

(No Model.)

2 Sheets—Sheet 1.

-G. W. NIXON.
COKE OVEN.

No. 499,565.

Patented June 13, 1893.

Fig. 1.

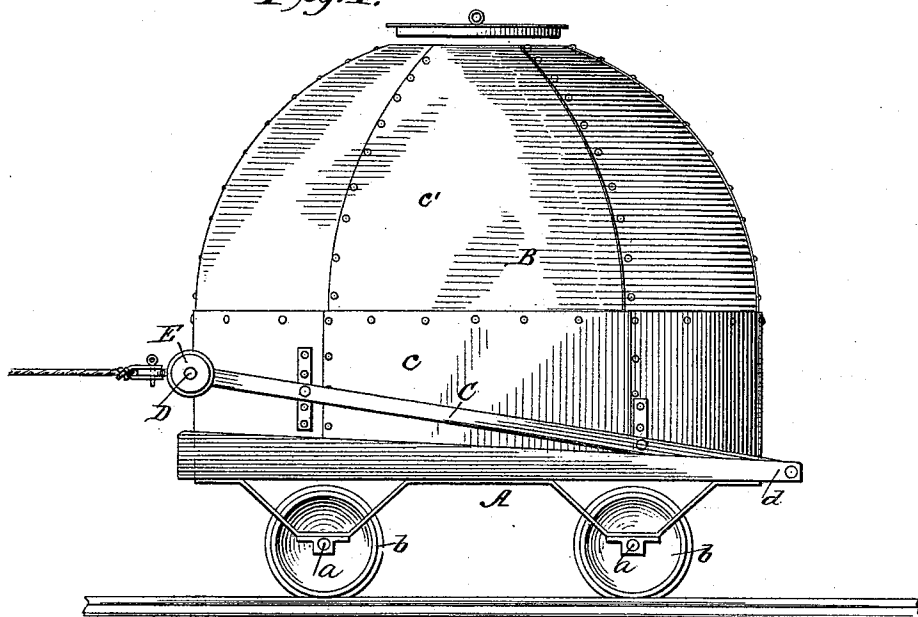
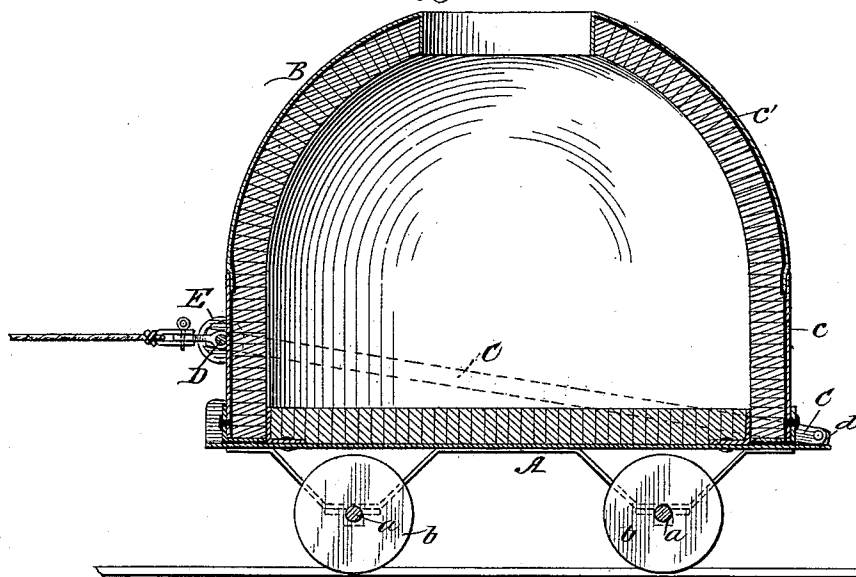


Fig. 2.



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Fig. 3.

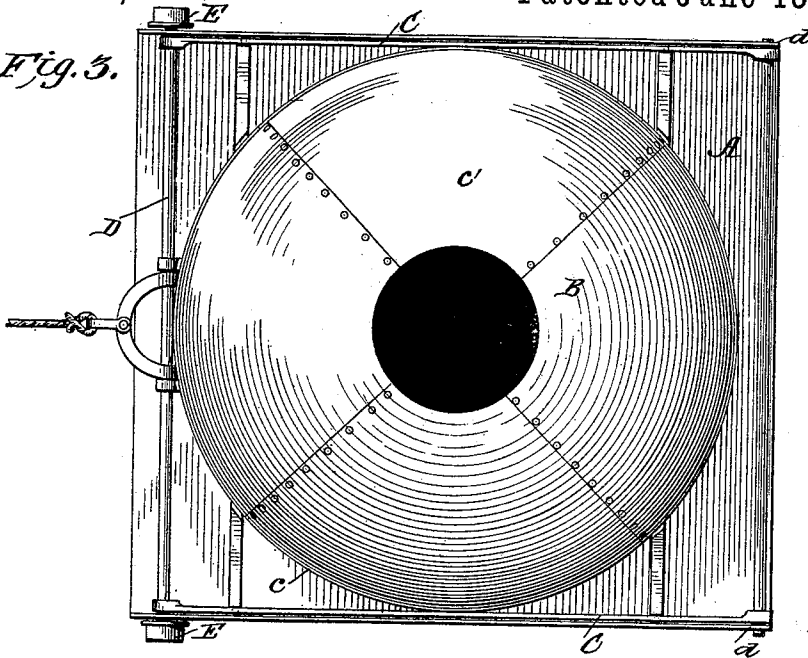


Fig. 4.

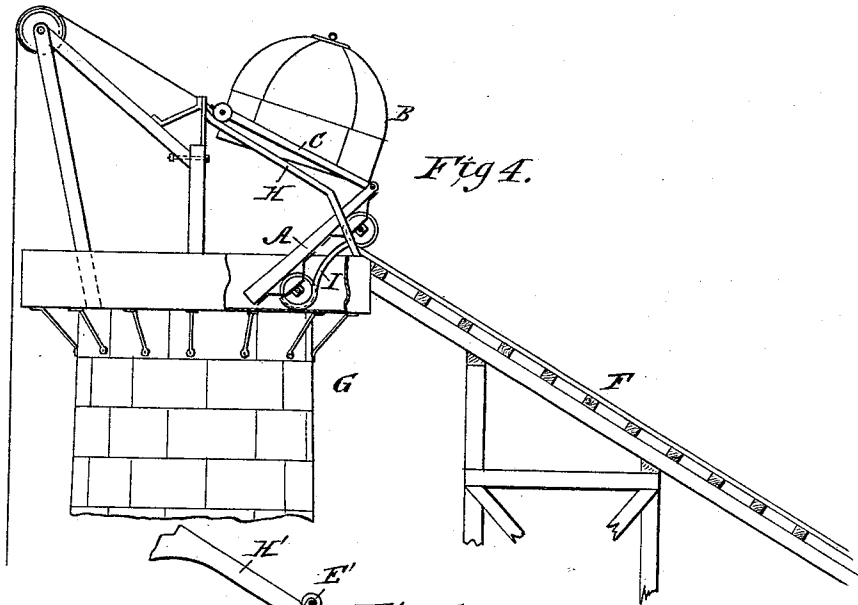
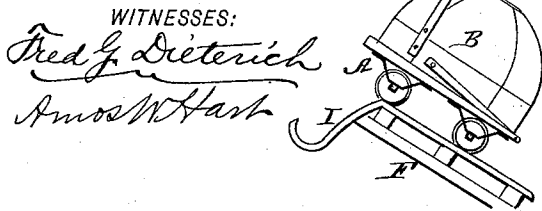


Fig. 5.



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UNITED STATES PATENT OFFICE.

GEORGE W. NIXON, OF CHATTANOOGA, TENNESSEE.

COKE-OVEN.

SPECIFICATION forming part of Letters Patent No. 499,565, dated June 13, 1893.

Application filed November 16, 1892. Serial No. 452,216. (No model.)

To all whom it may concern:

Be it known that I, GEORGE W. NIXON, residing at Chattanooga, in the county of Hamilton and State of Tennessee, have invented a new and Improved Self-Discharging Coke-Oven, of which the following is a specification.

For the purpose of economizing the manufacture of coke, I have devised an improved portable or traveling oven and means for causing it to discharge its contents automatically.

The construction and operation of the invention are as shown in accompanying drawings, in which—

Figure 1 is a side view of the coke oven. Fig. 2 is a central vertical longitudinal section of the same. Fig. 3 is a top plan view. Fig. 4 is a side view of a furnace and inclined way or elevator, with my improved coke-oven in the position required for dumping its contents. Fig. 5 shows a modified arrangement of certain parts.

The coke oven consists broadly stated, of a base A, and a dome-shaped top or body B. The base—which is shown flat but may be concave or have any other preferred form—is constructed of iron and is mounted upon axles *a*, having flanged wheels *b*.

The dome or top B is constructed of sections of boiler plate iron or steel riveted together and consists of two parts, one *c*, being the cylindrical and vertical bottom portion, and the other part *c'* being conical and provided with a charging opening at the top. These two parts *c c'* are connected by rivets, as shown. The dome B is lined with fire brick and a layer of the same material is also applied to the base A, to protect it from injury by heat in the process of coking. The lining of the dome rests upon an angle-iron ring. The semi-spherical or bee-hive form of the dome B, enables it to hold the fire-brick lining in place despite expansion and contraction under variations in degree of heat. This is due to the fact that they are, so to speak, keyed in an arch, *i. e.* supported by themselves and that an air-space is left between the brick lining and the jacket or casing, which duly provides for expansion. The dome B is hinged

to the rear edge of the base A, so that the two may be opened or separated, as hereinafter described, to discharge the coked contents of the oven. The hinge is formed by the following means: Two bars C are bolted to the sides of the dome being inclined at a slight angle to the base A, and their rear ends are extended and pivoted to extensions *d*, of the base. The front ends of these bars C, carry a horizontal axle D, having small flanged wheels E, journaled on its ends, and set farther apart than the transporting wheels *b*, on which the oven is mounted. A suitable clevis is attached to the axle at its mid length, for convenience of attachment of a rope for hauling the oven upon rails and up the incline F.

In practical operation, the coke oven is run upon a suitably arranged track beneath the chute of a coal bin and receives a charge of coal. The latter is then ignited and to provide for this, I propose—in practice—to construct the bottom of the oven with an opening, not shown. When the coking has progressed to the required degree (as is indicated by the smoke emitted from the top of the dome B), the car B *a b* is hauled by means of the rope up the incline F (Fig. 4) to the top of a furnace G, where the still burning contents are discharged into the latter. This is effected by the small wheels E, on the axle D, running up on inclined parallel rails H, fixed in proper relation over the top of the furnace, while the front wheels *b* of the base or car A, turn over the “knuckle” consisting of rails I, inclined oppositely to bars H and are arrested by the curved lower ends of the same as shown. Thus the dome B is carried and held on a grade parallel with the inclined way F, and the base A drops to a corresponding angle—as shown—so that the hot coke is free to slide off into the furnace. The oven A B is then allowed to run back down the incline F, and again charged and the operation repeated. It is obvious that if it is required to dump the contents of the oven into a stock pile, the same general construction and arrangement of tipple can be employed. The coke should be discharged, if hot, upon a perforated iron platform where it can be cooled with water from a stationary sprinkler. This platform

should be arranged to tilt the coke, when cooled, into a railroad car or other conveyance, as may be required in the further disposition of the coke. In shipping coke or stocking up
5 the same, this arrangement will dispense with the wearing labor of drawing the hot coke, cooling the same by hand, and the waste resulting from breaking up by handling. The fire-brick lining will of course be dispensed
10 with in this arrangement.

While I prefer to use the axle D arranged as shown I do not limit myself to it, since I may employ short separate axles attached to the front of the dome, or I may even dispense
15 with the wheels and use merely bars or brackets arranged to project laterally from the dome so as to engage and slide upon the inclined bars H.

The means for holding the dome or top elevated for dumping answers practical requirements but I do not propose to restrict myself to the described gage of the small wheels E, since this may be varied; and furthermore, in place of employing said wheels and the rails
20 H arranged as shown I may attach one or two wheels E' (see Fig. 5) to the upper portion of the dome by means of a bracket and arrange

a rail or rails H' overhead for such wheel or wheels to run on to effect the dumping.

Having thus described my invention, what
30 I claim is—

1. The combination, with two sets of rails, arranged at an angle to each other, the lower rails being curved at their lower ends, of the traveling coke-oven, having a base portion
35 which travels on said lower rails, and a dome, or top portion, which is hinged to the rear edge of said base and provided with means for engaging with the upper rails, whereby the contents of the oven may be automati-
40 cally dumped, as shown and described.

2. The combination with the coke oven having the wheels E, mounted on journals projecting from opposite sides, and the wheeled base hinged to the dome at its rear edge, of
45 the bars H, arranged as described upon which the said wheels may run to support the dome, and oppositely inclined bars I, for the wheels of the base, whereby the dumping is effected automatically, as set forth.

GEORGE W. NIXON.

Witnesses:

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