

No. 677,336.

Patented July 2, 1901.

H. BURGMANN.
RETORT GAS FURNACE.
(Application filed Feb. 26, 1900.)

(No Model.)

Fig. 1.

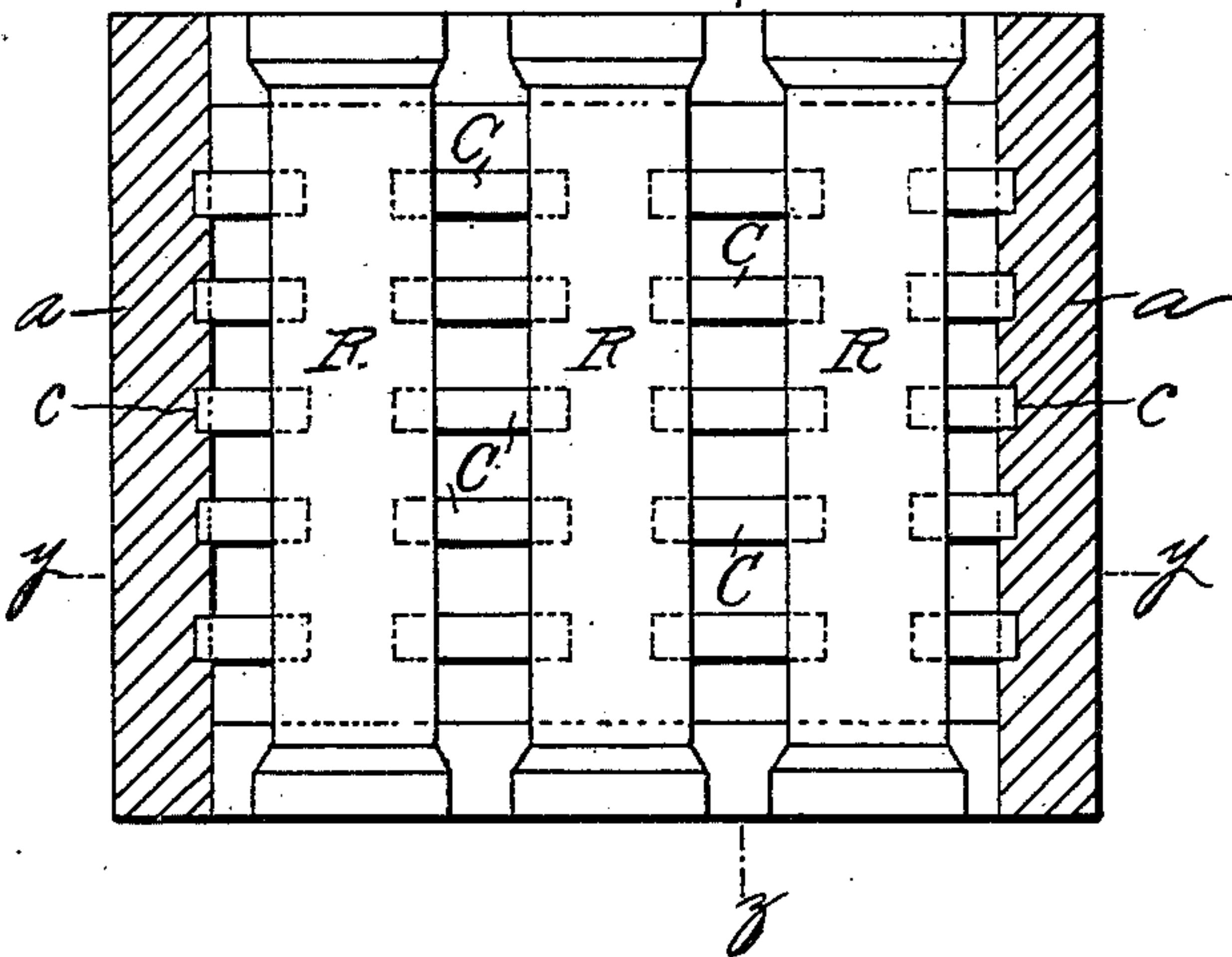


Fig. 2.

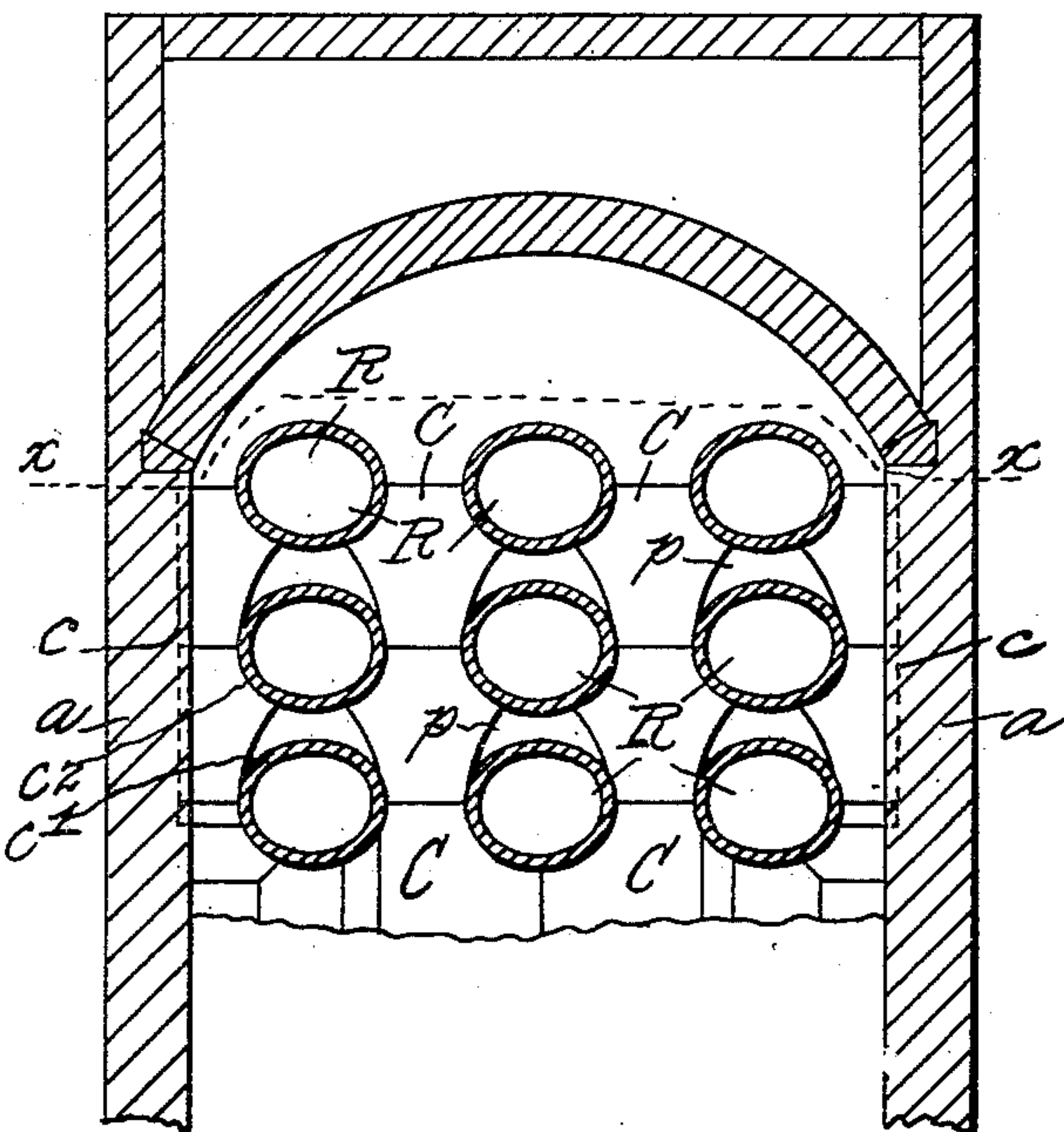
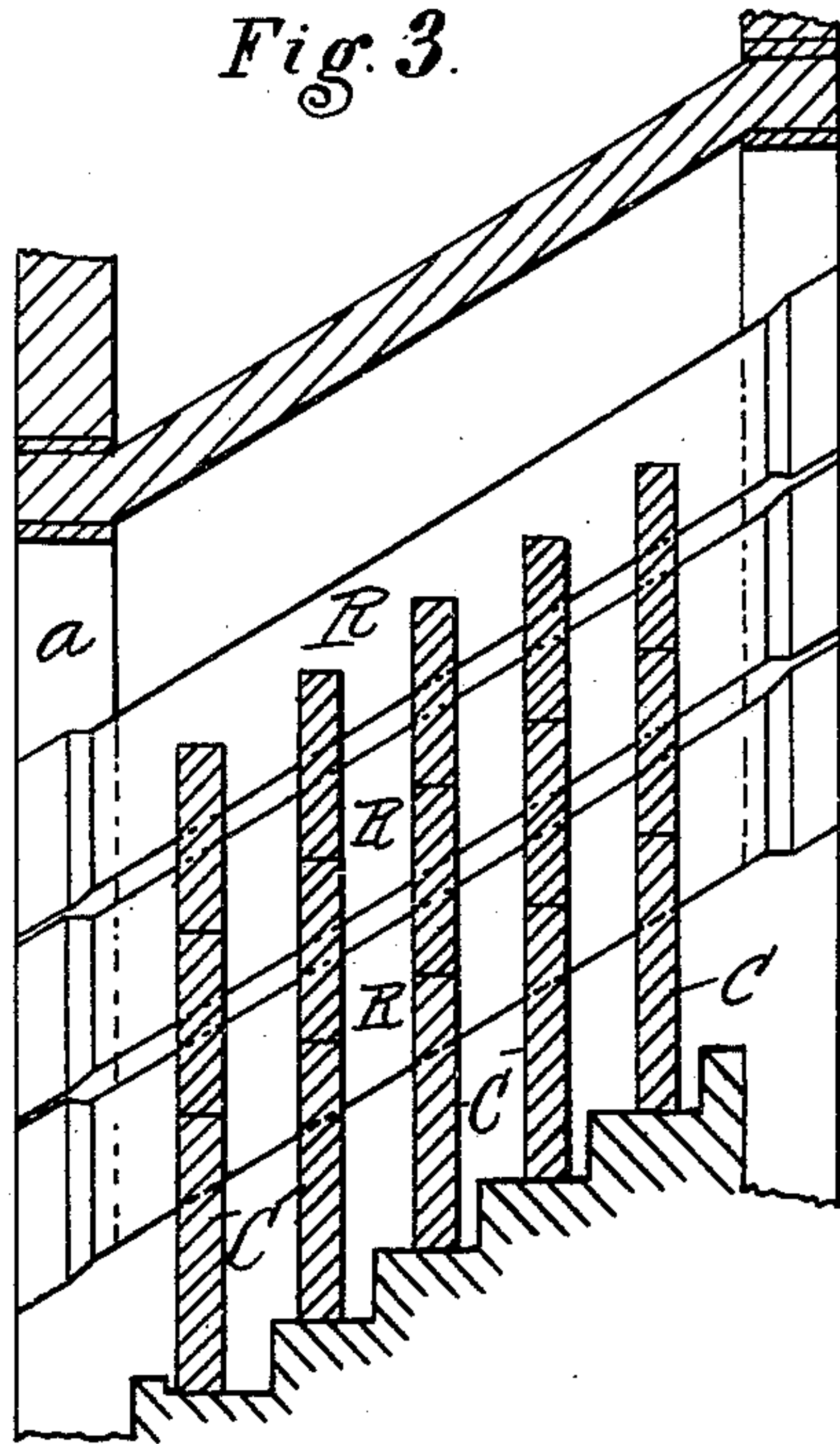


Fig. 3.



Witnesses:

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HUGO BURGMANN, OF ALTONA, GERMANY.

RETORT GAS-FURNACE.

SPECIFICATION forming part of Letters Patent No. 677,336, dated July 2, 1901.

Application filed February 26, 1900. Serial No. 6,631. (No model.)

To all whom it may concern:

Be it known that I, HUGO BURGMANN, a subject of the Emperor of Germany, residing at Altona-on-the-Elbe, Germany, have invented certain new and useful Improvements in Gas-Furnaces; 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 appertains to make and use the same, reference being had to the accompanying drawings, and to letters of reference marked thereon, which form a part of this specification.

Gas-furnaces as constructed prior to my invention, whether with horizontal or inclined retorts, present serious disadvantages in that each tier or bank of retorts has to sustain the weight superimposed thereon, so that the lower tier or bank is subjected to a very great pressure from the superimposed structure, those retorts which have to bear the greater pressure or weight being liable to be and are frequently crushed.

My invention has for its object a construction of gas-furnace whereby the disadvantage referred to is entirely obviated in that none of the retorts are subjected to any pressure or strain whatever, either from the surrounding or superimposed masonry or from the superimposed retorts, each retort having to sustain the strain of its own weight only. By means of the construction referred to I also provide flues or passages for the circulation of the heat and products of combustion which cannot be obstructed or choked up by breakage of the masonry or by the crushing of a retort, both being practically impossible.

My invention consists, essentially, in so constructing the carriers—*i. e.*, the masonry in which the retorts are set—that all the weight is sustained by said carriers and so that the retorts themselves form the tops of arched passages or flues; but that my invention may be fully understood I will describe the same in detail, reference being had to the accompanying drawings, in which—

Figure 1 is a horizontal section of a gas-furnace about on line xx of Fig. 2; and Figs. 2 and 3 are sections taken on line yy and zz , respectively, of Fig. 1.

In the drawings, a indicate the encompassing walls of the furnace, R the retorts,

and C the carrier bricks or blocks. As shown, those carriers C which are built or set in the side walls have one straight face c and two concave faces c' c^2 , while those carriers which are interposed between the retorts R have concave faces c' c^2 on either side. These carriers are of a height equal to the distance between the horizontal centers of two superposed retorts.

The concave faces c' of carriers C on opposite sides of a retort converge to a given point, from which the concave faces c^2 diverge, thus forming arched bridges, of which the retorts form the caps, also cradles for said retorts above the arches, and at the same time a passage p between two superposed retorts, the concave face c^2 fitting one retort snugly, while the lower part of the concave face c' similarly fits a portion of the upper half of a retort immediately below, the carriers C being set one upon another and upon a suitable foundation, as shown. Obviously the weight of all the retorts is in this manner supported by their carriers, the retorts themselves being subjected to no other weight or pressure or strain except that of their own weight, while, as stated, arched passages p are formed between two superposed retorts for the free circulation of the heat and products of combustion about the retorts. It is, furthermore, obvious that these passages are not liable to be obstructed either by the breakage of the carriers or the crushing of a retort, the former being practically and the latter absolutely impossible.

Although I have illustrated my invention in its application to gas-furnaces having inclined retorts, it is obvious that it is applicable as well to furnaces having horizontal retorts, and in either case the durability of the furnace is greatly increased.

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

1. In a retort-furnace, the combination with the retorts of carriers whose proximate faces form a passage between two superposed retorts, fit snugly around the lower one of the two retorts and form at their upper end a cradle for the upper one of said retorts fitting snugly around the lower half thereof, for the purpose set forth.

2. In a retort-furnace, the combination with
the retorts, of self-supporting carriers hav-
ing proximate concave faces forming a cradle
encompassing and fitting snugly one-half of
5 the perimeter of a retort and having similar
faces of greater curvature below the first-
named faces forming an arch above each re-
tort, for the purpose set forth.

In testimony that I claim the foregoing as
my invention I have signed my name in pres- 10
ence of two subscribing witnesses.

HUGO BURGMANN.

Witnesses:

E. H. L. MUMMENHOFF,
IDA HAERMANN.