

J. RAPPOLD.
 CONTINUOUS KILN WITH TRAVELING HEARTH.
 APPLICATION FILED OCT. 17, 1907.

981,109.

Patented Jan. 10, 1911.
 2 SHEETS—SHEET 1.

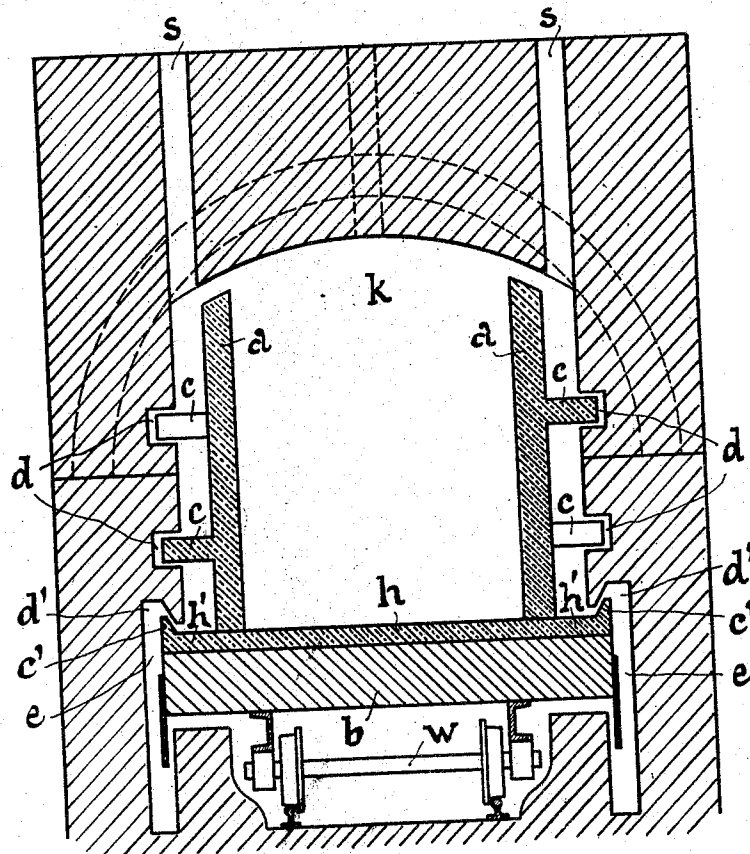


Fig. 1

Witnesses
 L. M. Boulter
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 Johann Rappold
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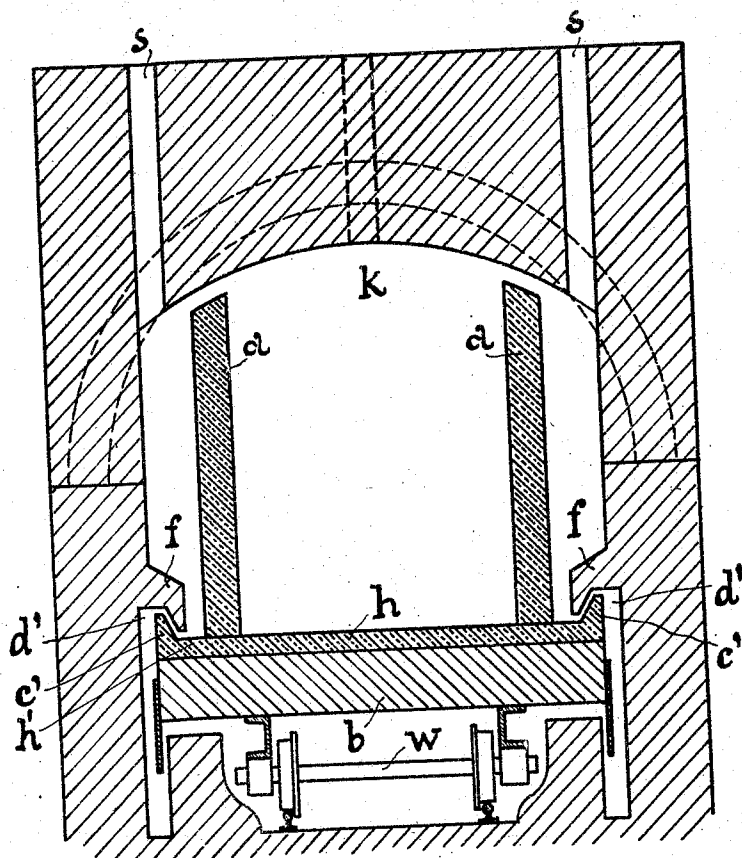


Fig. 2

Witnesses:
L. M. B. Miller
as honest

Inventor
Johann Rappold
By M. C. Boulder
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UNITED STATES PATENT OFFICE.

JOHANN RAPPOLD, OF ALLSWIL, NEAR BASEL, SWITZERLAND.

CONTINUOUS KILN WITH TRAVELING HEARTH.

981,109.

Specification of Letters Patent.

Patented Jan. 10, 1911.

Application filed October 17, 1907. Serial No. 397,943.

To all whom it may concern:

Be it known that I, JOHANN RAPPOLD, a citizen of the Swiss Republic, residing at Allswil, near Basel, Switzerland, have invented certain new and useful Improvements in Continuous Kilns with Traveling Hearths, of which the following is a specification.

This invention relates to kilns or furnaces with traveling hearths of the kind which is provided with projections on the hearth to engage with grooves in the walls of the furnace chamber. The projections, formed of refractory material, according to this invention are sometimes provided with upwardly turned edges and sometimes project without such edges; and holes are provided in the roof of the chamber through which fuel or other material can be fed on to the projections.

The accompanying drawings show in cross-section two constructions of the furnace according to this invention.

In the construction shown in Figure 1, the walls *a* on the traveling hearth *b* are provided at both sides with projections *c* made of refractory material which engages with grooves *d* in the lateral walls of the furnace chamber *k* extending throughout the whole of the length or throughout the length of the burning zone. The lateral projections *c* thus move with the traveling hearth and fuel or some loose packing material such as ashes is charged through the holes *s* in the roof of the furnace chamber. The upturned edges *c'*, on the hearth plate *h* of the carriage *w* traveling on a track are made of the same material as the hearth itself, and engage with the undercut portions *d'* of the widened portions *e* of the furnace chamber. These edges *c'* can be used, as shown in Fig. 1, in conjunction with two series of lateral projections *c*, for hindering the air from passing from the bottom of the chamber into the upper part, loose packing material such as ashes being used in connection with the projections and grooves. The lateral projections *c* need not extend throughout the whole length of the hearth, but could be arranged in a staggered order, in such manner as to form a stepped grate or fuel surface. Or only one of such lateral projections *c* could be used on each side.

In the construction shown in Fig. 2, the ledges *f* project from the lateral walls of the furnace chamber *k* and are provided with

undercut portions *d'* with which engage the edges *c'* of the portions *h'* of the hearth or floor of a carriage *w* traveling on a track. In this case the said portions *h'* constitute the traveling grate or fuel surface. Fuel falling down from the stoking holes of the furnace, falls in the latter constructions on to the projections *f* and on the parts *h'* of the hearth, is burned there to ashes which fall on the portions of the hearth plate situated outside the vertical portion *a*, and make a tight joint thus preventing the admission of air from the bottom of the furnace chamber. The parts *h'* which project outside the vertical wall *a* serve the same purpose as the projections *c* in Fig. 1. The ashes are removed from the furnace during the movement of the hearth. In the first construction, the projections *c* and *c'* receive the fuel falling down from above, which fuel is then burned to ashes and in that state constitutes a tight joint between the hearth and the furnace chamber and is then removed from the furnace chamber during the movement of the hearth. It is of course understood that in both constructions sand instead of ashes can be used for forming a tight joint between the hearth and the furnace chamber.

What I claim as my invention and desire to secure by Letters Patent is:—

1. In a furnace a traveling hearth, a plurality of horizontal lateral projections thereon formed of ceramic material and disposed in several horizontal planes, continuous grooves in the walls of the furnace chamber to engage one of said projections on both sides of the hearth, and passages through the roof of the chamber through which fuel or other material can be fed on to said projections and reduced there to ashes so as to make a tight joint on the traveling hearth.

2. In a furnace a traveling hearth, a plurality of horizontal lateral projections thereon formed of ceramic material and disposed in several horizontal planes, continuous grooves in the walls of the furnace chamber to engage said projections, and passages through the roof of the chamber through which fuel or other material can be fed on to said projections and reduced there to ashes so as to make a tight joint on the traveling hearth.

3. In a furnace a traveling hearth, a plurality of horizontal staggered lateral projections thereon, formed of ceramic material

and disposed in several horizontal planes to form a stepped grate for fuel, continuous grooves in the walls of the furnace chamber to engage one of said projections on both sides of the hearth, and passages through the roof of the chamber through which fuel or other material can be fed on to the projections and reduced there to ashes so as to make a tight joint on the traveling hearth.

10 4. In a furnace a traveling hearth, a plurality of horizontal staggered lateral projections thereon, formed of ceramic material and disposed in several horizontal planes to form a stepped grate for fuel, continuous

grooves in the walls of the furnace chamber to engage said projections, and passages through the roof of the chamber through which fuel or other material can be fed on to the projections and reduced there so as to make a tight joint on the traveling hearth.

In witness whereof I have hereunto set my hand in the presence of two witnesses.
Basel, October 5, 1907.

JOHANN RAPPOLD.

Witnesses:

HANS STICKELBERGER,
GEO. GIFFORD.