(No Model.)

T. & J. CUMMINGS.

COKE OVEN.

No. 523,397. Patented July 24, 1894.

Fig. 1.

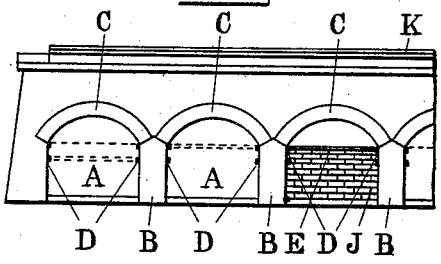

Fig. 2.

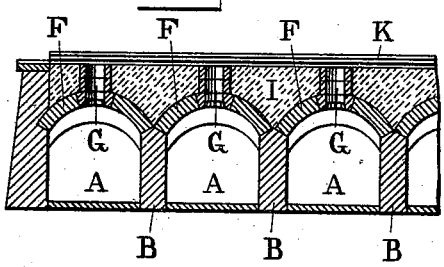

Fig. 3.

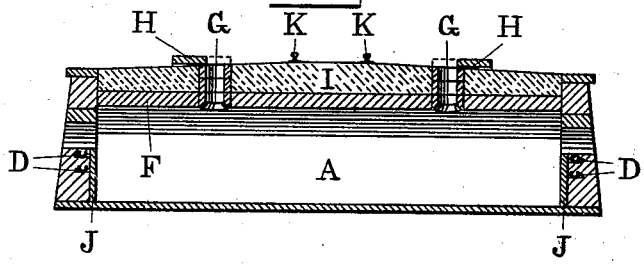

Fig. 4.

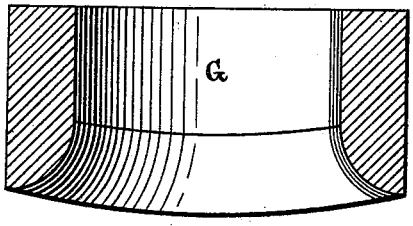

Fig. 5.

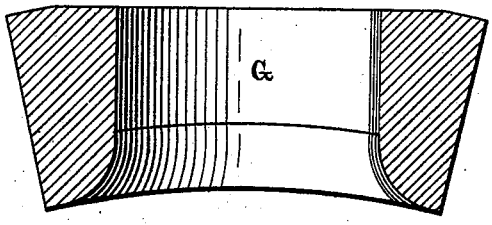

Fig. 6.

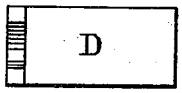

Fig. 7.

Witnesses
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UNITED STATES PATENT OFFICE.

THOMAS CUMMINGS, OF HARTRANFT, TENNESSEE, AND JOSEPH CUMMINGS, OF BROOKSIDE, ALABAMA.

COKE-OVEN.

SPECIFICATION forming part of Letters Patent No. 523,397, dated July 24, 1894.

Application filed March 26, 1894. Serial No. 505,225. (No model.)

To all whom it may concern:

Be it known that we, THOMAS CUMMINGS, of Hartranft, in the county of Claiborne, State of Tennessee, and JOSEPH CUMMINGS, of Brookside, in the county of Jefferson and State of Alabama, citizens of the United States, have invented certain new and useful Improvements in Coke-Ovens; and we do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

Our invention relates to improvements in that class of coke ovens having longitudinal arched chambers with arched openings at both ends to facilitate the drawing of the coke from the oven; and the objects of our improvement are, first, to provide a battery of coke ovens of that description that can be cheaply constructed to adapt the chambers to stand the intense heat to which they are subject and are operated with less expense than the ovens now in general use; second, to construct coke oven chambers of that class in which the arch or crown walls of the chambers will not connect with the arch or wall over the openings, the said construction permitting repairs on the arch of the opening, or the walls above the openings, or on the crown arch of the chambers without interference with each other; third, to provide coke oven chambers having arched openings at both ends of the chambers the openings partly closed with temporary walls before filling the ovens the jambs of the openings provided with lazy bars in supports as shown to facilitate the leveling of the coal; fourth, to provide coke oven chambers with tunnel heads in sections, the bottom section having a bell mouth formed to the circle of the chamber arch to permit the free exit of the gas, the outside of the tunnel head on two sides formed wedge shaped on the radial line of the chamber arch to fit the brick work of the arch.

We attain these objects by the construction and arrangement of the parts shown in the accompanying drawings, in which—

Figure 1, is a vertical front view of part of a battery of coke oven chambers located side by side. Fig. 2, is a vertical sectional view of the same through the center of the tunnel heads. Fig. 3, is a vertical cross sectional view of the same through the center of one of the coke chambers. Fig. 4, is an enlarged detail vertical sectional view of the bottom section of one of the tunnel heads through the center in the longitudinal direction of the chamber. Fig. 5, is a vertical cross sectional view of the same through the center. Fig. 6, is an enlarged detail top view of a metallic lazy bar support. Fig. 7, is a vertical sectional view of the same through the center.

Similar letters refer to similar parts throughout the several views.

In the drawings A represents a series of coke oven chambers in a battery of coke ovens the chambers placed side by side, having a series of division walls B separating the chambers, the chambers are constructed with arched openings on both ends, the openings are made the full width of the chambers to give free access to draw the coke, the outside and division walls to the springing of the arches are usually constructed of rock, but fire brick, or part fire brick and other suitable material can be used if desired.

The outside walls of the ovens at both ends of the chambers have segmental arches over them, to form an inclosure to the top part of the chambers, the said arches are made of brick or of other suitable material. The jambs of the openings below the arches are provided with metallic lazy bar supports D built in the walls, the lazy bar E when placed in the supports, is used to support the handle of a sweep to level the coal in the chambers.

The chambers A are covered with segmental arches F constructed of fire brick laid on their end, the arches are supported on the side walls of the chambers and are turned on the inside of the front and back outside walls without connecting or being joined in building to the walls, the chamber arches are turned some distance above the arched openings at the ends of the chambers, the crown of each chamber is provided with two tunnel heads G G to allow for the exit of the gases, the tunnel heads are made in sections composed of fire clay, they are formed circular on the inside, the bottom section having a bell shaped mouth made to conform to the circle of the arch, with two of the outer sides formed wedge shaped

on the radial line of the arch to fit the brick work.

Each tunnel head is provided with a damper H made of fire clay, the dampers are used to partly cover the tunnel heads when the gases commence to diminish and are not escaping in sufficient quantities to fill the tunnel heads, the partly closing of the tunnel heads with the dampers desulphurizes or lessens the amount of sulphur remaining in the coke. The space above the arches of the chambers to the top of the tunnel heads, is filled with earth or other suitable filling I.

Before filling the oven with coal the chamber openings at each end are walled partly up as at J with a temporary wall made of brick, the coal is filled through the tunnel heads by any of the usual forms of cars, rails K. K being provided on the top of the ovens for that purpose, when the coal in the chambers is leveled, the temporary walls are completed to close the opening, the inlet draft of the chambers is regulated through the temporary walls in the usual manner.

Having thus described our invention, what we claim as new, and desire to secure by Letters Patent, is—

1. In a coke oven having a longitudinal chamber with arched openings at the ends, the combination of metallic lazy bar supports as shown and described, the supports built in the inside jambs of the arched openings, substantially as set forth.

2. A coke oven consisting of a longitudinal chamber A having arched openings C at each end of the chamber the openings formed the full width of the chamber the jambs of the openings provided with metallic lazy bar supports D, a chamber arch F supported on the side walls the chamber arch provided with tunnel heads G the tunnel heads provided with dampers H to partly cover the openings to desulphurize the coke, all arranged as shown and for the purpose described.

In testimony whereof we affix our signatures in presence of two witnesses.

THOMAS CUMMINGS.
JOSEPH CUMMINGS.

Witnesses as to the signature of Thomas Cummings:

J. H. QUILLEN,
WALTER H. LAZENBY.

Witnesses as to the signature of Joseph Cummings:

H. D. SMITH,
JAMES MCCABE.