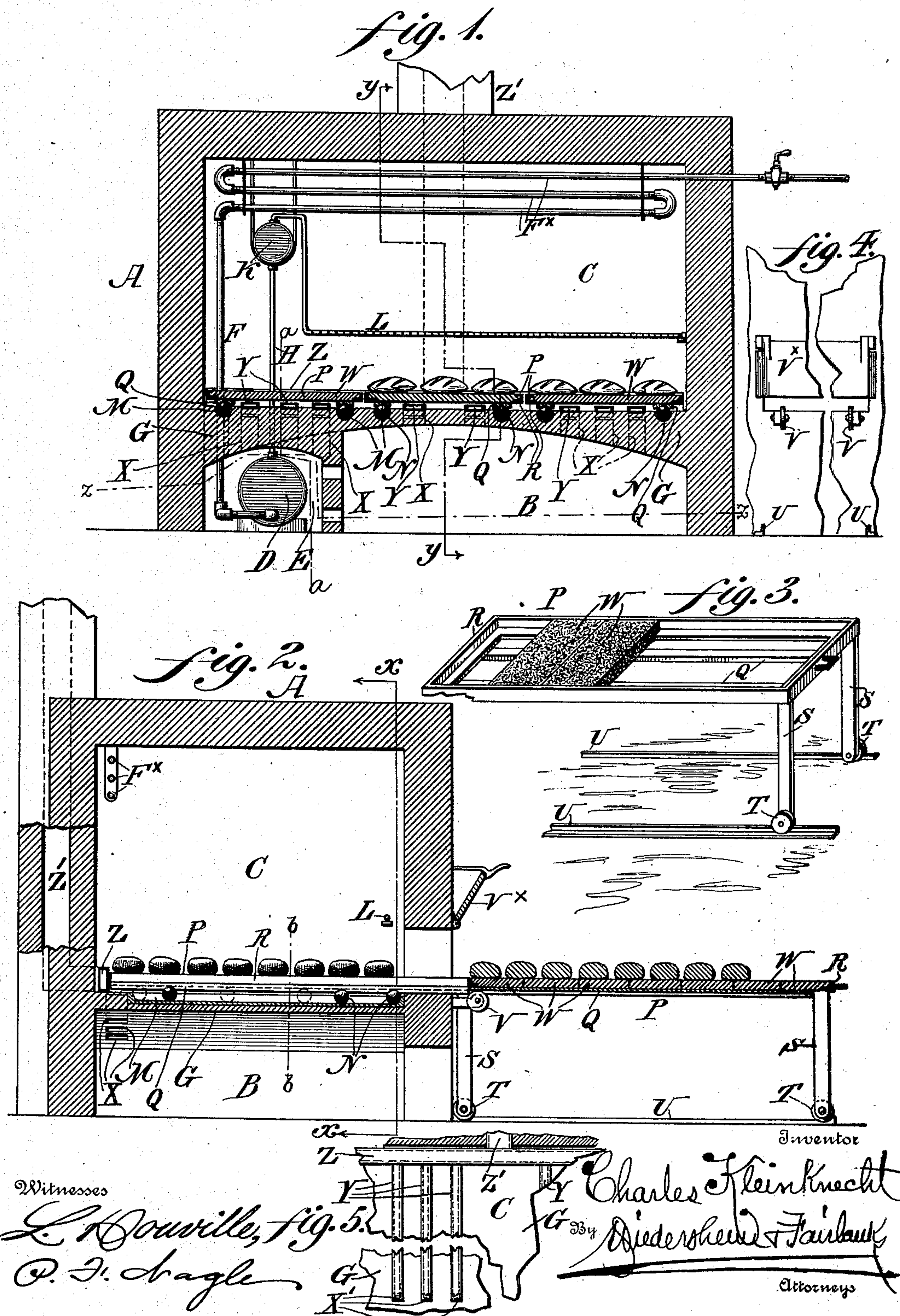


C. KLEINKNECHT.
BAKE OVEN.

(Application filed Feb. 7, 1902.)

(No Model.)

2 Sheets—Sheet 1.

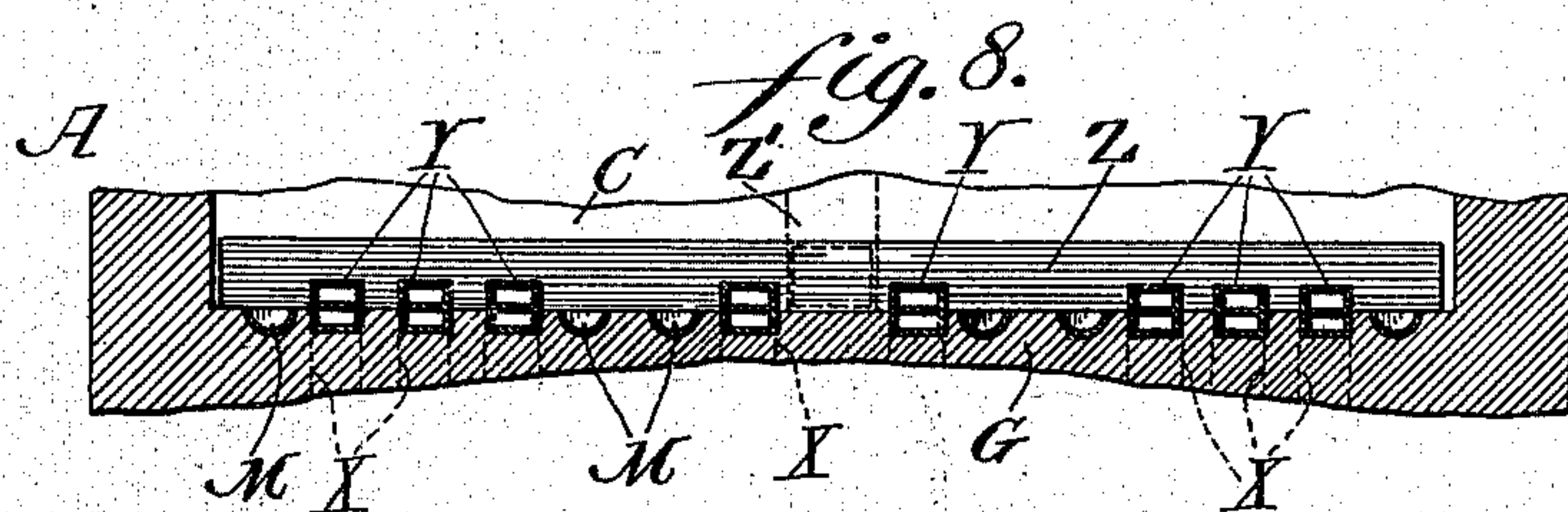
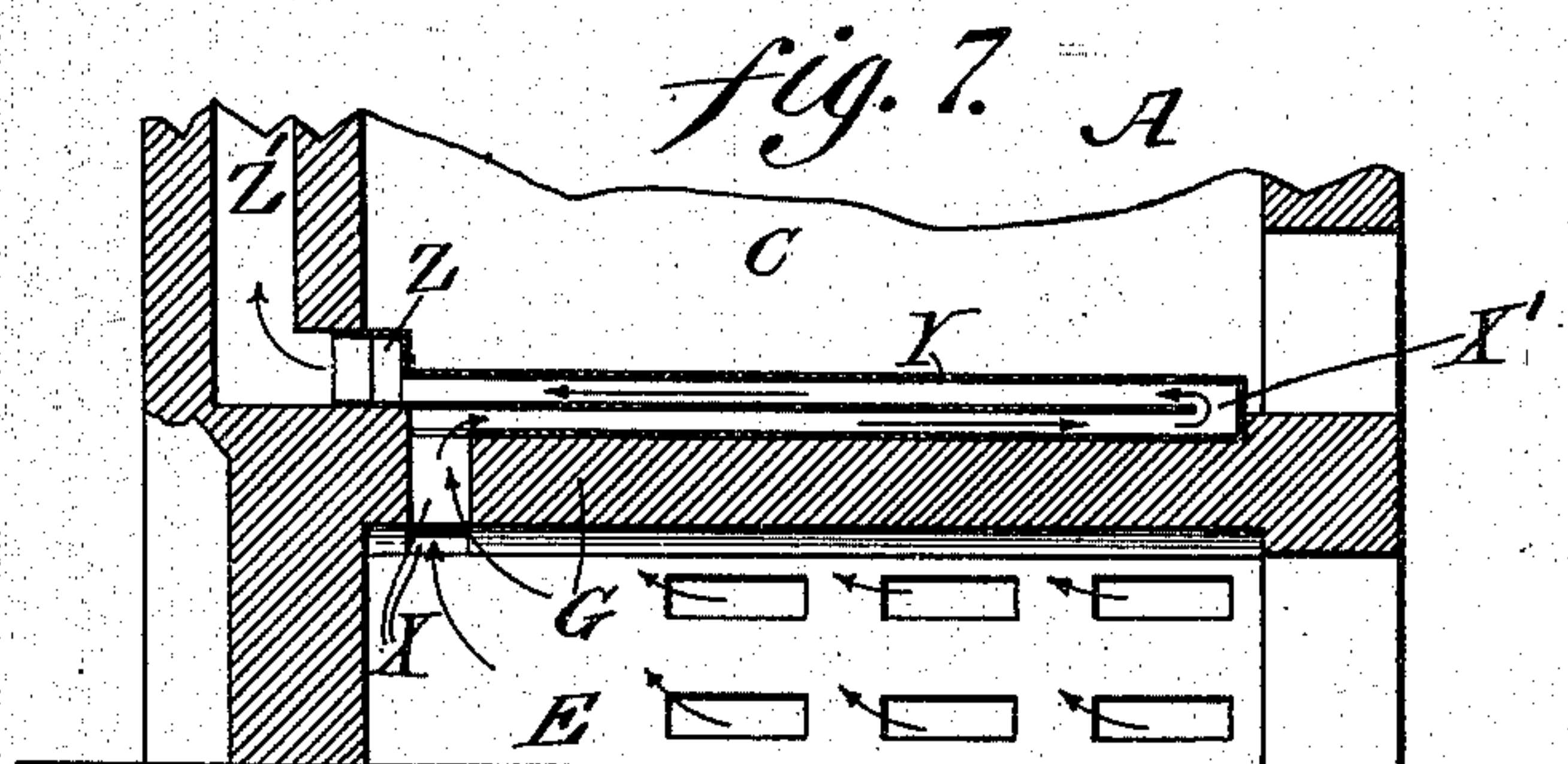
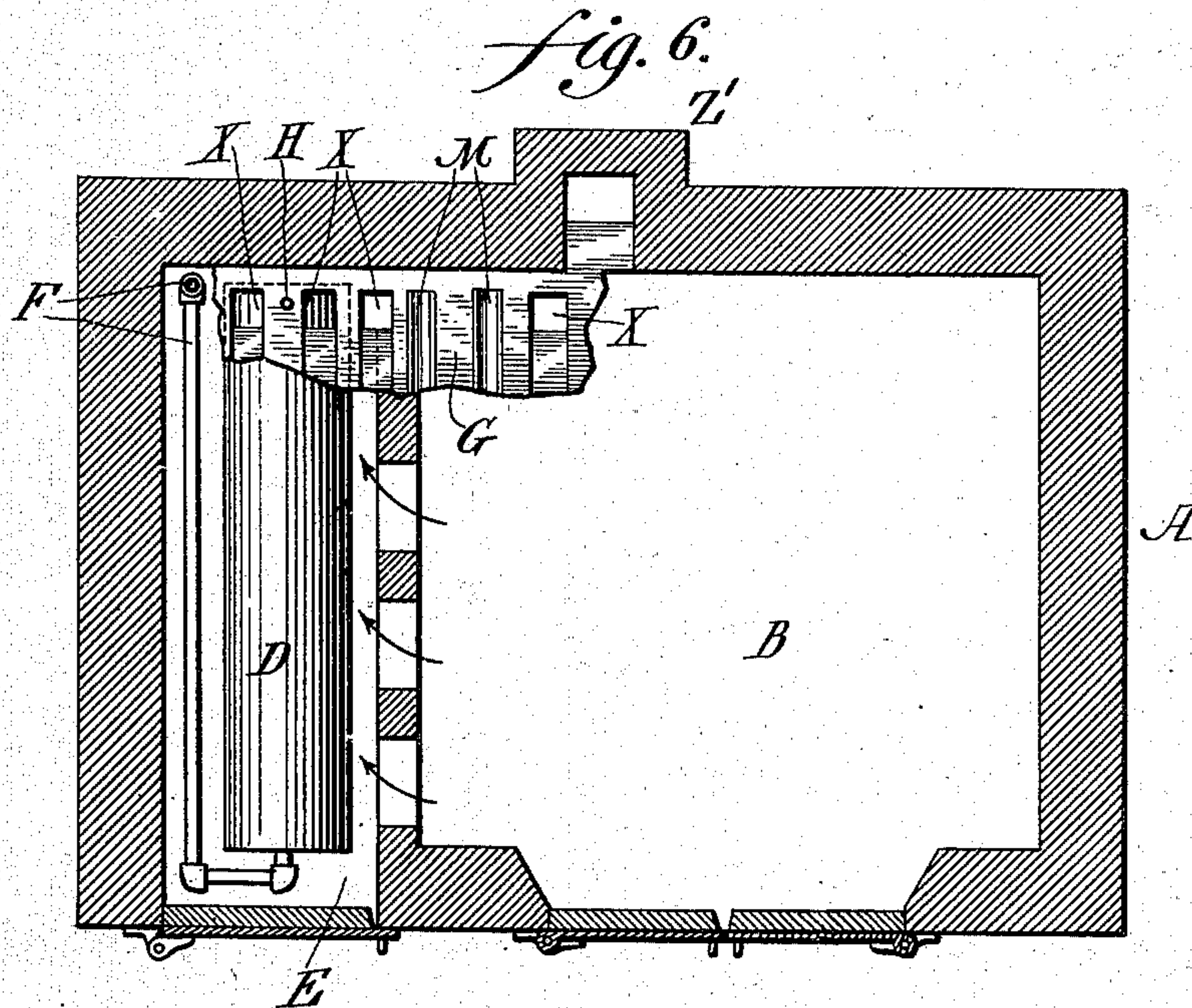


C. KLEINKNECHT.
BAKE OVEN.

(Application filed Feb. 7, 1902.)

(No Model.)

2 Sheets—Sheet 2.



Witnesses

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UNITED STATES PATENT OFFICE.

CHARLES KLEINKNECHT, OF PHILADELPHIA, PENNSYLVANIA.

BAKE-OVEN.

SPECIFICATION forming part of Letters Patent No. 714,491, dated November 25, 1902.

Application filed February 7, 1902. Serial No. 93,015. (No model.)

To all whom it may concern:

Be it known that I, CHARLES KLEINKNECHT, a citizen of the United States, residing in the city and county of Philadelphia, State of Pennsylvania, have invented new and useful Improvements in Bake-Ovens, of which the following is a specification.

My invention consists of a bake-oven having novel features, as will be hereinafter described, and pointed out in the claims.

Figure 1 represents a transverse vertical section on line *x x*, Fig. 2, of a bake-oven embodying my invention. Fig. 2 represents a longitudinal section on line *y y*, Fig. 1. Fig. 3 represents a perspective view of one of the hearths employed. Fig. 4 represents a front view of a portion of the oven. Fig. 5 represents a top view of a portion of the floor of the baking-chamber and supplemental heating-flues. Fig. 6 represents a horizontal section of a portion on line *z z*, Fig. 1. Fig. 7 represents a longitudinal vertical section on line *a a*, Fig. 1. Fig. 8 represents a transverse vertical section of a portion on line *b b*, Fig. 2.

Similar letters of reference indicate corresponding parts in the figures.

Referring to the drawings, A designates an oven, B the furnace or fireplace, and C the baking-chamber thereof.

D designates a boiler which is located in the space E in communication with the furnace B, so as to be heated by the products of combustion therefrom. Connected with said boiler is a pipe F, which passes through the floor G of the oven and is connected with the pipes F^x, whereby the boiler may be supplied with water.

H designates a pipe which is also connected with the boiler D and with a superheater K, from which latter extends the perforated pipe L, it being noticed that said superheater and perforated pipe are within the baking-chamber, so as to be subjected to the heat in the latter. It will now be seen that steam rises from the boiler D, and it is superheated and distributed within the baking-chamber, thus moistening the bread, &c., to be baked, causing a more effective baking of the bread, &c., and vastly improving the crust thereof.

On the floor G of the chamber C are longitudinally-extending channels or ways M, in

which are placed the loose balls N, which form bearings for the hearths P, it being noticed that the under side of the latter has longitudinally-extending grooved cleats Q, which rest on said balls N, so as to guide said hearths in their motions into and out from the baking-chamber C. The hearths consist of the top frames R and the legs S at the outer ends thereof, said legs carrying the wheels T, which are fitted on the tracks U in front of the oven. When the hearths are outside of the oven, the inner ends of their tops are primarily supported on the rollers V, which are mounted some distance from the front wall of the oven on arms which project from said wall, so as to stand out therefrom at the places of the openings in the oven below the doors V^x of the chamber C, there being as many doors V^x as hearths P. It is evident that said doors may be closed without being interfered with by said rollers, and the hearths may be entirely removed from said rollers, leaving the latter fixtures on the exterior of the oven. Supported on the tops of the hearths are the slabs W, of fire-brick or other suitable material, on which the dough is placed preparatory to being introduced into the chamber C, it being now evident that when the doors V^x of the chamber C are opened the hearths may be moved out from the chamber C, the top portions running partly on the rollers V, it being noticed that there are no legs on the inner ends of said hearths. The tops of the hearths are sunken, and the slabs W rest therein inclosed by the walls of said tops, and so are not liable to be shifted or displaced. When a hearth occupies its position within the chamber C to the full extent, its door V^x is then lowered or closed and the baking will occur. When the hearth is again withdrawn, it will be entirely supported outside of the oven, it being noticed that the rollers, owing to their position on the exterior of the oven and below the door-opening, are not subjected to the direct heat of the oven, and, as seen in Fig. 2, the top frame of the hearth is entirely removed from the oven, so that the said hearth may be resupplied with dough and the baked material displaced without subjecting the hand of the baker to the heat within the oven. In Fig. 2 I show one of the hearths within the

chamber and the other outside of the same ready to be entered. In order to increase the heating action in the chamber C, I introduce into the floor G the vertical flues X, which
 5 are connected with the longitudinally-extending flues Y, the latter being connected with the transversely-extending flue Z, with which the smoke-stack or chimney Z' of the furnace B is in communication, it being evident that
 10 the products of combustion pass through the flues X, Y, and Z, while said products also heat the floor G, and so provide increased heating action in the chamber C. It will be seen that the flues Y extend longitudinally
 15 from the flues X in the rear of the floor, over said floor to the front thereof, and are returned rearward therefrom, when they join the transversely-extending flue Z, by which provision the products of combustion traverse an in-
 20 creased space, thus highly heating said floor and the baking-chamber, the effect of which is evident.

The boiler D occupies the chamber or space E at the side of the fireplace B and has its
 25 inner side supported on a wall having openings therein, so that some of the products of combustion from the fireplace B pass through said wall, and so reach the boiler to heat the same, it being noticed that the ceiling of said
 30 space E is low, so that the boiler comes close to the same, whereby the products of combustion are more closely directed to said boiler and act highly upon the same before they reach the rear flues.

35 When the baking is accomplished, the doors of the chamber C are opened, when the hearths are run out and the bread or other article baked may be readily removed therefrom, the position of the hearths then being the
 40 same as that at the right-hand side of Fig. 2.

In Fig. 3 I show several of the fire-bricks as having been removed, so as to illustrate more clearly the construction of the top of the hearth.

45 Various changes may be made in the de-

tails of construction without departing from the general spirit of my invention.

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

1. In a bake-oven, a chamber at the side of the fireplace, a steam-boiler in said chamber, a wall intermediate of said chamber and place, said wall having an opening therein forming a communication between said cham-
 55 ber and place, a vertically-extending flue at the rear of said chamber, and a horizontally-traversing flue on the ceiling of the boiler-chamber, said flues being in communication with each other, and the horizontal flue be-
 60 ing in communication with the chimney of the oven.

2. In a bake-oven, a steam-boiler adapted to be heated by the products of combustion from the fireplace, in combination with a su-
 65 perheater connected with said boiler, a spraying-pipe leading from said superheater, a water-supply pipe leading to said boiler, said superheater, spraying-pipe and supply-pipe being in the baking-chamber, a vertical flue
 70 in the floor of said oven, at the rear of said boiler-chamber, a vertical flue in said floor at the rear of said fireplace, a horizontal pipe leading from said flues to the front of said floor, and a return-pipe connected with said
 75 horizontal pipe and with the chimney of the oven.

3. In a bake-oven, the floor of the baking-chamber having a vertical flue therein, in communication with the fireplace at or about
 80 the rear thereof, a pipe leading from said flue to the front of said floor, and a return-pipe leading from said first-named pipe and a transversely-extending pipe at the rear of said floor in communication with said return-
 85 pipe and with a chimney or stack.

CHARLES KLEINKNECHT.

Witnesses:

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