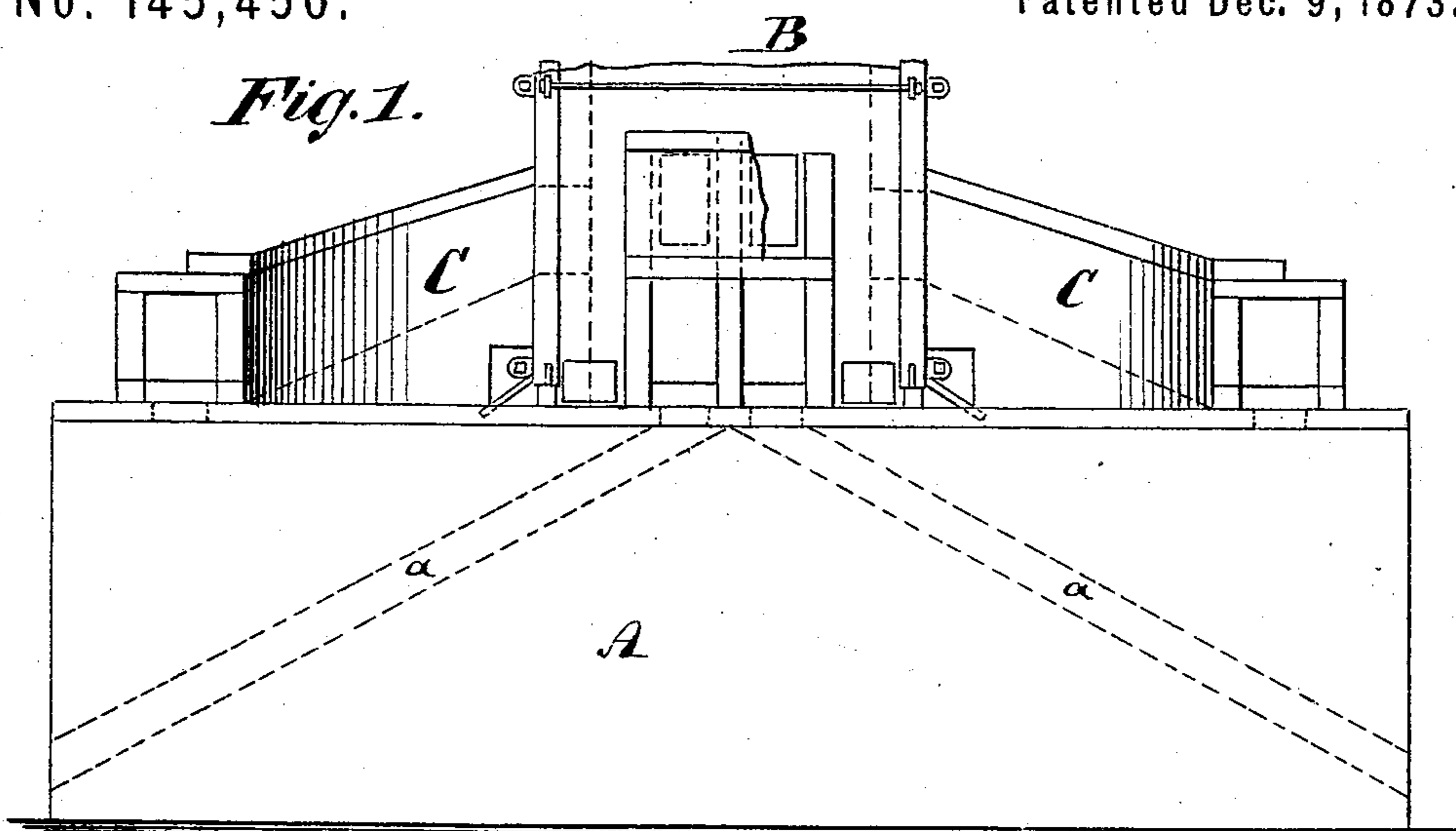


E. H. & F. G. RICHTER.  
Zinc-Furnaces.

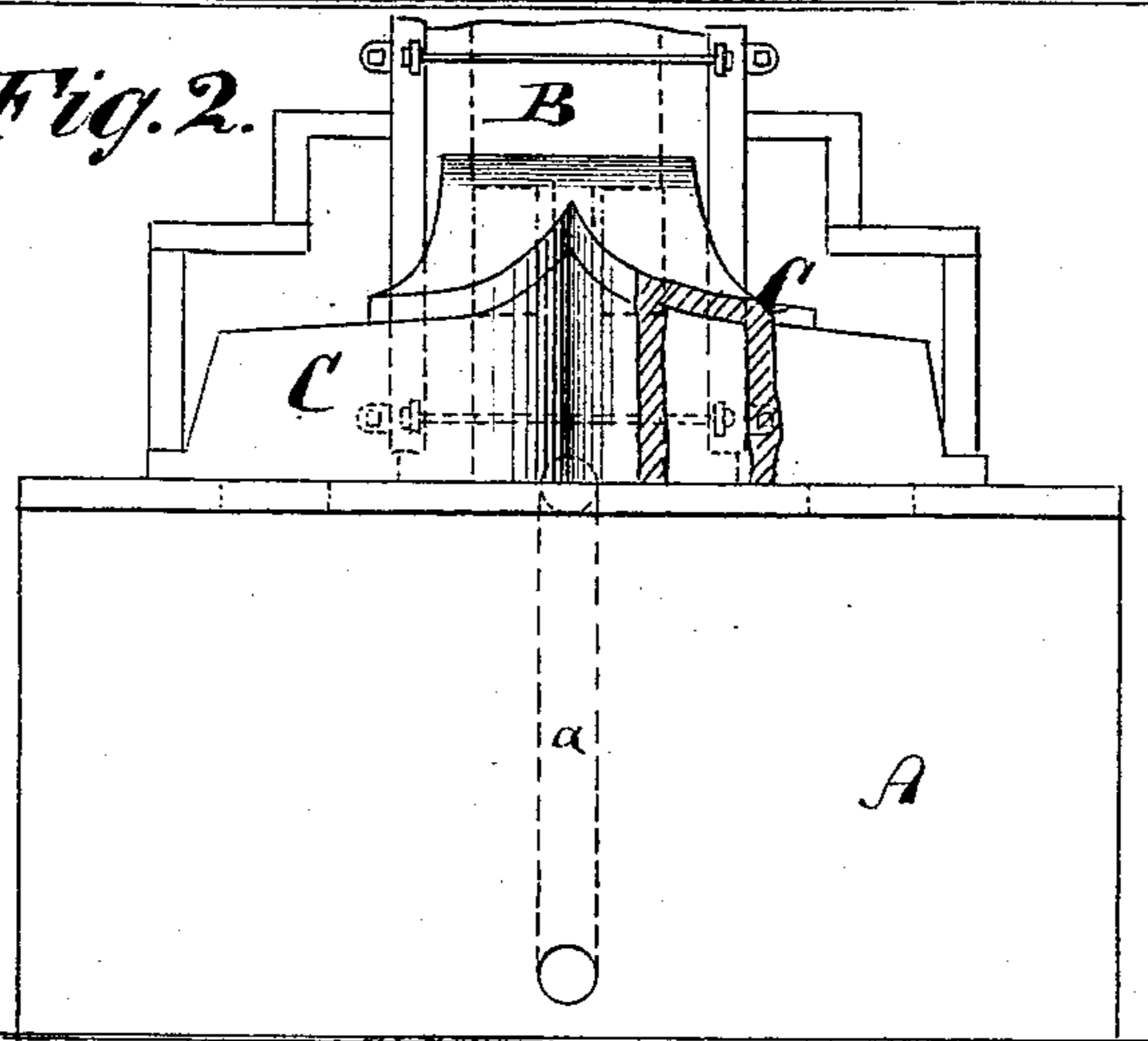
No. 145,450.

Patented Dec. 9, 1873.

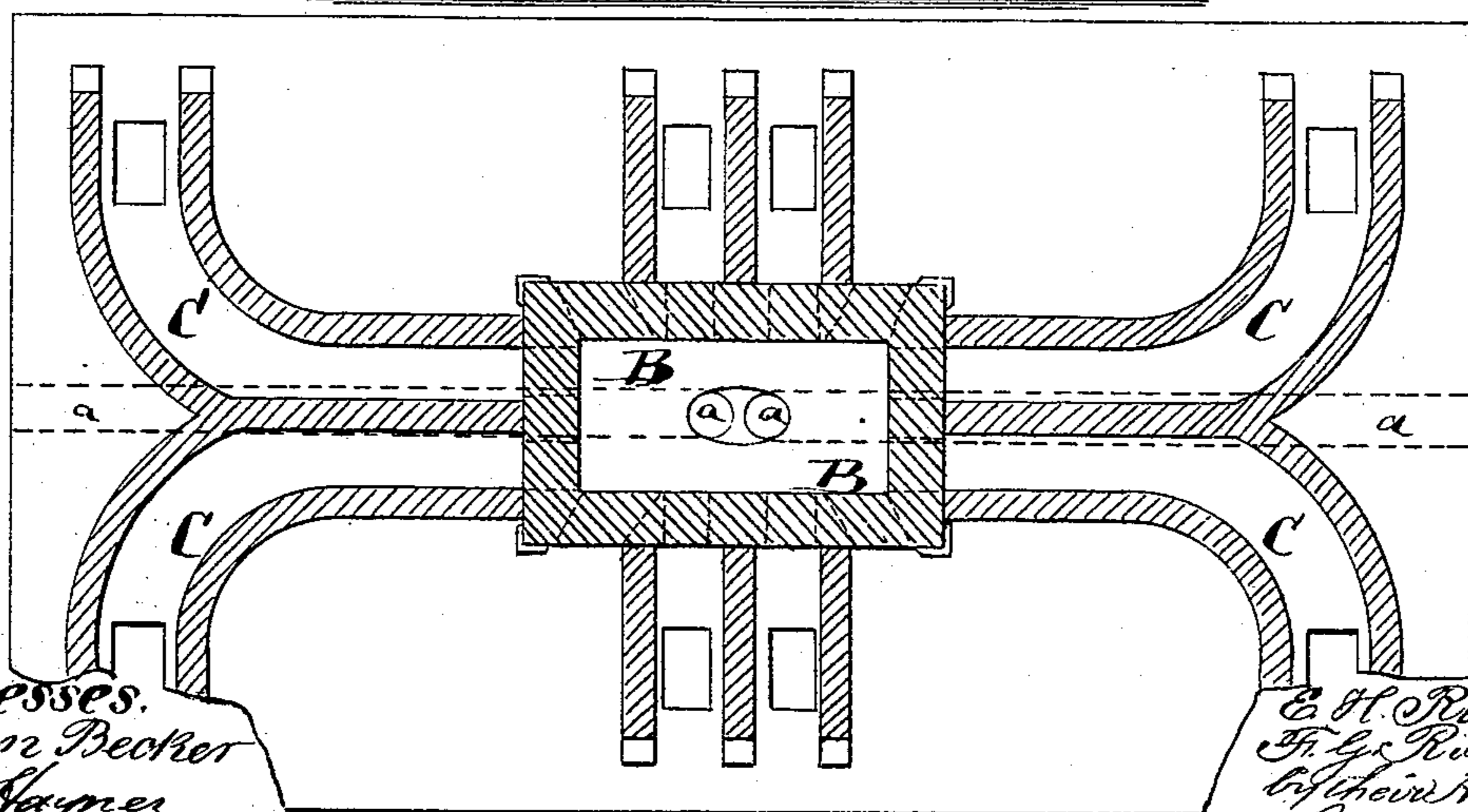
*Fig. 1.*



*Fig. 2.*



*Fig. 3.*



Witnesses.  
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# UNITED STATES PATENT OFFICE.

ERNST H. RICHTER AND FRIEDRICH G. RICHTER, OF TAUNTON, MASS.

## IMPROVEMENT IN ZINC-FURNACES.

Specification forming part of Letters Patent No. **145,450**, dated December 9, 1873; application filed August 21, 1873.

*To all whom it may concern:*

Be it known that we, ERNST H. RICHTER and FRIEDRICH G. RICHTER, of Taunton, in the county of Bristol and State of Massachusetts, have invented an Improved Zinc-Furnace, of which the following is a specification:

Figure 1 is a side elevation, partly in section, of our improved zinc-furnace. Fig. 2 is an end elevation, partly in section, of the same; and Fig. 3 a horizontal section thereof through the passages above the retort-chamber.

Similar letters of reference indicate corresponding parts in all the figures.

The object of this invention is to reduce the expense of zinc-furnaces, and at the same time to increase the draft in the same and facilitate the rapidity of thorough operation therein. The invention consists, principally, in forming on top of the furnace, above the chamber containing the retorts, and in place of the side stacks usually employed, horizontal, partly inclined, draft-passages, which lead to the center stack, and which constitute fully as reliable conduits for the escaping gases as the ordinary side stacks, being however considerably cheaper in construction than the same. Our invention also consists in forming inclined draft-passages in the longitudinal partition of the retort-chamber, chiefly for the purpose of taking currents of fresh air from each end to the center stack, thereby increasing the draft and hastening the process of preparing the zinc.

In the accompanying drawing, the letter A represents the lower part of a zinc-furnace, constructed with a heating apparatus and with receptacles for the retorts, substantially in the customary manner, such heating apparatus and retort-receptacles not being shown in the drawing, because well known. B is the lower part of the central smoke-stack usually formed on zinc-furnaces. This smoke-stack is also of the customary construction, provided with openings for the reception of the gases, and

with an upright shaft for their escape. C C are side passages on top of A for conducting the gases from the ends of the furnace to the central stack B. These passages or pipes C are arranged four in number, one from each corner of the furnace leading to the smoke-stack B. Their positions are fully indicated in Fig. 3.

These passages C are easily built upon the furnace A without adding materially to the cost of the same, and serve better than the separate stack heretofore used for conducting the superfluous gases away from the furnace.

The lower part, A, of the furnace is usually made in two compartments, which are divided longitudinally by a central partition. In this partition we form two inclined air-passages, *a a*, which are indicated by dotted lines in Fig. 1, and also in Figs. 2 and 3, extending from the center of the top of the furnace A outwardly toward the ends of the same. Through these passages *a*, by suction created through the draft, fresh air is conducted into the stack in constant currents.

We claim as our invention, and desire to secure by Letters Patent—

1. The zinc-furnace carrying the central stack B on top of and in direct communication with central portion of the retort-chamber, and with the passages C C that extend to the four corners of the furnace, so that the stack will at once draw the gases from all parts of the furnace, as set forth.

2. A zinc-furnace provided with inclined air-passages *a a* in the central partition, when said air-passages are made to extend from the ends of the furnace to the central stack B, substantially as specified.

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Witnesses:

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