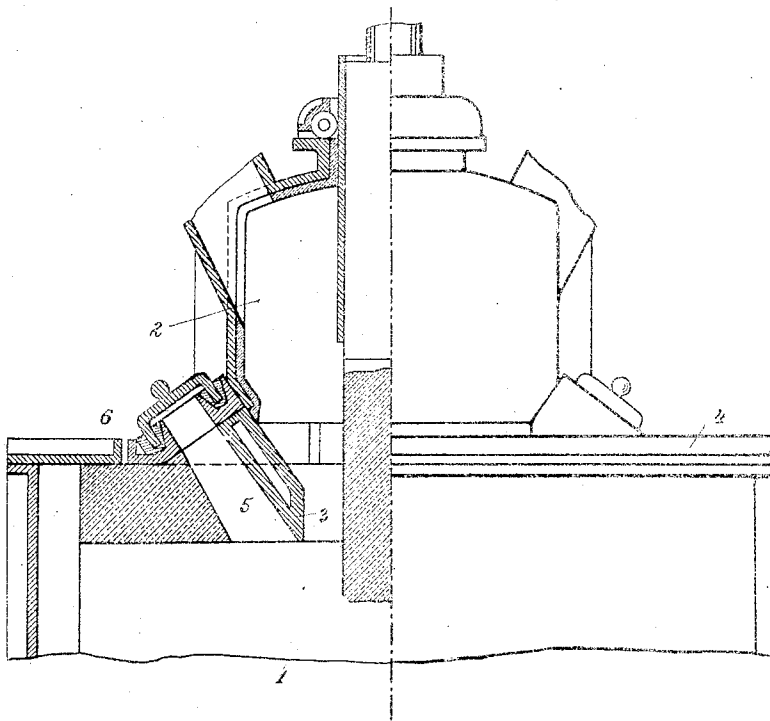


A. HELFENSTEIN.
ELECTRIC FURNACE WITH RAISED CHARGING PIT.
APPLICATION FILED JUNE 12, 1909.

942,068.

Patented Dec. 7, 1909.



Witnesses

R. Goodstein
E. Schallinger

Inventor
Alois Helfenstein
by J. Singer
Att'y

UNITED STATES PATENT OFFICE.

ALOIS HELFENSTEIN, OF VIENNA, AUSTRIA-HUNGARY.

ELECTRIC FURNACE WITH RAISED CHARGING-PIT.

942,068.

Specification of Letters Patent.

Patented Dec. 7, 1909.

Application filed June 12, 1909. Serial No. 501,837.

To all whom it may concern:

Be it known that I, ALOIS HELFENSTEIN, a citizen of Switzerland, and residing at Vienna, in the Province of Lower Austria, Austria-Hungary, have invented new and useful Improvements in Electric Furnaces with Raised Charging-Pits, of which the following is a specification.

In electric furnaces with raised charging pit it has been impossible or difficult to guard the entrance of the mixture into the electric hearth and to regulate the working of the furnace from another place.

According to the present invention the difficulties are overcome by providing broad gas-tight closed openings in the roof of the furnace and beneath the charging-pit.

The drawing shows the upper part of a furnace in vertical elevation partly in section.

On the proper furnace or the electric melting hearth 1 is raised or set up a closed charging pit 2, comprising the vertical electrode and advantageously suspending or running into the hearth or furnace by a watercooled cone 3. Joining with this cone but independently of the charging-pit 2 are provided in the roof 4 of the furnace 1 broad openings or slots 5, directed to the center of the hearth and tightly closed by sand sealed covers 6. These openings permit access to and guarding of the heating zone and entrance of the mixture in the electric melting hearth also during the charging period. They are useful for the removal of slag and crusts, for ascertaining any breaking of the electrode and for removal of the broken part.

The openings permit also to introduce ingredients to correct the mixture, when disturbances occur, which require an interruption of the working. Without such a device these disturbances present a danger to the security and the existence of the furnace. These openings prevent also the choking of the furnace and act as safety valves in cases of too high gas pressure avoiding so an escaping of gas through the high mixture-pile in the charging pit and the charging tubes. By these slots the closed furnace possesses all advantages of an open furnace without the disadvantages of the same.

Having now described my invention what I claim is:

1. In an electric furnace with raised charging pit, broad slots or openings in the roof of the furnace laterally and around the charging pit, these openings being closed gas-tight by removable sand sealed covers substantially as described and illustrated.

2. In an electric furnace with raised charging pit, a cone suspending into the melting hearth or furnace, the roof of the hearth being provided with a plurality of openings adjacent this cone and directed to the center of the hearth and sand covers closing these openings substantially as described and illustrated.

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

ALOIS HELFENSTEIN.

Witnesses:

ROBERT HEINGARTNER,
IGNAZ KNOR SCHNAEHL.