

No. 647,811.

Patented Apr. 17, 1900.

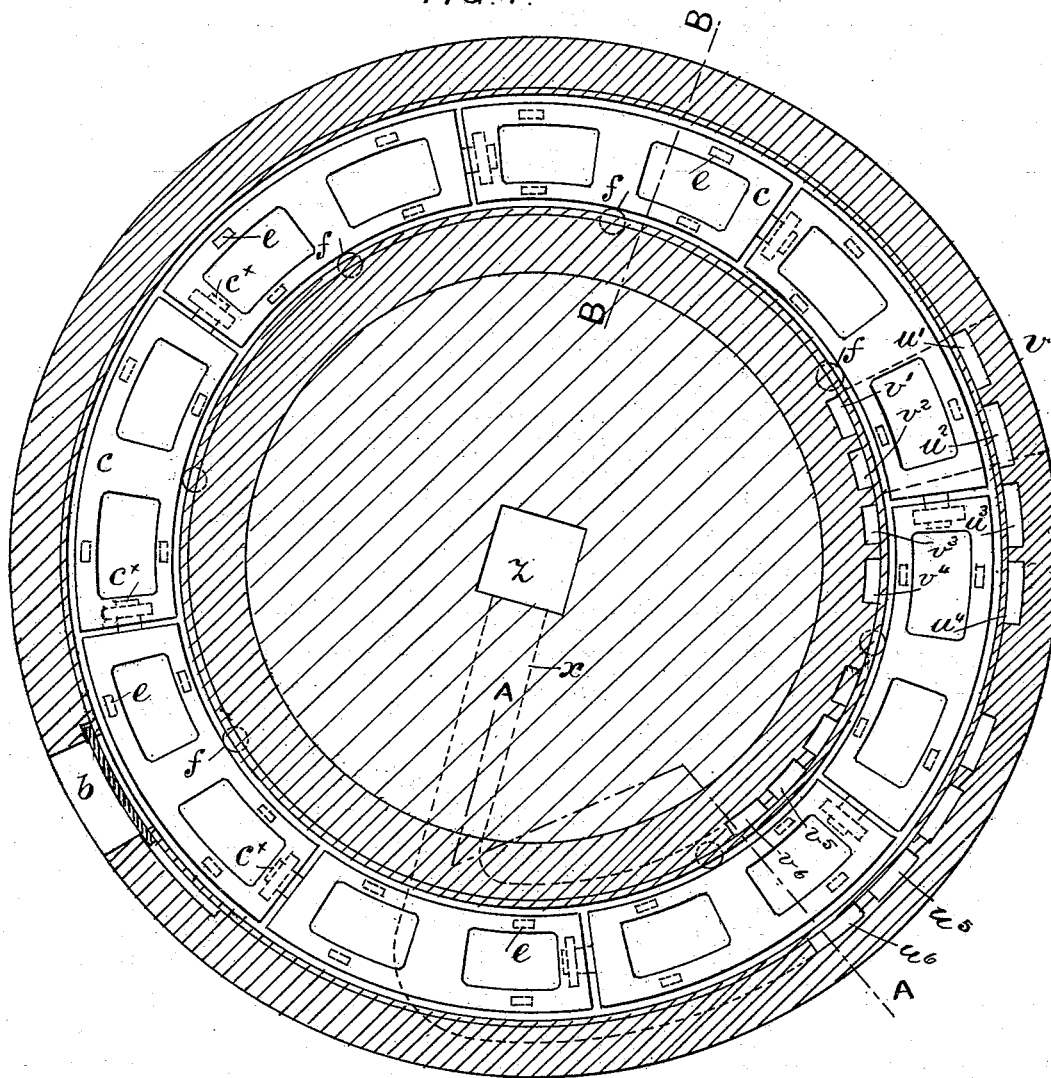
W. DICKEN.
CONTINUOUS MUFFLE FURNACE.

(Application filed Aug. 12, 1899.)

(No Model.)

2 Sheets—Sheet 1.

FIG. 1.



WITNESSES

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FIG. 2.

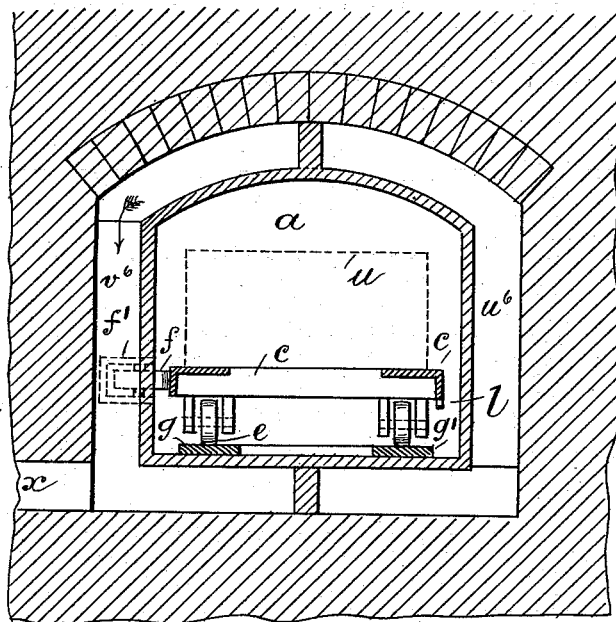
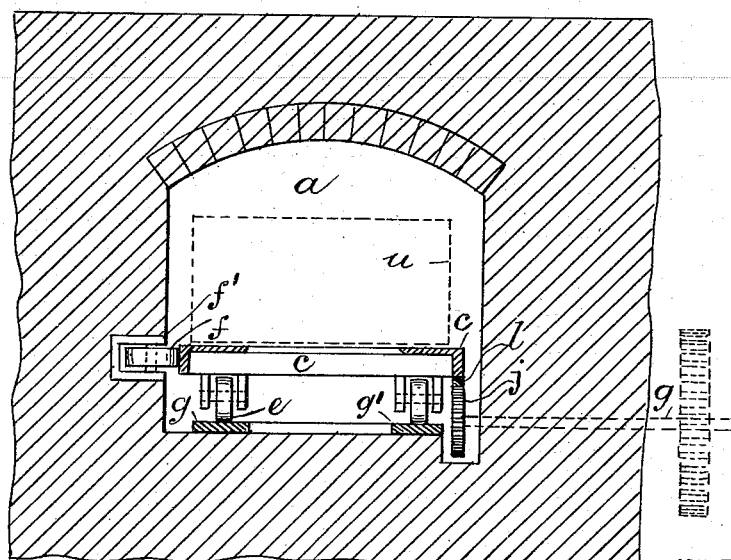


FIG. 3.



WITNESSES

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REISSUED

WILLIAM DICKEN, OF HANLEY, ENGLAND, ASSIGNOR TO WILLIAM WADE,
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CONTINUOUS-MUFFLE FURNACE.

SPECIFICATION forming part of Letters Patent No. 647,811, dated April 17, 1900.

Application filed August 12, 1899. Serial No. 727,014. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM DICKEN, a subject of the Queen of Great Britain, residing at Hanley, in the county of Stafford, England,
5 have invented new and useful Improvements in Continuous-Muffle Furnaces, of which the following is a specification.

This invention is for an improved continuous-muffle furnace or kiln for firing pottery-ware and enameled iron; and it consists in constructing a circular kiln with an entirely-closed muffle having an endless horizontal platform or turn-table therein upon which the goods to be fired are placed and which is capable of being revolved in the muffle by mechanism operated from the outside of the kiln,
15 said kiln having only one opening where the goods to be fired are set in and taken out and with flues arranged so that the flames and
20 hot gases are carried for a portion of the circuit well around the muffle, but do not come in contact with the goods to be fired.

In the accompanying drawings, Figure 1 is a sectional plan of the improved kiln which
25 forms the subject of this invention. Fig. 2 is a vertical section of the muffle in said kiln on line A A; and Fig. 3, a vertical section on line B B, drawn to an enlarged scale.

In the views similar letters refer to similar
30 parts.

I construct a kiln with an entirely-closed circular muffle, as *a*, and with a single opening *b* for obtaining access to the muffle. I place within said muffle an endless platform or turn-table constructed of cast-metal frames, as *c*, forming segments of a circle and coupled, as at *c'*, sufficient play being allowed at the ends of said segmental frames for expansion and contraction, but when coupled forming
35 a complete circular table. The aforesaid table is carried on rollers, as *e*, which revolve on tram-plates *g g'*, that are secured to the bottom of the muffle. The table when moved around is retained in position in the muffle by
40 antifriction-rollers *f*, placed horizontally in wall-boxes *f'*, that are fitted in the inner wall of the muffle. The table is moved around from the outside of the kiln by means of a horizontal shaft *g*, that is fitted in journals
45 and provided at the inner end with a pinion *j*

to work in a rack *l*, formed on or fitted to the under side of the outer edge of the table *c*, and one or more toothed wheels on the outer end of said shaft which gear into a wheel or wheels fitted on a shaft that is provided with
55 a handle for turning said wheels.

The fire-hole is constructed on the opposite side of the kiln to that in which the opening for the goods to be set in or taken out is situated. The flues are arranged in proximity
60 to the fire-hole, extending to about one-third of the circuit on each side of and partly over and under the muffle, and are continued under the muffle to the flue *x*. The fire-hole may be situated at any convenient part of the kiln, as at *v*. The flames and hot gases pass from thence up two adjoining flues on either side of the muffle, as *u' u''* and *v' v''*,
65 and along the top and under the muffle to the next two flues *u''' u''''* and *v''' v''''*, alternately ascending and descending each succeeding two flues until finally passing by the flue *x* into the chimney *z* in the center of the kiln. Dampers are provided at suitable intervals to regulate the heat of the kiln.
75

In applying my invention I place the iron or clay boxes *u* (represented by dotted lines) containing the goods to be fired on the circular platform or turn-table *c*, hereinbefore described, by passing said boxes through the
80 opening *b*, the table being moved slowly around as each box is placed in the kiln. The entrance to the kiln is then closed by a sliding door, and the turn-table, with the ware, is moved around by means of the rack, pinion, and train of wheels previously described.
85 By these means the articles to be fired are gradually heated without coming in contact with the flames and after passing through the greatest heat in the kiln are gradually
90 cooled before being removed from the kiln, thereby preventing the cracking and denting of the pottery. The boxes are independent of each other in transit through the kiln and the muffle is entirely closed during the
95 process of firing the ware.

I claim as my invention—

The combination in a continuous circular muffle furnace or kiln for firing pottery-ware and enameled iron, with a continuous circu- 100

lar muffle having one opening where the goods to be fired are set in or taken out, of a turn-table or circular platform constructed of cast-metal frames of a segmental circular form
5 mounted on rollers and centrally coupled, with horizontal antifriction-rollers fitted in wall-boxes and projecting within the muffle so as to bear against the inner circumference of the turn-table, means for revolving the
10 turn-table from the outside of the muffle, a fire-hole placed on the opposite side of the kiln to that by which access to the muffle is obtained, duplicate flues arranged in proximity thereto for conducting the flames and

hot gases in an upward and a downward 15 course from the fire-hole to a flue or flues along over and under the muffle for a portion of the circuit and passing to a chimney without coming in contact with the goods being fired all substantially as and for the purposes 20 hereinbefore described.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

WILLIAM DICKEN.

Witnesses:

F. W. WAIN,

JNO. WM. MALLETT.