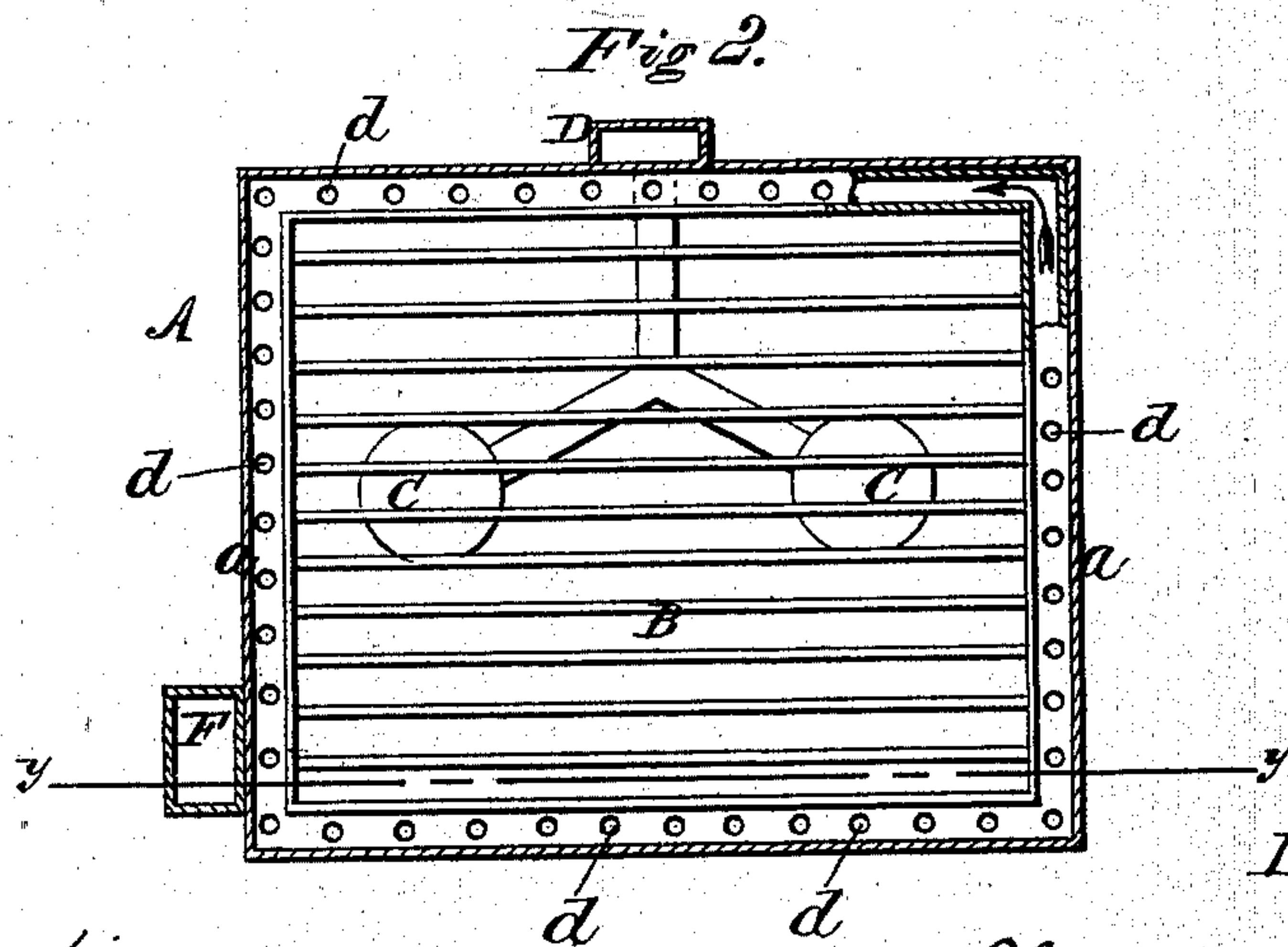
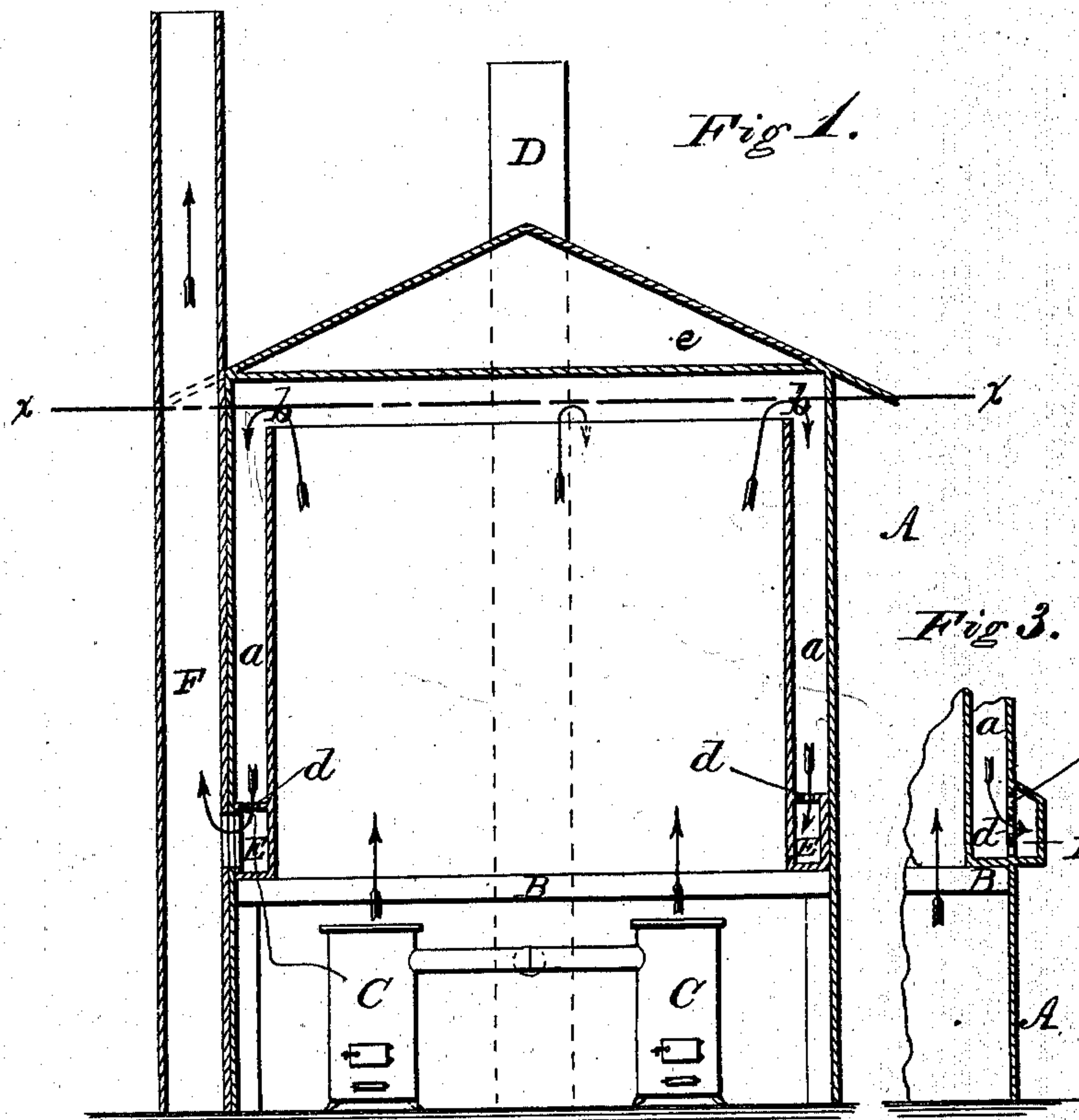


H. E. WELLS.
Lumber-Driers.

No. 146,499.

Patented Jan. 13, 1874.



Witnesses.

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UNITED STATES PATENT OFFICE.

HORACE E. WELLS, OF VAN WERT, OHIO.

IMPROVEMENT IN LUMBER-DRIERS.

Specification forming part of Letters Patent No. **146,499**, dated January 13, 1874; application filed May 6, 1873.

To all whom it may concern:

Be it known that I, HORACE E. WELLS, of Van Wert, in the county of Van Wert and State of Ohio, have invented certain improvements in Dry-Houses for Lumber, &c., of which the following is a specification, reference being had to the accompanying drawings.

My invention consists in a dry house or kiln with hollow outside walls, in which the air passes from the interior outward on all sides into the top of said walls, and downward therein to a flue, which conducts it to a discharge flue or chimney.

Figure 1 is a vertical transverse section of my house; Fig. 2, a horizontal section of the same on the line *xx*; and Fig. 3, a sectional view, showing a modification.

The house A, which may be constructed of any suitable size, form, and material, is built with a grated floor, B, to receive and support the material to be dried, and with hollow or double walls *a* above said floor, as shown. Stoves, furnaces, or other heating apparatus C, of any suitable construction, are placed below the grated floor, and a chimney, D, built on one side of the house to carry off the smoke from the heater. An opening, *b*, is made from the interior of the house into the top of the hollow walls *a* around the entire building, as shown. A flue, E, is built in the bottom of the hollow walls entirely around the house, and connected with a chimney or flue, F, built on one side of the house, as shown in Figs. 1 and 2, the flue E being provided in its top with numerous holes *d* opening into the space in the walls, as shown. The top of the house above the walls is closed, as shown in Fig. 1, to form an air-space or chamber, *c*.

When the house is in use, the heated air passes up through the grated floor, around and among the lumber or other material being treated, and out at the top on all sides into the hollow walls *a*. Descending in the walls it enters the flue E, and is conducted thereby into the flue or chimney F, through which it escapes.

By exhausting the air from all sides of the house a uniform draft and temperature is maintained in all parts of the drying-chamber, so

that all the material therein is dried evenly and thoroughly. The air in the hollow walls and in the closed top *c* serves as a non-conducting medium, and prevents the heated air from being chilled by contact with the outside cold walls of the building, and consequently the interior of the building can be kept much warmer than if single solid walls were used.

As the air does not strike the cold walls until it has left the drying-chamber, there is no danger of the moisture and impure vapors being condensed and flowing back on the material below, as happens in dry-houses of the ordinary construction. In my house there is no condensation, except in the hollow walls, from whence the fluids may be readily drawn.

Instead of building the flue E in the hollow walls it may be built around the outside of the house, as shown in Fig. 3, and openings made between it and the interior of the walls.

In order to have the holes *d* answer the desired purpose perfectly, they may be made smaller or at greater distances apart as the chimney F is approached, the draft or current being, of course, stronger near the chimney than at distant points.

Although it is desirable to use the flue E and its openings *d*, they may be omitted, as very good results are attained without them.

The holes *d*, through which the escaping air enters the flue E, are made of such size, and so disposed that they render the outward draft or current uniform, or practically so, on all sides of the house.

Having thus described my invention, what I claim, is—

1. A dry-house having hollow outside walls *a*, a continuous outlet-opening, *b*, from the drying-chamber into the top of the hollow walls, and a chimney, F, communicating with the bottom of the hollow walls, substantially as shown and described.

2. In a dry-house having the hollow walls *a*, opening *b*, and chimney F, the flue E, provided with the holes *d*, as set forth, for the purpose of equalizing the draft.

Witnesses: HORACE E. WELLS.

GEO. E. WELLS,
J. W. WELLS.