

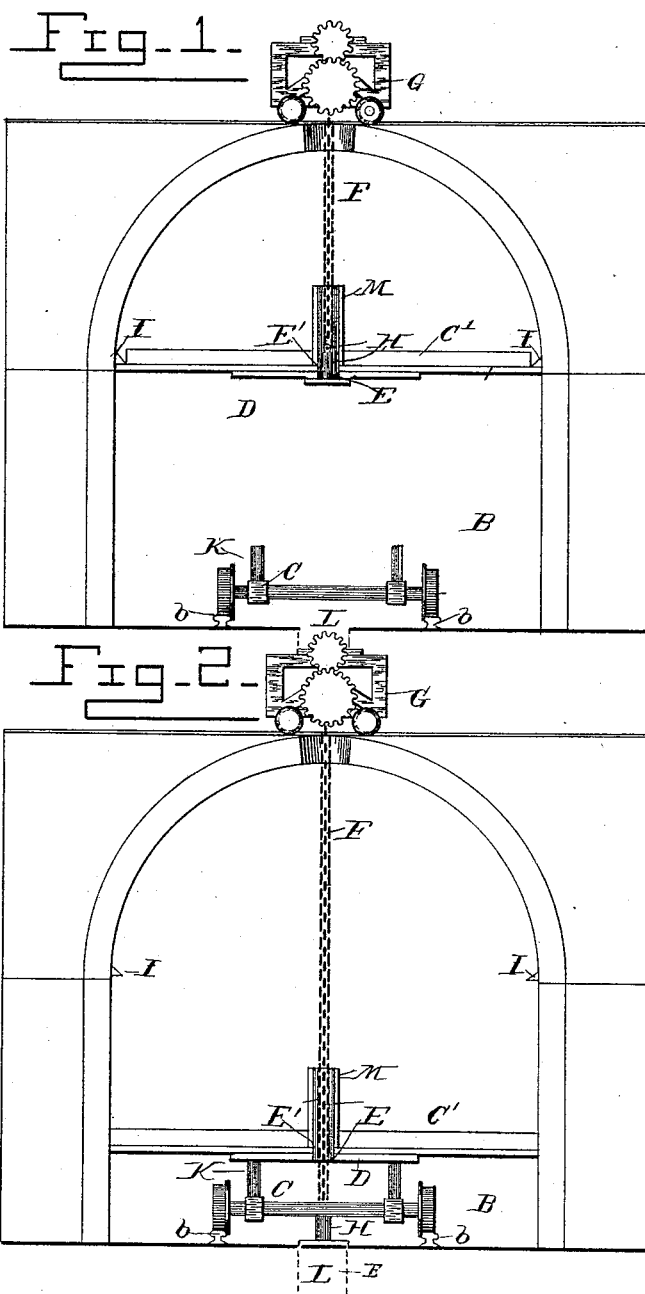
(No Model.)

D. EVANS & A. W. ADAMS.

PORTABLE BOTTOM COKE OVEN.

No. 386,427.

Patented July 17, 1888.



Witnesses,

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UNITED STATES PATENT OFFICE.

DAVID EVANS AND ALBERT WILLIAM ADAMS, OF PITTSBURG,
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PORTABLE-BOTTOM COKE-OVEN.

SPECIFICATION forming part of Letters Patent No. 386,427, dated July 17, 1888.

Application filed July 15, 1886. Serial No. 208,150. (No model.)

To all whom it may concern:

Be it known that we, DAVID EVANS and ALBERT WILLIAM ADAMS, citizens of the United States, residing at Pittsburg, in the county of Allegheny, in the State of Pennsylvania, have invented a Portable-Bottom Coke-Oven, of which the following is a specification.

Our invention has relation to coke-ovens; and has for its object the provision of novel means for facilitating the withdrawal of the coke after the charge is burned.

Our invention contemplates the use, in connection with an oven of the bee-hive or other type, of an adjustable bottom capable of being raised and lowered in a pit excavated below the base of the oven; and the improvements consist in the novel construction, combination, and arrangement of appliances for raising, lowering, and supporting said bottom, and for transporting the same and its load away from the oven to the yard and returning the bottom to the oven.

In the accompanying drawings, Figure 1 is a vertical section of a "bee hive" coke-oven embodying our invention, and showing the portable bottom in its raised position. Fig. 2 is a similar sectional view showing the bottom lowered.

Our invention is applicable to coke-ovens of the old bee-hive form, or to others of more modern construction.

In carrying our invention into effect we excavate below the plane of the oven-base or below the old bottom a pit, B, slightly greater in diameter than the interior diameter of the oven proper at its lower part. This pit has an opening or open tunnel at one side, and on its floor are laid track-rails *b b*, which are continued or extended into the pit from the yard. Upon this track is placed a car-truck, C, adapted and designed to be run into and out of the pit for the conveyance of the portable oven-bottom to and fro.

C' designates the oven-bottom, which is constructed of (one or more) plates connected together and forming a structure capable of being raised and lowered within the pit.

D designates a plate frame or spider, designed and adapted to constitute a support for the oven-bottom in raising and lowering the

same. This plate or spider is formed or provided with an offset, *d*, which fits snugly in an opening formed in the center of the oven-bottom, and is also provided with a piston or guide rod, *h*, depending from its under side and entering a cavity, I, in the floor of the pit. The object of this piston is to guide the bottom in its vertical movement and to maintain it in a horizontal position. The offset *d* is provided with an eye, hook, or staple, for the attachment of the chain F, connected with the crab or windlass G.

The crab G is supported and travels upon a track, *g*, laid upon the top of the oven and running across the center of the same. A shoulder or flange, I, is formed inside the oven, near its base, against which the bottom bars, *k k*, are provided, for supporting the bottom in its raised position while the coke is burning. These bars lie upon the floor of the pit when not in use, and are lifted and arranged in position after the bottom is raised.

Above the central opening in the oven-bottom a crucible or tube, M, is fixed, and, with the openings in the bottom and spider, constitute a guide or channel for the passage of the chain and a means for carrying off the air that accumulates below the bottom.

When coke is ready for drawing, the "crab" G is run over the top of the oven and the chain dropped down through the eye *h* and through the tube or crucible and attached to the spider D. The latter is now lifted until it strikes the bottom of the oven and lifts the same from the bearing bars or supports *k k*, which are then lowered to the floor of the pit. The chain is now relaxed, allowing the bottom carrying its charge to descend until it strikes the truck and rests thereon, after the chain is disconnected, and the truck and its load drawn out of the pit by a horse and the load deposited in the yard.

The one crab and one truck may be used in discharging any number of ovens. After the load is discharged from the truck the latter is returned to the oven-pit, the chain attached to the spider, and the bottom raised to its proper position.

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

1. In a coke-oven having a pit below the level of its base or floor, the combination, with a movable bottom having a central opening, of a chain passing through said opening and through the eye of the oven, a portable crab 5 above the oven mounted on rails, a spider or frame below the floor, and a car or truck mounted on tracks within said pit, substantially as described.

10 2. In a coke-oven, the combination, with a movable floor or bottom and a frame or spider to support the same while being raised and lowered, of a crab mounted on tracks above the oven, and a chain connecting said crab and

spider through the eye of the oven, substantially as set forth. 15

3. The combination, with a coke-oven, of a vertically-movable floor, a portable crab or hoisting apparatus mounted upon tracks above the oven, and a chain passing from said 20 crab through the eye of the oven and connected to said bottom, substantially as set forth.

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