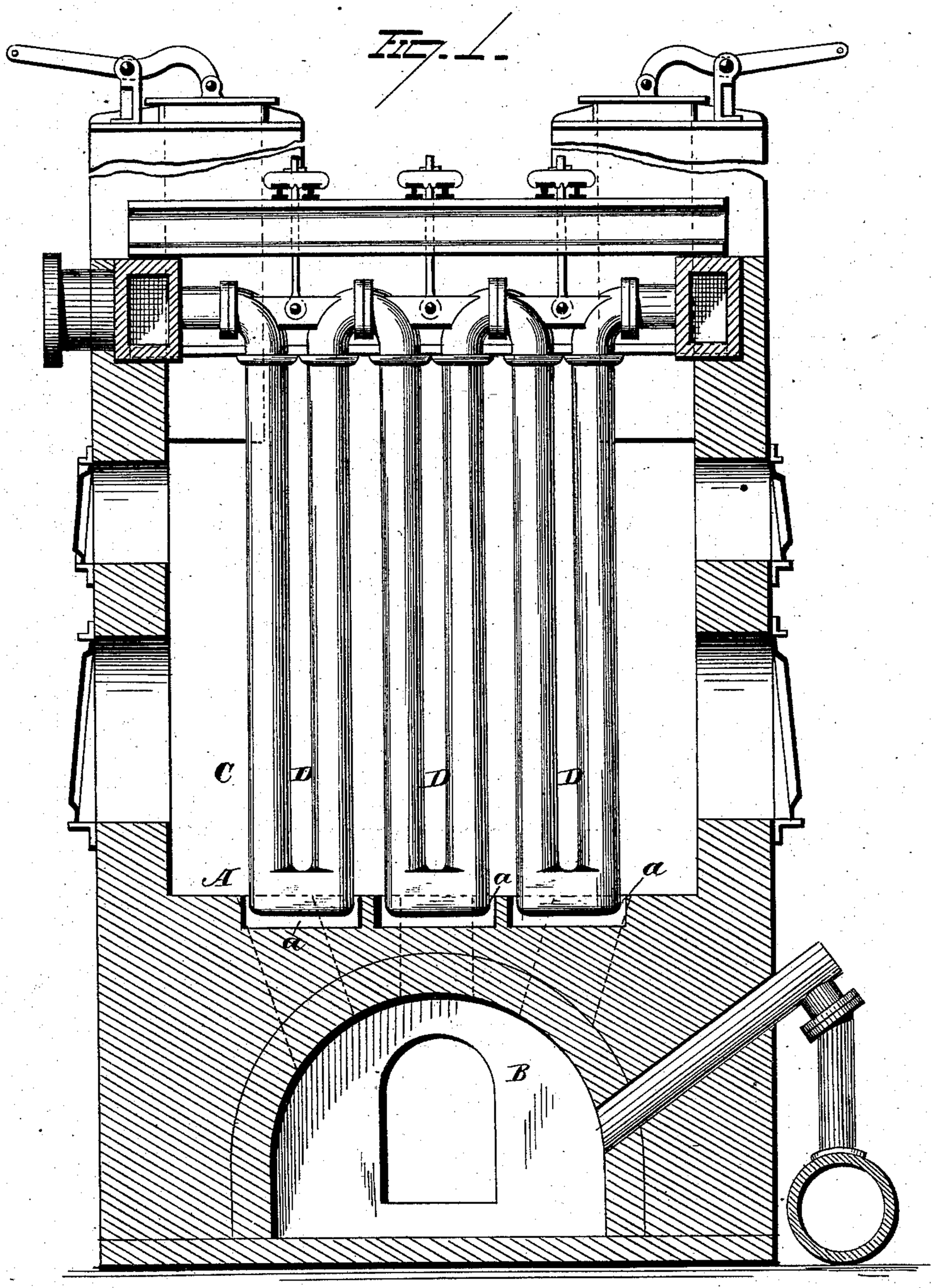
(No Model.) 3 Sheets—Sheet 1.

P. L. WEIMER.

Hot Blast Oven.

No. 239,414. **Patented March 29, 1881.**

Fig. 1.



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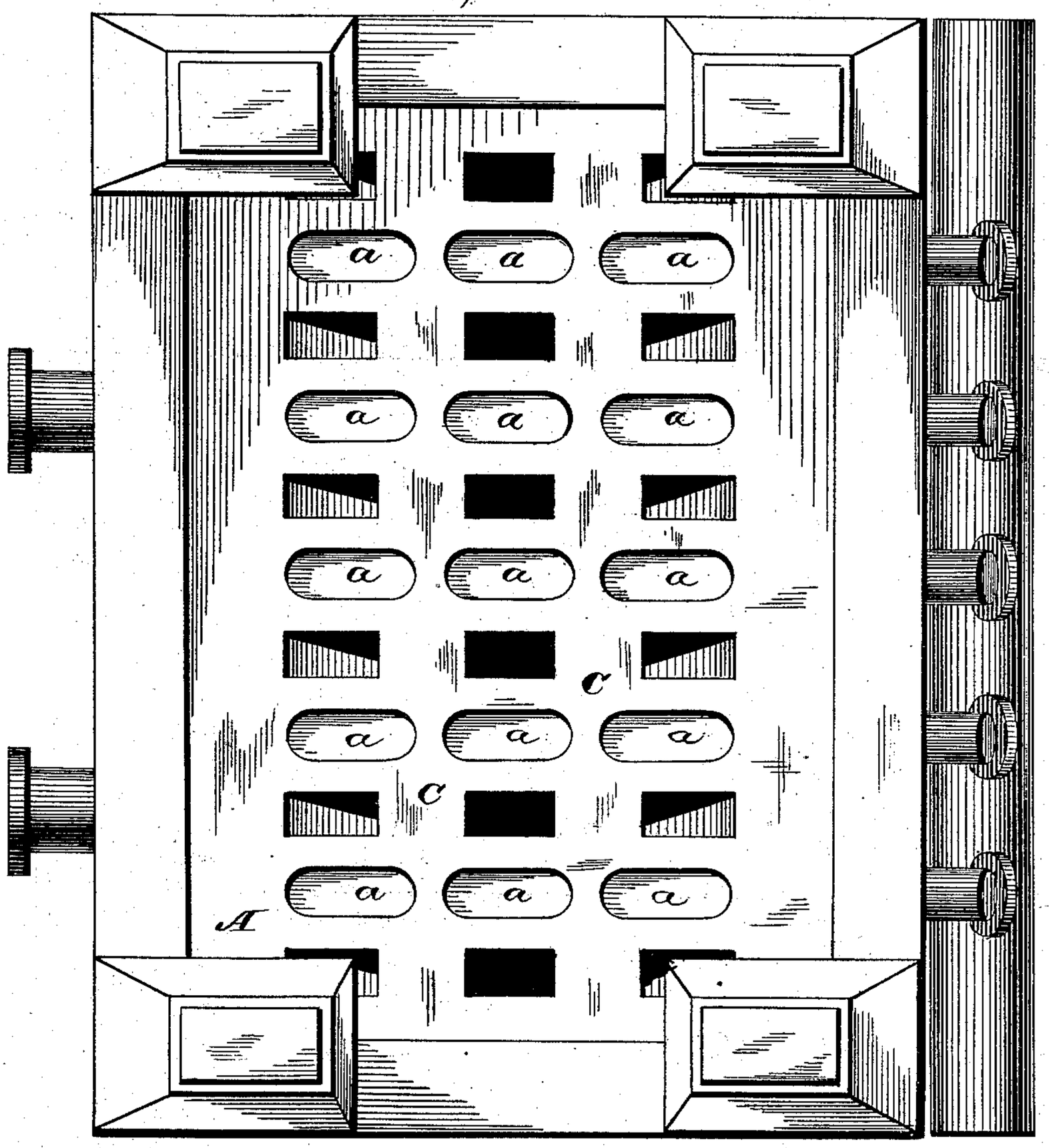
(No Model.) 3 Sheets—Sheet 2.

P. L. WEIMER.

Hot Blast Oven.

No. 239,414. **Patented March 29, 1881.**

Fig. 2.



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(No Model.) 3 Sheets—Sheet 3.

P. L. WEIMER.

Hot Blast Oven.

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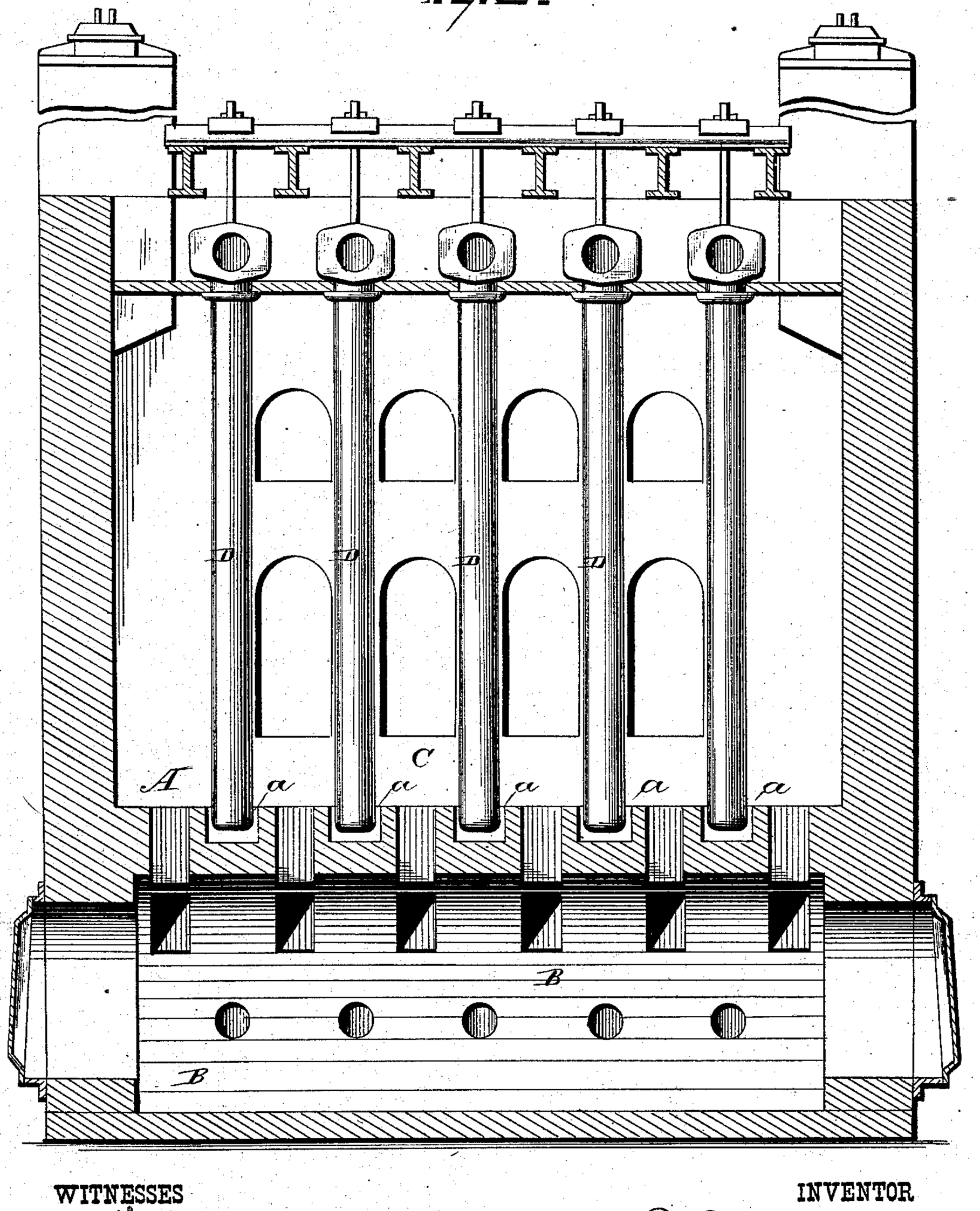
Fig. 3.



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UNITED STATES PATENT OFFICE.

PETER L. WEIMER, OF LEBANON, PENNSYLVANIA.

HOT-BLAST OVEN.

SPECIFICATION forming part of Letters Patent No. 239,414, dated March 29, 1881.

Application filed October 29, 1880. (No model.)

To all whom it may concern:

Be it known that I, PETER L. WEIMER, of Lebanon, in the county of Lebanon and State of Pennsylvania, have invented certain new and useful Improvements in Hot-Blast Ovens; 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 pertains to make and use it, reference being had to the accompanying drawings, which form part of this specification.

My invention relates to that class of hot-blast ovens which are provided with air-pipes suspended in the heating-chambers, so that they do not rest upon their lower ends. Heretofore these air-pipes have terminated some distance above the bottom of the heating-chamber. The lower extremities of the pipes have not been provided with any means whereby they may be maintained in position, and hence the pendent pipes were liable to become displaced. Also, the flame impinging against the bottoms of the pipes resulted in rapidly destroying them, and it was therefore necessary to substitute new pipes for pipes which had only their lower ends materially affected.

The object of my invention is two-fold—to obviate both the disadvantages above recited. This object I obtain by providing the brick-work formed above the arch with cells, in which the lower extremities of the air-pipes are fitted, these cells being of size adapted to permit the air-pipes to expand freely without resting upon their lower ends. By this construction the pendent pipes have their lower side portions provided with inclosures which maintain them in position, and the bottoms of the pipes are also protected against the flame.

The drawings represent the invention embodied in one form of construction, the connecting parts thereof being given merely to illustrate an operative device.

Figure 1 is a vertical transverse section of the oven. Fig. 2 is a plan view of the bottom of the heating-chamber, the air-pipes being removed. Fig. 3 is a vertical longitudinal section of the oven.

The brick-work A, formed above the arch of the combustion-chamber B, and constituting the bottom of the heating-chamber C, is provided with vertical cells *a*. The air-pipes D depending within the heating-chamber are of length adapted to extend down into these cells. The lower side portion of each pipe being inclosed within its appropriate cell, the pendent pipe is maintained against any tendency to displacement. The bottom of each pipe is thus fitted within a cell, and protected from the intense action of the flame. These cells are respectively of such a size relative to the air-pipes that the latter may expand fully without causing the pipes to rest upon their lower ends.

The combustion-chamber, the heating-chamber, the air-pipes, and the devices which suspend the latter may one and all be changed from the forms represented in the drawings.

It is also apparent that modifications may be made as to the form of the inclosures about the lower ends of the air-pipes, without departing from my invention, the latter consisting, broadly, in the construction set forth in the following claims.

I am aware that steam-boilers have been provided with upper and lower horizontal water-tubes connected by vertical water-tubes, the lower horizontal water-tubes extending slightly within grooves formed in the bottom of the furnace, and the flames caused to circulate between the upper and lower horizontal water-tubes; but I make no claim to such construction and arrangement of parts, as it is foreign to my invention.

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

1. In a hot-air blast oven, the combination, with a combustion-chamber provided with a perforated arch, and furnished with cells or recesses on its upper side, of suspended air-pipes located in a heating-chamber situated above the combustion-chamber, the lower ends of said pipes being arranged to enter said cells or recesses, substantially as set forth.

2. In a hot-blast oven, the combination, with air-pipes and supporting devices which sus-

pend them in the heating-chamber, of brick-work formed above the arch and provided with vertical cells in which the lower extremities of the pipes are fitted, said cells being of size adapted to permit the pipes to expand without resting upon their lower ends, substantially as set forth.

In testimony that I claim the foregoing I have hereunto set my hand this 23d day of October, 1880.

PETER L. WEIMER.

Witnesses:
TOBIAS REINOEHL,
A. W. BRIGHT.