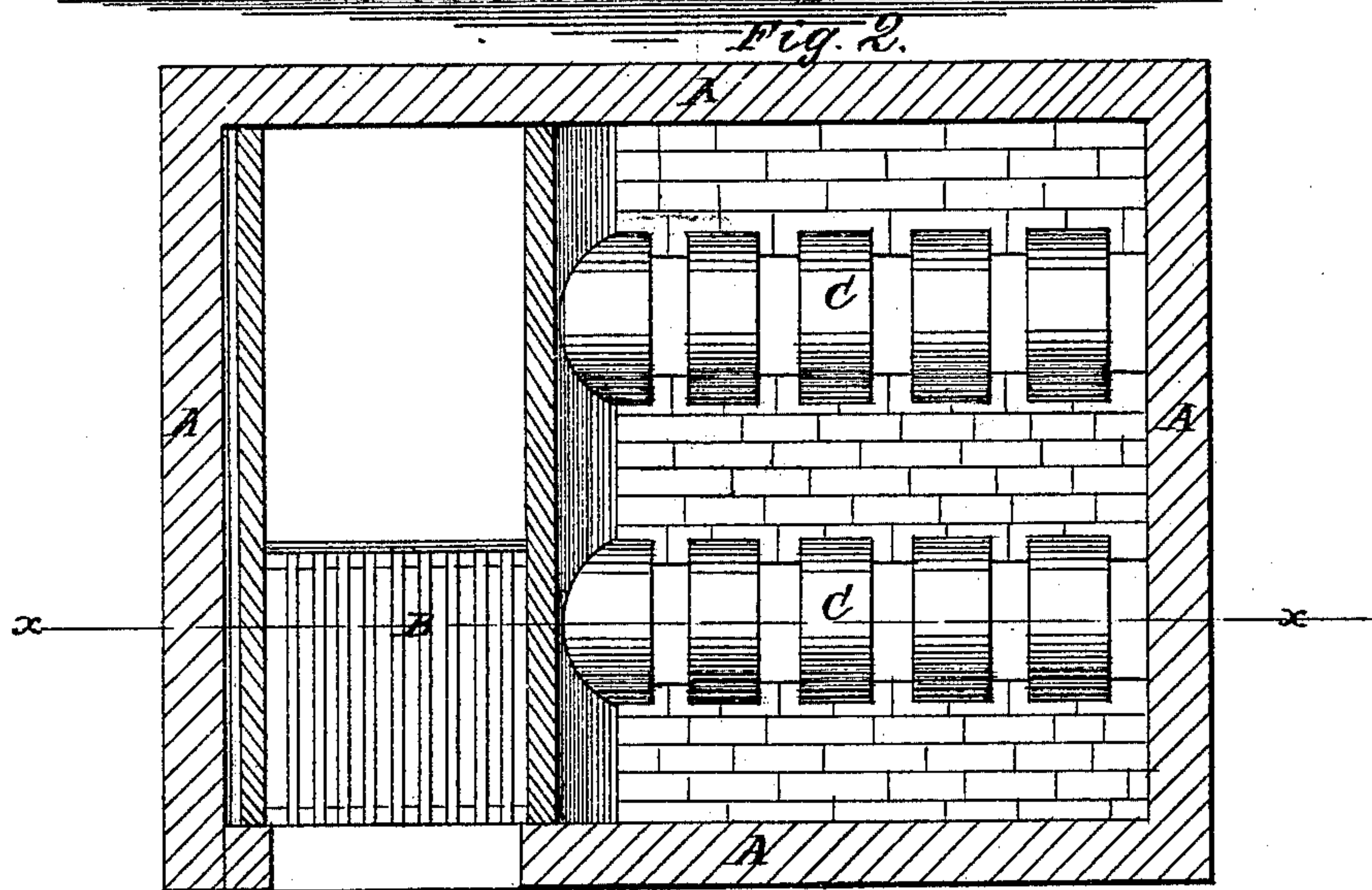
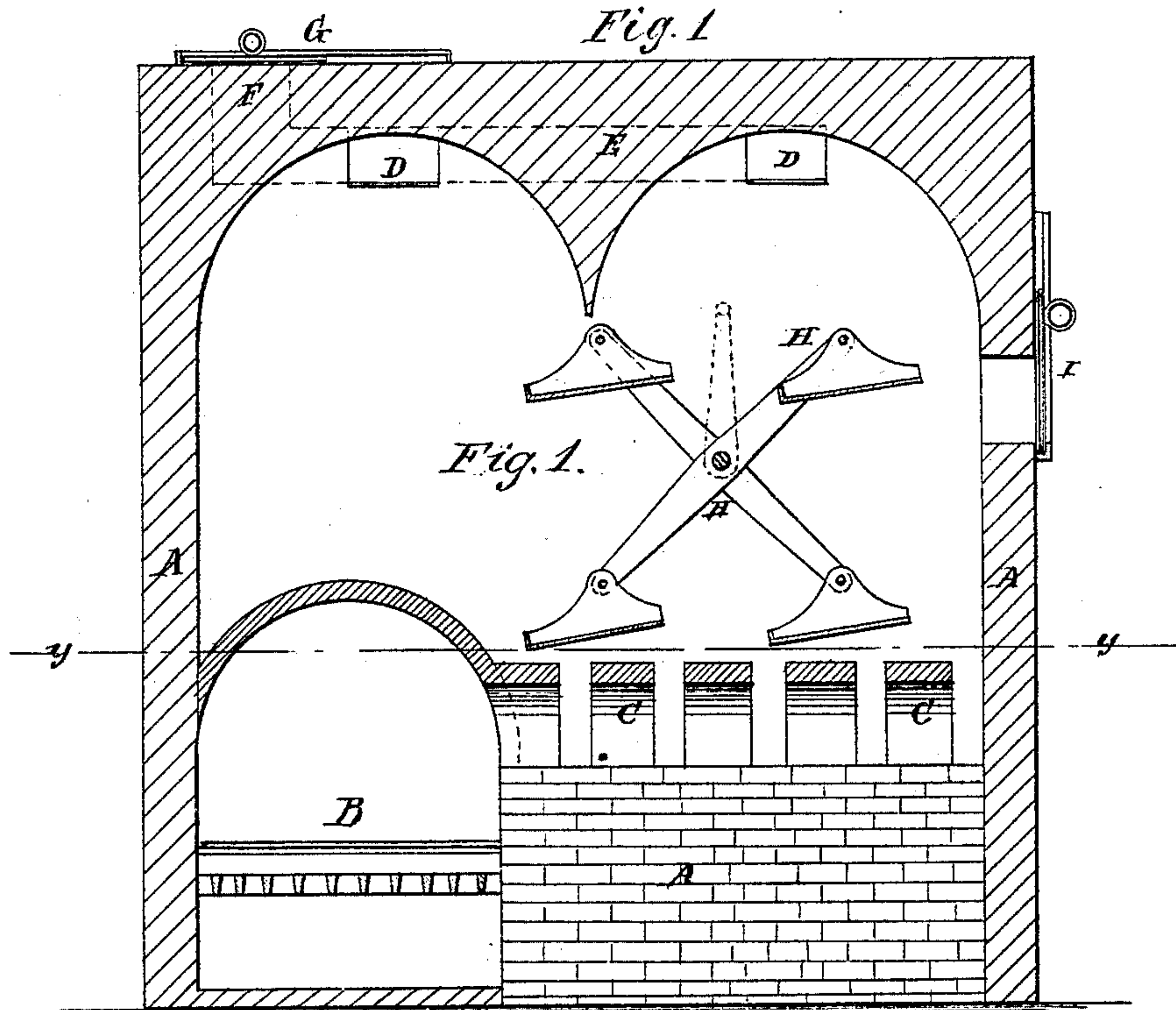


J. RAINEY.

Bake Oven.

No. 108,389.

Patented Oct. 18, 1870.



Witnesses:

A. W. Almqvist
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Inventor:

John Rainey
PER *Wm. C. [Signature]*
Attorneys.

UNITED STATES PATENT OFFICE.

JOHN RAINEY, OF BROOKLYN, NEW YORK.

IMPROVEMENT IN OVENS.

Specification forming part of Letters Patent No. **108,389**, dated October 18, 1870.

To all whom it may concern:

Be it known that I, JOHN RAINEY, of Brooklyn, in the county of Kings and State of New York, have invented a new and useful Improvement in Ovens; and I do hereby declare that the following is a full, clear, and exact description thereof, which will enable others skilled in the art to make and use the same, reference being had to the accompanying drawing, forming part of this specification.

Figure 1 is a vertical section of my improved oven, taken through the line *x x*, Fig. 2. Fig. 2 is a horizontal section of the same, taken through the line *y y*, Fig. 1.

Similar letters of reference indicate corresponding parts.

My invention relates to bakers' ovens for crackers or analogous articles, and the leading object which I have in view is to produce a more even distribution of heat through the baking-chamber, and a more uniform application thereof to all parts of the cracker and pans of crackers, whereby burning or browning on tops, bottoms, or sides may be avoided.

The means which I employ to carry out these objects will be first described in connection with all that is necessary to a full understanding thereof, and then clearly pointed out in the claims.

A represents the walls of my improved oven, the walls of which are constructed of brick-work, in the ordinary manner.

The roof or top of the oven is made in the form of a double arch, as shown in Fig. 1, the inner sides of the two arches meeting at an acute angle, directly over the middle part of the oven.

B is the furnace, which is built of brick-work, lined with fire-brick, and is placed about upon a line with the bottom of the oven.

From the furnace B extend two flues or hot-air chambers, C, according to the capacity of the oven, along the bottom of the oven to the opposite wall, said flues being covered with section-arches, as shown in Figs. 1 and 2.

The openings between the sections of the arches of the flues C admit the heated products of combustion through all parts of the lower part of the oven.

In the wall of the oven, just beneath the crown of the arches of its roof or top, are formed the exit-passages D for the products

of combustion. The passages D lead into the flue E, between the inner and outer walls of the oven, and which leads into the chimney-flue F.

The flue E or F is provided with a damper, G, by means of which the draft through said flues may be regulated at will.

H is the reel upon which the crackers are baked, and which is constructed and operated in the ordinary manner. Access to the reel H is obtained through the door I in the frame of the oven.

The furnace B may be placed in the front or rear part of the oven; but in either case the flues C, with sectional covers, should extend to the opposite side of said oven.

The mode of operation is as follows: The current of air, passing through the fire at all points, will eliminate products possessing a different temperature; but the whole mass, passing forward into the combustion-chamber, or upward into the dome, and finding no upward or forward outlet, is checked, intermixed, and approximately equalized in temperature. It then passes into the channels C, from whence it is discharged into the baking-chamber. Then the lighter, more expanded, and hotter portions of air from all parts of the chamber naturally tend to accumulate at the top, as in an ordinarily-heated room, and will create a greater intensity of heat in that upper locality; but this superheated air is gathered by the two deep concavities in the top arches, from whence it is gradually drawn off by the outlets D D and flue E, so that all practical and injurious rise in the temperature is prevented.

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

1. The outlet-passages D and discharge-flue E, combined with the two arches at the top of the baking-chamber, as and for the purpose specified.

2. The furnace B, channels C, outlets D D, and flue E, combined with a reel, H, all constructed and relatively arranged as and for the purposes specified.

The above specification of my invention signed by me this 30th day of January, 1870.
JOHN RAINEY.

Witnesses:

GEO. W. MABEE,
JAMES T. GRAHAM.