No. 885,155. PATENTED APR. 21, 1908.

R. HILPRECHT.

GRATE FOR GAS PRODUCERS.

APPLICATION FILED DEC. 1, 1906.

2 SHEETS—SHEET 1.

Fig. 1.

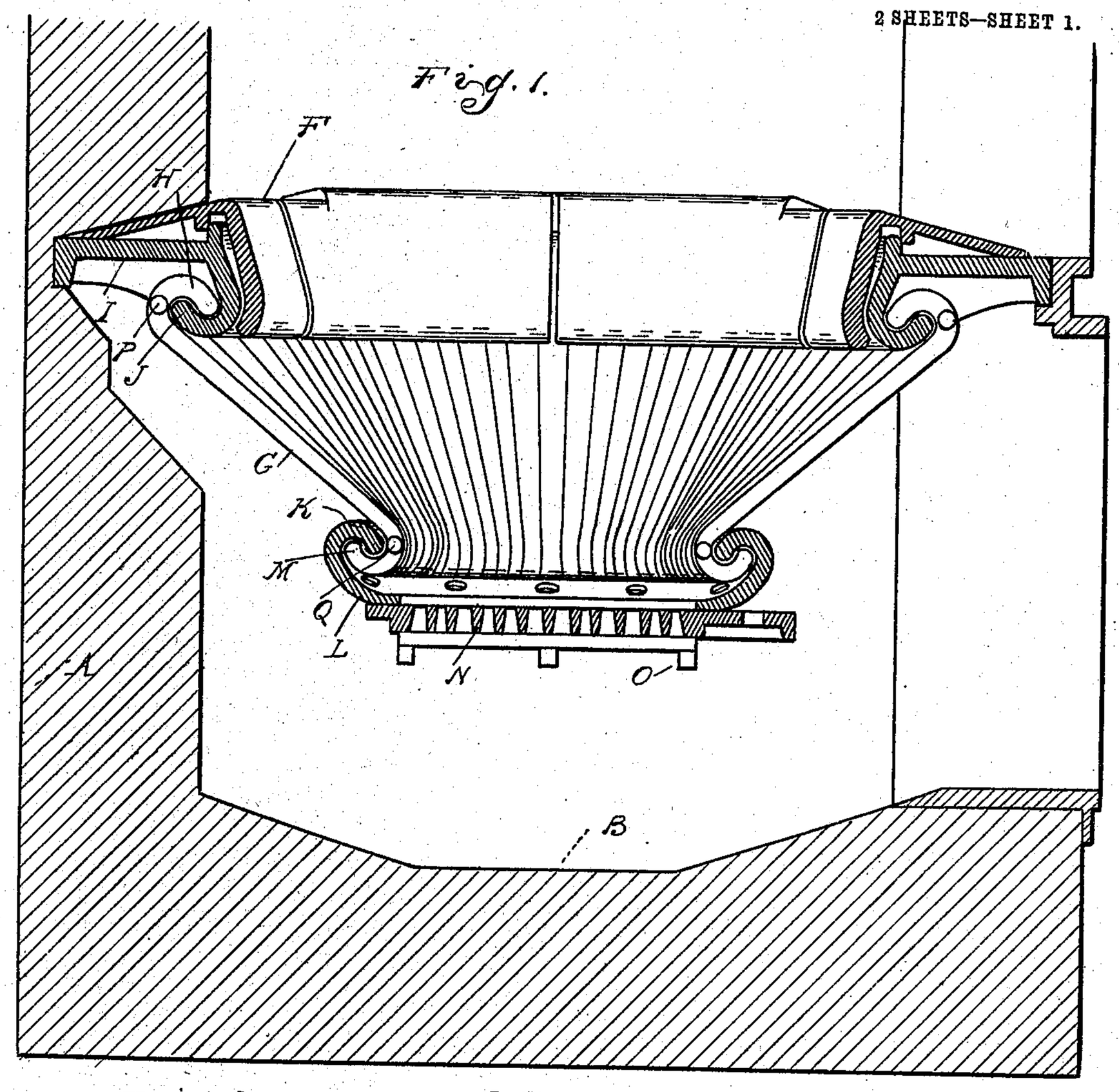
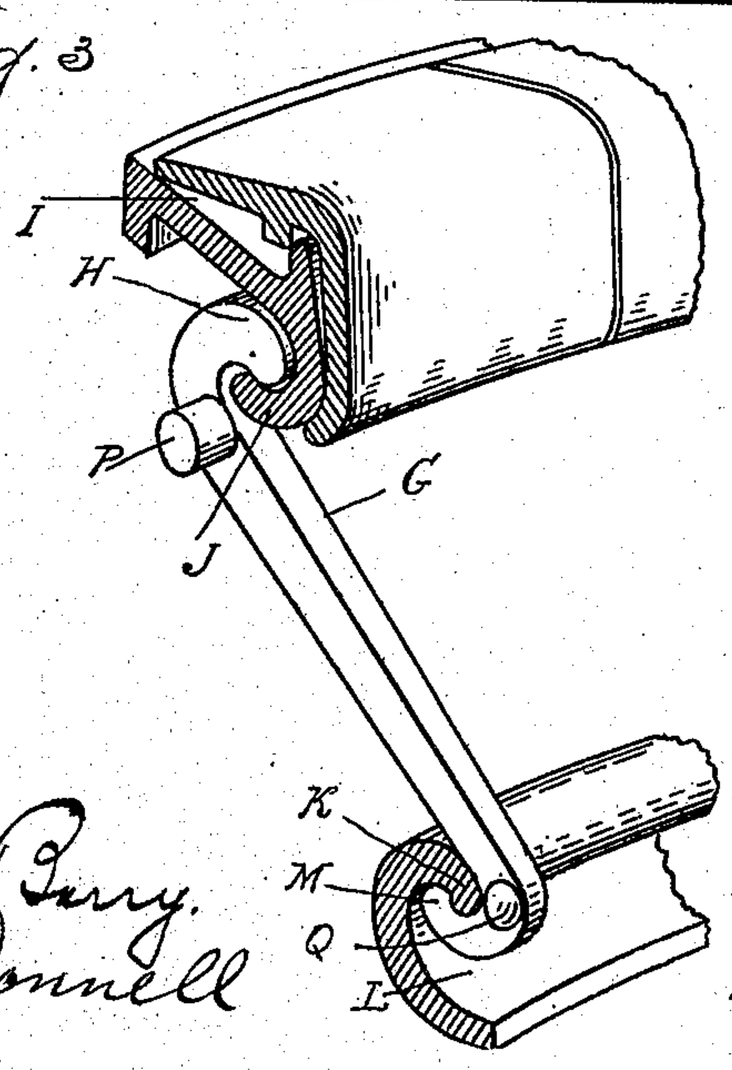


Fig. 3.



Witnesses
James P. Barry.
Thos. O'Donnell

Inventor
Robert Hilprecht
By Whittemore Hulbert & Whittemore
Attys

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2 SHEETS—SHEET 2.

Fig. 2.

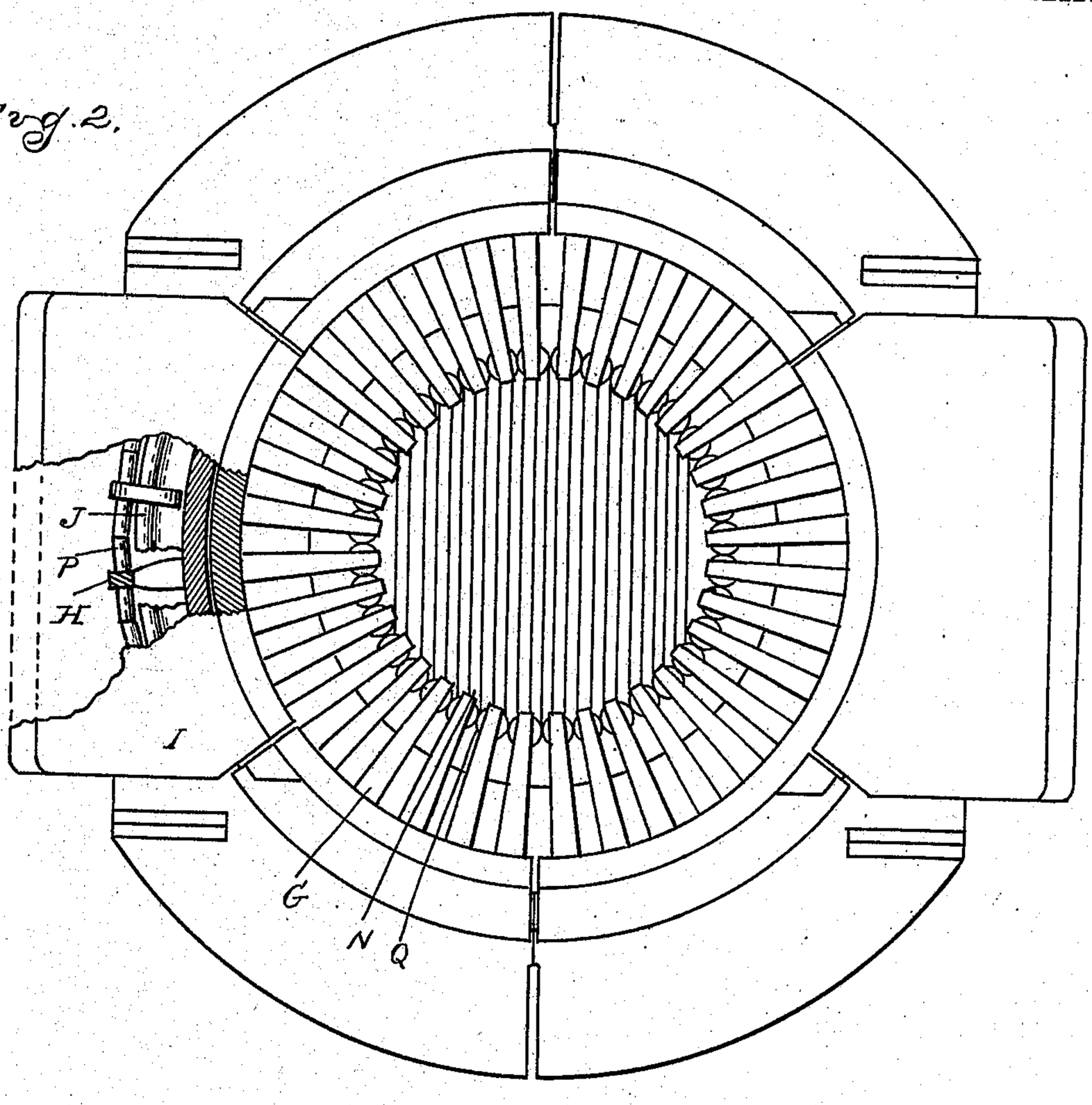
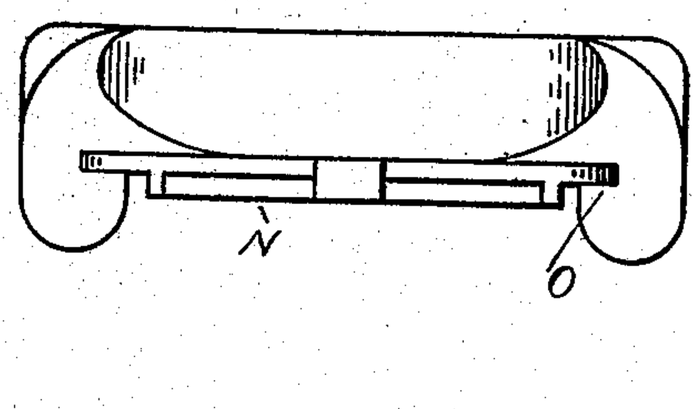


Fig. 4.



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attys.

UNITED STATES PATENT OFFICE.

ROBERT HILPRECHT, OF LANSING, MICHIGAN, ASSIGNOR TO OLDS GAS POWER COMPANY, OF LANSING, MICHIGAN, A CORPORATION OF MICHIGAN.

GRATE FOR GAS-PRODUCERS.

No. 885,155. Specification of Letters Patent. Patented April 21, 1908.

Application filed December 1, 1906. Serial No. 345,861.

To all whom it may concern:

Be it known that I, ROBERT HILPRECHT, a subject of the Emperor of Germany, residing at Lansing, in the county of Ingham and State of Michigan, have invented certain new and useful Improvements in Grates for Gas-Producers, of which the following is a specification, reference being had therein to the accompanying drawings.

The invention relates to gas producers of the suction type, and consists in certain features of construction as hereinafter set forth.

In the drawings, Figure 1 is a vertical central section through the producer; Fig. 2 is a plan view of the grate; Fig. 3 is a perspective view of a portion of the grate; and Fig. 4 is an elevation of the grate at right angles to Fig. 1.

In the operation of suction gas producers, in which American anthracite coal is employed difficulty has been experienced in keeping the grates clear. Furthermore a grate area only equal to the cross section of the fuel support thereon has been found insufficient to produce satisfactory results. With these difficulties in view, the present invention consists primarily in the novel construction of the grate, and further in the peculiar construction and arrangement of said grate in relation to the other portions of the producer.

A is the producer casing, preferably of cylindrical form, having a vertically arranged axis; B is the hearth at the lower end of this casing, and F is the lining of refractory material.

The chamber within the producer is preferably cylindrical in form, and substantially uniform in diameter from top to bottom. The fuel in this chamber is supported by a grate, but, to provide a greater open area, this grate is of a basket form. Thus the air has access to the fuel through the conical sides, as well as the bottom of the grate, preventing the formation of clinker and the putting out of the fire at any point due to the chilling effect of the vapor mixed with the air.

In detail construction, this basket grate comprises a series of separate sections, preferably individually separable bars G, which are arranged around the casing adjacent to each other to form the basket. These bars are supported at their upper ends by being provided with hooks H, which engage bearings upon an annular shelf or plate I, upon which the refractory lining F is supported. The bearing for the hooks H is formed by an annular flange J depending and extending outward from the plate I. At their lower ends the bars G are held together by a surrounding ring K, preferably an inturned flange on an annular member L, which engages outwardly of the hooks M on the bars G. The member L also forms a support for a flat grate N slidably engaging ways O. The individual grate bars G are spaced from each other by laterally projecting lugs P near their upper ends, and preferably also rounded bosses Q adjacent to their lower ends. Thus, when engaged with the rings J and K, the bars will be uniformly spaced from each other.

With the construction described, the grate may be readily assembled, or taken down for repairs, it being only necessary to slightly elevate the lower ring L, which will permit sufficient lateral movement of the hooks H to disengage them from or engage them with the annular flange J. In operation, the spaces between the bars and in the flat slidable grate N will provide abundant access to the air and vapor, and whenever the grate becomes clogged with ashes, it may be shaken by sliding the entire series of bars upon the annular flange J.

What I claim as my invention is:

1. In a gas producer, the combination with a casing, of an annular bearing therein, a series of grate sections having a hooked engagement with said annular bearing, a ring carried by and surrounding the lower ends of said grate sections to hold them together, and a flat grate supported by said ring.

2. In a gas producer, the combination with a casing and a refractory lining therein, of an annular plate supporting said refractory lining and provided with a depending annular bearing, a series of grate sections having hooked engagement with said annular bearing, a ring carried by said grate sections for holding said grate sections together at their lower ends, and a flat grate supported by said ring.

3. In a gas producer, the combination with a casing, of a refractory lining therefor, an annular plate supporting said lining, an annular bearing depending from said plate, a series of grate bars having reversely bent

hooks at their opposite ends, the upper hooks being engaged with said annular bearing, spacing means between said grate bars and an annular member carried by the lower hooks, and holding said bars together.

4. In a gas producer, the combination with a casing, of an annular bearing within said casing, a series of longitudinally S-shaped grate bars having their upper ends engaging said annular bearing, and an annular member carried by and engaging the lower ends of said bars, having a hooked engagement therewith.

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

ROBERT HILPRECHT.

Witnesses:
S. J. SEAGER,
N. T. HARRINGTON.