(No Model.) 3 Sheets—Sheet 1.

C. BELLSTEDT.

BAKER'S OVEN.

No. 341,874. Patented May 18, 1886.

Fig. 1.

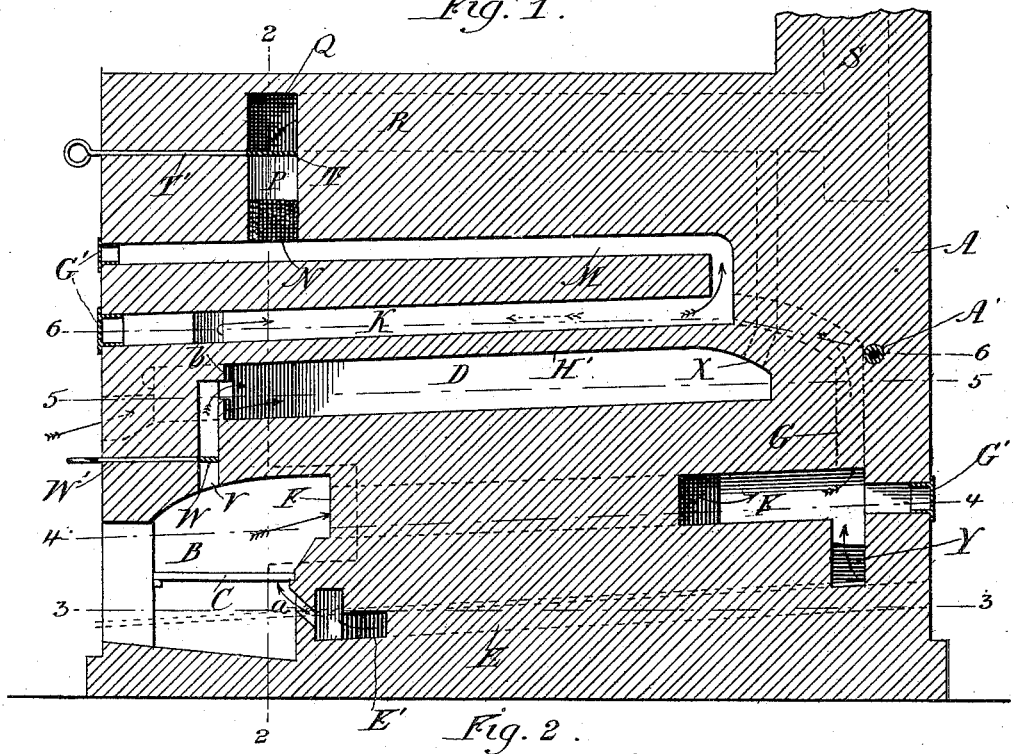

Fig. 2.

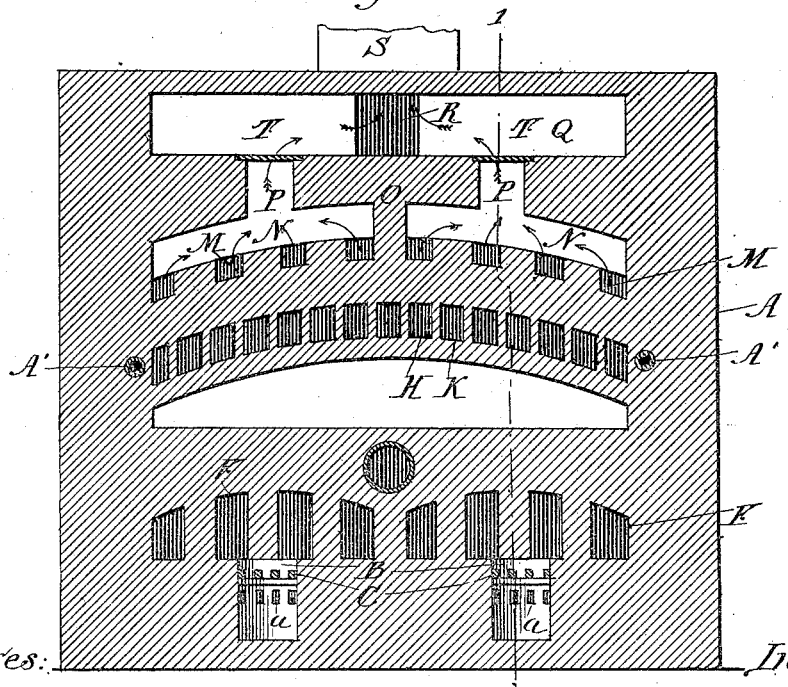

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Fig. 4.

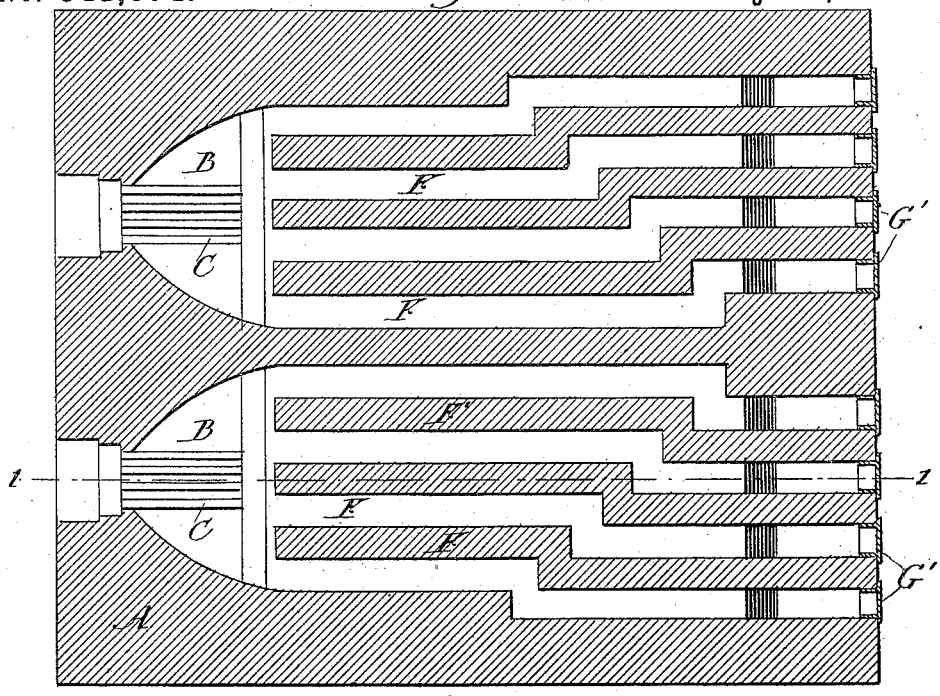
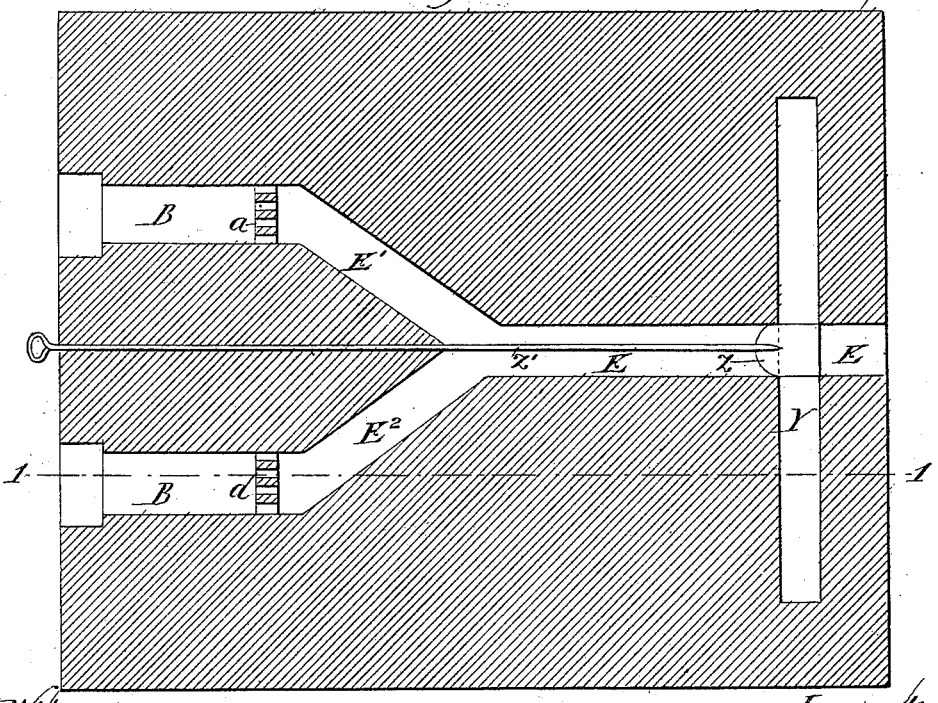


Fig. 3.



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(No Model.) 3 Sheets—Sheet 3.

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BAKER'S OVEN.

No. 341,874. Patented May 18, 1886.

Fig. 6.

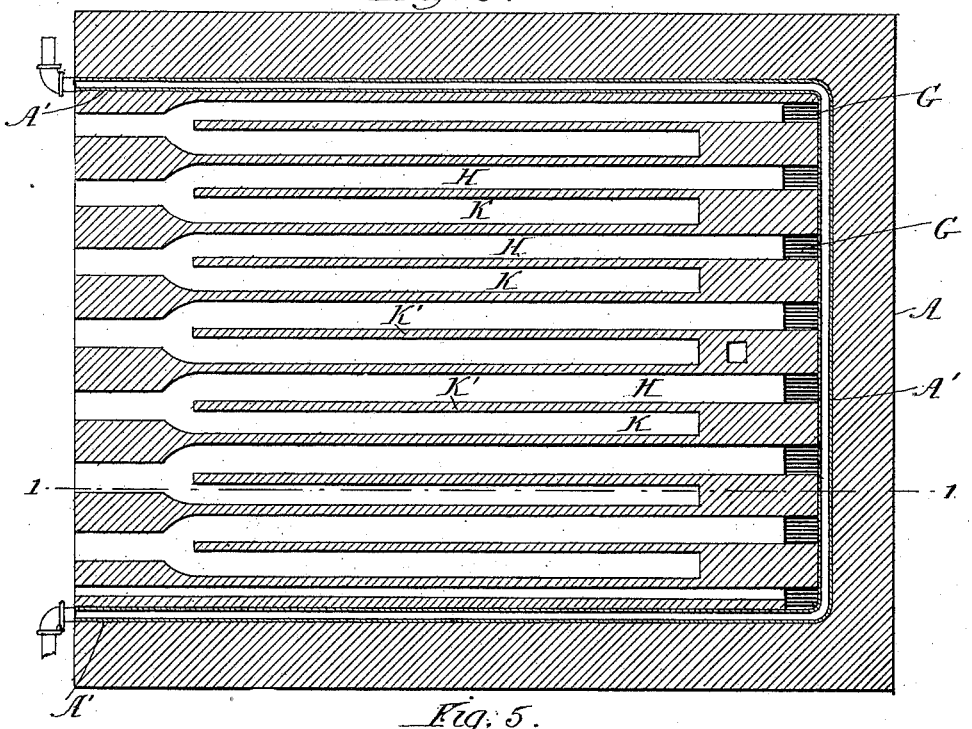
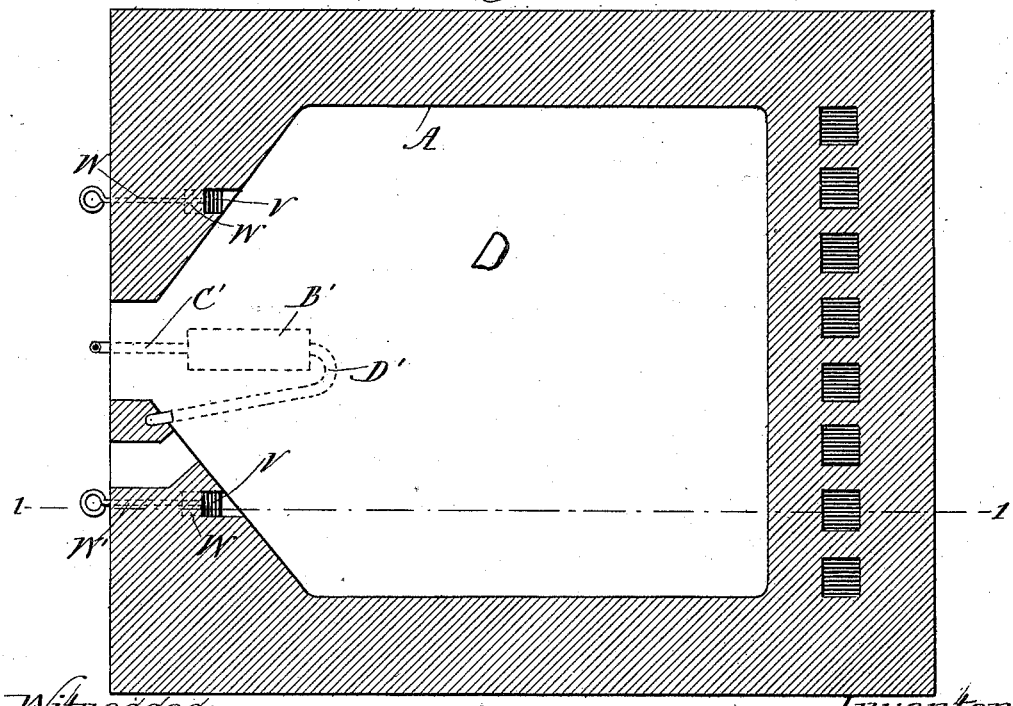


Fig. 5.



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UNITED STATES PATENT OFFICE.

CARL BELLSTEDT, OF CHICAGO, ILLINOIS, ASSIGNOR OF ONE-HALF TO WILLIAM SCHMIDT, OF SAME PLACE.

BAKER'S OVEN.

SPECIFICATION forming part of Letters Patent No. 341,874, dated May 18, 1886.

Application filed February 24, 1885. Serial No. 156,891. (No model.)

To all whom it may concern:

Be it known that I. CARL BELLSTEDT, a citizen of the United States of America, residing at Chicago, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in Baking-Ovens, of which the following is a specification, reference being had therein to the accompanying drawings.

My invention relates to certain improvements in baking-ovens.

The object of the invention is to so construct such ovens that the heat obtained may be best utilized, to provide means for cooling the oven quickly when desired, to provide for the sudden heating of the oven when occasion demands, and to retard the heat in its passage from the fire-box to the smoke-stack, in order that the greatest benefits may be derived from it.

To the accomplishment of the above the invention consists of the novel construction of the oven, and in the devices and combination of devices used in connection therewith, as will be described and claimed.

Reference will be made to the accompanying drawings, in which Figure 1 is a longitudinal section through the oven, the section being taken on the lines 1 1 in the remaining figures; Fig. 2, a transverse section on line 2 2; Fig. 3, a horizontal section on line 3 3; Fig. 4, a similar view on line 4 4; Fig. 5, a similar view on line 5 5, and Fig. 6 a similar view on line 6 6.

Like letters refer to like parts in each view.

A represents the masonry of the oven; B, the fire-space; C, the grates, and D the oven proper or baking-space.

At a point near the bottom of masonry there is provided an air-flue, E, which opens into the open air, and, after extending forward a certain distance, as shown in Fig. 3, is formed into two branches, E' E², each of which communicates with the ash-pit through ports *a*, Figs. 1, 2, 3, thus providing means for feeding air to the fuel on the grates, and assisting combustion. The hot air arising from the fire-beds passes into flues F, which open directly thereabove, there being one series of such flues for each grate. Flues F are formed by walls F', Fig. 4, which, as shown, at suitable points are bent at right angles, and then continued back to the rear wall. This construction of walls or partitions F' serves to form an abutment or offset in each flue F, against which the hot gases in their passage through such flues strike, and by which such hot gases are retarded in such flues.

After passing to the rear of flues F the hot gas enters a series of vertical flues, G, one for each of such flues F. Flues G pass upwardly a suitable distance, and are then carried forward until each communicates with a flue, H, situated above the arch H', that forms the ceiling of the oven proper, such arch or ceiling being built of fire-brick, preferably of but the thickness of a single brick. Situated parallel with flues H are a series of flues, K, the two separated by a partition, K', but communicating near the front wall of the oven by forming partitions K' slightly shorter than the flues.

After passing through flues H and K the gases are carried to flues M, situated on a higher plane than flues H K. Flues M, of which there are two series, communicate with two transverse flues or spaces, N, divided by a suitable partition, O, Fig. 2, and flues N in turn communicate through openings P with a transverse chamber, Q. Chamber Q communicates with a rearwardly-extending flue, R, through which connection is made with smoke-stack S. The openings P, which form the means of communication between chambers N Q, are closed by valves T, the operating-rods T' of which pass through the front wall.

In the top wall of each fire-box there is formed a vertical flue, V, closed by a valve, W, the operating-rod W' of which passes through the front wall, flues V at their upper ends communicating through ports *b* with the oven proper. This construction and arrangement is adapted to be utilized whenever it is desired to heat the baking-compartment quickly, in which case the heat is admitted directly to such compartment by opening valves W. At the rear end of the baking-compartment communication is formed with a flue, X, which leads directly to flues R, described as communicating with the smoke-stack. Under certain circumstances it is de-

sirable to cool the ceiling of the baking-oven, and this result I accomplish in the following way: Situated over the cold-air flue E is a transverse flue, Y, communicating with said cold-air flue. The opening through which this communication is formed is adapted, however, to be closed by a valve, Z, the operating-rod Z′ of which passes through the front wall. (See Fig. 3.) Flue Y communicates with each of the flues G, and when valve Z is opened the cold air is admitted through flues Y G to flues H above the ceiling of the baking-compartment, and the cooling of this ceiling accomplished.

Mounted in the masonry is a water-pipe, A′, situated, preferably, on a line with flues H K, and extending around three sides of the oven-walls. This line of pipes protrudes at each end through the front wall, one end being connected with a suitable water-supply, and the other preferably provided with a cock. By this arrangement it will be seen that water supplied to these pipes will be heated, and a constant supply of hot water obtained.

A small boiler, B′, is situated below the baking-compartment, said boiler connecting with a supply-pipe, C′. Connected with the boiler is a second pipe, D′, which opens into the baking-compartment, thus providing for a damp heat, when desired.

The flues are provided with doors G′, as shown.

What I claim is—

1. In a baking-oven, the combination, with the fire-box B and flues F, G, H, and K, of two upper series of horizontal flues, M, and two transverse flues or spaces, N, substantially as described.

2. In a baking-oven, the combination, with the fire-box B and flues F, G, H, K, and M, of the flues or spaces N, divided at the center, the chamber Q, the intermediate communicating openings, P, and valves T, the flues R, leading from said chamber to the smoke-stack, substantially as described.

3. In a baking-oven provided with flues for the passage of air and gases from the fire-box to the smoke-stack, a water-pipe, A′, located in the masonry about on a line with the baking-compartment and in close proximity to said flues, and extending around three sides of the walls, with any proper connection with a water-supply at one end, and provided with a cock on the other end, substantially as described.

In testimony whereof I affix my signature in presence of two witnesses.

CARL BELLSTEDT.

Witnesses:

M. J. CLAGETT,

LOUIS NOLTING.