

No. 815,438.

PATENTED MAR. 20, 1906.

E. KÖRTING.  
RETORT CHARGING APPARATUS.

APPLICATION FILED DEC. 2, 1904

Fig. 1.

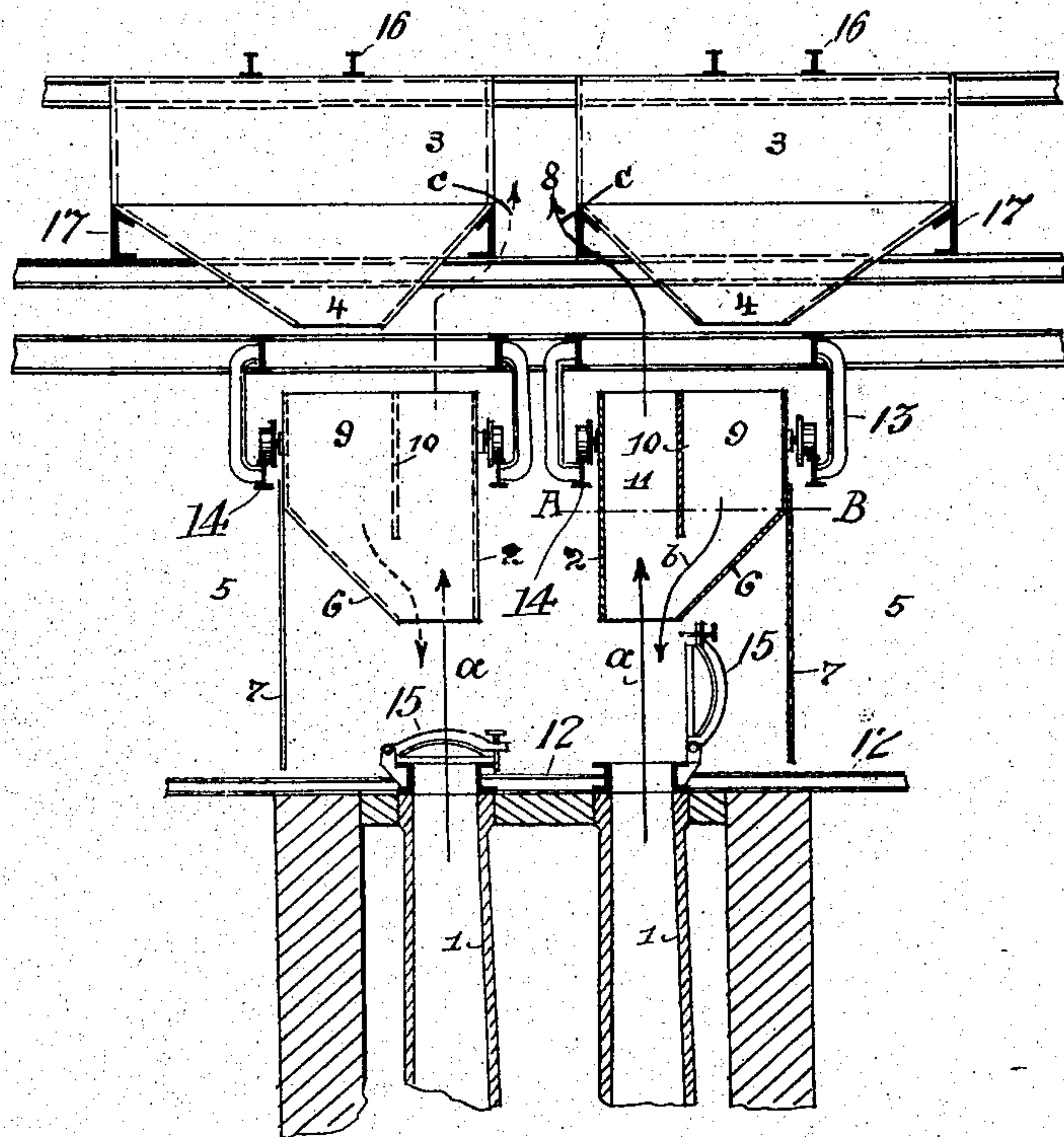
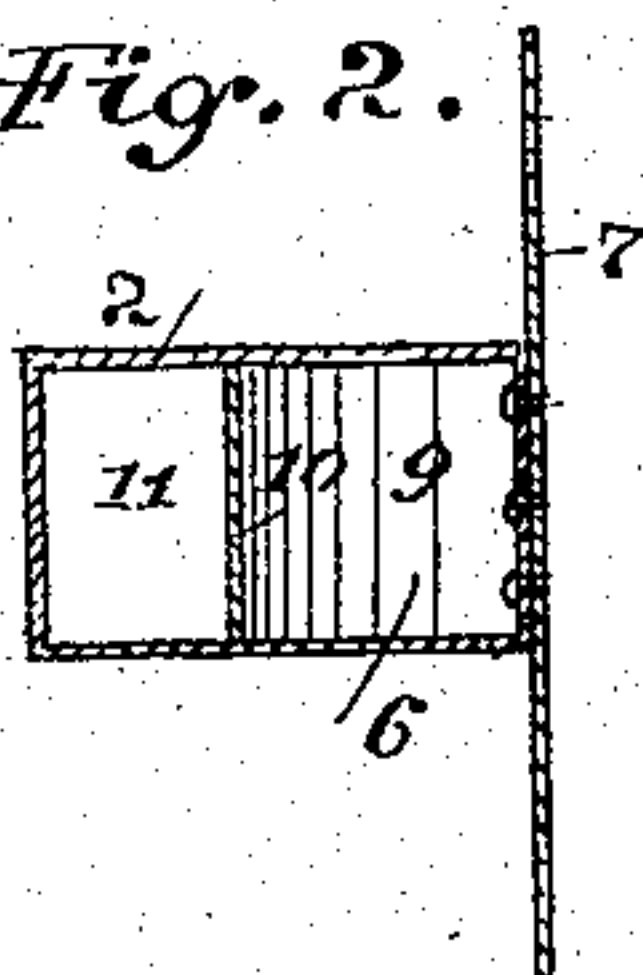


Fig. 2.



Witnesses  
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# UNITED STATES PATENT OFFICE.

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## RETORT-CHARGING APPARATUS.

No. 815,438.

Specification of Letters Patent.

Patented March 20, 1906.

Application filed December 2, 1904. Serial No. 235,194.

*To all whom it may concern:*

Be it known that I, ERNST KÖRTING, a subject of the German Emperor, and a resident of Mariendorf, near Berlin, Germany, have invented certain new and useful Improvements in Retort-Charging Arrangements, of which the following is a specification.

My invention relates to improvements in the charging arrangement of vertical gas-producing retorts, whereby the gases arising from the opened retorts are collected and conducted upward into the atmosphere, so that the laborers on the top of the oven are protected from the gases during the charging operation; and the objects of my improvement are, first, to so arrange traveling hoppers on suspended rails and to divide them each by a partition-wall into two compartments that the one compartment is parallelopipedal and can be brought into a position exactly above a vertical retort, so that it will conduct the gases from the latter in a vertical direction upward, and that the other compartment communicates laterally with the first compartment and serves as a hopper proper, it receiving the coal from a stationary hopper above and allowing the coal to fall into the retort; second, to provide a vertical protecting-plate on the traveling hopper, which reaches down to near the top surface of the oven and keeps the gases off from the laborer, and, third, in case two traveling hoppers above two neighboring vertical protecting-plates parallel to and near the external suspended rails, and to leave between the two stationary hoppers above an opening which serves as a chimney for the escaping gases. I attain these objects by the arrangement illustrated in the accompanying drawings, in which—

Figure 1 is a vertical cross-section through a gas-generating apparatus with two parallel rows of vertical retorts and through a stage above with two stationary hoppers and two traveling hoppers, of which one stationary hopper and one traveling hopper are shown in elevation; and Fig. 2 is a horizontal section through the right traveling hopper on the line A B in Fig. 1.

Similar characters of reference refer to similar parts in both views.

In the drawings I have shown a gas-producing apparatus provided with the rows of verti-

cal retorts 1 1. Above the top 12 of the oven a stage 13 of any known construction is disposed, which carries four suspended parallel rails 14 14 for the two traveling hoppers 2 2. Each traveling hopper 2 is divided by a partition-wall 10 into two compartments 9 and 11, of which the one 11 is parallelopipedal and in the central plane of the one row of retorts 1, while the other compartment 9 communicates below with the first compartment 11, its inclined hopper-wall 6 ending in the plane of the partition-wall. The two traveling hoppers 2 2 are preferably placed so high as to leave sufficient room for opening the charging-doors 15 15 of the vertical retorts 1 1. On the external sides of the two traveling hoppers two vertical protecting-plates 7 7 are secured, which reach down to near the top surface 12 of the oven and are preferably made wider than the hoppers 2 2. (See Fig. 2.) In the stage 13 a plurality of stationary hoppers 3 3 are disposed in pairs and in the vertical cross-planes of the several vertical retorts 1 1 in both rows. The stationary hoppers 3 3 are to receive coal from cars (not shown) on the two rail-tracks 16 16 and are each provided with a valve (not shown) of any known construction for closing and opening their bottom apertures 4, which latter are disposed in the vertical cross-planes of the retorts 1 1 in both rows and in the vertical longitudinal central planes of the compartments 9 9 of the two traveling hoppers 2 2. Each pair of stationary hoppers 3 3 may be placed on beams 17 of the stage 13 and are so constructed as to leave between them an opening or a space 8, which serves as a chimney.

The arrangement described is operated as follows: The two traveling hoppers 2 2 are moved on the suspended rails 14 14 over the two vertical retorts 1 1 to be charged. Then the charging-doors 15 15 of the latter are opened, so that the gases arising therefrom are allowed to pass in the direction of the arrows *a a* direct through the parallelopipedal compartments 11 11 of the two traveling hoppers 2 2 and escape upward in the direction of the arrows *c c* through the chimney 8 into the atmosphere. The laborers go around and place themselves before the protecting-plate 7 7 and are thus protected from the escaping gases. They then open the two stationary



hoppers 3 3 by means of the respective valves, as usual, and allow a certain quantity of coal to fall through the compartments 9 9 into the retorts 1 1 in the direction of the arrows *b b*, after which the stationary hoppers 3 3 and the charging-doors 15 15 are again closed. The traveling hoppers 2 2 may then be moved on to charge the following retorts 1 1 in the same manner.

The charging arrangement may be varied in many respects without deviating from the spirit of my invention. The construction of the gas-producing apparatus is immaterial, the only point being that the charging arrangement is chiefly intended for charging vertical retorts. A single row of retorts may be employed, in which case of course a single traveling hopper 2 and a single rail-track 16 with a single row of stationary hoppers 3 will suffice. Then a wall may be preferably provided which reaches from the top surface 12 of the oven to the top surface of the stage 13 and leaves spaces 8 for the escaping gases.

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

1. In an apparatus for charging vertical gas-retorts, the combination with a traveling hopper adapted to be moved over any retort in a row, of a vertical partition-wall dividing said traveling hopper into two compartments, of which the one is parallelopipedal and permits the gases from the opened retort to vertically escape, and the other compartment serves as a hopper proper and communicates below with the first compartment, means for dropping coal into the other compartment, so that it falls into the retort, and a protecting-plate secured on the outside of the other compartment and reaching down to near the top surface of the oven, whereby the laborer is protected from the gases escaping from the opened retort.

2. In an apparatus for charging vertical gas-retorts, the combination with a traveling hopper adapted to be moved over any retort in a row, of a vertical partition-wall dividing said traveling hopper into two compartments, of which the one is parallelopipedal and permits the gases from the opened retort to vertically escape, and the other compartment, serves as a hopper proper and communicates below with the parallelopipedal compartment, a protecting-plate secured on the outside of the other compartment of said traveling hopper and reaching down to near the top surface of the oven, a plurality of stationary hoppers above the path of said traveling hopper and having their bottom openings in the vertical cross-planes of the several retorts and in the vertical longitudinal central plane of the other compartment of said traveling hopper, and a plurality of spaces or openings on one side of said plurality of stationary hoppers in the vertical cross-planes of the

several retorts and serving as chimneys for the gases passing through the parallelopipedal compartment of the traveling hopper.

3. The combination with a gas-producing apparatus with two parallel rows of vertical gas-retorts, of two traveling hoppers adapted to be moved over either retort of both rows, each traveling hopper being divided by a vertical partition-wall into two compartments, of which the one is parallelopipedal and permits the gases from the opened respective retort to vertically escape and the other compartment serves as a hopper proper and communicates below with the parallelopipedal compartment, a protecting-plate secured on the outside of the other compartment of each of said two traveling hoppers, two parallel rows of stationary hoppers above the paths of said two traveling hoppers and having their bottom openings in the vertical cross-planes of the several retorts in both rows and the vertical longitudinal central planes of the other compartments of said two traveling hoppers, and a plurality of spaces or openings between said two parallel rows of stationary hoppers and serving as chimneys for the gases escaping from the parallelopipedal compartments of both traveling hoppers.

4. In an apparatus for charging vertical gas-retorts, the combination with a traveling hopper adapted to be moved over any one of several retorts, of a vertical partition-wall dividing said traveling hopper into two compartments of which one permits the gases from an open retort to vertically escape and the other compartment serves as a hopper proper and communicates at the bottom with the first compartment, and means for feeding material into the latter compartment.

5. A charging-hopper having an opening at its bottom through which the contents of the hopper may be discharged, and a partition forming a vertical compartment over said opening, and a second compartment at one side of the aforesaid compartment, the two said compartments communicating at their lower ends, substantially as described.

6. The combination with a retort, of a charging-hopper above said retort having an opening in its bottom through which the contents of the hopper may be discharged, said opening being vertically over said retort, a partition forming a vertical compartment over said opening and a second compartment at one side of the aforesaid compartment, the two said compartments communicating at their lower ends, substantially as described.

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

ERNST KÖRTING.

Witnesses:

PERCY GEORGE LEDGER,  
PAUL RUDOLPH.