

No. 725,748.

PATENTED APR. 21, 1903.

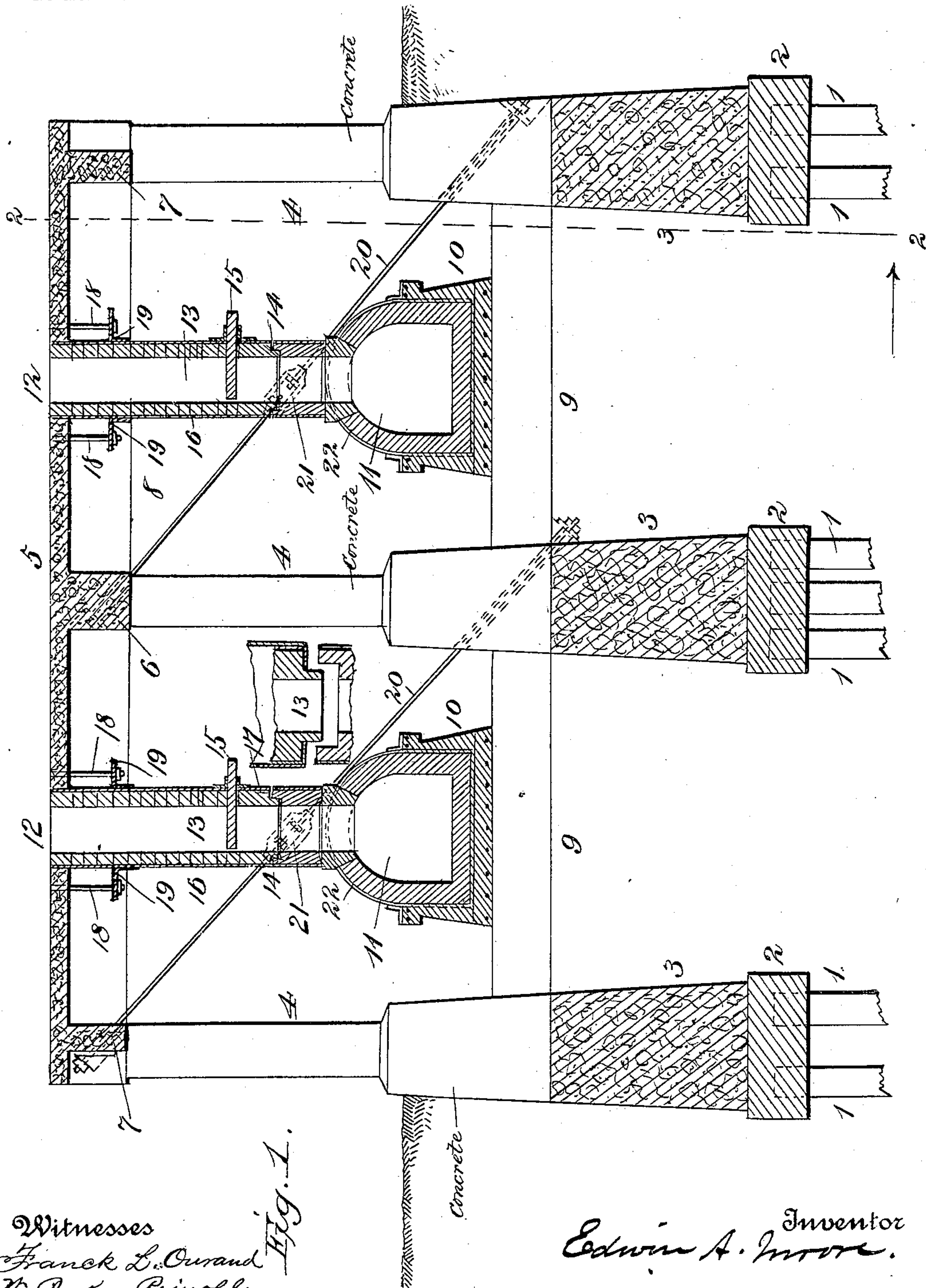
E. A. MOORE.

FOUNDATION OR SUBSTRUCTURE FOR COKE OVENS.

APPLICATION FILED SEPT. 10, 1902.

NO MODEL.

3 SHEETS—SHEET 1.



Witnesses  
Frank L. Ourand  
W. Parker Reinohl

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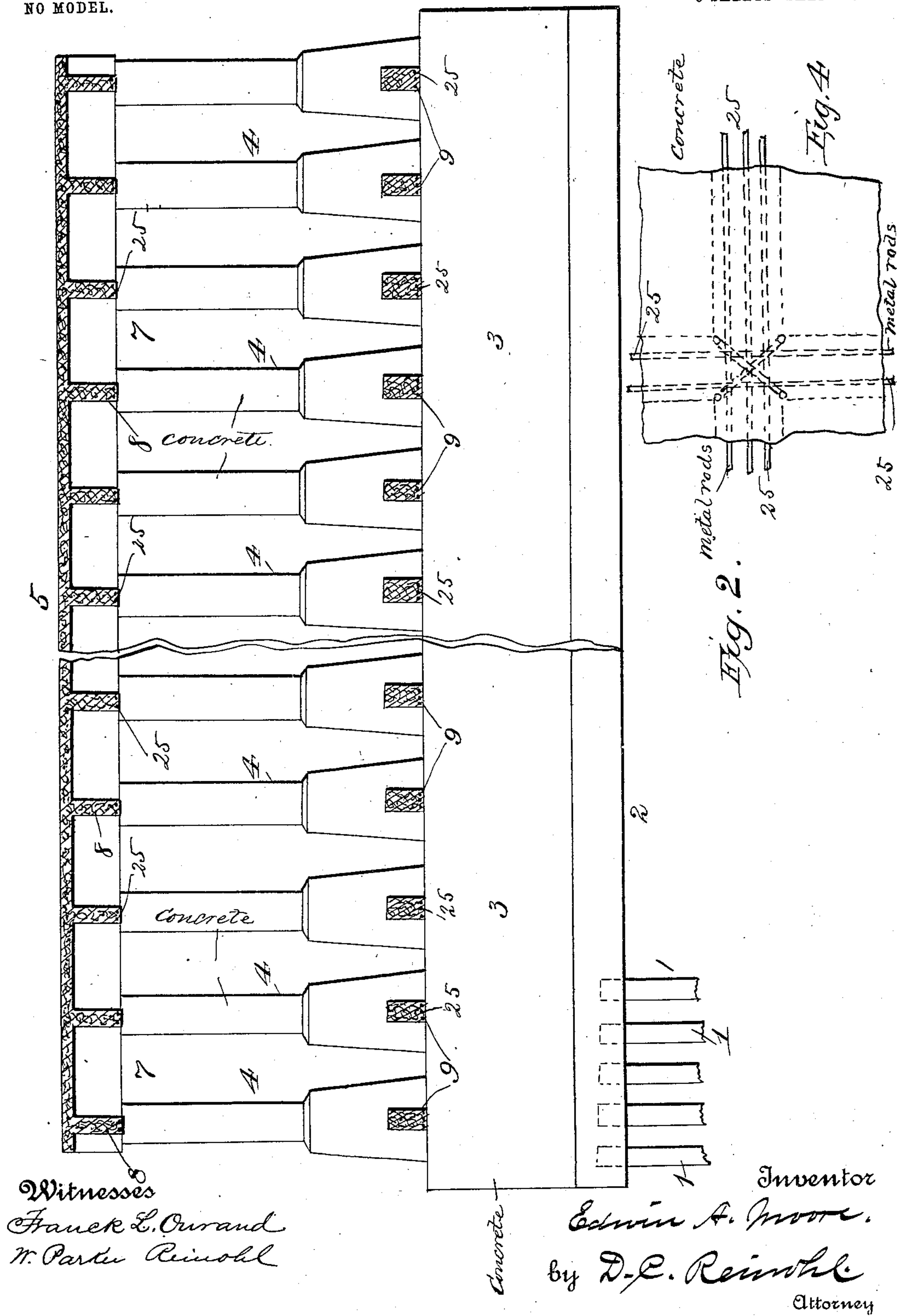
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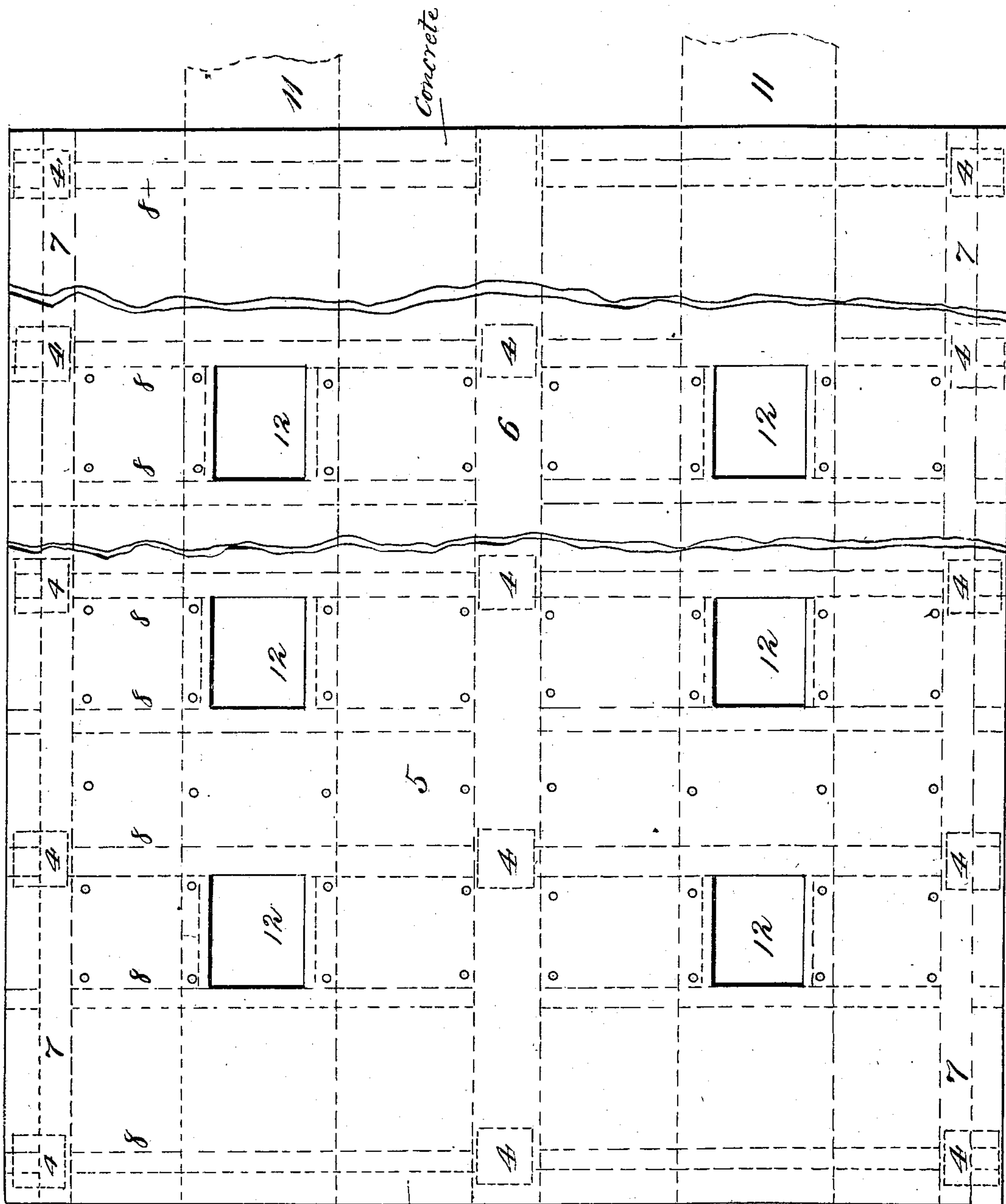
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3 SHEETS—SHEET 3.



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Fig. 3.

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# UNITED STATES PATENT OFFICE.

EDWIN A. MOORE, OF PHILADELPHIA, PENNSYLVANIA.

## FOUNDATION OR SUBSTRUCTURE FOR COKE-OVENS.

SPECIFICATION forming part of Letters Patent No. 725,748, dated April 21, 1903.

Application filed September 10, 1902. Serial No. 122,751. (No model.)

*To all whom it may concern:*

Be it known that I, EDWIN A. MOORE, a citizen of the United States, residing at Philadelphia, in the county of Philadelphia and State of Pennsylvania, have invented certain new and useful Improvements in Foundations or Substructures for Coke-Ovens; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

My invention relates to coke-ovens, has especial reference to the construction of foundations or substructures on which the coke-ovens are supported, has for its object the construction of such foundations that will resist the deleterious and destructive effects upon the structure by the action of the elements, fumes, and gases generated in and about the coke-ovens; and it consists in certain improvements, which will be fully disclosed in the following specification and claims.

In the accompanying drawings, which form part of this specification, Figure 1 represents a vertical transverse section, partly in elevation; Fig. 2, a vertical section on lines 2 2, Fig. 1, looking in the direction of the arrow; Fig. 3, a top plan view of the floor; and Fig. 4, a plan view of a section of the floor, showing the metal rods in the concrete.

Reference being had to the drawings and the designating characters thereon, 1 indicates piles used when required by the condition of the soil or earth on which the ovens are to be built; 2, the beds; 3, the bases of the column which rest upon the beds 2, all of which may be made of concrete; 4, the columns, which are preferably made of concrete and upon which the floor 5 is supported. The floor is comprised of girders 6 in the center of the floor and 7 7, one on each side, as shown in Fig. 1, and interposed joists 8. (Shown in Figs. 1 and 2.)

The floor 5, the girders 6 and 7, and the joists 8 are made of concrete reinforced by metal rods 25, preferably that known as the "Ransome" construction; described in Letters Patent of the United States numbered 516,113 and bearing date of March 6, 1894.

9 indicates transverse bars of the same construction as the floor, girders, and joists, upon

which rest troughs 10, also of the same construction. These troughs are built in sections provided with the usual expansion-joints (not shown) common to the art of constructing masonry exposed to variations of temperature, and these troughs extend throughout the length of the battery of ovens.

11 indicates gas-flues, made of fire-brick, resting in the troughs 10, and are connected with openings 12 in the floor 5 by vertical flues 13, also made of fire-brick and provided with an expansion-joint 14, a damper or valve 15, and incased in a metal jacket 16, provided with a right-angled projection 17 on its inside, on which the brick of the flue are supported, and the flue above the expansion-joint is supported on bolts 18, engaging angle-irons 19 on the jacket 16 and extending through the floor 5.

To stiffen the structure, rods 20, provided with turnbuckles 21, are extended from the columns to the girders, as shown in Fig. 1.

The flues 11 may be provided with an insulating material, such as magnesia or asbestos, (not shown,) and protected by a metallic casing 22.

By the construction shown no metal entering into the structure of the columns, girders, joists, or flue-supporting bars is exposed to the deteriorating influences or action of the elements, fumes, and gases emanating from the coke produced in the ovens and the durability of the foundation or substructure is greatly enhanced.

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

1. A foundation or substructure for coke-ovens, comprising a floor, girders and joists of metal embedded in concrete, and columns of concrete; in combination with metallic tie-rods between the girders and the columns.

2. A foundation or substructure for coke-ovens, having columns supporting the floor of the ovens, transverse bars between the columns, a trough resting on said bars, and a gas-flue in the trough provided with vertical flues connected to openings in the floor.

3. A foundation or substructure for coke-ovens having columns supporting the floor of the ovens, transverse bars between the col-

umns, a gas-flue supported on said bars, an expansion-joint in the flue, and a metallic casing for the flue.

5 4. A foundation or substructure for coke-ovens, having columns of concrete, a floor of metal embedded in concrete, transverse supporting-bars, a trough resting on said bars, and a gas-flue in the trough provided with

vertical flues connected to openings in said floor.

In testimony whereof I affix my signature in presence of two witnesses.

EDWIN A. MOORE.

Witnesses:

D. C. REINOHL,

C. W. METCALFE.