2 Sheets—Sheet 1.

A. MARTIN.

BAKER'S OVEN.

No. 111,759. Patented Feb. 14, 1871.

Fig: 1.

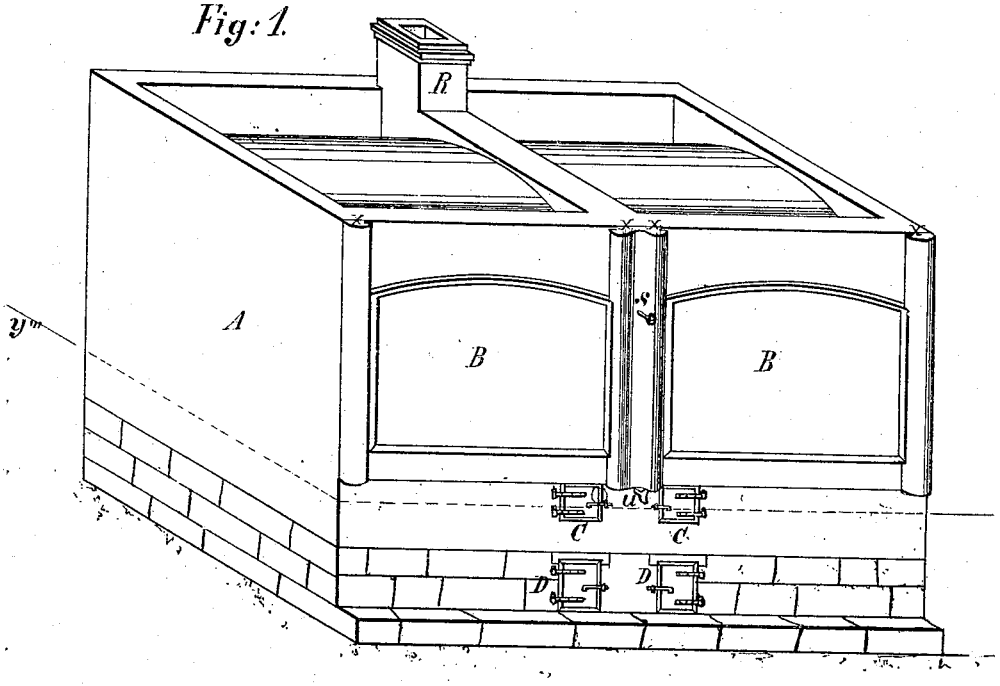
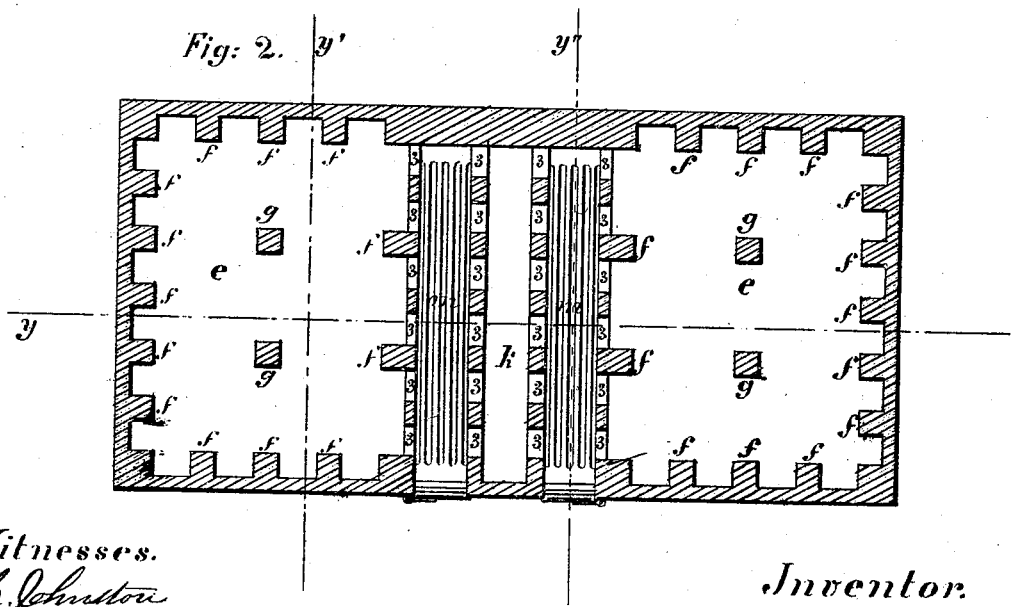


Fig: 2.



Witnesses.

A. C. Johnston

James L. Johnston

Inventor.

Alex. Martin

2 Sheets—Sheet 2.

A. MARTIN.

BAKER'S OVEN.

No. 111,759. Patented Feb. 14, 1871.

Fig: 3.

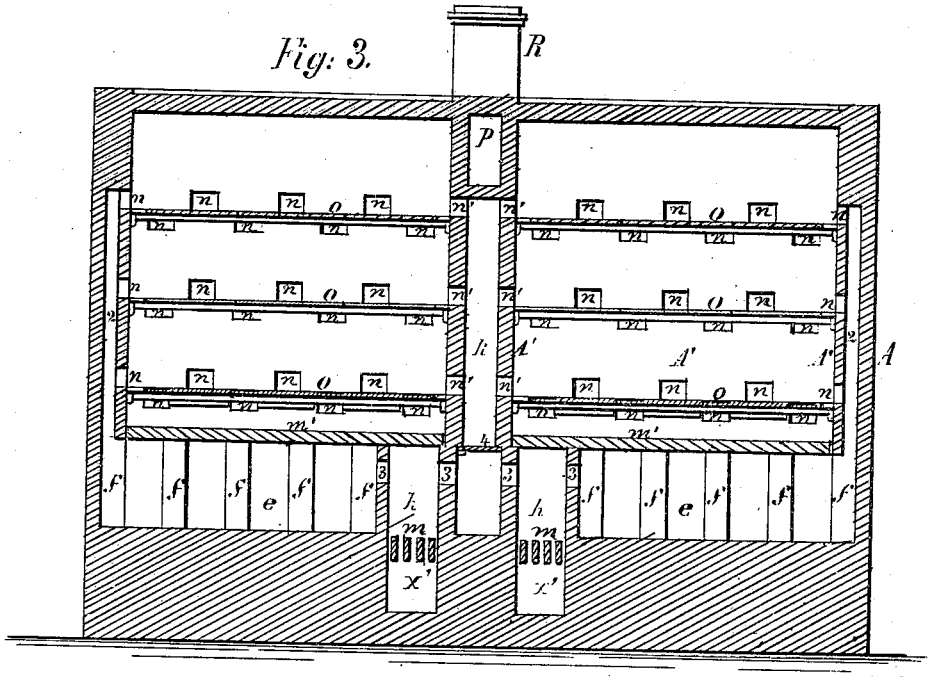


Fig: 4

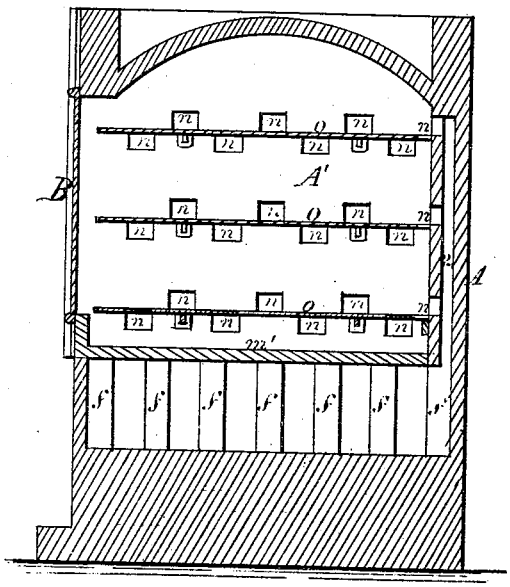
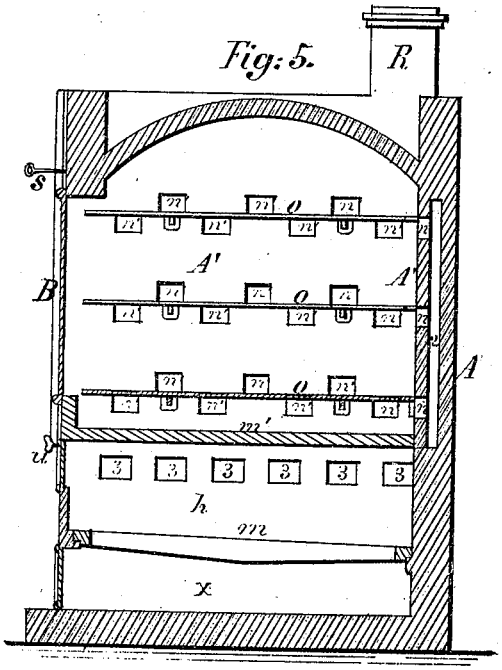


Fig: 5.



Witnesses.
A. C. Johnston
James L. Johnston

Inventor:
Alex Martin

United States Patent Office.

ALEXANDER MARTIN, OF ALLEGHENY, PENNSYLVANIA.

Letters Patent No. 111,759, dated February 14, 1871.

IMPROVEMENT IN BAKERS' OVENS.

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

To all whom it may concern:

Be it known that I, ALEXANDER MARTIN, of the city and county of Allegheny and State of Pennsylvania, have invented a new and useful Improvement in Bakers' Oven; and I do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawing and to the letters of reference marked thereon.

The nature of my invention consists in the arrangement of fire-chambers, heat-chambers, air or heat-spaces, flues, and dampers, hereinafter described.

Figure 1 is a perspective view of my improvement in baker's oven.

Figure 2 is a transverse section of the same when cut through at line *y'''* of fig. 1.

Figure 3 is a vertical and longitudinal section of the oven when cut through at line *y* of fig. 2.

Figure 4 is a transverse and vertical section of the oven when cut through at line *y'* of fig. 2.

Figure 5 is a transverse section of the oven when cut through at line *y''* of fig. 2.

In the accompanying drawing—

A represents the outer walls, and

A' represents the inner walls of the oven.

B represents the oven-doors, which move in grooves X.

C represents the fire-doors; and

D, the doors of the ash-pits.

R represents the chimney or stack of the oven.

S and U represent damper-rods for manipulating the dampers arranged in the chambers K and P between the two ovens.

h represents the fire-chambers, the top of the grates *m* of which are on a line with the plane of the bottom of the lower chambers *e*, which are used for distributing heat through the chambers 2, from which it passes into the ovens through openings *n*.

In the chambers *e* are piers *f* and *g*, the piers *f* being used for supporting the walls A' and the outer edges of the bottom *m'*, and the piers *g* are used for supporting the central portion of the bottom *m'*.

The chambers *e* are used as a reservoir for the accumulation of the heat, from which it passes up into the spaces 2 between the walls A and A', and from said spaces through openings *n* and *n'*, in the inner walls A', into the ovens.

The fire-chambers *h* are so constructed that the top surface of their grates *m* are on a line with the plane of the bottom of the heat-chambers *e*.

By this arrangement the heat passes into the chambers *e*, K, and *e*, through openings 3, at points which are above the fire, thereby more equally distributing the heat and utilizing it.

This arrangement of the fire-chambers *h* and grates *m* with relation to the openings 3 and heat-chambers *e e*, K, and P, combined with the dampers and chimney or flue R, greatly facilitates the separation of sulphurous gas from the heated air. The heated air, being lighter than the gas, passes into the chambers *e e* through openings 3 and rises up into chamber K, and from these chambers passes into the ovens through openings *n* and *n'* in the walls A'. If the openings 3 and fire-grates are arranged closely together, which is the ordinary practice or mode of construction, the oven will be found to be filled with heated air and sulphurous gas, which are always a source of annoyance and trouble to the baker. But, by this arrangement, he can, when he finds an undue amount of gas in the chambers *e e* and K, open the dampers and allow it to pass off through the flue or chimney R.

The ovens are provided with a series of fixed bottoms, O, which are constructed of tile, of soap-stone, or fire-clay, and supported on iron bars, and are arranged at suitable distances apart and above the bottom *m'*.

The chamber K is provided with a pivoted damper, 4, which extends the whole length of said chamber, and the chamber P, at its front end, is provided with a sliding damper for closing the opening which communicates with the chamber K.

By means of the dampers in the chambers K and P the temperature of the ovens may be regulated to any desired degree of heat.

By supporting the lower bottoms *m'* on piers, as described, instead of supporting them by arching, as is now practiced, all lateral strain caused by expansion of the bottoms by heat is avoided. This lateral expansion of the bottoms is a difficulty which all bakers experience, and is a great source of annoyance, for it soon destroys the efficiency of the oven for baking.

As the construction and arrangement of my improvement in ovens will be readily understood from the foregoing description and by reference to the accompanying drawing, I will therefore proceed to describe its operation, which is as follows:

Fire is made in the usual manner in the fire-chamber *h*. The heat passes from the chambers *h* through opening 3 into chambers *e*, K, and *e*, and from chambers *e* it passes up into the spaces 2 between the walls A and A', and through openings *n* in the walls A' into the ovens, and the heat from chamber K passes from it through openings *n'* into the ovens. When too much heat or gas accumulates in the ovens, the damper 4 is turned, and communication between the chambers K and P is opened by pushing the damper-rod S in, which will move the damper connected to it. The surplus heat and gas will pass into chamber K, and from it into chamber P, and pass along and out through the chimney R.

The operation of charging the ovens with unbaked

bread, cakes, crackers, &c., and discharging the same when baked, will be readily understood by the skillful baker, to whose judgment I leave these little details, and who will readily understand that by having ovens with a series of bottoms, as hereinbefore described, a continuous process of baking can be carried on with ovens which require but a small amount of room.

Having thus described the nature, construction, and operation of my improvement,

What I claim as of my invention is—

The arrangement of the fire-chambers *h*, grates *m*, openings 3, heat-chambers *e e*, K, and P, spaces 2, openings *n n'* in walls A' and oven-bottoms O *m'*, combined with the dampers and flue or chimney R, constructed, arranged, and operating with relation to each other, substantially as herein described, and for the purpose set forth.

ALEXANDER MARTIN.

Witnesses:

A. C. JOHNSTON,

JAMES J. JOHNSTON.