(No Model.)

W. W. ANDERSON.

COKE OVEN.

No. 420,897. Patented Feb. 4, 1890.

FIG. 1.

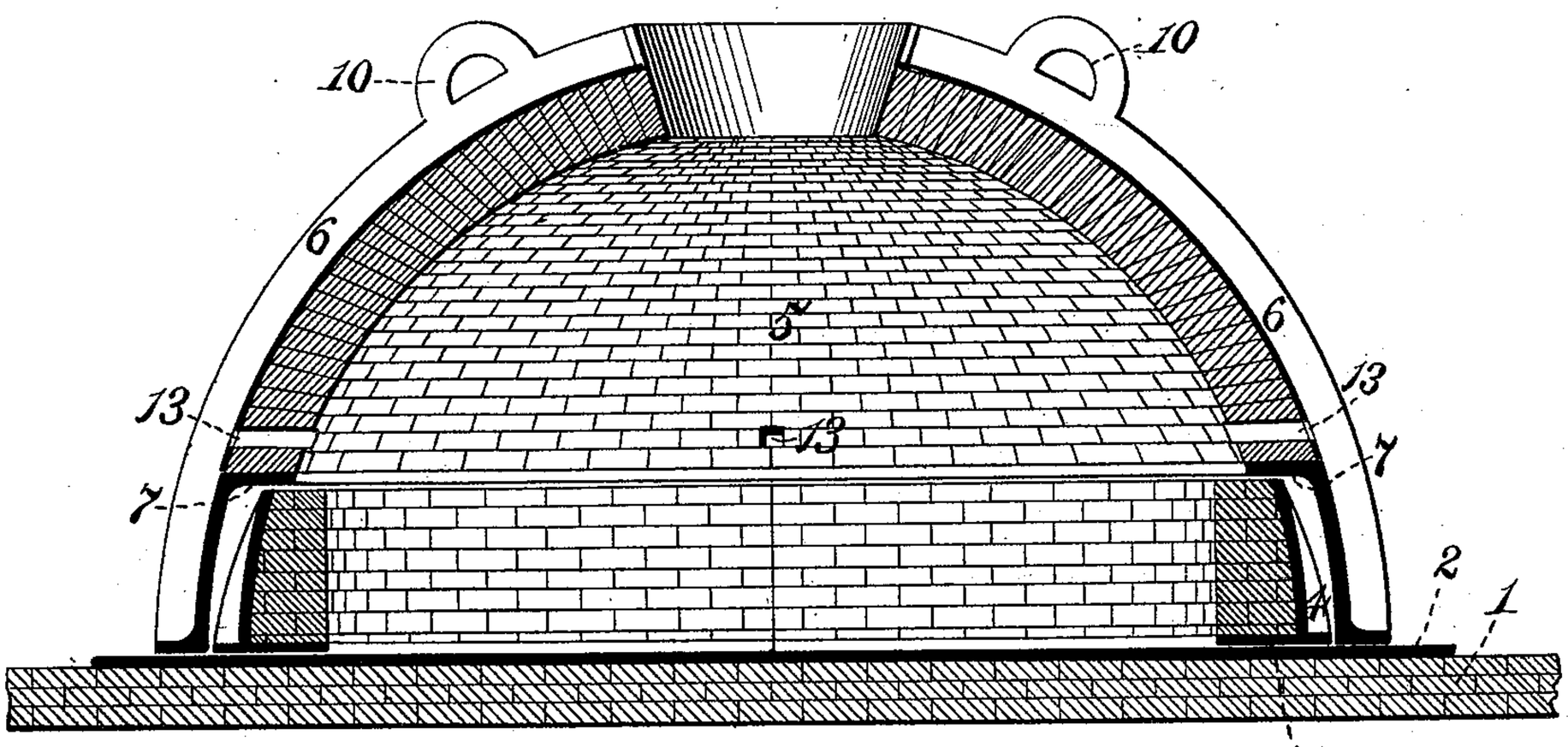
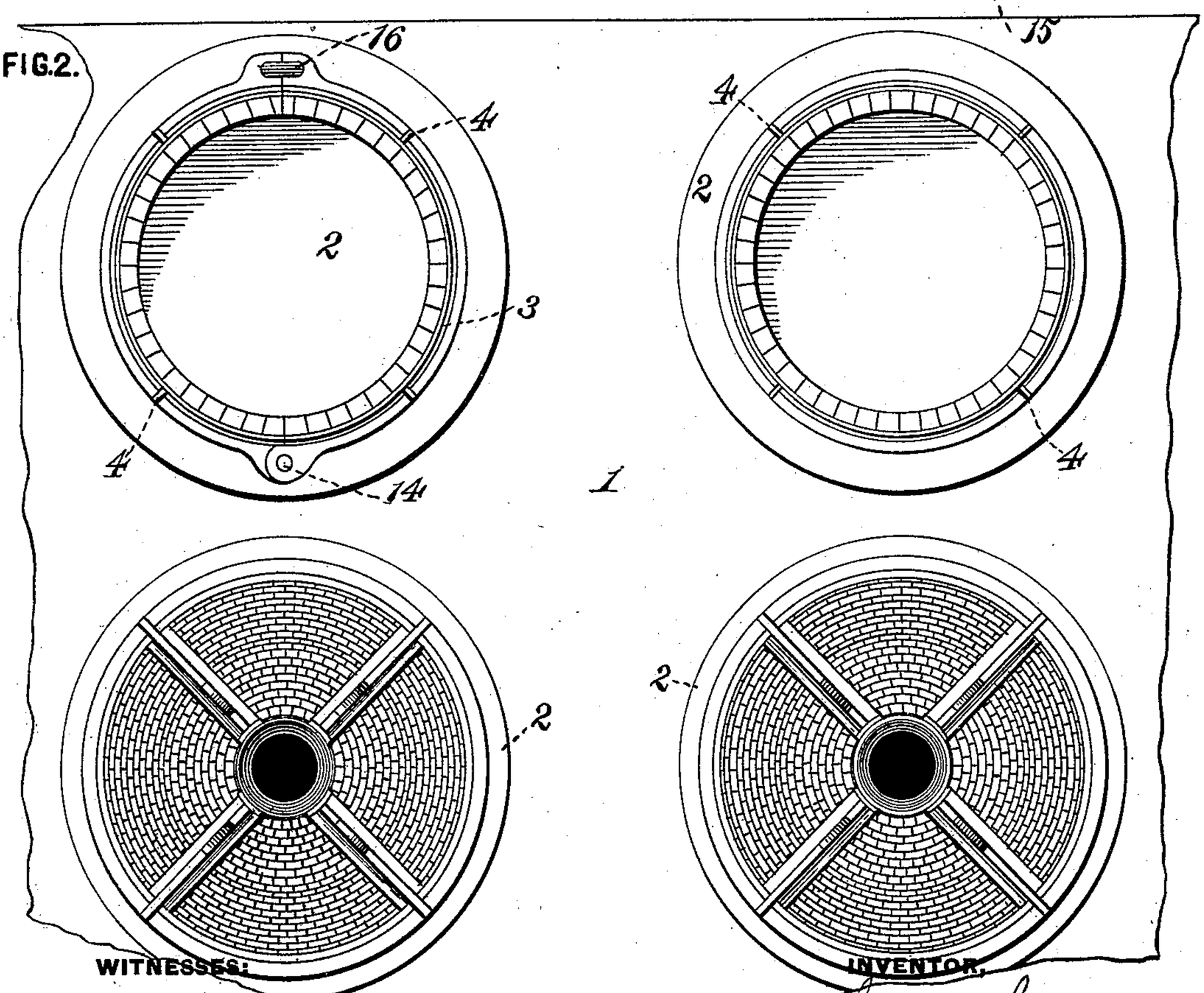


FIG. 2.



WITNESSES:

Damon S. Wolcott

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INVENTOR,

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by George H. Christy

Att'y.

UNITED STATES PATENT OFFICE.

WILLIAM W. ANDERSON, OF WILKINSBURG, PENNSYLVANIA, ASSIGNOR OF ONE-HALF TO JAMES H. CURRY, OF SAME PLACE.

COKE-OVEN.

SPECIFICATION forming part of Letters Patent No. 420,897, dated February 4, 1890.

Application filed April 24, 1889. Serial No. 308,495. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM W. ANDERSON, a citizen of the United States, residing at Wilkinsburg, in the county of Allegheny and State of Pennsylvania, have invented or discovered certain new and useful Improvements in Coke-Ovens, of which improvements the following is a specification.

The invention described herein relates to certain improvements in the construction of ovens for coking coal.

It has heretofore been the general practice in constructing coking-ovens to form a chamber or series of chambers in a mass of brick-work, each of said chambers being provided with an opening in the top for charging in the coal and for the escape of the products of combustion, and an opening in the bottom or near the same for the removal of the charge. In an oven so constructed great difficulty is experienced in the cooling off of the charge and the removal of the same.

The object of the invention herein is to provide such a construction or form of furnace as will not only facilitate the charging and discharging of the same, but will also lessen the cost of erecting such ovens.

In the accompanying drawings, forming a part of this specification, Figure 1 is a sectional elevation of a coke-oven constructed in accordance with my invention, and Fig. 2 is a plan view showing the relative arrangement of a series of ovens.

In the practice of my invention I provide a suitable bed or foundation 1, on which is placed what I term the "hearth" 2 of the oven. This hearth consists of an iron plate 2 of suitable dimensions and preferably circular in outline, on which I arrange a ring 3 of a height proportioned to the size and capacity of the furnace to be built, said ring being preferably made of uniform thickness throughout, except at certain parts, where it is re-enforced by external abutments 4. This ring is lined with one or more rows of brick-work. The top or hood 5 of the oven consists of a dome-like structure formed of a series of arched T-shaped bars 6, converging to a common center at the top of the dome, said bars being connected at intervals by bands. The dome at its lower end is made of sufficient diameter or size to fit around the ring 3 of the hearth, the lower edge of the dome resting upon the metal bed-plate outside of the ring, as shown. Around the inner wall of the dome, at a height from its lower edge a little greater than the height of the ring 3, is secured an angle-plate 7, thereby forming a shelf or ledge for supporting the fire-brick forming the body of the dome. At the apex of the dome is formed an opening of sufficient size to permit of the escape of the gases and other products of combustion generated during the coking operation.

For facilitating the handling of the dome, as hereinafter described, suitable rings 10 are formed on the bars 6, to which lifting-chains may be attached.

In using my improved furnace the dome is removed and the proper charge of coal is arranged on the hearth within the ring 3, and, the coal having been ignited, the dome is then placed in position, as shown. After the coking operation is finished, the dome is removed from its position over the hearth, the charge wet down, and then removed from the hearth and another charge placed therein. It will be readily understood that the removal of the dome greatly facilitates the charging of the coal and subsequent removal of the coke.

In practice I prefer to arrange a number of the hearths in two lines, each line containing an equal number of hearths, and provide a number of domes equal to the number of hearths in one row, so that while the coking operation is being effected in the ovens in one line the coke could be removed and a new charge of coal placed in the hearths of the other line, and as soon as the coking operation is finished in the ovens of the first line the domes could be lifted off and placed over the charged hearths of the second line, thereby avoiding the loss of heat in the domes, due to the wetting down of the coke as now practiced. In fact, the brick-work of the domes will be sufficiently hot in the practical operation of my improved furnaces to ignite the fresh charge of coal over which they are placed.

It will be understood that suitable openings are left at intervals around the dome to ad-

mit sufficient air for the proper combustion of the coal, as indicated at 13.

In order to facilitate the removal of the coke from the hearth, the ring 3 may be formed in two or more sections independent of the plate 2 and hinged together, as at 14, so that they may be opened and thereby permit of the shoveling of the coke off from the plate, when the sections are again brought together, or the ring may be formed integral with the plate 2. The sections of the ring are provided with a shelf 15 for supporting the brick lining, and also eyes and hooks 16, whereby the sections may be fastened together. If desired, the metal plate 2 may be dispensed with, the ring, whether integral or in sections, being arranged upon a smooth bed or foundation.

I claim herein as my invention—

1. A coke-oven having in combination a bed provided with a retaining-ring, and a removable dome or hood resting upon the bed outside of the retaining-ring, substantially as set forth.

2. A coking-oven having in combination a bed-retaining ring formed in sections and resting upon said bed, and a removable dome or hood resting upon the bed outside of the retaining-ring, substantially as set forth.

In testimony whereof I have hereunto set my hand.

WILLIAM W. ANDERSON.

Witnesses:
DARWIN S. WOLCOTT,
R. H. WHITTLESEY.