No. 848,118. PATENTED MAR. 26, 1907.

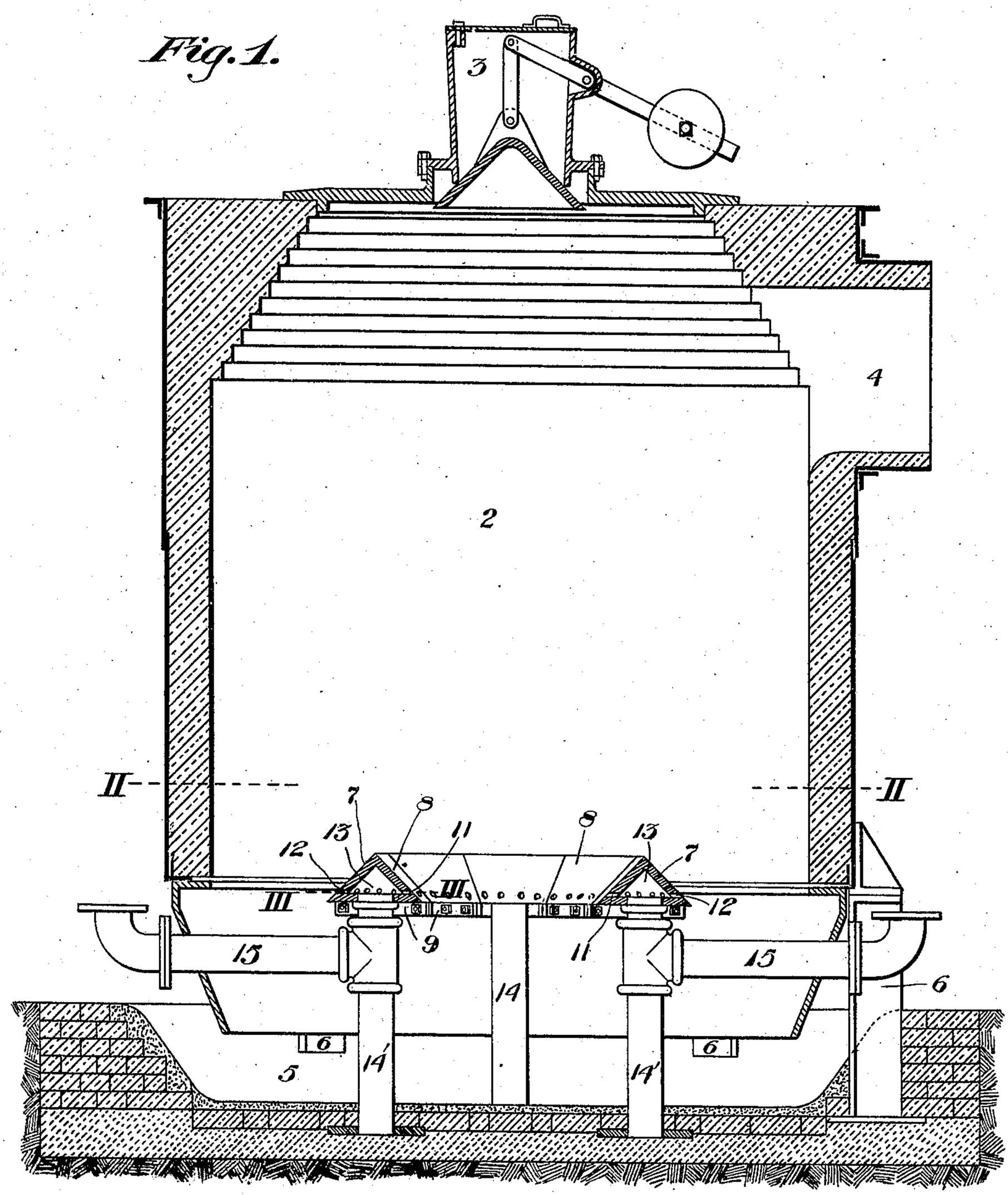
W. R. MILLER.

GAS PRODUCER.

APPLICATION FILED DEC. 30, 1905.

2 SHEETS—SHEET 1.

Fig. 1.



Witnesses:

E. R. Rodd.

Chas. S. Lepley.

Inventor:

William R. Miller

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his Attorney.

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2 SHEETS—SHEET 2.

Fig. 2.

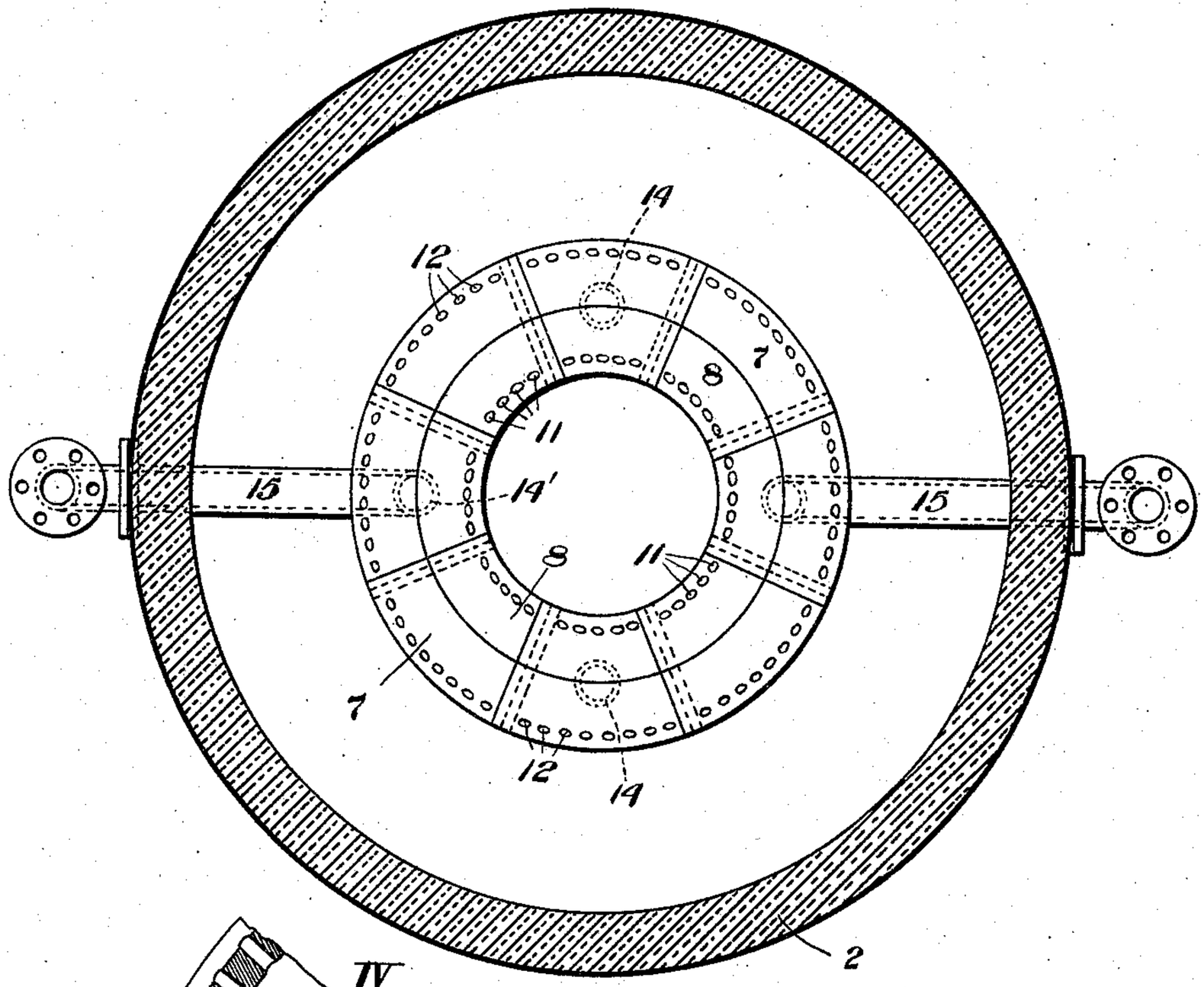


Fig. 3.

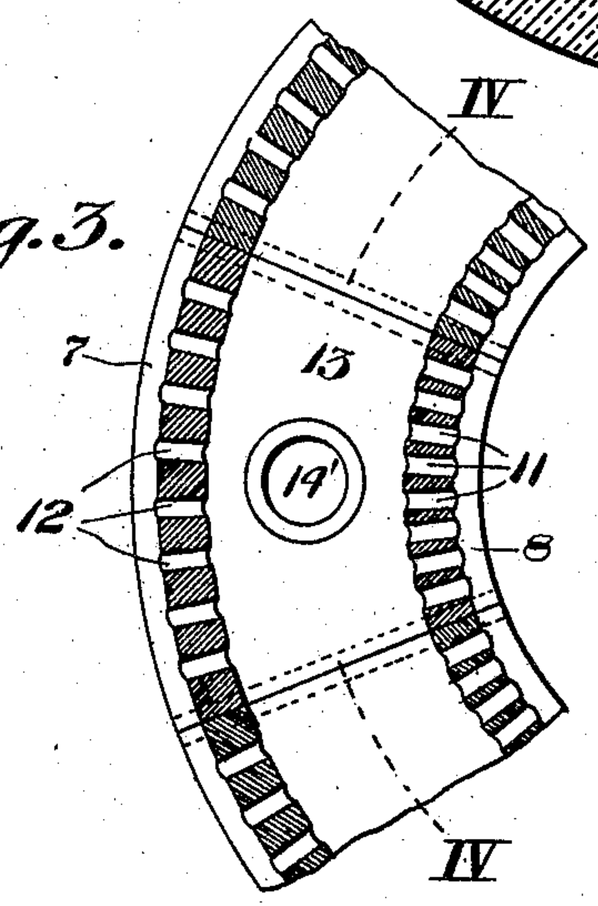
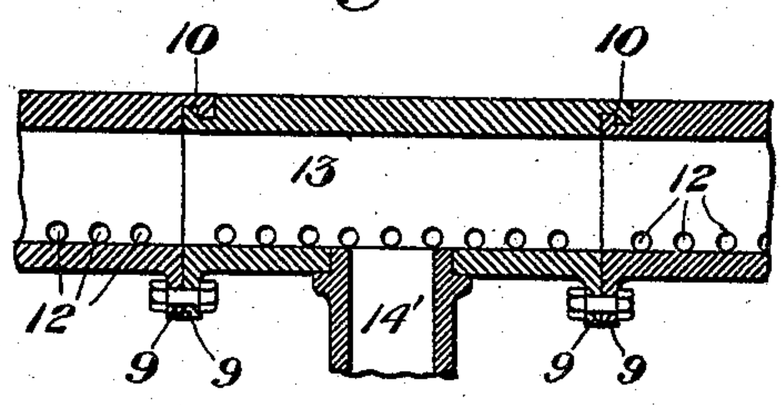


Fig. 4.



Witnesses:

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UNITED STATES PATENT OFFICE.

WILLIAM R. MILLER, OF PITTSBURG, PENNSYLVANIA, ASSIGNOR TO THE FORTER MILLER ENGINEERING COMPANY, OF PITTSBURG, PENNSYLVANIA, A CORPORATION OF PENNSYLVANIA.

GAS-PRODUCER.

No. 848,118. Specification of Letters Patent. Patented March 26, 1907.

Application filed December 30, 1905. Serial No. 293,888.

To all whom it may concern:

Be it known that I, WILLIAM R. MILLER, a citizen of the United States, residing at Pittsburg, in the county of Allegheny and State of Pennsylvania, have invented certain new and useful Improvements in Gas-Producers, of which the following is a specification, reference being had therein to the accompanying drawing, forming part of the specification, in which—

Figure 1 is a vertical sectional view of my improved gas-producer. Fig. 2 is a horizontal sectional view on the line II II of Fig. 1. Fig. 3 is an enlarged horizontal sectional view on the line III III of Fig. 1. Fig. 4 is a vertical sectional view on the line IV IV of Fig. 3.

My invention refers to improvements in gas-producers, more particularly the class of water-sealed gas-producers, and relates particularly to the construction of the air and steam supplying wind-box. In producers of this class it is desirable to provide a fuel-supporting air-supplying structure so arranged as to uniformly distribute the steam and air blast through the whole area of the fuel-bed, while providing for free downward travel of the fuel-ash into the pan during combustion.

The producer 2, as shown in the drawings, is cylindrical in cross-section, provided with the usual charging-hopper 3 and having suitable feeding mechanism and a gas-outlet opening 4.

5 is the water-seal basin, into which the ashes are deposited and from which they are removed from time to time, the entire upper portion of the producer being supported above said basin by means of any suitable supporting structure, as posts 6.

My improvement consists of a concentrically-located hollow ring constituting a wind-box, preferably triangular in cross-section through one side, providing the upper outwardly and inwardly sloping faces 7 8, oppositely disposed and so arranged that the ash, &c., will pass downwardly and to the outside and inside of the wind-box, respectively, due to such inclined faces. As shown in Fig. 2, the box is so arranged as to the cross area of the interior of the producer that it will distribute the air to the fuel from the inside and outside of the wind-box in a very thorough and efficient manner. The wind-box is preferably composed of a plurality of sections bolted together by means of flanges 9 extending across their lower portions, the upper, outer, and inner slanting walls 7 and 8 having interlocking joints, as indicated at 10, so that the entire series of sections are rigidly and tightly connected together. Each section is provided at the lower portion of the slanting walls with series of air-supply ports 11 12 at the inside and outside, respectively, and preferably just above the level of the base, the interior hollow cavity 13 preferably extending continuously throughout the circular interior. The entire wind-box is supported upon suitably-located standards 14, which may conveniently be made of hollow pipe, and for the purpose of supplying air and steam under pressure to the interior of the box two of said pipe-supports 14′ are connected with supply-pipes 15, communicating with a blower or any suitable air and steam supply apparatus. The supply of air and steam through these pipes to the wind-box is controlled so that the gas-maker can force more or less air to the grate, depending on the nature of the fuel or the condition of the gas required. As thus constructed the entire apparatus is very strong and substantial and is capable of distributing a copious supply of air and steam to all portions of the fuel, contributing to very even combustion and greatly facilitating the operation. The device is simple and economical in construction, will not readily burn out, and may be easily and quickly renewed as to some or all of its sections.

It will be understood that with producers of greater diameter a plurality of concentric circular boxes may be utilized or that with producers of oval, square, or other form the boxes may be made to correspond, and all such changes or modifications or others which may be made within the province of the skilled mechanic are understood to be included within the scope of the following claims.

What I claim is—

1. A wind-box for gas-producers consisting of a hollow ring having an interior clearance-space, the surrounding hollow ring or

box having outer and inner downwardly-diverging sloping walls provided with perforating air-supply openings, and means for furnishing a volume of air to the interior of the hollow ring, substantially as set forth.

2. A wind-box for gas-producers consisting of a hollow ring having an interior clearance-space, the surrounding hollow ring or box having outer and inner downwardly-diverging sloping walls and a horizontal lower closing-wall, said sloping walls having perforating air-supply openings, substantially as set forth.

3. A wind-box for gas-producers consisting of a hollow ring having an interior clearance-space, the surrounding hollow ring or box having outer and inner downwardly-diverging sloping walls and a horizontal lower closing-wall, said sloping walls having perforating air-supply openings located immediately above said lower closing-wall, substantially as set forth.

4. A wind-box for gas-producers consisting of a circularly-arranged series of connected hollow sections surrounding an interior clearance-space, said sections having outer and inner downwardly-diverging sloping perforated walls arranged to deliver the burden to the outer and inner areas adjacent to the box, with means for supplying a blast of air to the interior of the box, substantially as set forth.

5. A wind-box for gas-producers consisting of a hollow circular ring, the body portion of said ring consisting of a continuous triangular-shaped box having outer and inner downwardly-diverging sloping sides arranged to deliver the burden to the outer and inner adjacent areas and a flat horizontal bottom, said sloping sides being provided with air-circulation openings, with means for supplying a blast of air to the interior, substantially as set forth.

6. The combination with a gas-producer chamber, of a concentrically-arranged hollow ring located in the middle portion of the producer and surrounding an interior clearance-space, the body portion of said ring comprising a continuous hollow box having outer and inner downwardly-diverging sloping walls provided with air-circulation openings and a closing bottom, with means for supplying a volume of air to the interior of the box, substantially as set forth.

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

WILLIAM R. MILLER.

Witnesses:

C. M. CLARKE,

CHAS. S. LEPLEY.