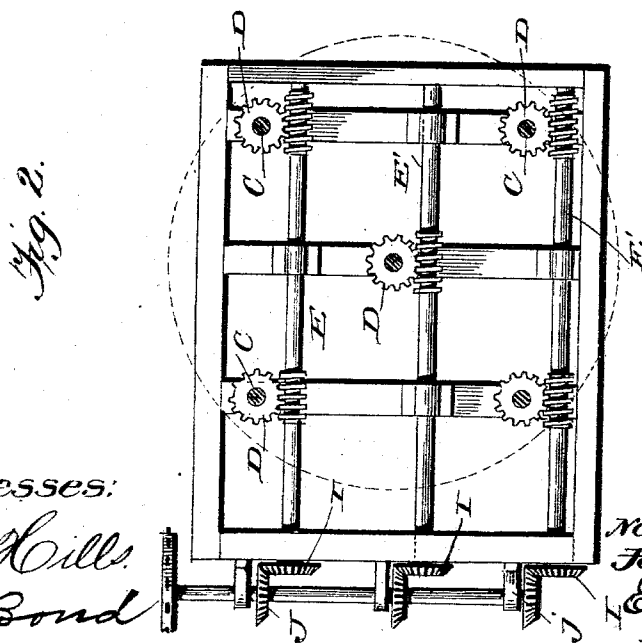
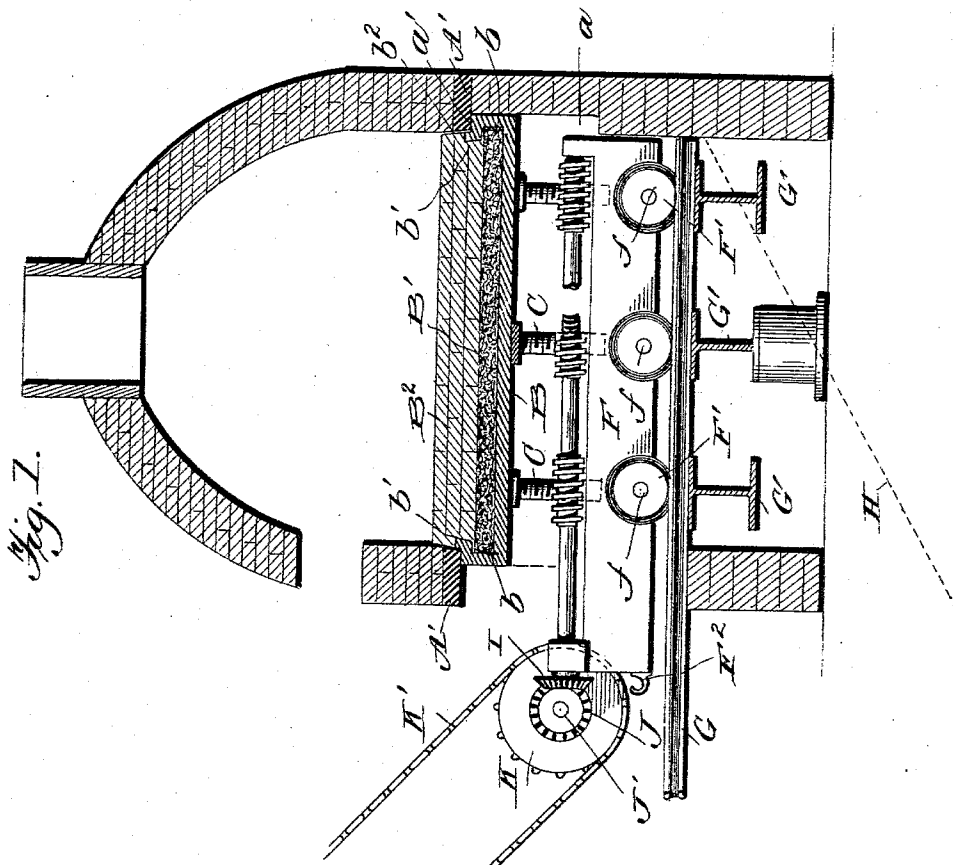


(No Model.)

N. B. TAYLOR & J. C. DIAS.
COKE OVEN.

No. 561,922.

Patented June 9, 1896.



Witnesses:
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E. A. Bond

Inventors:
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Atty

UNITED STATES PATENT OFFICE.

NORTON B. TAYLOR AND JOHN C. DIAS, OF WILMERDING, PENNSYLVANIA,
ASSIGNORS OF ONE-TENTH TO JOSEPH REDFERN, OF SAME PLACE.

COKE-OVEN.

SPECIFICATION forming part of Letters Patent No. 561,922, dated June 9, 1896.

Application filed January 2, 1896. Serial No. 574,133. (No model.)

To all whom it may concern:

Be it known that we, NORTON B. TAYLOR and JOHN C. DIAS, citizens of the United States, residing at Wilmerding, in the county of Allegheny, State of Pennsylvania, have invented certain new and useful Improvements in Coke-Ovens, of which the following is a specification, reference being had therein to the accompanying drawings.

10 This invention relates to certain new and useful improvements in coking-ovens of that class in which the bottom or platform is designed to be moved vertically; and it has for its object, among others, to provide an improved apparatus of this character which shall be simple and cheap in its construction, durable and efficient in its operation, and having provision for scraping the coke off of the bottom when it is lowered sufficiently to clear it, after which the same is drawn out and the coke allowed to fall into a chute arranged beneath the oven. Suitable means are provided for causing the rise and fall of the bottom. The bottom is mounted on a truck and means are provided for moving the truck out after the bottom has been lowered and after the coke has been discharged; for moving it back again into position and the oven recharged, and the operation repeated.

30 Other objects and advantages of the invention will hereinafter appear, and the novel features thereof will be particularly pointed out in the appended claims.

35 The invention is clearly illustrated in the accompanying drawings, which, with the letters of reference marked thereon, form a part of the specification, and in which—

40 Figure 1 is a vertical section through the oven with the truck and other parts shown in elevation, and Fig. 2 is a top plan of the truck and the raising and lowering means with the bottom removed.

Like letters of reference indicate like parts in both the views.

45 Referring now to the details of the drawings by letter, A designates the oven, and A' a cast-iron ring built therein, as shown, the inner face of the ring being preferably lightly beveled, as seen in Fig. 1, and beneath said ring the brickwork of the oven is offset, as shown at *a*, so that a shoulder *a'* is formed by

the inner end face of the ring, serving as a stop for the upward movement of the movable bottom, as seen in Fig. 1.

The bottom, which is carried by the truck, 55 comprises the cast-iron or other suitable plate B, the vertical walls of which are formed with the groove or recess *b*, as seen in Fig. 1, into which is forced or held the mineral wool, asbestos, or some suitable non-conducting substance B', upon which are the bricks or tile B², 60 constituting the upper face of the said bottom, and which tile or brick have their outer edges beveled, as seen at *b*², and are anchored to the inner upper flange *b'* of the metallic plate B, as seen in Fig. 1, the said beveled edges 65 corresponding to the bevel or taper of the inner face of the cast-iron ring A' and the adjacent wall of the oven, all as clearly illustrated in Fig. 1.

70 Depending from the under side of the plate B, and secured thereto in any suitable manner, are the screws C, there being five shown, although this number may be varied as may be required, and on these screws are mounted for movement the worm-gears D, with which 75 are mounted to engage the worms E, carried by the shafts E', mounted in suitable bearings in or upon the truck F, mounted upon wheels F', carried by the shafts or axles *f* 80 and adapted to travel upon the tracks G, suitably supported, as upon I-beams or other equivalents G', extending across the pit beneath the oven, and beneath which is designed to be arranged a chute, designated in this instance by the inclined dotted line H in Fig. 1. 85 The end of the truck is provided with a hook or other analogous means F² for the attachment or connection of a chain or other means, (not shown,) whereby the truck may be withdrawn when desired. 90

The shafts E' are extended at the front end and carry each a bevel-pinion I, which pinions are adapted to mesh with similar bevel-pinions J on the shaft J', mounted in suitable 95 bearings *j* on the front end of the truck and adapted to be revolved through the means of a sprocket-wheel K on said shaft, and a sprocket-chain K', passed around the same and adapted to be driven from any suitable source of power. (Not shown.) 100

The asbestos or mineral wool serves to re-

tain all possible heat and at the same time prevent warping of the plate.

With the parts constructed and arranged substantially as above described the operation is as follows: With the parts in the position in which they are shown in Fig. 1, and the coke ready to be withdrawn from the oven, the oven having been charged and the coke burned in the usual way, the bottom is lowered by means of the screws and the worm-gears driven by the sprocket chain and wheels, and as the bottom is brought so that its upper face is just below the lower face of the cast-iron ring A' the truck is drawn out, and as it is drawn the cast-iron ring scrapes the coke off of the bottom and the said coke falls down to the rear of the truck and between the rails into the pit or onto the chute when the latter is employed, and as soon as the coke has all been discharged the truck is run back into position again and then raised through the medium of the bevel-pinions, worms, and worm-gear and the shoulders a', and, engaging the end face of the ring A', serve as stops and limit the upward movement of the bottom. The sprocket chain and wheel may be moved outward with the truck, or the chain may be removed from the sprocket when the truck is drawn outward and pushed back, or there may be a separable connection between the shaft carrying the sprocket-wheel and the shaft J', so as to be readily separated and driven or avoid carrying of the sprocket wheel and chain with the truck in its movement.

Modifications in detail may be resorted to without departing from the spirit of our invention or sacrificing any of its advantages.

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

1. A coke-oven provided with a vertically-movable bottom, comprising the metallic plate and non-combustible layer adjacent to the plate, the upper edges of the plate being flanged and extended inward over the non-

combustible layer, and brick or tiling resting upon said layer and anchored to the plate, combined with a combined stop and scraper for said bottom; substantially as described. 50

2. A coke-oven provided with a vertically-movable bottom, comprising a metallic plate and non-combustible layer adjacent to the plate, the upper edges of the plate being flanged and extended inward over the non-combustible layer, brick or tiling resting upon said layer, and anchored to the plate, the outer edges of which are beveled, and the brick above the same being correspondingly beveled, combined with a combined stop and scraper for said bottom, the inner edge of which is also beveled; substantially as described. 60

3. A coke-oven provided with a vertically-movable bottom, comprising a metallic plate and non-combustible layer adjacent to the plate, the upper edges of the plate being flanged and extended inward over the non-combustible layer, brick or tiling resting upon said layer, and anchored to the plate, the outer edges of which are beveled, and the brick above the same being correspondingly beveled, combined with a combined stop and scraper for said bottom, the inner edge of which is also beveled, and a truck on which said bottom is mounted, and means for moving said truck horizontally after the bottom is lowered to cause it to be engaged by said scraper; substantially as described. 75

4. The combination with a vertically-movable bottom to a coke-oven, of the oven, and a metallic ring forming a stop for the upward movement of the bottom, and serving as a scraper when the bottom is lowered and moved outward; substantially as described. 85

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

NORTON B. TAYLOR.
JOHN C. DIAS.

Witnesses:

W. A. McDEVITT,
W. L. MOOK.