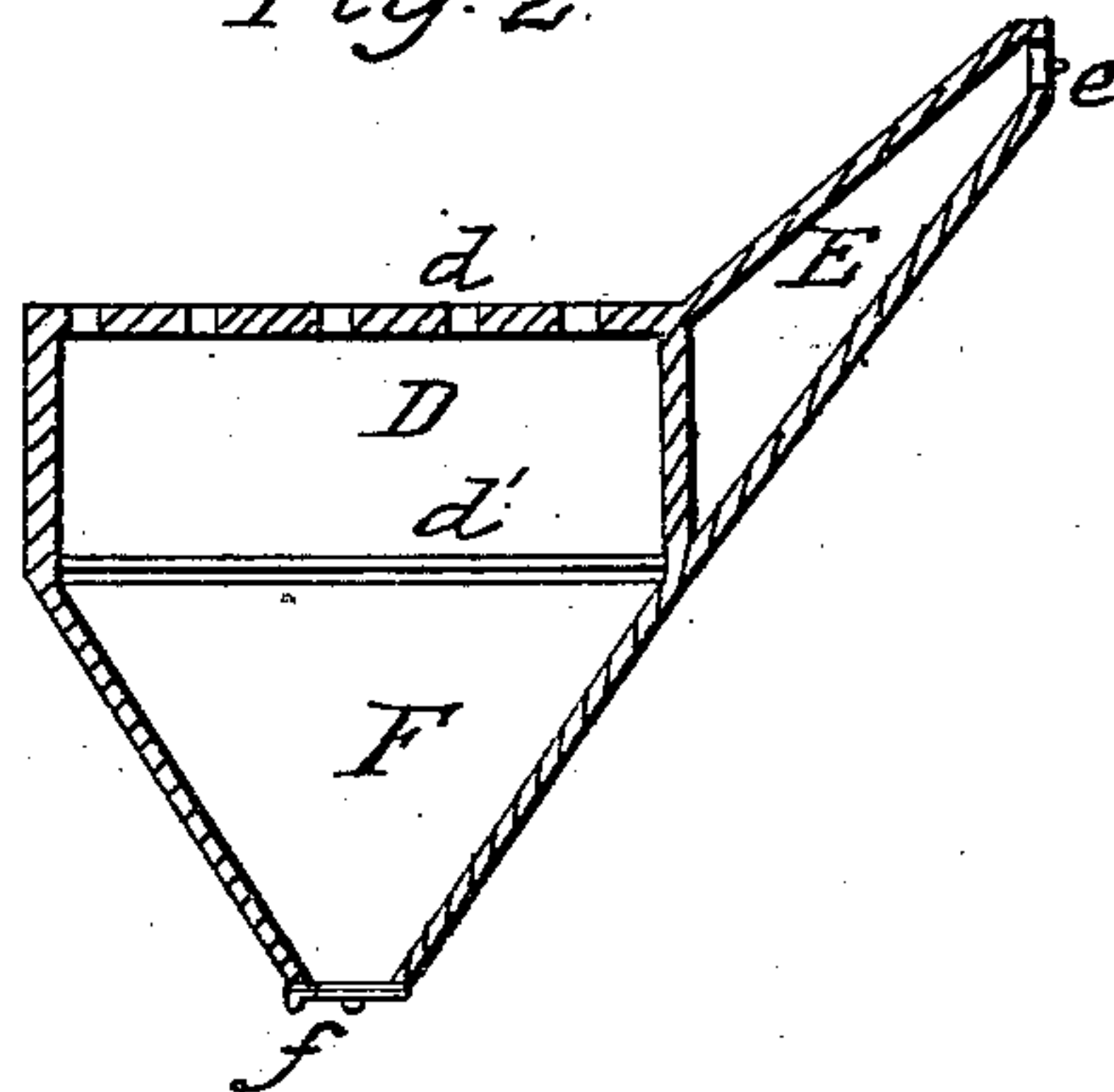
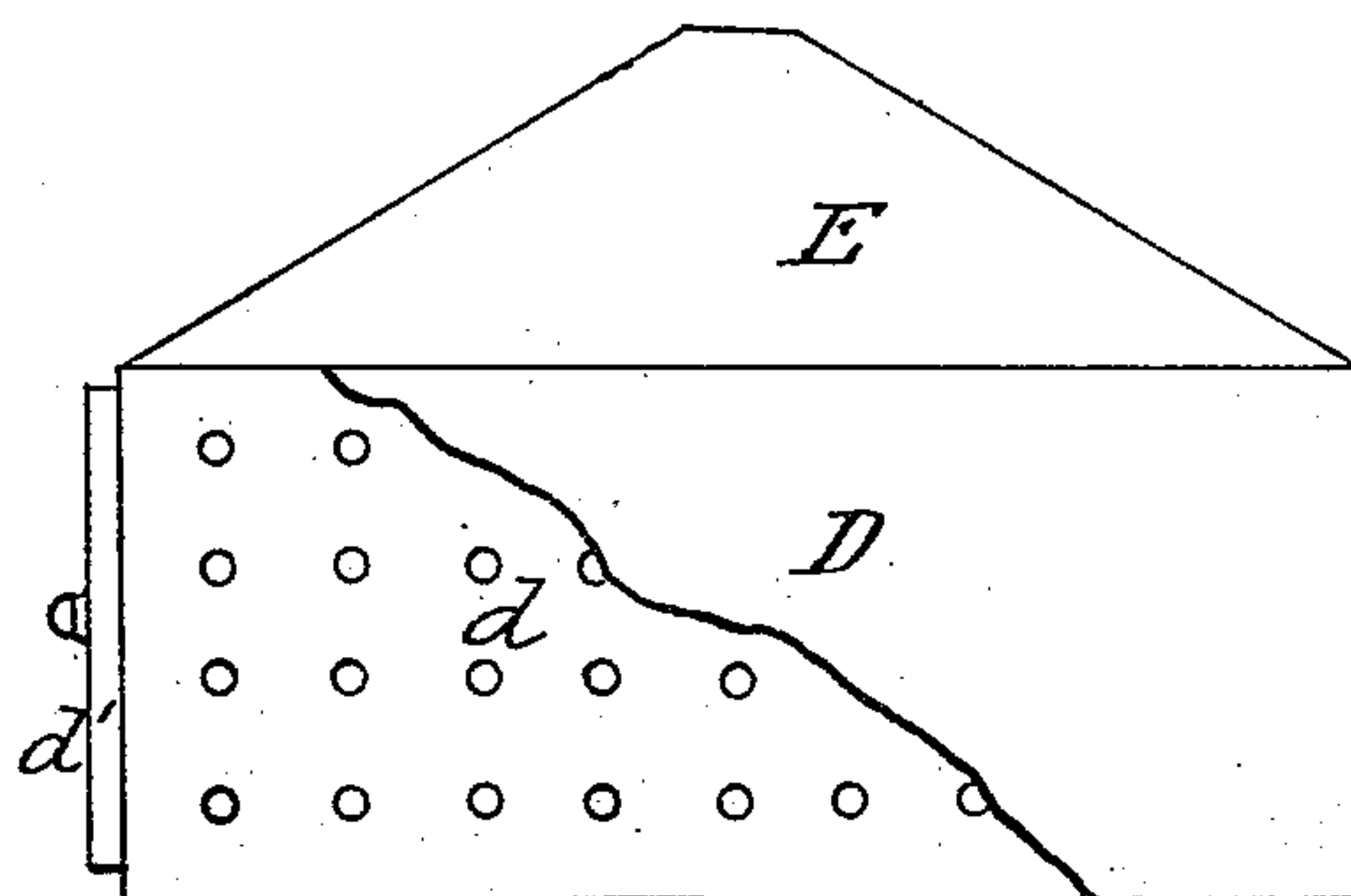


Fig. 3.



Witnesses
Robert Burns
Am. W. Herthel.

Inventor:
A. Davidsohn by his
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United States Patent Office.

ARNOLD DAVIDSOHN, OF ST. LOUIS, MISSOURI.

Letters Patent No. 84,735, dated December 8, 1868.

RAILROAD-CAR HEATER.

The Schedule referred to in these Letters Patent and making part of the same.

To all whom it may concern:

Be it known that I, ARNOLD DAVIDSOHN, of St. Louis, in the county of St. Louis, and State of Missouri, have made certain new and useful Improvements in Heating-Device for Railroad or Street-Cars and other public conveyances; and I do hereby declare that the following is a full and clear description thereof, reference being had to the accompanying drawings, and to the letters of reference marked thereon.

This invention relates to a device for heating public conveyances, by means of hot sand, placed in portable or stationary boxes, on a level with or below the floor of the conveyance.

It is a well-known fact that heated sand retains its heat for a long time, and this fact renders it admirably adapted to the purposes of heating public conveyances, such, for instance, as railroad or street-cars, stage-coaches, and other similar vehicles, where the use of fire in stoves is always attended with more or less of danger to the traveller, and to the vehicle itself, and, in the case of overturning or wrecking of the coach or car, conflagrations and fatal casualties are too often the result.

To overcome these fatally-defective heating-arrangements of stoves and furnaces is the object of the present invention, and it is sought to be overcome by the use of boxes of sand, the said boxes to be either stationary or portable.

To enable those skilled in the art to make and use my improved heating-device, I will proceed to describe its construction and operation.

Figure 1 of the drawings is a longitudinal sectional elevation of a street-car, provided with the improved heating-device.

Figure 2 is a perspective view of one of the heating-boxes, showing the cover raised up or opened.

Figure 1, of Sheet No. 2, is a longitudinal section of a fixed heater;

Figure 2, of Sheet No. 2, is a transverse section of same; and

Figure 3, of Sheet No. 2, is a top plan of the heater, showing the form and construction of said heating-device, when intended as a fixture in a car.

Of course this description will not be confined to the details of construction, which may be as widely varied as the number or form of vehicles to which this device is applied.

In general terms, therefore, the car A will represent the vehicle to be heated, of whatever kind or form it may be, and the box B will represent the heating-box, the construction of which will be equally variable.

In all cases, however, I prefer that the cover *b* of the box B should be perforated, as shown in fig. 2, so as to let the heat pass freely from the box to the apartment to be warmed, and it may be hinged to one side of the box.

If the box is placed above the floor of the vehicle, a carpeting might be placed over the top of the cover, so as to exclude dirt from the apertures in the cover, and to more regularly diffuse the heat in the apartment.

These boxes might readily be placed below the floor of the vehicle, and the heat admitted into the passen-

ger-saloon thereof, through registers in the floor of the same.

If the boxes be made portable, it will be easy to remove them from the car or coach, for the purpose of removing the cold sand and replenishing the box with newly-heated sand.

If, however, the boxes are to be made stationary, they should have hopper-bottoms, and be provided with induction and eduction-pipes, for the introduction of hot sand and the discharge of the cold sand.

In the case of railway-cars, heating-stations might be provided in the same manner as water-stations now are, for the purpose of heating and changing the sand in the several boxes, and the length of time that would elapse for the cooling of the hot sand thus introduced would be sufficient to make the distance between these heating-stations so long as not to make the expense of them objectionable.

The form of the heating-device, as represented in the several figures of Sheet No. 2, is intended to show the invention when applied to a car as a fixture, and D represents the heating-box, into which the heated sand is placed.

It has a perforated top, *d*, and will usually be enveloped in a felt or similar covering.

E is the influent-hopper, and F the effluent or discharge-hopper. These parts are so shaped that the sand will, by the former, freely enter and fill up the box D, and, by the latter, be easily and perfectly discharged.

At the top of the influent-hopper E is the influent-valve *e*, which can be connected with any filling-pipe, at the hot-sand station where the box is to be charged; otherwise, said valve is to be closed.

In order that the sand, when it has become cold, may be rapidly discharged, I arrange the slide *d'*, at the base of the box and at the top of the discharge-hopper, and, by withdrawing the slide *d'*, the sand drops into the hopper F, and, upon opening the discharge-valve *f*, it is withdrawn or runs out, and may be reheated.

It is apparent that, in the use of my stationary heating-apparatus, the sand-box D being filled with hot sand, the hoppers E and F will act to a great extent as retainers of heat, as they are filled with air which, owing to the close-fitting valves *e* and *f*, cannot escape, and thus forms an excellent so-called non-conducting medium of the heat.

I am aware that heated sand, in bags, has been used for heating-purposes, and I lay no claim to such invention as is described and claimed in English patent No. 2,675 of the year 1856; but

What I do claim, and desire to secure by Letters Patent, is—

The car-heating device, composed of box D, slide *d'*, influent-hopper E, valve *e*, and effluent-hopper F, and discharge-valve *f*, when constructed to operate as described, and arranged, with relation to the vehicle, substantially as set forth.

ARNOLD DAVIDSOHN.

Witnesses:

M. RANDOLPH,

GEO. P. HERTHEL, Jr.