

No. 765,309.

PATENTED JULY 19, 1904.

J. E. T. DICKINSON.

STOVE.

APPLICATION FILED AUG. 12, 1903.

NO MODEL.

Fig. 1.

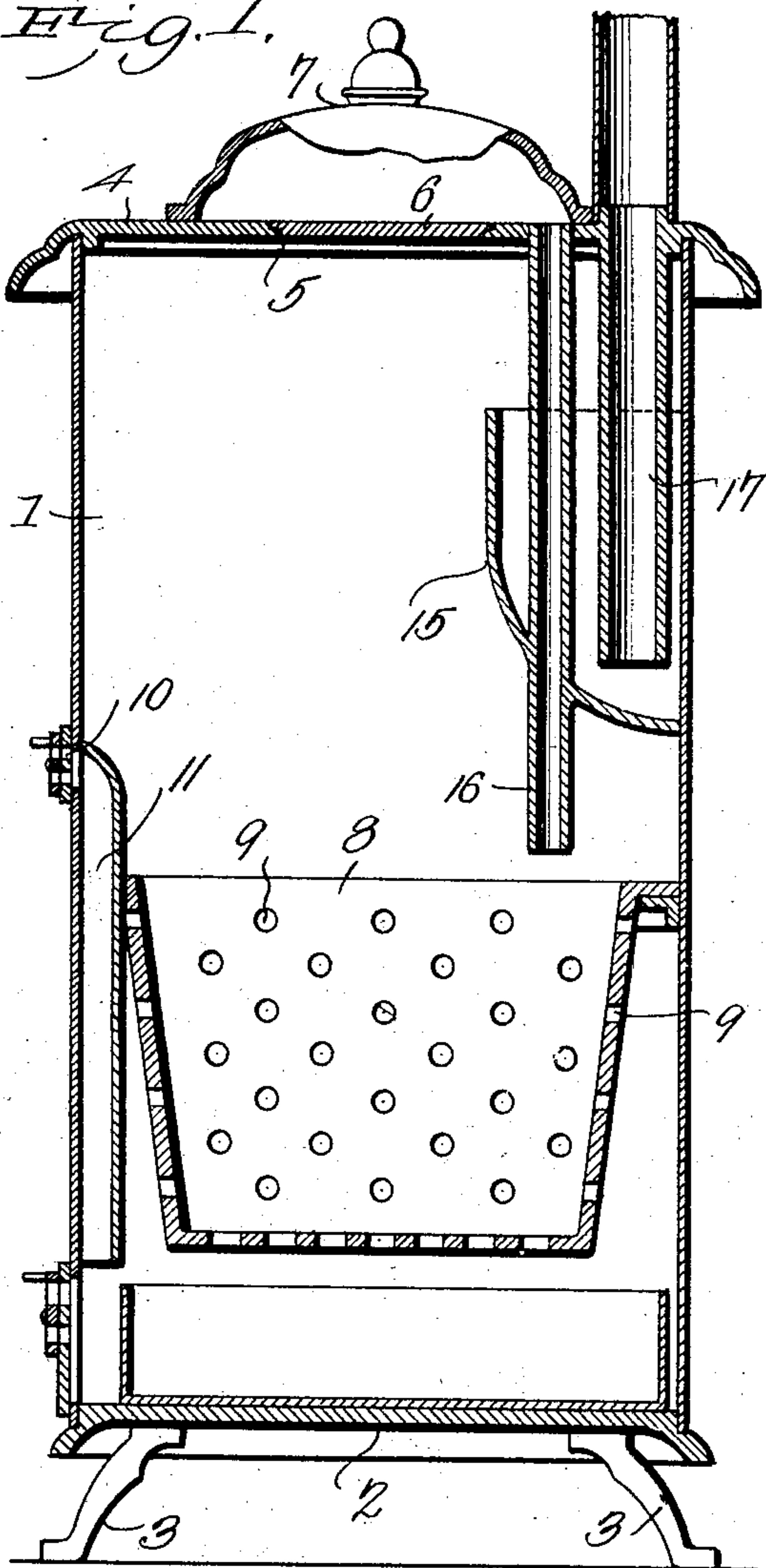


Fig. 2.

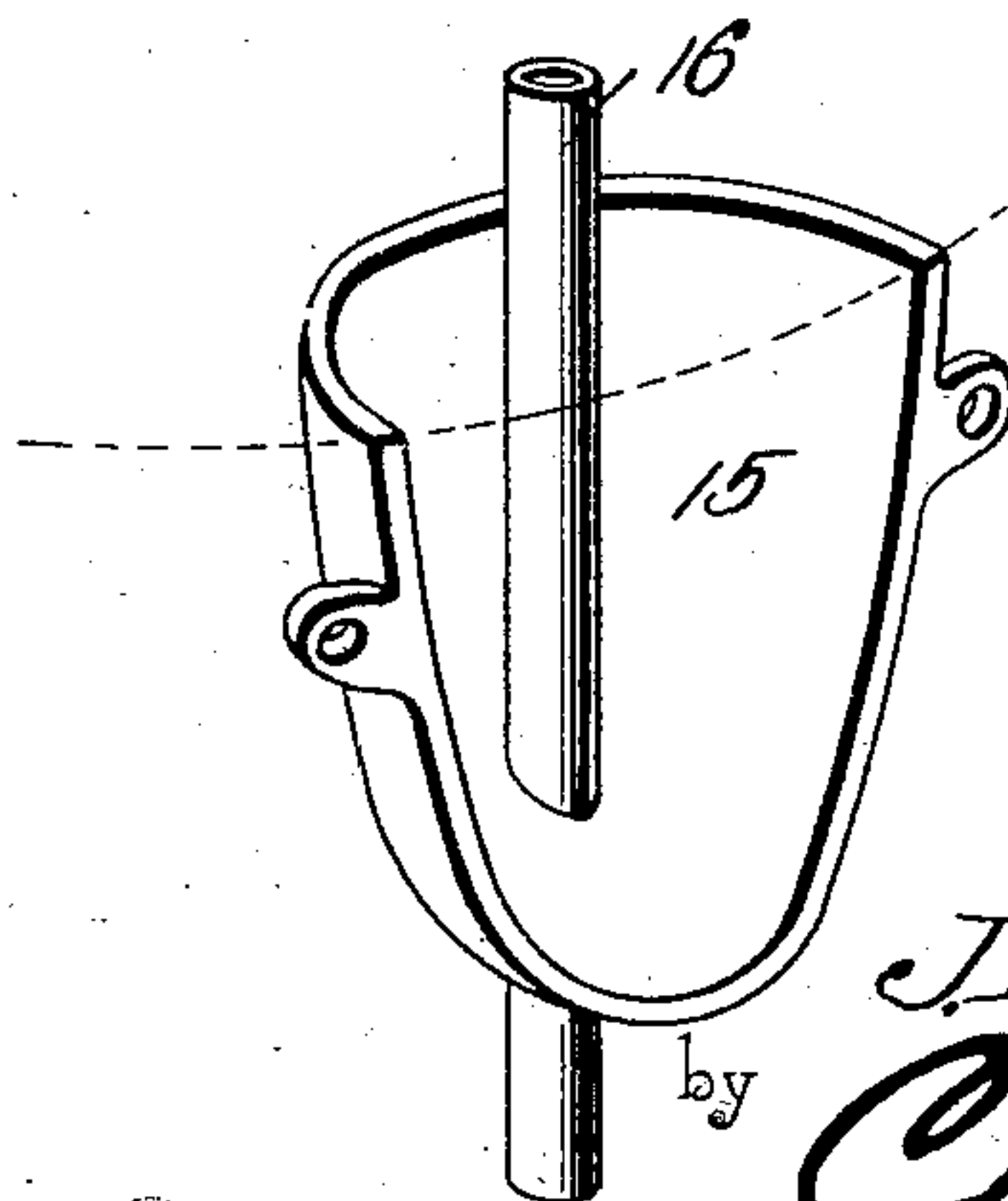
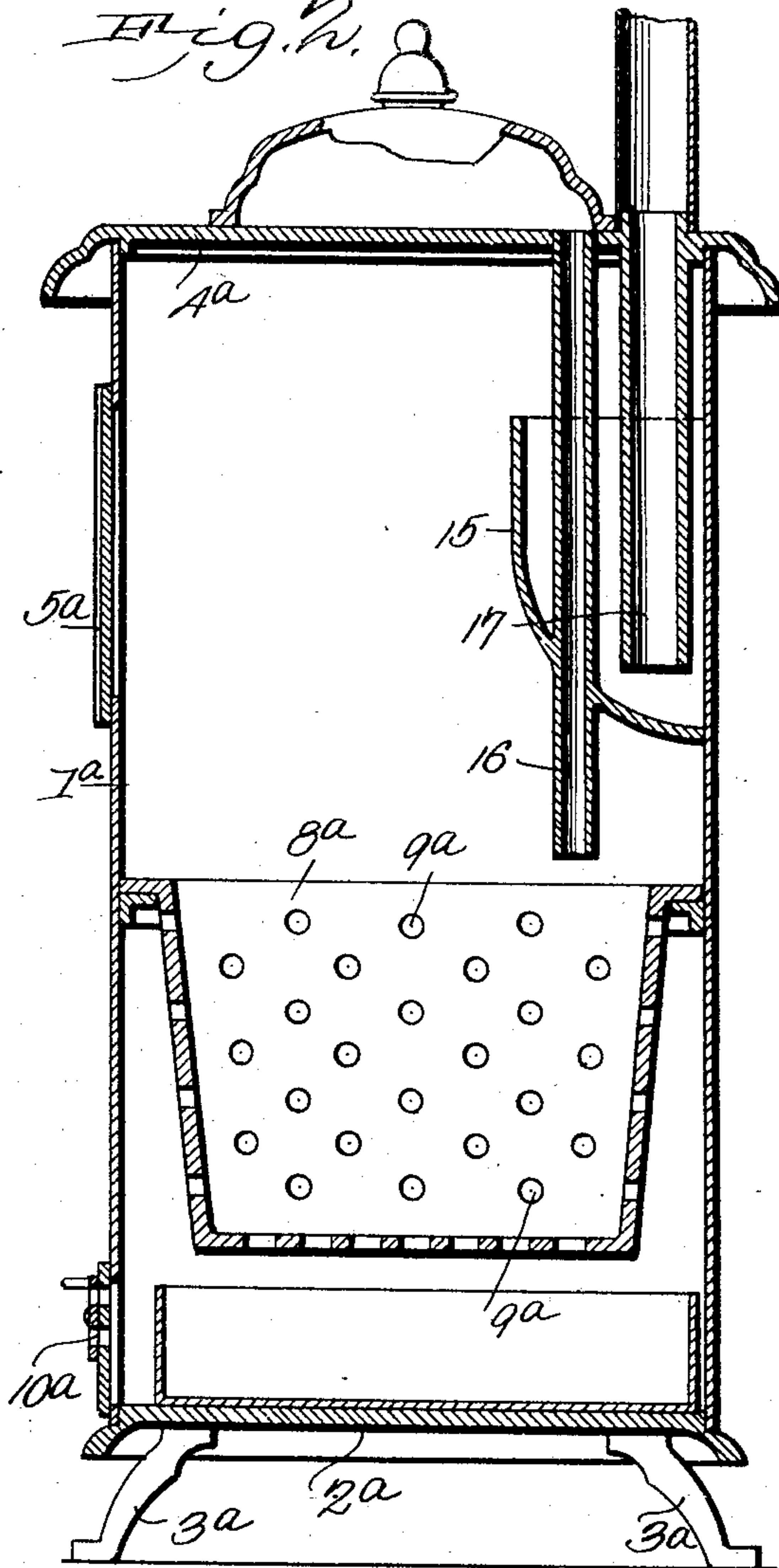


Fig. 3.

Witnesses
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UNITED STATES PATENT OFFICE.

JOHN E. T. DICKINSON, OF BEATRICE, NEBRASKA, ASSIGNOR OF ONE-HALF TO SAMUEL AVEY, OF BEATRICE, NEBRASKA.

STOVE.

SPECIFICATION forming part of Letters Patent No. 765,309, dated July 19, 1904.

Application filed August 12, 1903. Serial No. 169,295. (No model.)

To all whom it may concern:

Be it known that I, JOHN E. T. DICKINSON, a citizen of the United States, residing at Beatrice, in the county of Gage and State of Nebraska, have invented a new and useful Stove, of which the following is a specification.

This invention relates to heating-stoves; and it has for its object to construct and provide a heating-stove adapted especially for the consumption of soft coal, slack, and the like which shall be extremely simple in construction and which shall be especially adapted for the total combustion of the gases created during the combustion of this class of fuel.

My invention is of a nature which enables it to be applied to and adapted to be used in connection with soft-coal stoves of almost any make upon the market at the present day, and for this reason my invention may be considered in the nature of an attachment to such stoves. I mean thereby to imply that I do not limit myself in the application of my invention to any particular form or make of stove.

My invention in its preferred form comprises a hood or trap adapted to be secured within the stove above the fire-pot and below the top of the stove. This device is intended to serve as what I term a "gas-trap," and it is pierced by a hot-blast pipe which extends upwardly to the upper part of the stove structure directly below the top of the same and which extends downwardly into the fire-pot, terminating directly above the coals therein. The fire-pot, moreover, is perforated, as will be hereinafter fully described, and the exit-pipe for the smoke is extended downwardly into the gas-trap. The hood constituting the said gas-trap is to be made of a size and shape specially adapted to the size and kind of stove in connection with which it is to be used.

In the accompanying drawings I have shown two preferred forms of embodiment of my invention; but I desire it to be understood that I reserve the right to change and modify the parts therein exhibited as to shape, proportion, or exact manner of assemblage within the scope of my invention and without de-

parting from the spirit or sacrificing the efficiency of the same.

In said drawings, Figure 1 is a vertical sectional view showing my invention applied to one ordinary form of heater. Fig. 2 is a vertical sectional view illustrating my invention applied to a heater of a different construction. Fig. 3 is a perspective detail view of the hood or gas-trap with the hot-blast pipe extending therethrough.

Corresponding parts in the several figures are indicated by similar numerals of reference.

In the accompanying drawings, 1 designates a heater-casing having a bottom 2, supported upon legs 3, said casing being in this instance constructed of sheet-iron. The casing is provided with a top 4, having a feed-opening 5 and lid 6, over which an ornament 7 is placed. Within the casing is supported the fire-pot 8, which is contracted downwardly and which is provided with a plurality of perforations 9 in the sides or walls thereof. In the form of stove exhibited in Fig. 1 the draft is supplied through a valve 10, disposed near the top of the stove and from whence a downwardly-extending draft-pipe 11 extends to a point below the fire-pot. In this form of stove the air necessary to support combustion being admitted through the pipe 11 is heated in transit and is supplied below the fire-bowl in a highly-heated condition, whereby, as is well known, combustion is materially promoted. These features of the stove, however, are common and well known and have been described merely in order to enable the application of my invention to be perfectly understood.

In Fig. 2 I have represented a similar stove-casing (here designated 1^a) having the bottom 2^a, legs 3^a, and top 4^a. In this instance the stove-casing is provided with a feed-door 5, disposed above the fire-pot 8^a, which is in this instance also provided with perforations, as 9^a. A draft-door 10^a is disposed in alignment with the ash-pit.

15 designates a hood or shell, which may be constructed either of cast-iron or of sheet metal, its shape being such that it may be readily fitted adjacent to the inner wall of the

stove-casing, making a reasonably tight joint between said casing and the edges of the hood 15. The latter practically forms a separate and independent compartment in the upper rear part of the stove-casing, the bottom of said compartment extending forwardly over the fire-pot, where it is subjected to the direct impact of the flames and practically to the greatest heat. Through the bottom of said hood or casing extends a hot-blast pipe 16, the upper end of which extends through the top of the stove, so as to permit air to pass through the said pipe in a downward direction. It will be observed that this pipe is constantly exposed to a high degree of heat, and consequently the air passing downwardly there-through will be highly heated previous to its discharge in proximity to the incandescent contents of the fire-box.

17 designates a smoke-exit pipe, which in each of the forms illustrated in the drawings extends through the stove-top and downwardly into the hood or casing 15, the lower end of said exit-pipe terminating within a few inches of the bottom of the casing or gas-trap. The upper end of the pipe 17 is intended to be connected in the usual manner with the chimney.

From the foregoing description, taken in connection with the drawings hereto annexed, the operation and advantages of my invention will be readily understood by those skilled in the art to which it appertains. It will be understood at a glance that the exact shape of the hood or casing constituting the gas-trap herein represented may be widely departed from within the scope of my invention in order to enable the latter to be accommodated to stoves of a construction different from those herein illustrated and described. I would likewise have it understood that this hood or casing constituting the gas-trap may be made integral with the hot-blast pipe 16, or the latter may, when preferred, be constructed independently and afterward be placed in position. Again, I desire it to be understood that when my improved hood or gas-trap is constructed not in the shape of an attachment but as a constituent part of the stove it may be formed integral with the stove-casing, which latter in such instance may be made of cast-iron.

As to the operation of the device, the per-

forations in the bowl or fire-pot will permit the gases to escape laterally into the space between said conical fire-pot and the stove-casing, where, becoming heated, they will become ignited by contact with the fire, the flames being deflected back through the uppermost openings in the fire-pot and into the latter. Air passing downwardly through the blast-pipe 16 will become heated during the passage through the latter and by commingling with the gases adjacent to the incandescent contents of the fire-pot will promote the combustion of such gases and other combustible products of combustion. The exit-pipe 17 being extended into the hood or gas-trap will prevent the premature escape of any combustible products of combustion, thereby promoting economy in the consumption of fuel and the avoidance of black smoke.

Having thus described my invention, I claim—

1. In a stove, a gas-trap consisting of a hood having its edges connected with the inner walls of the stove-casing and its bottom projecting over the fire-pot, in combination with a pipe piercing the bottom of said hood extending upwardly into the upper part of the stove-casing and terminating at its lower end above the fire-pot.

2. In a stove, a gas-trap consisting of a hood mounted interiorly in the stove-casing over the fire-pot, and a pipe piercing the bottom of said hood, in combination with a smoke-exit pipe depending into said hood nearly to the bottom thereof.

3. The combination of a stove-casing, a fire-pot supported within said casing and having conical perforated walls, a hood mounted in the upper part of the stove-casing, the bottom of said hood extending forwardly over the fire-pot, a pipe piercing the bottom of said hood, and an exit-pipe depending into said hood and terminating within a short distance of the bottom thereof.

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

JOHN E. T. DICKINSON.

Witnesses:

W. S. BOURNE,
GEO. G. HILL.