

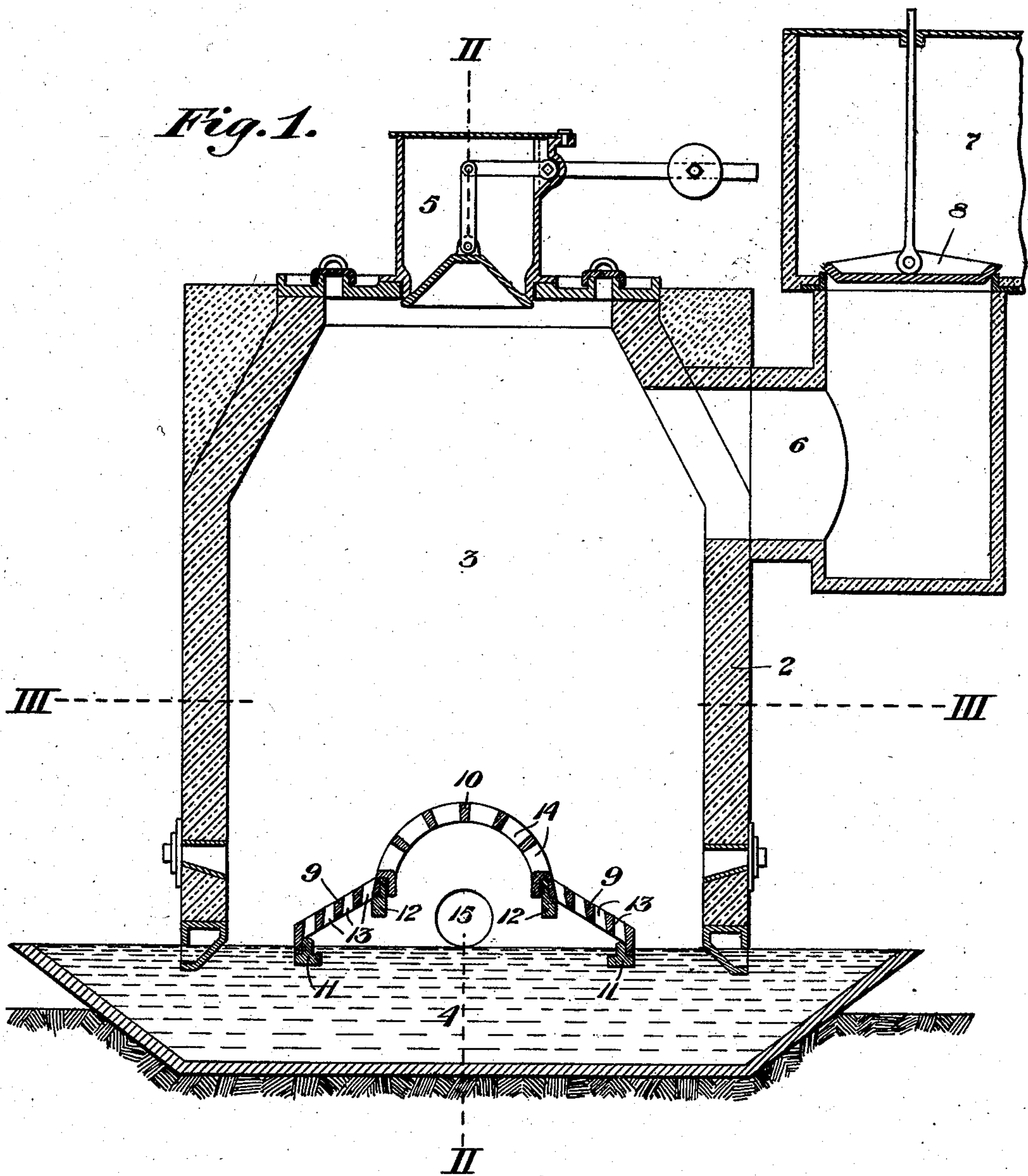
No. 881,258.

PATENTED MAR. 10, 1908.

H. T. NEWELL.  
GAS PRODUCER.

APPLICATION FILED APR. 3, 1907.

3 SHEETS—SHEET 1.



*Witnesses:*  
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*James Nye*

*Inventor:*  
*Hugh T. Newell*  
*by C. M. Clarke*  
*his attorney*

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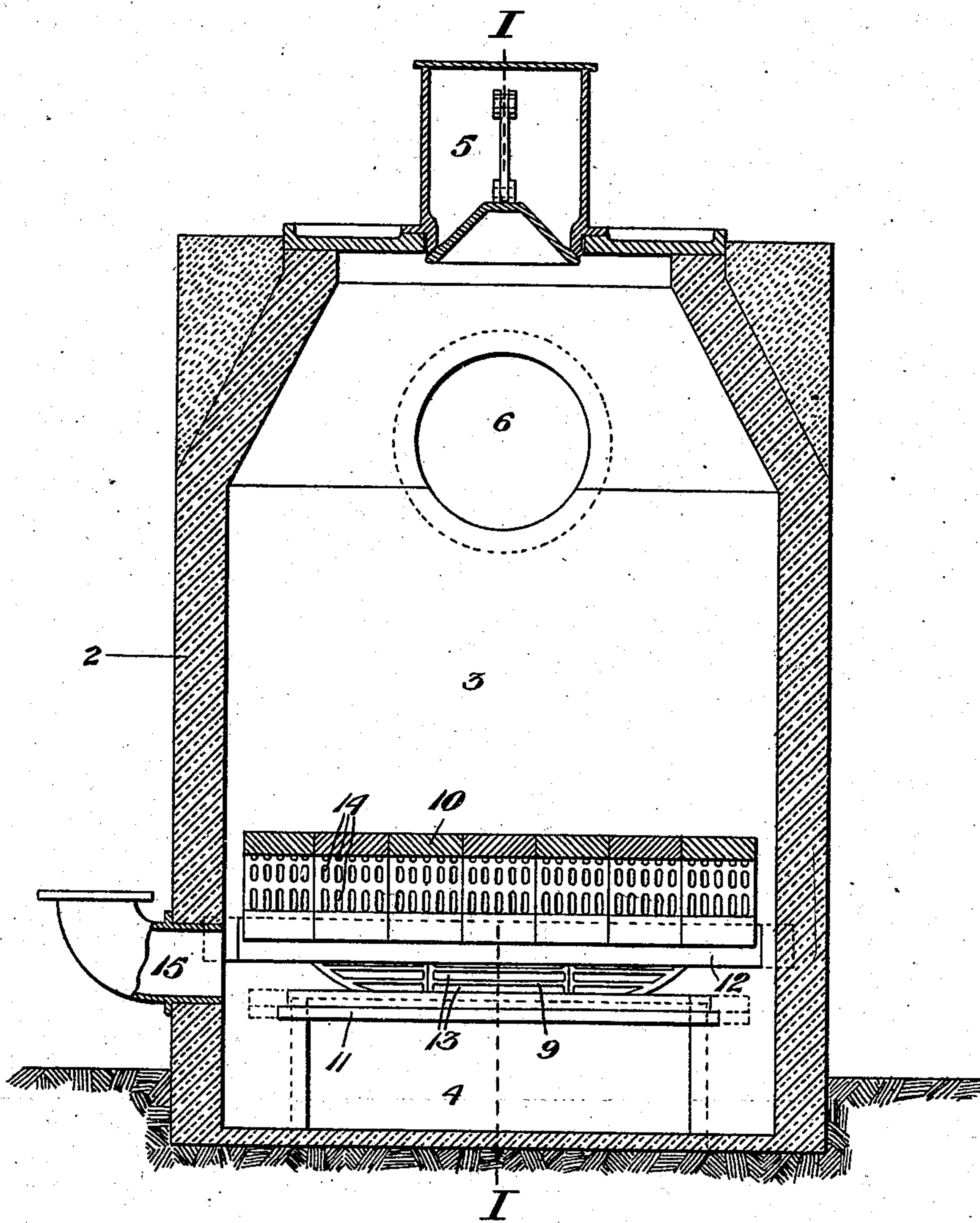
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3 SHEETS—SHEET 2.

*Fig. 2.*



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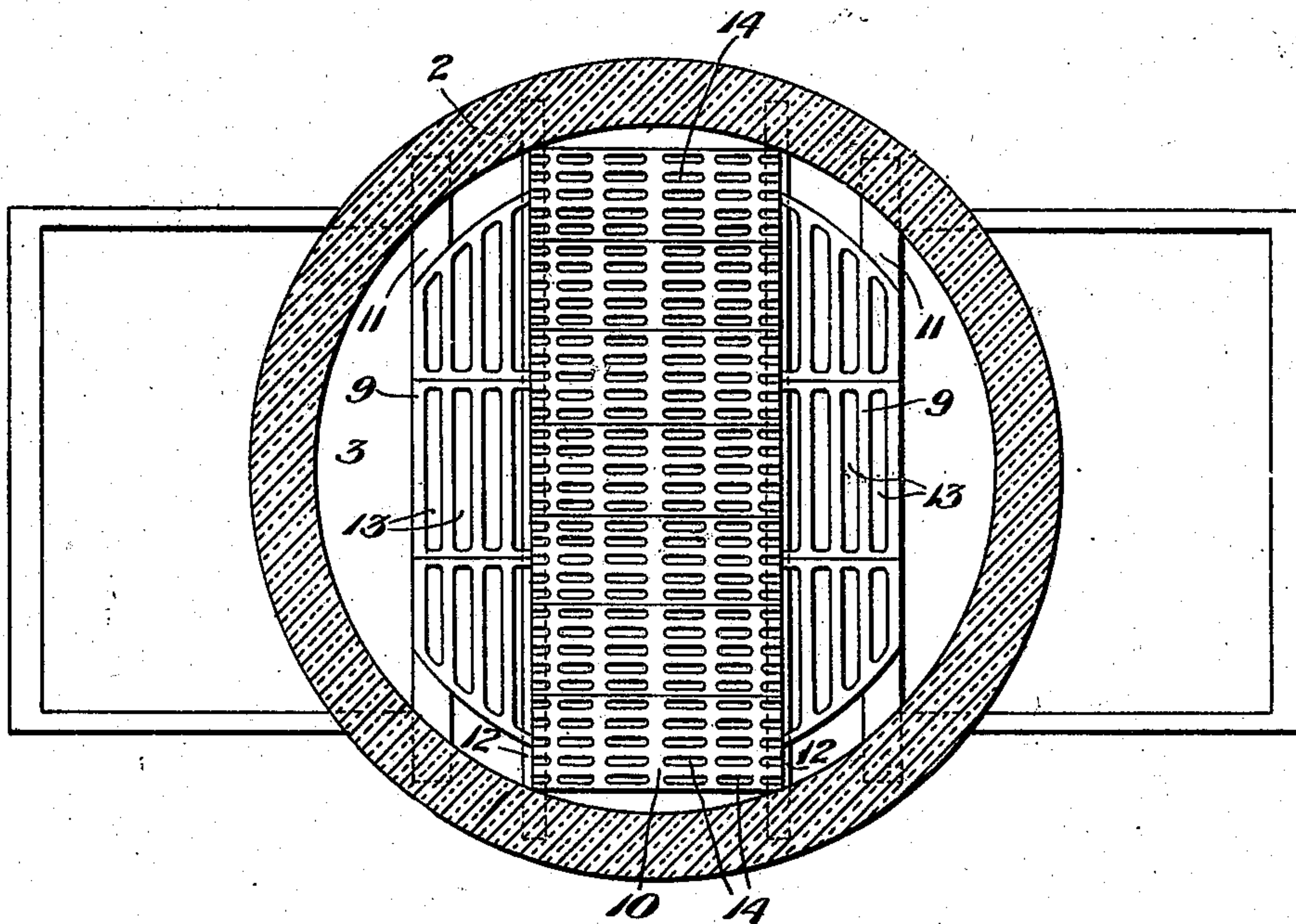
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3 SHEETS—SHEET 3.

*Fig. 3.*



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# UNITED STATES PATENT OFFICE.

HUGH T. NEWELL, OF WILKINSBURG, PENNSYLVANIA, ASSIGNOR TO NEWELL ENGINEERING COMPANY, OF PITTSBURG, PENNSYLVANIA, A CORPORATION OF PENNSYLVANIA.

## GAS-PRODUCER.

No. 881,258.

Specification of Letters Patent.

Patented March 10, 1908.

Application filed April 3, 1907. Serial No. 366,229.

*To all whom it may concern:*

Be it known that I, HUGH T. NEWELL, a citizen of the United States, residing at Wilkinsburg, 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.

My invention refers to improvements in gas producers, and relates particularly to the construction of the means for supporting the fuel and supplying thereto the necessary volume of air and steam.

In the drawings Figure 1 represents a central vertical sectional view of a producer provided with my invention, taken on the line I, I, of Fig. 2. Fig. 2, is a similar sectional view at right angles to Fig. 1, indicated by the section line II, II, thereof. Fig. 3, is horizontal sectional view indicated by the line III, III, of Fig. 1.

In the drawings, 2 represents the main body portion of the producer, which may be made in cylindrical form as shown, or of any other preferred cross-section. The walls consist of brick work within a suitable surrounding metal shell, inclosing the gas-producing chamber 3, and located above a water-sealing basin 4, having laterally arranged ash-withdrawing openings, one at each side of the producer, of well known construction.

The producer is also supplied with a fuel-supply hopper 5, of any suitable construction, provided with means for lowering the fuel into the interior, and also a gas outlet port 6, opening into any suitable conduit 7, and preferably controlled by a valve 8, as shown. Such portions of the producer as are above described are not new, *per se*, and my present invention refers particularly to the construction of the grate.

My improvement consists in the inclined grates 9, 9, and the middle ridge portion, said grates sloping upwardly at each side from a point somewhat inside of the walls 2, and terminating at the base of the coping or arch 10. The grates 9, 9, and coping 10, are suitably mounted upon transversely arranged supporting bars 11, 11; 12, 12; respectively, extending across the area of the producer and set in the walls thereof. Grates 9 and coping 10 are provided with numerous openings 13 and 14 as clearly shown, which may be of any desired form of construction adapt-

ed to provide for free upward passage of the air or steam, or both, so that it will be furnished in a copious volume from underneath to the super-imposed body of fuel.

15 is an air and steam supply conduit opening underneath the grates from one or both sides and connected with any suitable source of supply, through which air for combustion or gasification may be injected by means of a steam jet or blower. By means of the form of the coping, which is substantially semi-cylindrical, it provides a broad supporting arch for the fuel, with the numerous openings for passage of the air and steam, while ample provision is made for the falling of the fuel by gravity upon the inclined grates 9.

The grates and coping or arch may conveniently be made of cast metal in sections and assembled in the manner shown in the drawings, particularly Fig. 3, and when thus arranged, constitute a complete supporting grate, extending practically across the entire area of the producer and providing ample space at each side for downward passage of the ashes into the water-seal basin.

The operation of the invention will be readily understood from the foregoing description. It provides simple and convenient means for supporting the fuel and supplying the air and steam thereto; avoids any projecting ridges or abrupt edges liable to cause fissures in the fuel; it is easily and cheaply manufactured, and may be readily renewed and repaired.

The advantages of the invention will be appreciated by all those familiar with this class of mechanism and the invention may be changed or varied by the skilled mechanic to suit different requirements, but all such changes or variations are to be considered as contemplated herein.

What I claim is:

1. The combination with a gas producer, of a fuel supporting grate comprising a middle rounded semi-cylindrical arch and lower sloping grates at each side thereof, substantially as set forth.

2. The combination with a gas producer, of a fuel supporting grate comprising a middle rounded arch, and lower sloping grates at each side thereof, with a clearance space between said grates and the producer wall, substantially as set forth.

3. The combination with a gas producer, of a fuel supporting grate comprising a



middle rounded semi-cylindrical arch and lower sloping grates at each side thereof, and means for introducing air and steam beneath said arch and grates, substantially as set  
5 forth.

4. A producer grate consisting of an upwardly bowed rounded arch portion, and grates sloping downwardly and outwardly at an angle from the base of said arched portion  
10 at each side.

5. A producer grate consisting of an upwardly bowed rounded arch portion, and grates sloping downwardly and outwardly at an angle from the base of said arched portion  
15 at each side, said arched portion and grates having perforating openings therein for the purpose described.

6. A producer grate consisting of an up-

wardly bowed perforated coping portion having substantially perpendicular bases, 20 and grates sloping downwardly and outwardly from said bases at each side.

7. The combination with a gas producer, of a fuel supporting grate comprising a middle upwardly bowed perforated coping 25 portion, and grates sloping downwardly and outwardly at an angle from the base of said coping at each side and terminating within the walls of the producer providing a clearance space at each side.

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

HUGH T. NEWELL. 30

Witnesses:

C. M. CLARKE,

CHAS. S. LEPLEY.