(No Model.) 2 Sheets—Sheet 1.

J. L. W. OLSEN.

BAKING OVEN.

No. 554,396. Patented Feb. 11, 1896.

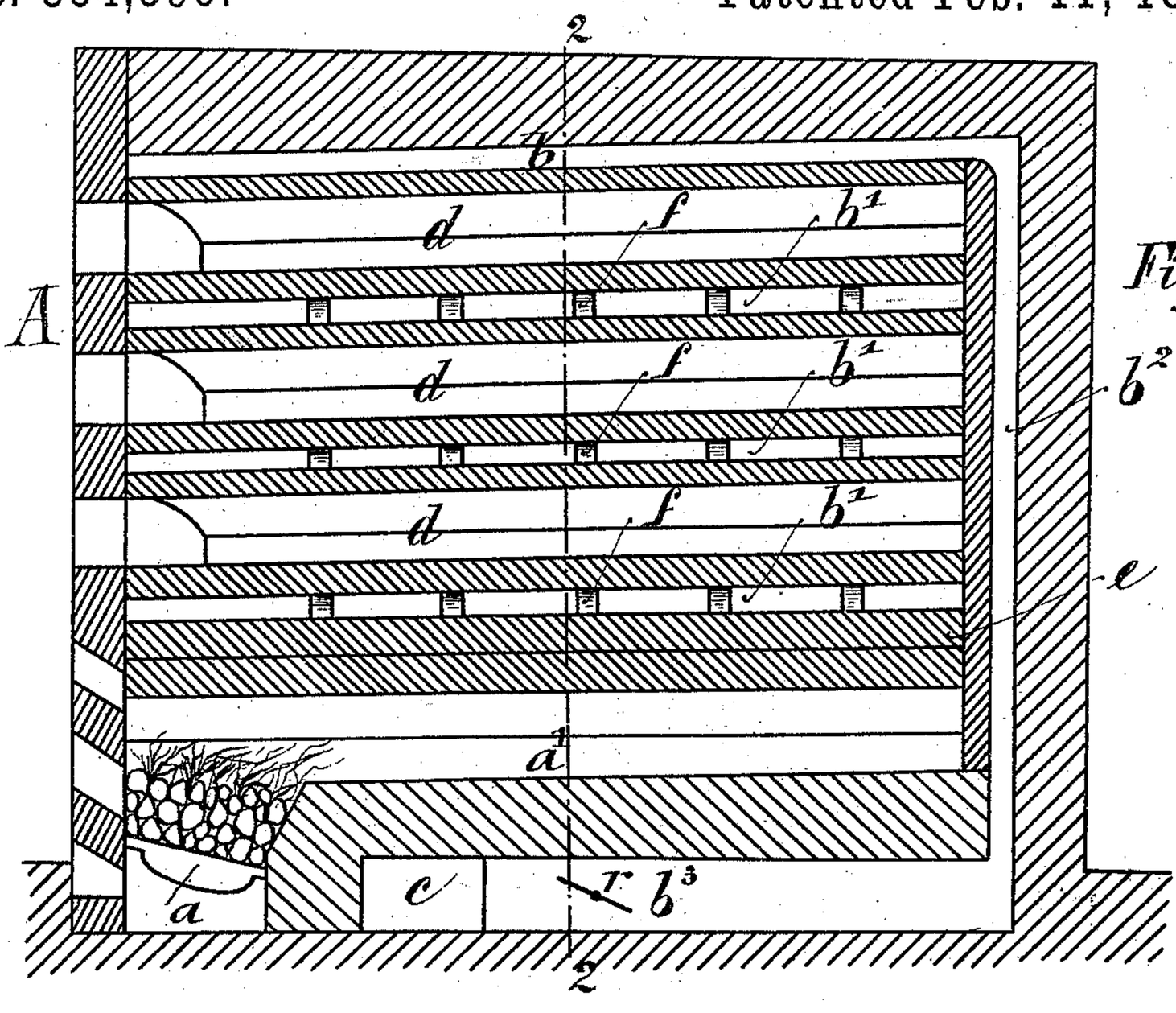

Fig. 1.

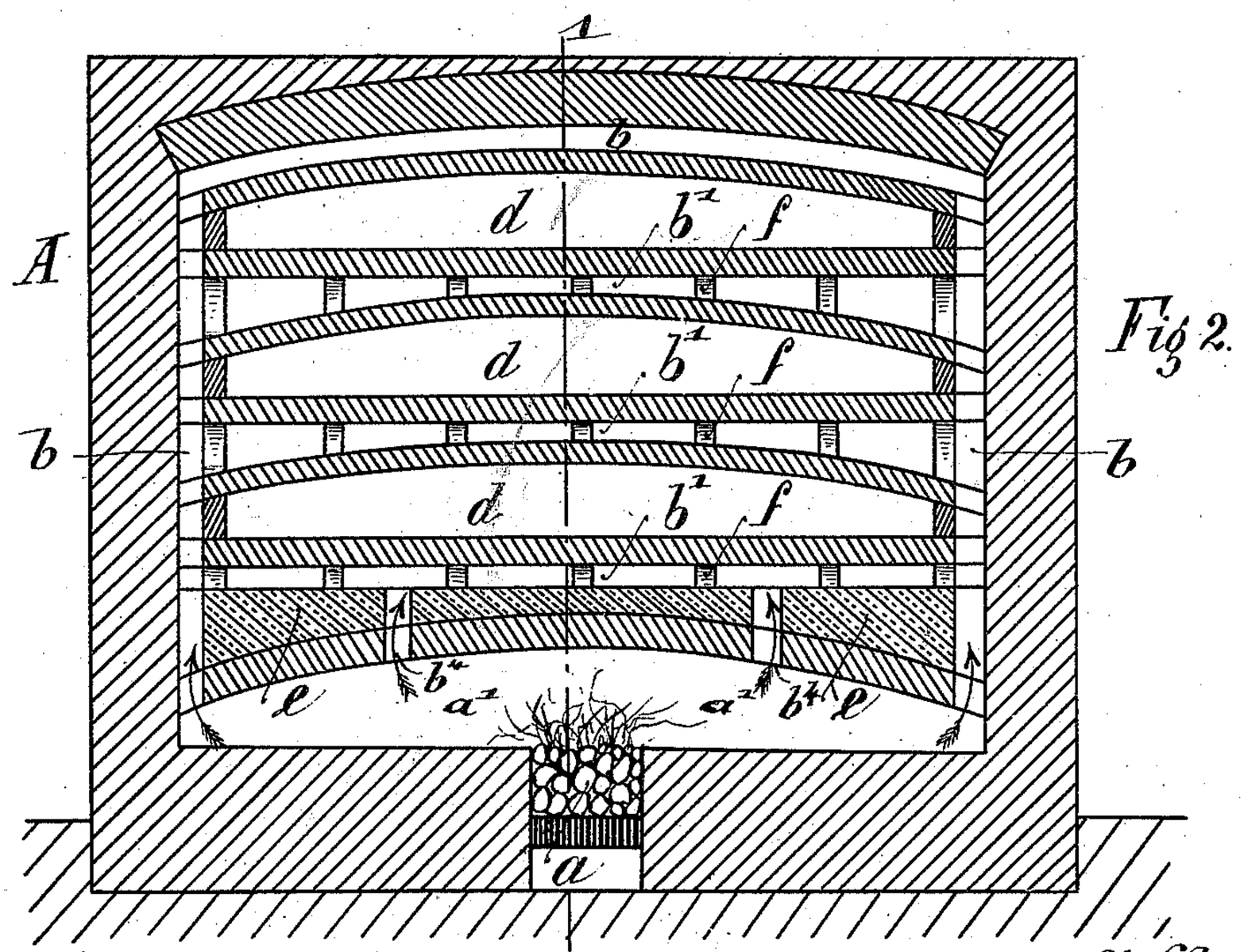

Fig 2.

WITNESSES:
George W. Jaenel.
Geo. L. Wheelock.

INVENTOR
Johan L. W. Olsen
By Joseph Kaegener
ATTORNEYS.

(No Model.) 2 Sheets—Sheet 2.

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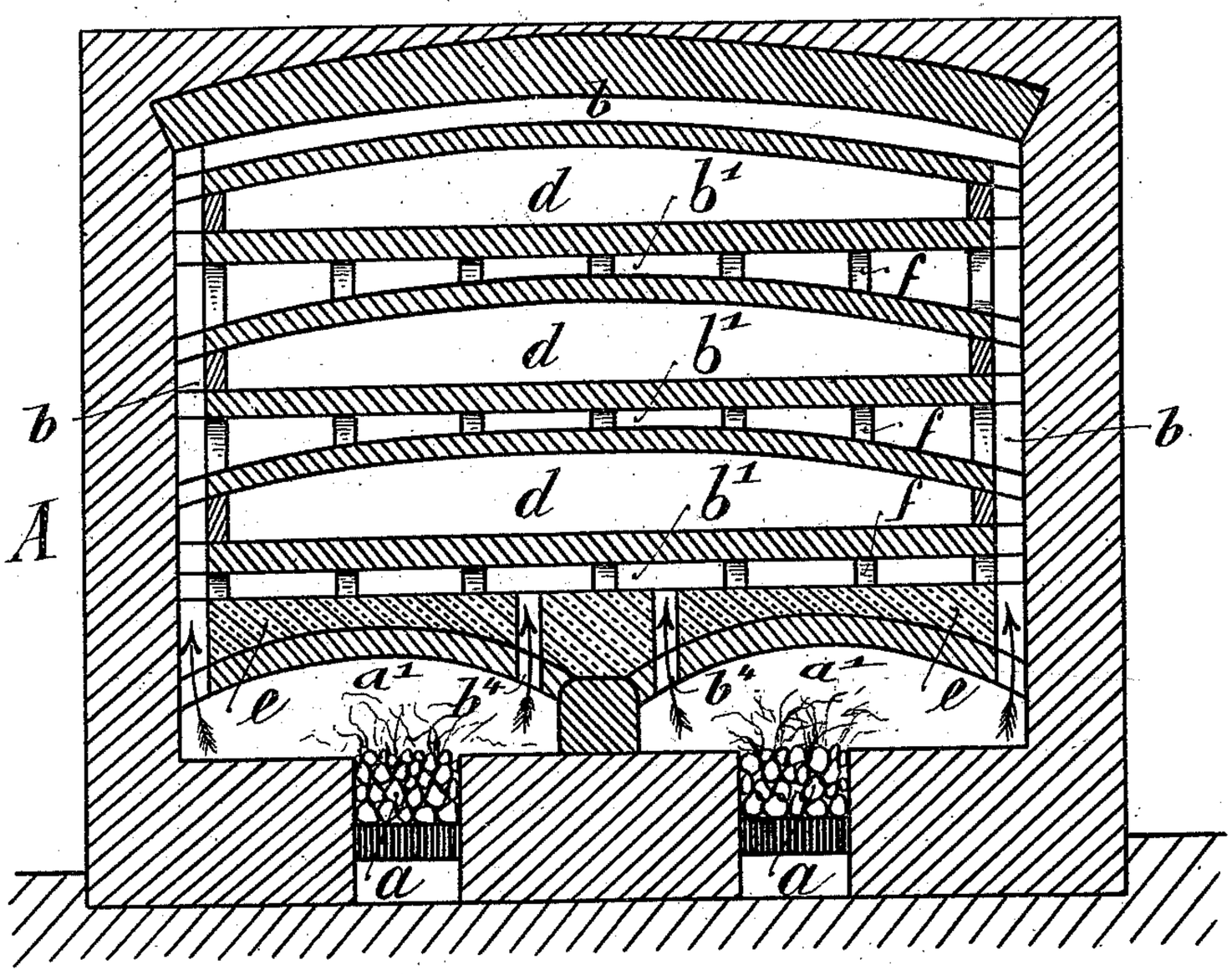
Fig 3.



WITNESSES:
George H. Parker.
Geo. L. Wheelock

INVENTOR
Johan L. W. Olsen
By Gowen & Pregemer
ATTORNEYS.

UNITED STATES PATENT OFFICE.

JOHAN LUDVIG WALDEMAR OLSEN, OF COPENHAGEN, DENMARK.

BAKING-OVEN.

SPECIFICATION forming part of Letters Patent No. 554,396, dated February 11, 1896.

Application filed March 2, 1895. Serial No. 540,296. (No model.)

To all whom it may concern:

Be it known that I, JOHAN LUDVIG WALDEMAR OLSEN, baker, a subject of the King of Denmark, residing at Copenhagen, Denmark, have invented certain new and useful Improvements in Baking-Ovens, of which the following is a specification.

This invention relates to certain improvements in baking-ovens which I have designated with the name of "heat-storage" oven, in which it is rendered possible to use coal or coke for firing the same, while the baking takes place continuously. The oven can also be heated by gas as fuel.

The invention consists of a baking-oven which comprises a fireplace located at the bottom of the oven, a combustion-chamber having an arched top and leading from the fireplace toward the rear, a heat-storage wall located above said arched top, baking-chambers above said heat-storage wall and each formed with a floor and an arched top, and side and transverse flues communicating with the combustion-chamber so as to conduct the heat around the baking-chambers, and then by a downwardly-extending rear flue and forwardly-extending bottom flue to the chimney, as will be fully described hereinafter and finally pointed out in the claim.

In the accompanying drawings, Figure 1 represents a vertical longitudinal section on line 1 1 of Fig. 2. Fig. 2 is a vertical transverse section on line 2 2, Fig. 1, of my improved oven; and Fig. 3 is a vertical transverse section of an oven with two fireplaces.

Similar letters of reference indicate corresponding parts.

The fireplace *a*, Figs. 1 and 2, or the two *a a*, Fig. 3, is or are arranged at the lower part of the oven A and either at the front or rear of the same. They are constructed of considerable depth so as to receive a large quantity of fuel. From the fire place or places *a* extend a broad and arched combustion chamber or chambers *a'*, which extend from the front to the rear below a compact mass of masonry of fireproof material, which forms a wall *e* and serves for the storage of heat. The flues *b* extend along the opposite side walls of the oven in upward direction and over the top of the baking-chamber *d*, or if several such baking-chambers *d* are arranged above each other, then additional flues *b'*, which communicate with the flues *b*, extend transversely between the same, as shown clearly in Figs. 2 and 3. The flues *b* finally are connected with the downflue b^2 at the rear of the oven, which extends to the forwardly-extending flue b^3 at the bottom of the oven that communicates with the smoke-flue *c* leading to the chimney. b^4 are short flues leading from the combustion-chamber through the heat-storage wall *e* and directly into the lower flue *b'*.

f are supports for the flat bottom of the baking-chambers *d*. The walls of the baking-chambers themselves can be made of fireproof or other suitable material.

As the flues b' b^2 b^3 are of considerable size and extent inasmuch as they almost encircle the baking-chambers and are only interrupted by the supports *f*, which are necessary between the flat bottom of one baking-chamber and the arched top of the adjacent lower chamber, it is possible to produce a quick and uniform heating of the baking-chambers. The fireplaces can be so arranged that the fire can be easily regulated so that the baking can be continuous even during the starting of the fire. As the products of combustion cannot pass through the interior of the baking-chambers, it is possible to use any kind of fuel with a high degree of cleanliness.

The fireplace is arranged, as shown in the drawings, at the lower part of the oven, while the flue that leads to the chimney is likewise located at the lower part of the oven, and the flues for the flame and products of combustion are located below the heat-storage wall *e*, are conducted around the baking-chambers so as to lap over all sides of the same and finally conducted in a downward direction from the top of the oven along the rear flue and to the bottom flue which communicates with the chimney. This arrangement has the advantage that when the fire is discontinued and the fireplaces and the draft-regulator *r* are closed that no heat can escape, but that the same is retained in the entirely-closed spaces formed around the baking-chambers, so that the heat of the hot air in the same is fully utilized in the baking-oven. The heat-storage wall sustains the heat in the oven during the intervals of time between the differ-

ent firings, performing thereby the extremely-useful function of giving off the heat absorbed during the firing, and supplping this heat while the firing is continued. As this takes place for a few hours in the course of the day of twenty-four hours, the oven is always in a condition for refiring and baking without any lowering of its temperature. As the baking-chambers are entirely surrounded by tightly-closed spaces, and as the storage-wall for the heat, as well as the flue leading to the chimney, is located in the lower part of the oven, the heat is prevented from passing from the flues which surround the baking-chambers when the firing is discontinued, and thereby the oven is in a better condition for the next firing and baking.

Having thus described my invention, I claim as new and desire to secure by Letters Patent—

A baking-oven provided with a fireplace, an arched combustion-chamber extending from the fireplace toward the rear wall of the oven, a compact mass of fireproof material arranged on top of the arched combustion-chamber, and forming a heat-storage wall, baking-chambers arranged above said storage-wall, flat and broad side and transverse flues communicating with the combustion-chamber for conducting the products of combustion around the sides, bottoms and tops of the baking-chambers, so that the latter are surrounded on all sides by such flues, a downwardly-extending rear flue communicating with the aforesaid flues at the top, and a forwardly-extending bottom flue communicating at its rear end with the lower end of the downwardly-extending rear flue, and having its exit adjacent to the fireplace, substantially as set forth.

In testimony that I claim the foregoing as my invention I have signed my name in presence of two subscribing witnesses.

JOHAN LUDVIG WALDEMAR OLSEN.

Witnesses:
ROBT. J. KIRK,
G. OLSEN HAUGE.