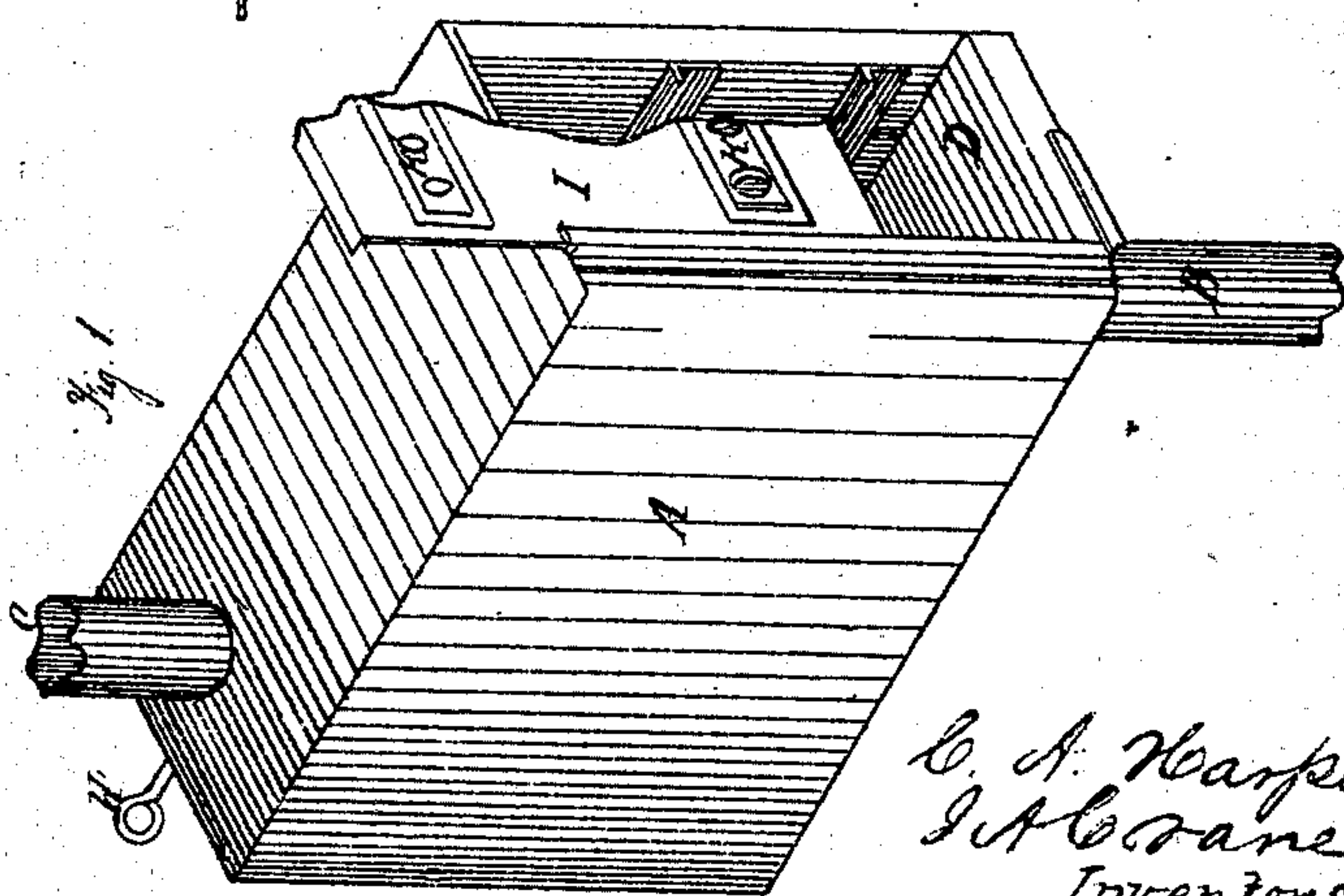
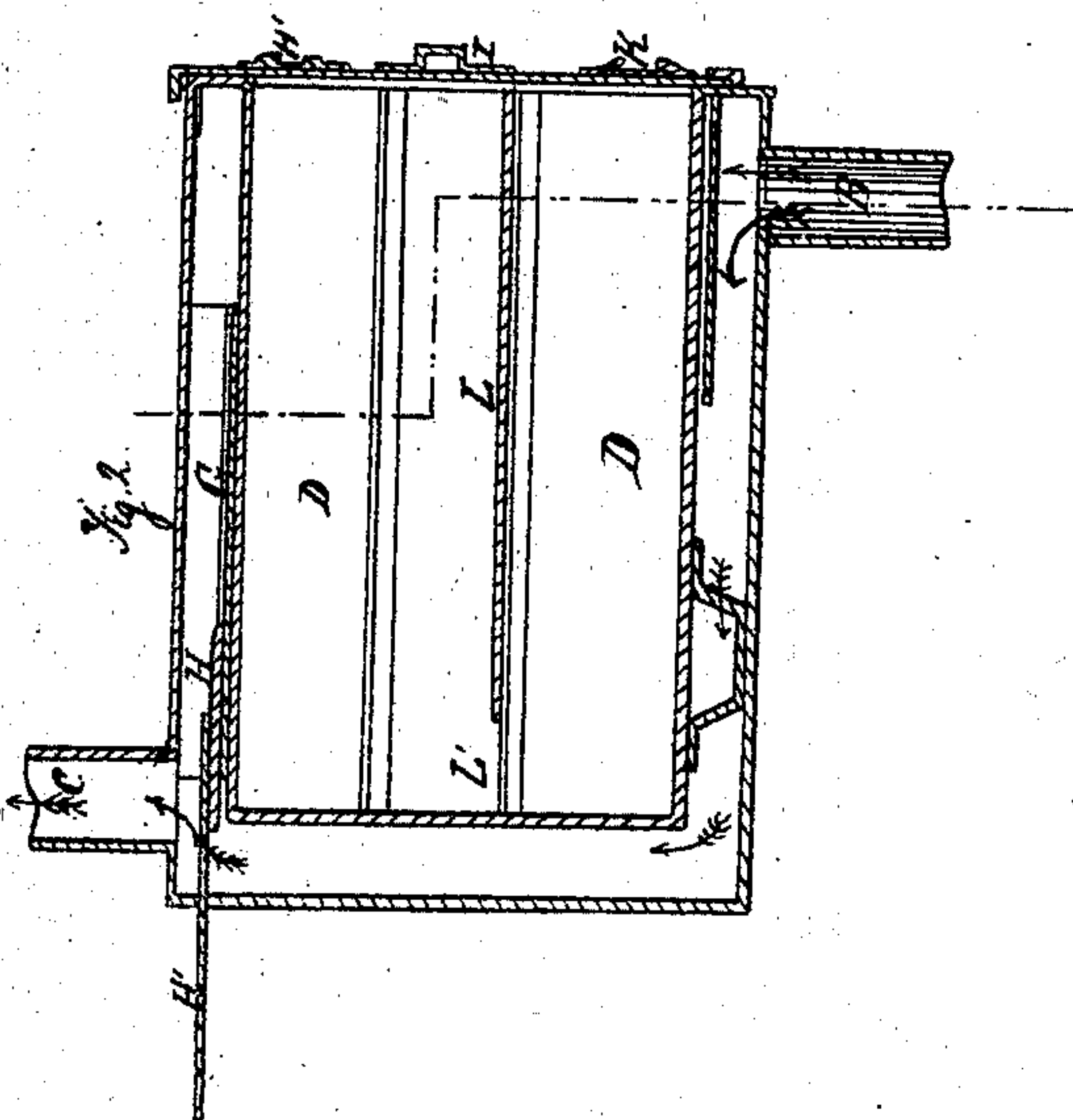
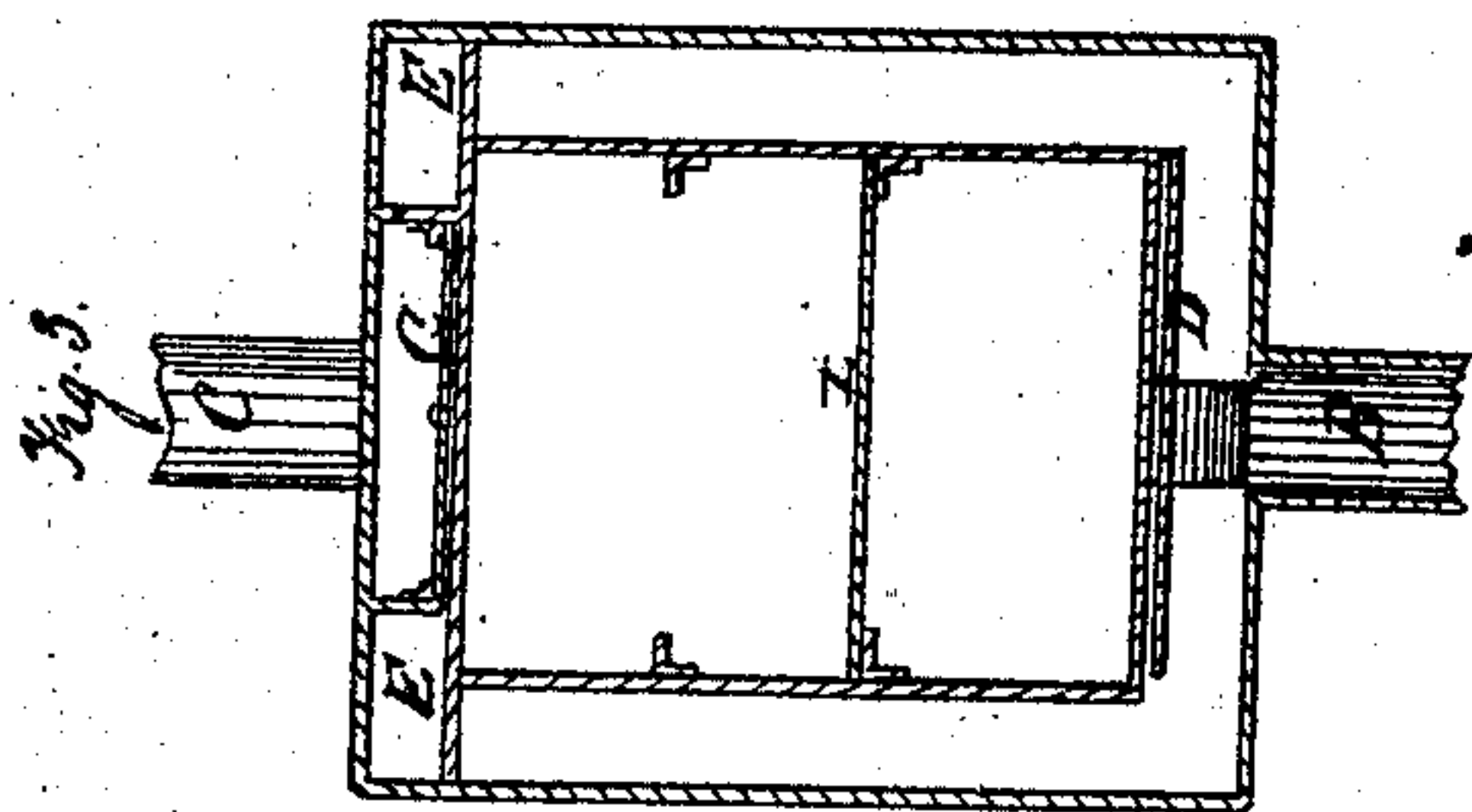


Harper & Crane.  
 Detachable Oven & Drum.  
 No 71481  
 Patented Nov. 26, 1867.



Witnesses

Chas. F. Blauvelt  
 L. Murphy

C. A. Harper  
 J. A. Crane  
 Inventors

by

D. P. Holloway & Co.  
 their attys.



# United States Patent Office.

CHARLES A. HARPER AND ISAAC A. CRANE, OF RAHWAY, NEW JERSEY.

*Letters Patent No. 71,481, dated November 26, 1867.*

## DETACHABLE OVEN AND DRUM.

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

### TO ALL WHOM IT MAY CONCERN:

Be it known that we, CHARLES A. HARPER and ISAAC A. CRANE, of Rahway, in the county of Union, and State of New Jersey, have invented a new and useful Improvement in Detachable Ovens and Heating-Drums for use in connection with any kind of stove or heater; and we do hereby declare that the following is a full, clear, and exact description of the same, reference being had to the annexed drawings, making part of this specification, in which—

Figure 1 is a perspective view.

Figure 2 is a vertical longitudinal section.

Figure 3 is a vertical transverse section.

In all the figures the same letters are employed in the designation of the same parts.

This drum and oven is intended to be attached to the pipe of any form of stove or heater, and our improvement consists in the mode of obtaining the diffusion of the heat over the surface of the plates forming the inner oven; also in the mode of obtaining atmospheric circulation through the oven or drum.

The following description will enable those who are skilled in the art to make and apply our improved oven and drum.

A is the external case of the drum, attached to the pipes B and C. Within this case is a smaller oven, D, formed by a bottom, top, two sides, and an end plate, around, and in contact with all of which, the heat passing into the pipe is brought as it passes through the drum. A plate, D', is placed over the inlet-pipe B, to prevent too great heat at the point when the up-rising current would otherwise strike against the bottom plate of the oven. In order to secure a more perfect diffusion of the circulation, flanges E E are extended from the top of the sides to the external case, which, preventing the draught from passing directly upon the top plate, forces it to pass across the end plate and thence over the top plate. A flat pipe, G, is constructed under the top plate of the exterior casing, extending over the top plate of the oven, from its rear end nearly to the front. The space between the rear of this pipe, where it is left open above the back flue, may be closed by a damper, H, which, actuated by a rod, H', may be used either to close that opening, and thus force the circulation to pass over the top of the oven to enter the pipe G, or to open it, and thus leave a free course for the draught directly into the pipe C. The door I closes the front of the oven. It is formed with two rows of holes, covered by slides K and K', with corresponding holes for the purpose of making an atmospheric circulation through the oven, passing in at the lower openings K, and forced to traverse twice along the length of the oven by a central plate, L, extending across the oven from the door nearly to the back of the oven, leaving a space, L', and then passing out at the upper openings K'. These openings are, especially designed for use when the oven is not in use except as a drum.

By this means we greatly increase the heating-surface of the drum, and also provide a means for regulating the heat in the oven when used for baking, by the introduction of an atmospheric current into the oven by slightly opening the spaces K and K'.

What we claim as our invention, and desire to secure by Letters Patent, is—

1. In combination with the external case A and internal oven D, the flanges E, located as described, pipe G and damper H, for the purpose of effecting distribution of the heat, substantially as set forth.
2. In combination with the external casing A and oven D, we claim the door I, with the lower and upper series of openings at K and K', and the plate L so placed as to leave the space L' at the back of the oven, substantially as and for the purpose set forth.
3. In combination with the external case A, oven D, and pipe B, we claim the plate D', arranged to operate substantially as and for the purpose set forth.

In testimony whereof we have signed our names to this specification in the presence of two subscribing witnesses.

C. A. HARPER,  
ISAAC A. CRANE.

Witnesses:

R. M. EDMONDS,  
JOSEPH CONKLIN.