

No. 649,359.

Patented May 8, 1900.

E. K. B. ROHARDT & F. A. TEIFKE.
KILN, FURNACE, OR OVEN FOR CERAMICS.

(Application filed Aug. 12, 1899.)

(No Model.)

2 Sheets—Sheet 2.

Fig. 2.

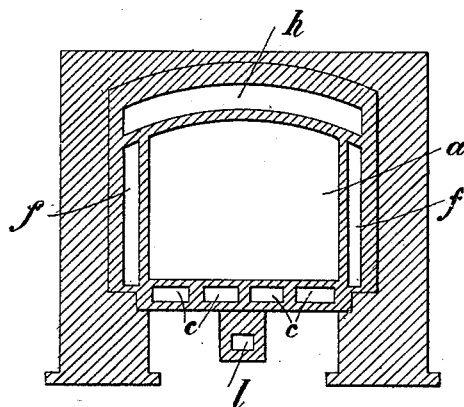
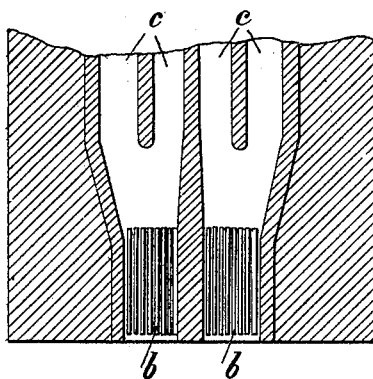


Fig. 1.



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UNITED STATES PATENT OFFICE.

ERNST KAY BERNHARD ROHARDT AND FRIEDRICH ALBERT TEIFKE,
OF UETERSEN-MOORREGE, GERMANY.

KILN, FURNACE, OR OVEN FOR CERAMICS.

SPECIFICATION forming part of Letters Patent No. 649,359, dated May 8, 1900.

Application filed August 12, 1899. Serial No. 727,090. (No model.)

To all whom it may concern:

Be it known that we, ERNST KAY BERNHARD ROHARDT and FRIEDRICH ALBERT TEIFKE, subjects of the King of Prussia, German Emperor, residing at Uetersen-Moorrege, in the Kingdom of Prussia, Germany, have invented certain new and useful Improvements in Kilns, Furnaces, or Ovens for Ceramics, (for which we have applied for patents in England, No. 11,058, dated May 26, 1899; in France, No. 277,203, dated May 26, 1899; in Belgium, No. 112,239, dated May 26, 1899; in Switzerland, No. 21,234, dated May 23, 1899; in Italy, dated May 23, 1899; in Austria, dated May 27, 1899; in Hungary, No. 8,154, dated May 30, 1899; in Germany, dated May 6, 1899; in Sweden, No. 891, dated May 23, 1899; in Norway, No. 11,184, dated May 26, 1899; in Denmark, No. 542, dated May 20, 1899, and in Russia, No. 7,872, dated May 17, 1899,) of which the following is a specification.

This invention relates to a kiln, furnace, or burning-oven for ceramics, and has for its object the burning of such articles by radiating heat only, so that the objects to be burned do not come at all in contact with the flame and gases of combustion, whereby the burning is effected much more cleanly and evenly and with much less waste than is the case otherwise.

In order that this invention may be the better understood, we now proceed to describe how the same may be carried into effect, reference being had to the accompanying drawings and to the letters marked thereon.

Like letters refer to like parts in the various figures.

Figure 1 shows a longitudinal section through an oven or furnace constructed according to this invention. Fig. 2 shows a transverse section therethrough. Figs. 3 and 4 show details.

A chamber *a* for the reception of the articles to be burned, completely closed against the flame and gases of combustion, consists, preferably, of fireproof plates or slabs selected as thin as possible, so that the heat may pass as quickly as possible. The chamber *a* is surrounded by the fire and smoke flues, which are arranged so that the flames and hot gases

proceeding from the grate *b* pass below the chamber *a*, through several flues *c*, into a flue or chamber *d* at the back of the chamber *a*, from which they pass through side flues to return to the front into a chamber *g*, whence they pass over the top of the chamber *a* to the uptake *l*.

In order to produce sufficient circulation of air in the chamber *a*, air-suction pipes *k* are provided in the front of the furnace, in which the air passing to the chamber *a* is heated through the hot wall and gases surrounding the pipe or pipes. The moist air or vapors escape from the chamber *a* by an exit *m*, carried through the flue *b* into an open air flue *l*. The circulation of air may be regulated by a slide *o*, inserted into the flue *l*.

The wall or partition which separates the smoke-flue or chamber *g* from the flue *c* may be formed as a slide *p*, so that, if desired, the gases may pass direct to the uptake over the top of the chambers *a* instead of passing also below at the back and sides thereof.

The action of the oven will be obvious from the foregoing description. The hot fire gases give up their greatest heat to the bottom of the chamber *a*, over which the heavy cold air is collected. They then pass to the back of the chamber along the sides, front, and top of the chamber in order to escape through the uptake *l* after having given up their available heat. The burning of the articles in the chamber *a* will thus be very clean, and the circulation of air may be regulated, according to experience or experiment, so as to allow for the greater or less amount of moisture contained in the goods to be burned. The draft of air through the flue *l* will act as a suction to draw fresh air through the pipes *k* and also to draw the moist air from the chamber *a*.

What we claim, and desire to secure by Letters Patent of the United States, is—

1. A kiln or furnace, comprising a casing, a chamber arranged within the casing and having flues along its bottom connecting with a rear end flue which communicates with side flues in turn communicating with a front flue connecting with a top flue, the single top flue embracing the entire top surface of the cham-

ber, the single side flues embracing the entire side surfaces of the chamber, and the single end flues embracing the entire end surfaces of the chamber, and the several flues being
5 so separated that the products of combustion must pass from the bottom flues to the rear end flue, thence through the side flues to the front flue and then to and through the top flue, substantially as specified.

10 2. A kiln or furnace for the purpose described, comprising a casing, a chamber arranged in the casing and having flues extending around its top, bottom, sides and ends, a damper between the forward end flue and the
15 furnace, a grate arranged in the forward end of the bottom flue, air-pipes leading to the flue, an air-chamber in the base of the furnace, and a pipe providing communication

between the said air flue and chamber, substantially as specified. 20

3. A kiln or furnace for the purpose described, comprising a casing, a chamber arranged within the casing and having flues arranged along its top, bottom, ends and sides, an air-flue in the base of the furnace and having
25 communication through a pipe with the chamber, and a valve in said air-flue, substantially as specified.

In testimony whereof we have hereunto set our hands in the presence of two witnesses. 30

ERNST KAY BERNHARD ROHARDT.
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Witnesses:

GUSTAV ACHS,
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