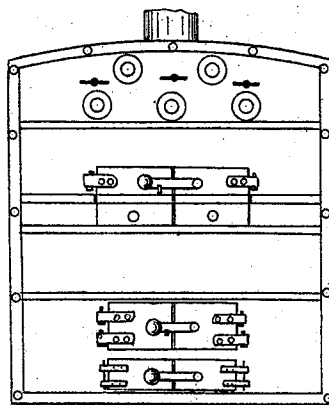
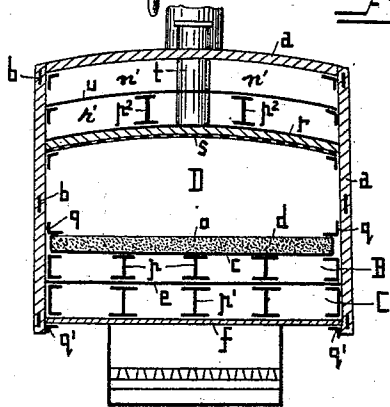
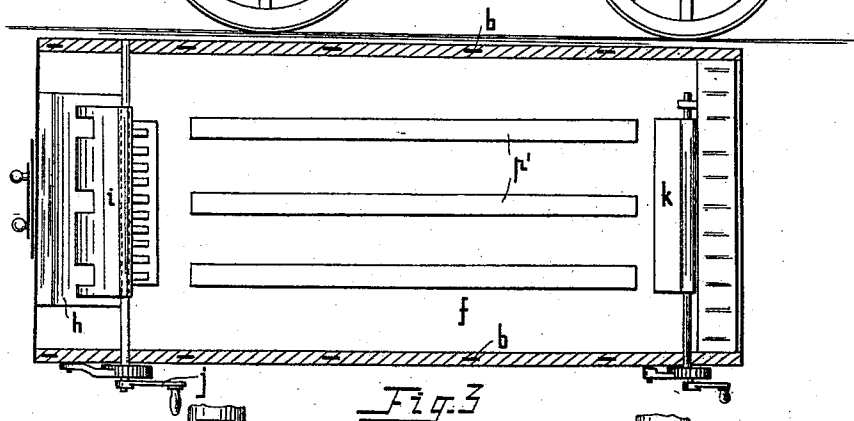
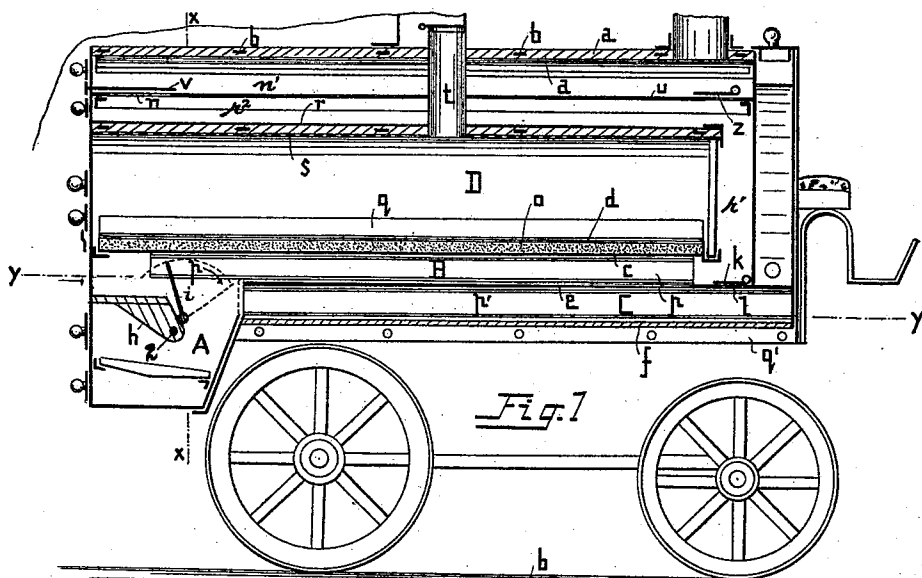


(No Model.)

L. KUBALA.
BAKING OVEN.

No. 495,347.

Patented Apr. 11, 1893.



Witnesses: Fig. 2
H. H. Boller
C. M. M. M.

Fig. 4 Inventor:-
Ludwig Kubala,
by his attorney Wm. E. Foulter.

UNITED STATES PATENT OFFICE.

LUDWIG KUBALA, OF KÖNIGLICHE, WEINBERGE, NEAR PRAGUE, AUSTRIA-HUNGARY.

BAKING-OVEN.

SPECIFICATION forming part of Letters Patent No. 495,347, dated April 11, 1893.

Application filed October 20, 1892. Serial No. 449,537. (No model.)

To all whom it may concern:

Be it known that I, LUDWIG KUBALA, a subject of the Emperor of Austria-Hungary, residing at Königliche, Weinberge, near Prague, in Austria-Hungary, have invented certain new and useful Improvements in Baking-Ovens, of which the following is a specification.

The object of this invention is so to arrange baking ovens that the combustion gases generated by the fire enable, by certain adjustable apparatus, not only a saving of fuel, time and labor to be realized but also the temperature within the oven to be at all times so controlled that the baking can take place with great regularity so as to produce perfectly uniform goods.

The oven may be constructed of iron or other sheet metal and lined with brickwork, or it may be built entirely of brick or masonry.

In the accompanying drawings Figure 1 is a vertical longitudinal section of the improved baking oven mounted on traveling wheels. Fig. 2 is a cross section on line *xx* and Fig. 3 a horizontal section on line *yy* Fig. 1. Fig. 4 is a rear view of the oven.

The oven is jacketed or provided with double sheet metal walls *a* with iron ribs *b*. The interior is lined with fire-proof material.

The sole or baking plate *o* of the oven is double consisting of a lower thick plate *c* and of an upper thin plate *d*. This plate is adapted freely to expand between angle irons *q* and supports *p*. The inner space is filled with ashes or cinders so as to protect the goods being baked from burning. Underneath the baking plate *o* is arranged an intermediate plate *e* and under the latter the sole proper *f* both carried by the supports *p'* and angle irons *q'* and also expansible.

The fire chamber A which will be more particularly described farther on, is arranged above the inclined plate *h*, a door or damper *i* (Figs. 1 and 3) being provided to cut off connection with the heating flue B which is done by turning it in the direction of the arrow (Fig. 1) by means of the crank *j* (Fig. 3). When this door is brought into the position indicated in dotted lines the products of combustion are cut off from the flue B and caused

to pass through the flue C and through the openings *l* through which when the door or valve *k* is open they rise and travel through flues *r'*, *r''*, along the roof *r* of the baking chamber; then they pass through the open damper *n* and flue *n'* into the chimney.

On the roof *r* are arranged carriers *p''* for an intermediate roof *u* to rest upon; the latter is provided with slides *v* and a door or valve *z*.

In the center of the baking chamber D there is a channel or flue *t* for the discharge of the steam.

Owing to the arrangement of the double flue B C and the valves or dampers *i k* and *z* and the sliding door *v* it is possible to adjust the degree of heat which should prevail in the oven to a nicety. This is done in the following manner: When it is found that the baking plate is sufficiently heated for baking or if for any reason it be desired not to heat it further, the flue B is closed by means of the valve or door *i*. The combustion gases therefore pass through the open door *k* to the roof *r*, and passing over and along this roof, heat the baking chamber D from the top; then the sliding doors *v* being open they pass into the upper space and thence escape through the chimney. When however it is desired to heat the baking plate *o* the flue B is opened by turning the valve to the position indicated in full lines in Fig. 1 and also by opening the door *z*, whereby the combustion gases directly escape into the chimney.

The reservoir E serves for heating the water required in baking.

Another novel feature of this baking oven is the arrangement of the furnace or fireplace, in which there is provided a fire-brick bridge *h* placed over the grate and somewhat inclined thereto at the lower part. In this bridge is fitted a round rod 2 preferably of wrought iron, intended to support the mass of fire-bricks in case the bridge should be cracked or damaged. The object of the arrangement of this bridge in the furnace is the combustion of the smoke, &c., and it is accomplished as follows: When the fire is first lighted the progress of the smoke or gases is stopped and they are sent back into the flame freely developing behind the said bridge so

that the flame absorbs the smoke and gases. In further attending to the fire care should be taken always to push the carbonized coal behind the bridge and to place a sufficient supply of coal in front of the bridge. In this manner the coal undergoes a kind of dry distillation process, the smoke and gases being retained by the bridge and reabsorbed by the fire gases developing behind the bridge and which are free from smoke.

I claim—

1. In a baking oven, the combination with a suitable casing, of a baking chamber within said casing and provided with a baking plate and a covering plate or roof, heating flues arranged beneath said baking plate, one of which flues is adapted to conduct the products of combustion into contact with the baking plate, a heating flue arranged above the covering plate of the baking chamber and communicating with the other heating flue and adapted to conduct the products of combustion into contact with the said roof, a chimney communicating with the flue above the roof and with the flues below the baking plate valves or dampers arranged to control the communication between the chimney and the several heating flues, a fire chamber arranged within the oven casing at one end of the latter and in constant communication with the lowermost heating flue, and a damper adapted to throw the intermediate heating flue into and out of communication with said fire chamber, as and for the purpose specified.

2. In a baking oven, the combination with the oven casing of a baking chamber within said casing and provided with a baking plate and a covering plate or roof, a plate *e*, arranged beneath the baking plate and forming between the latter and the sole of the oven heating flues B and C, a plate *u* arranged between the roof of the baking chamber and that of the oven casing and forming flues *r'* *n'*, as described, a chimney communicating with said flue *n'* and with the flues B, C, a damper *v*, adapted to control the communication between flues *r*² *n'*, a damper *k*, adapted to control the communication between the

flues *r'* C, and a damper *z* adapted to control the communication between the chimney and flue *r'*, a fire chamber within the oven casing near one end of the latter and in constant communication with flue C, and a damper *i*, adapted to control the communication between said fire chamber and the flue B, as and for the purpose specified.

3. In a baking oven, the combination with the oven casing of a baking chamber within said casing and provided with a baking plate and a covering plate or roof, a plate *e*, arranged beneath the baking plate and forming between the latter and the sole of the oven heating flues B, and C, supports *p*, carried by said plate *e*, angle pieces *q*, carried by the oven casing, and between which supports and angle pieces the baking plate is mounted and adapted to expand, as described, a plate *u* arranged between the roof of the baking chamber and that of the oven casing and forming flues *r'* *n'*, as described, a chimney communicating with said flue *n'* and with the flues B, C, a damper *k*, adapted to control the communication between the flues *r'* C, a damper *v*, adapted to control the communication between flues *r*² *n'*, and a damper *z* adapted to control the communication between chimney and flue *r'*, a fire chamber within the oven casing near one end of the latter, and in constant communication with flue C, and a damper *i*, adapted to control the communication between said fire chamber and the flue B, as and for the purpose specified.

4. In a baking oven, the combination with the oven casing of a fire chamber within the same, and provided with a grate, and a fire bridge *h*, arranged in a backwardly-inclined position above the grate, for the purpose specified.

In testimony that I claim the foregoing as my invention I have signed my name in presence of two subscribing witnesses.

LUDWIG KUBALA.

Witnesses:

ADOLPH FISCHER,
JOSEF VORTREL.