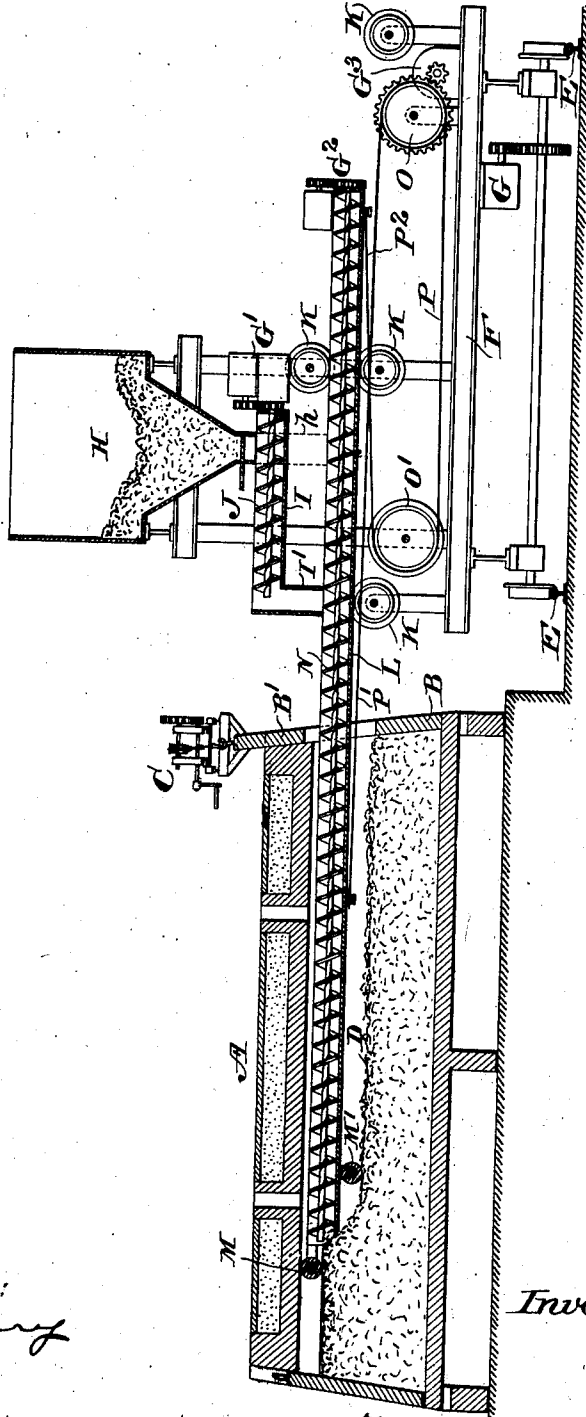


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F. W. C. SCHNIEWIND.
APPARATUS FOR CHARGING COKE OVENS.

APPLICATION FILED AUG. 1, 1899.



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APPARATUS FOR CHARGING COKE-OVENS.

No. 845,719.

Specification of Letters Patent.

Patented Feb. 26, 1907.

Application filed August 1, 1899. Serial No. 725,729.

To all whom it may concern:

Be it known that I, FREDERIC WILLIAM CHARLES SCHNIEWIND, a citizen of the United States of America, residing in Everett, in the county of Middlesex, in the State of Massachusetts, have invented certain new and useful Improvements in Apparatus for Charging Coke-Ovens, of which the following is a true and exact description, reference being had to the accompanying drawings, which form a part thereof.

My invention relates to apparatus for charging coke-ovens, having for its object to provide for a rapid and homogeneous charging of the oven with coal.

Generally speaking, my invention consists in providing a horizontally-supported longitudinally-movable conveyer-trough, preferably mounted on a truck adapted to move in front of a bank of coke-ovens and having means for pushing it into and retracting it from the ovens and providing, in connection with said trough and movable therewith, mechanism for moving fuel longitudinally through the trough, forcing it out of the end thereof, and properly distributing it in the ovens. Preferably I carry on the same truck a coal-bin and provide for a feeding of the coal from the bin into the movable charging-conveyers, though any means for bringing coal to and delivering it into the conveyer may be employed without departure from my invention.

Reference being now had to the drawings, in which my invention is illustrated, A indicates a sectional elevation of a horizontal coke-oven having, as shown, sectional doors B and B' on the charging side.

C indicates a device for raising the upper portion B' of the door or when the lower portion is secured to it for raising the entire door.

D indicates coal charged in the coke-oven.

E E are tracks running in front of the coke-ovens.

F is a truck, which may conveniently be the same truck that is commonly used in connection with the discharging apparatus for pushing the coke out of the ovens.

G is a motor, conveniently an electric motor, arranged, as shown, to drive the axle of one pair of the truck-wheels and by means of which the truck can be moved from oven to

oven. H is a coal-bin supported on the truck F.

I I' indicate a conduit leading from the discharge-aperture of the coal-bin to the horizontal conveyer-trough. A screw conveyer J is indicated in the portion I of this conduit G', indicating a motor for actuating the screw conveyer. The conduits I I' and conveyer J, together with the motor G', while convenient are not essential, as the bin H may be furnished with a discharge-opening, as indicated in dotted lines at h, by which it will discharge directly into the horizontal conveyer.

K K K are supporting-bearings for the horizontal conveyer, preferably made, as shown, in the form of wheels, so as to diminish friction.

L is the horizontal conveyer-trough supported by the bearing-wheels K K, &c., and open on top, so as to permit the free delivery of coal to it irrespective of its position. Supported on and a short distance in front of the end of the trough is a leveling device, preferably a roller, as indicated at M. I also prefer to secure to the under side of the conveyer one or more supporting-rolls, as indicated at M', which will rest upon the top of the fuel of the first charging while the conveyer is being introduced and withdrawn.

N is a screw conveyer working in the conveyer-trough L and actuated, as shown, by a motor G², supported on the rear end of the conveyer-trough.

I have indicated the screw conveyer as working in the conveyer-trough because it is, for obvious reasons, the most convenient and practicable device. It must be understood, however, that I do not intend to limit myself to any particular form of conveying mechanism, as there are many well-known devices which would operate in a substantially equivalent way to the wheel-conveyer.

O and O' are pulley-wheels, the wheel O being, as shown, driven by a motor, (indicated at G³.) Passing over the pulley-wheels O and O' is a rope P, the ends P' and P² of which are fastened to the conveyer-trough at a considerable distance apart, and, as indicated in the drawings, obviously the rotation of the pulley O toward the right will

retract the conveyer from the oven, while its rotation toward the left will force the conveyer into the oven.

In use the end of the conveyer would be thrust into the end of the oven, the feed-screw set in motion, and the coal delivered to the conveyer-trough either from the bin H or any other source of supply. The conveyer would be forced gradually forward, filling the oven, for instance, to the level of the lower section of the door, and as it is forced in the supporting-roller will rest upon the top of the fuel, serving to support the conveyer in position and also to compact the first partial charge fed to the oven as the conveyer moves forward, thereby increasing the density of the coke produced. After this the conveyer is gradually retracted, still delivering coal to the oven and filling it to the determined height, the leveling device M compacting the coal in the oven as the conveyer is withdrawn and the supporting-roller M' again moving backward over the partial charge, supporting the end of the conveyer as it is withdrawn and further compacting the coal.

In case of very long ovens it may sometimes be inconvenient to use a conveyer of the excessive length required to extend entirely through such ovens. In such cases shorter conveyers may be inserted from both sides of the ovens, working to and from the center.

Having now described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. As a device for charging coke-ovens, a horizontally-movable conveyer-trough in combination with conveying mechanism secured in the trough for feeding material

along the same and means for forcing the trough and conveyer mechanism into and retracting them from the ovens and a leveling device, as M, secured to the end of the conveyer-trough.

2. As a device for charging coke-ovens, a truck movable in front of the ovens in combination with a conveyer-trough open at top supported and horizontally movable on the truck, a feed-screw rotating in said trough, means for forcing the trough and screw into and retracting them from the ovens, a conveyer arranged to deliver coal into the trough outside of the ovens and a leveling device, as roller M, secured to the end of the trough beyond the end of the screw.

3. As a device for charging coke-ovens a horizontally-movable conveyer-trough in combination with conveying mechanism secured in the trough for feeding material along the same and means for forcing the trough and conveyer mechanism into and retracting them from the ovens, and a supporting and coal-compacting device M' secured to the under side of the conveyer-trough.

4. As a device for charging coke-ovens a horizontally-movable conveyer-trough in combination with conveying mechanism secured in the trough for feeding material along the same and means for forcing the trough and conveyer mechanism into and retracting them from the ovens, a leveling device M secured to the end of the conveyer-trough, and a supporting and coal-compacting device M' secured to the under side of the conveyer-trough.

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