No. 673,946.

Patented May 14, 1901.

E. G. GERMER.

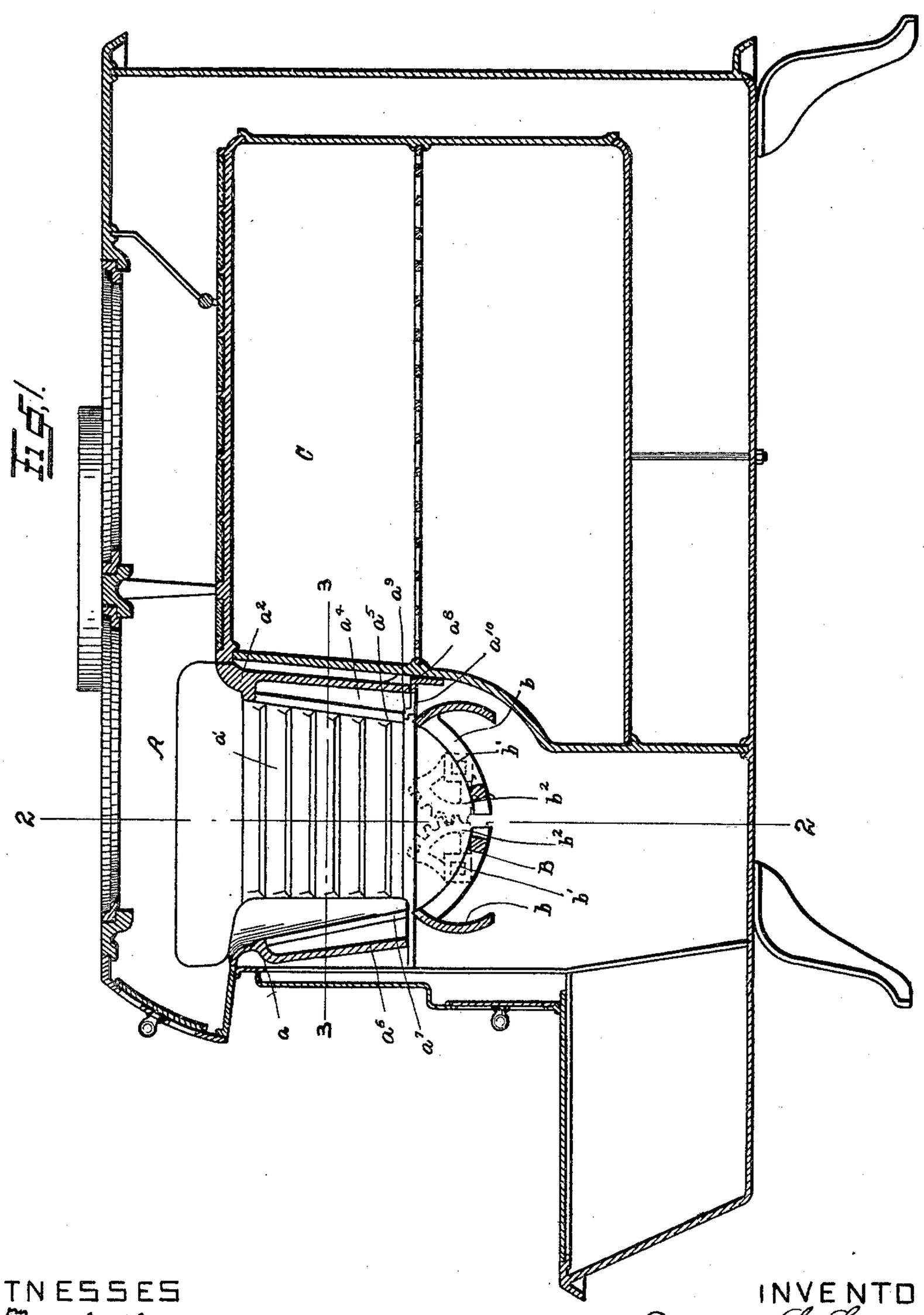
COOKING STOVE.

(Application filed Feb. 17, 1900.)

(No Model.)

2 Sheets—Sheet 1.

Fig. 1.



WITNESSES

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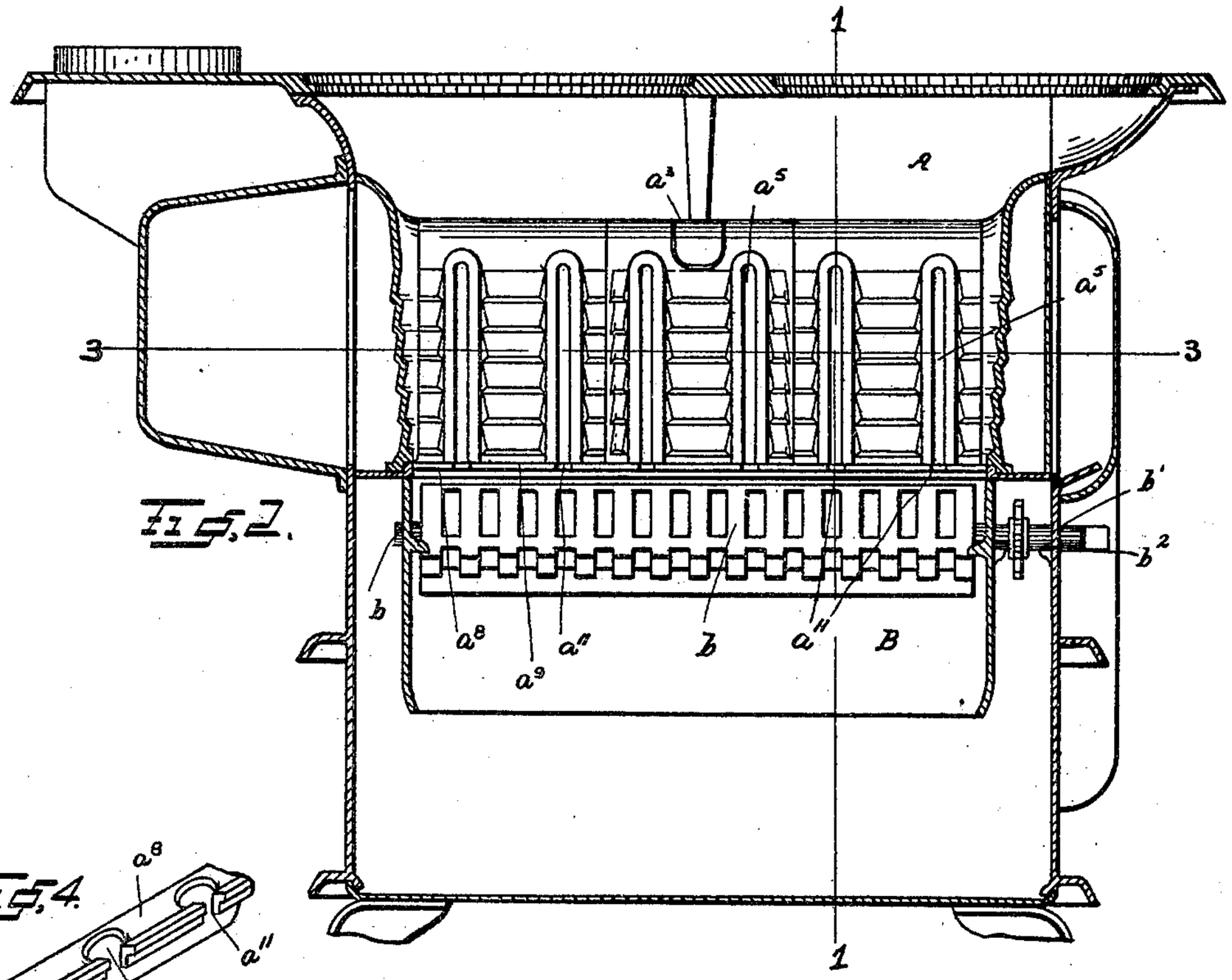

FIG. 2.

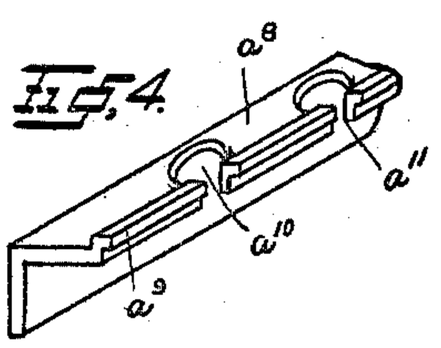

FIG. 4.

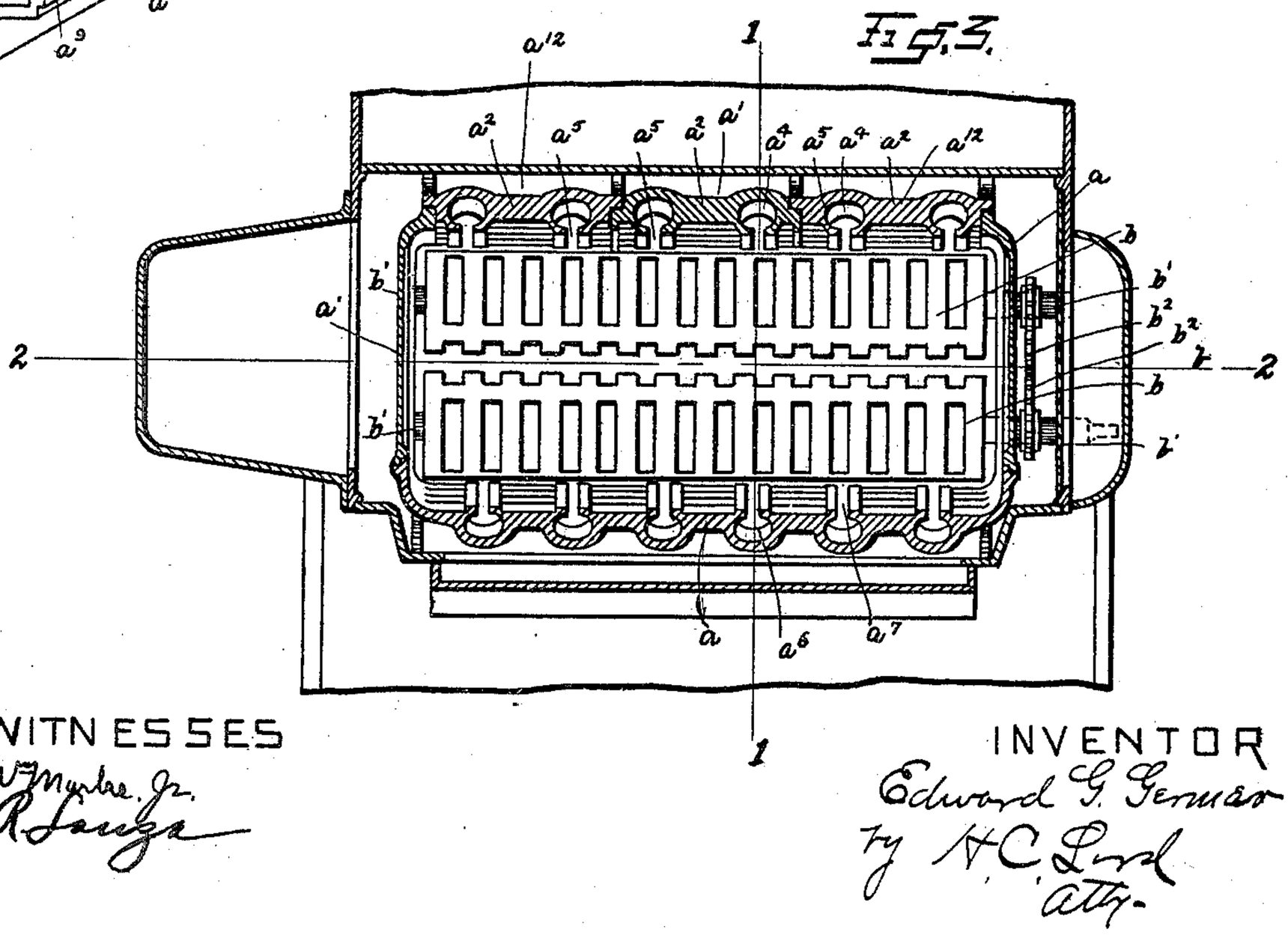

FIG. 3.

WITNESSES

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UNITED STATES PATENT OFFICE.

EDWARD G. GERMER, OF ERIE, PENNSYLVANIA.

COOKING-STOVE.

SPECIFICATION forming part of Letters Patent No. 673,946, dated May 14, 1901.

Application filed February 17, 1900. Serial No. 5,646. (No model.)

To all whom it may concern:

Be it known that I, EDWARD G. GERMER, a citizen of the United States, residing at Erie, in the county of Erie and State of Pennsylvania, have invented certain new and useful Improvements in Cooking-Stoves; 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.

This invention relates to cooking-stoves; and it consists in certain improvements in the construction thereof, as will be hereinafter fully described, and pointed out in the claims.

The invention is illustrated in the accompanying drawings as follows:

Figure 1 shows a section on the lines 1 1 in Figs. 2 and 3. Fig. 2 shows a section on the lines 2 2 in Figs. 1 and 3. Fig. 3 shows a section on the lines 3 3 in Figs. 1 and 2. Fig. 4 shows a perspective view of the bracket for supporting the fire-box lining.

A marks the fire-box, B the grate, and C the oven. These are arranged in the usual relation—that is, the grate is immediately below the fire-box and the oven is arranged immediately adjacent the fire-box.

In the combustion of fuel placed in the fire-box there is a tendency for the partly-burned fuel in the lower parts of the box to so act upon the fuel near the top as to expel the gases therefrom, and in fire-boxes of the ordinary construction the oxygen, which passes through the grate, is largely taken up in the combustion of fuel in the lower part of the fire. Where this occurs, the gases expelled from fuel in the upper part of the box are of course unconsumed and are carried off with the other products of combustion. This not only effects the loss of the heat-producing quality of these gases themselves, but these gases are also liable to escape from the stove and are disagreeable and of course injurious. To obviate this, I have provided a lining for the fire-box with ducts or flues which open to the space below the grate and extend upwardly in the lining to nearly the top of the fire-box and are in communication with the fire-box through slits, which preferably extend throughout the entire length of the flue.

It is desirable to insulate the oven from the intense heat of the fire-box, and to this end these flues form air-spaces between the fire-box and the oven, which tend to accomplish this purpose. It will be noted, therefore, that in a cooking-stove, where the oven is adjacent to and at the side of the fire-box, the flues have a double function—that is, they carry air to the upper parts of the fire, so that the gases expelled by the heat in the lower part of the fire may be consumed, and they form air-spaces, which insulates the fire-box from the oven.

Where a dumping-grate is used, it is desirable to keep the ashes, &c., from the fire-box from falling on the gears which control the movement of the parts of the grate. For this purpose I have made the fire-linings at the ends solid and placed them inside of the gears.

I have shown in the drawings a preferable way of carrying out my invention. In this the front lining a is made in one piece and is supported at the ends, and the end linings a' are placed in position and joined at the corners with the front lining, so that they hold the front lining in place, and, on the other hand, the front lining holds these end linings in place. This is the usual manner of putting these linings together. The rear lining is formed of three sections a^2. The end sections engage the end linings and hold the rear side of the end linings in place, and, on the other hand, they are locked in position by the end linings. The central section overlaps the end section and it is secured in place by the lip a^3. In this manner all parts of the lining are made secure. The front and end linings being made in one piece can be supported at their ends, but the rear linings being in sections are preferably supported by a bracket a^8, and this bracket is provided with a rib a^9, which prevents the linings from moving forward at the bottom. The rear lining is provided with the flues a^4, from which the slits a^5 extend into the fire-box. The bracket a^8 has the openings a^{10}, which register with the openings a^4, and the slits a^{11} register with the slits a^5. This permits a free movement of air from below the grate-space into the flues and a free exit for any ash that may get into the flues. The flues a^4 in themselves form air-spaces, which insulates the oven from the fire-box. I prefer, however, in addition

to this to form the depressions a^{12} between the flues, so that there will be an air-space between the fireback and the oven-plate formed by said depressions, thus increasing the insulation effected by the flues. The exit-passage of the fire-box extends from the side laterally over the oven, as in the usual construction. The front lining is provided with the flues a^6 and slits a^7, which operate in the manner heretofore described. The front lining being supported at its ends is of course immediately in communication with the space below the grate.

The grates are preferably of the ordinary dumping form, having the two parts b b, supported by the rod b' b'. The gears b^2 b^2 control the movement of the parts, as is usual with this construction of grate. I prefer to make the end linings solid, so as to prevent the falling of ash on these gears.

What I claim as new is—

1. In a cooking-stove, the combination with the fire-box and the oven, arranged side by side, with a lateral exit-passage extending from the side of the fire-box over the oven, of a lining next to the oven-plate and below said passage, having flues arranged within the body thereof and communicating with the outer air, said lining having openings between the flues and that part of the fire-box designed to hold the fuel, whereby columns of air, for insulating purposes, are maintained in the flues of the lining, and are introduced into the fuel part of the combustion-chamber in sufficient volume to maintain the air in the flues at a temperature effecting an insulation between the fire-pot and the oven, and at a point to facilitate combustion.

2. In a cooking-stove, the combination with the fire-box and oven, of a lining for the fire-pot having vertical flues opening at their lower ends into the ash-pit, provided with slits throughout their lengths, opening into the fuel-space of the fire-pot; the lining next to the oven being in sections and having depressions between the flues forming air-spaces to protect the oven-plate, and a bracket supporting the rear lining-sections and having openings and slits corresponding to the flues and slits in the lining; substantially as described.

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

EDWARD G. GERMER.

Witnesses:
H. C. LORD,
R. LANZA.