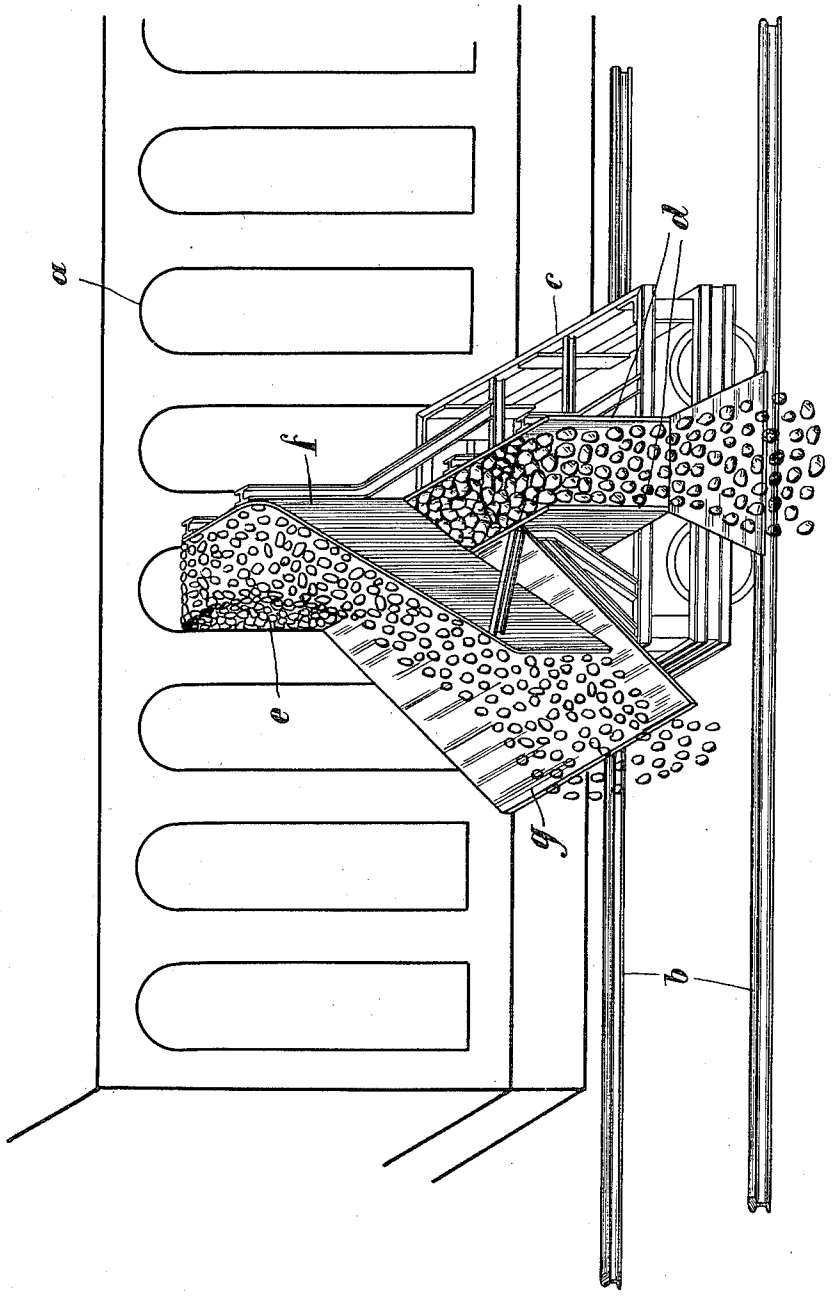
H. KOPPERS.

METHOD OF AND APPARATUS FOR EFFECTING GRADED DELIVERY OF COKE FROM HORIZONTAL AND INCLINED RETORT OVENS.

APPLICATION FILED FEB. 16, 1912.

1,036,648. Patented Aug. 27, 1912.



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UNITED STATES PATENT OFFICE.

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METHOD OF AND APPARATUS FOR EFFECTING GRADED DELIVERY OF COKE FROM HORIZONTAL AND INCLINED RETORT-OVENS.

1,036,648. Specification of Letters Patent. Patented Aug. 27, 1912.

Application filed February 16, 1912. Serial No. 678,136.

To all whom it may concern:

Be it known that I, HEINRICH KOPPERS, residing at Isenbergstrasse 28–30, Essen-on-the-Ruhr, in Westphalia, Germany, have invented a certain new and useful Method of and Apparatus for Effecting Graded Delivery of Coke from Horizontal and Inclined Retort-Ovens, of which the following is a specification.

As is known, the denser kinds of coke, which give a short, hot flame, are the kinds preferred for foundry purposes, whereas the less dense kinds, giving a long flame, are used for smelting. The comparatively considerable height to which the modern horizontal and inclined retort ovens are charged produces, in each "cake" of coke, a density which increases in the direction from top to bottom.

The object of the present invention is to effect, at delivery, a separation or grading of the coke, according to density, and this is done by dividing the cake of coke, as it is pushed out of the oven, into layers, and delivering the coke in said layers to separate receptacles. That this can be done is due to the fact that the coke cake issuing from the oven retains the structure acquired in the oven, and can, by means of suitable guides, be retained in this shape while traveling some distance from the oven. Consequently, by dividing the cake in horizontal planes, the coke can be separated in layers of different densities. As all the ovens belonging to a battery are uniformly served, substantially uniform grading of the entire output can be effected in this way, the separated kinds of coke being, by reason of their different qualities, suitable for different industrial purposes.

Apparatus adapted for carrying out this method of delivery is shown in perspective elevation in the accompanying drawing.

In front of the oven battery *a* there is a rail track *b* for a trolley *c*, upon which are fixed vertical guide walls *d*, arranged for passage of the coke cake *e* between them, and affording guidance to the cake in the known manner. These guide walls *d* only extend to a certain height, corresponding to the thickness of that layer of coke which is suitable for foundry purposes. Above the walls *d* there is a transverse deflecting wall *f*, inclined to the axis of the coke chamber, and the upper part of the cake *e* is pushed against this wall, shorn off from the lower part, and deflected aside, in order to slide down the inclined guide way *g*. The apparatus travels past all the ovens in succession, and the two different kinds of coke are thus obtained from the whole battery. The two different kinds of coke can be quenched in any desired manner.

In the case of inclined retort ovens the process can be carried out in a quite similar manner.

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

1. The method of effecting graded delivery of coke from horizontal and inclined retort ovens by horizontally dividing the issuing coke cake before it loses the stratified structure acquired in the oven, and separately discharging the separated layers.

2. The method of effecting graded delivery of coke from horizontal and inclined retort ovens by horizontally dividing the issuing coke cake before it loses the stratified structure acquired in the oven, and separately discharging the separated layers in different directions.

3. The method of effecting graded delivery of coke from horizontal and inclined retort ovens by causing the lower part of the issuing coke cake, before the cake loses its stratified structure, to travel in the direction of the oven axis, between guide walls, and separating the upper part of the cake, by means of a deflector, so that it is laterally discharged.

4. A device of the character described comprising a coke oven provided with a row of horizontally disposed coking chambers, a transversely movable carriage adapted to become alined with the mouth of each chamber, and means on said carriage for separately discharging the lower and upper strata of the coke cakes issuing from said chambers.

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

HEINRICH KOPPERS.

Witnesses:
WOLDEMAR HAUPT,
HENRY HASPER.