

J. R. GEORGE.  
GAS PRODUCER.  
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946,030.

Patented Jan. 11, 1910.

Fig. 1.

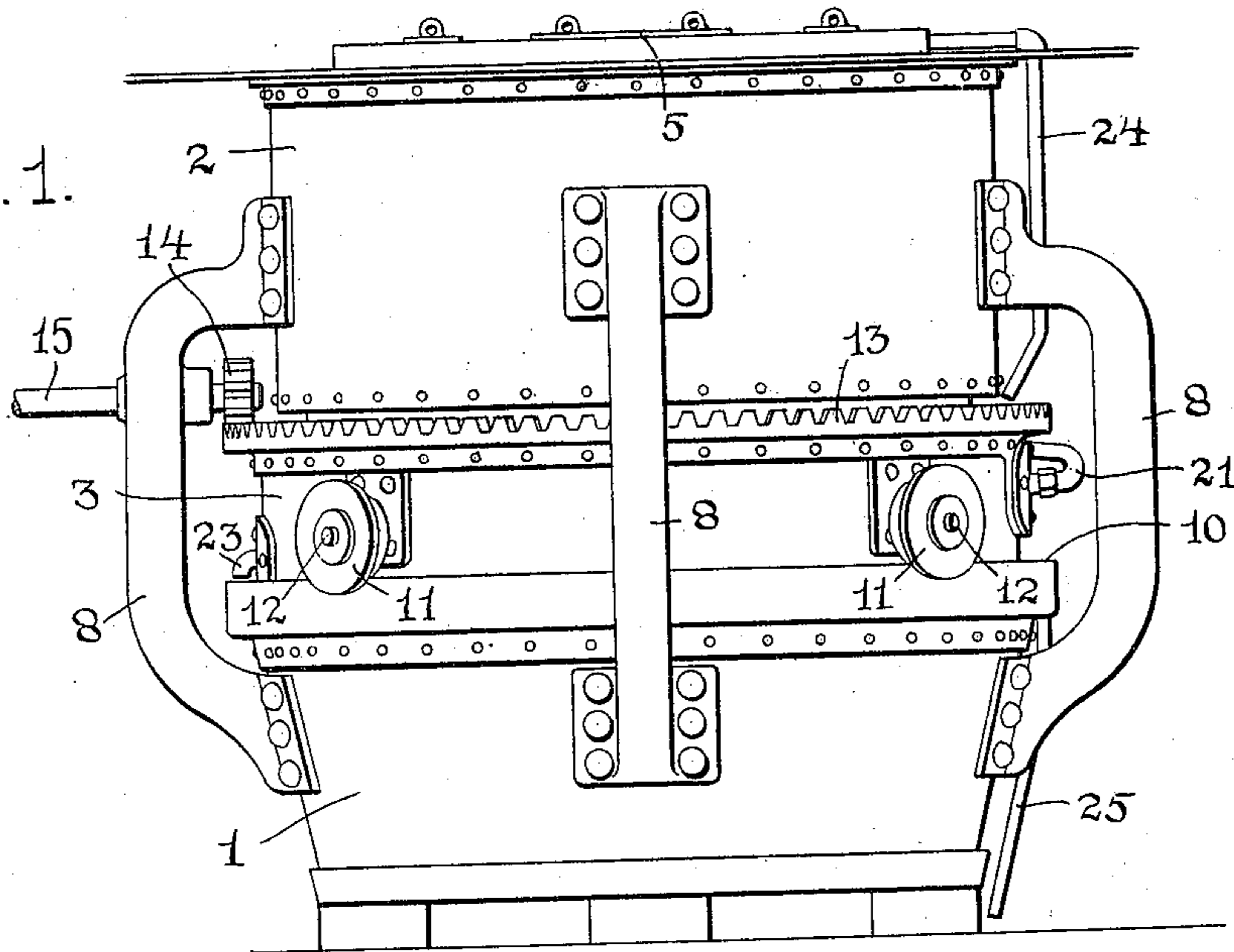
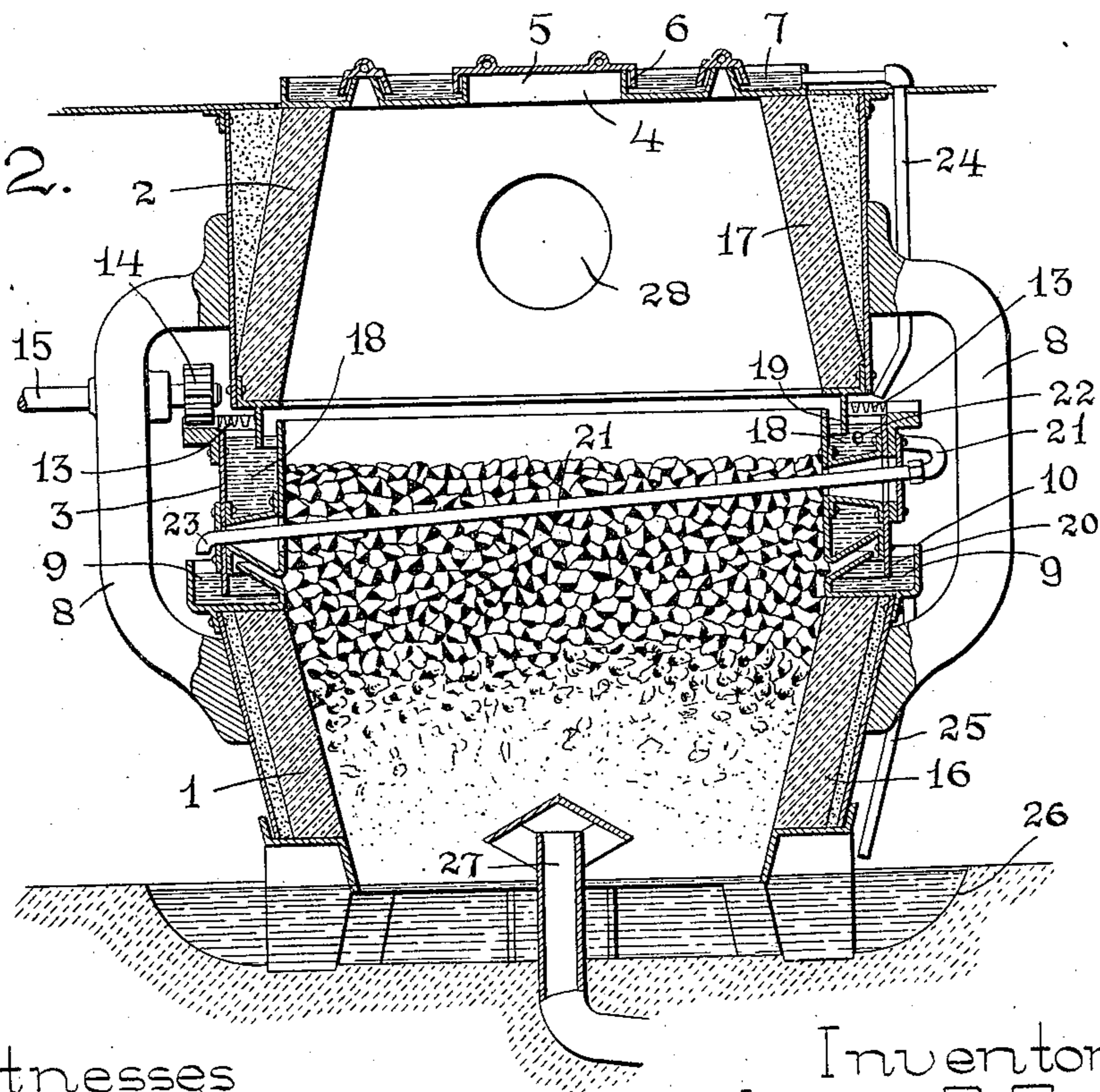


Fig. 2.



Witnesses

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# UNITED STATES PATENT OFFICE.

JEROME R. GEORGE, OF WORCESTER, MASSACHUSETTS, ASSIGNOR TO MORGAN CONSTRUCTION COMPANY, OF WORCESTER, MASSACHUSETTS, A CORPORATION OF MASSACHUSETTS.

GAS-PRODUCER.

946,030.

Specification of Letters Patent.

Patented Jan. 11, 1910.

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*To all whom it may concern:*

Be it known that I, JEROME R. GEORGE, a citizen of the United States, residing at Worcester, in the county of Worcester and Commonwealth of Massachusetts, have invented a new and useful Improvement in Gas-Producers, of which the following is a specification, accompanied by drawings forming a part of the same, in which—

Figure 1 represents a side elevation of a gas producer embodying my invention. Fig. 2 is a central vertical sectional view.

Similar reference figures refer to similar parts in the different views.

The object of my present invention is to provide means for accomplishing the even distribution of coal fed to the producer chamber, to prevent the formation of interior flues or "pipes" within the mass of fuel and to disintegrate any mass of coal which may be formed during the process of combustion. I accomplish these objects by forming a gas producer shell or casing in three sections, with means for rotating the intermediate or central section which is provided with a water pipe passing diametrically through the producer chamber and through the upper portion of the fuel contained therein.

Referring to the accompanying drawings 1 denotes the lower section of the gas producer shell or casing, 2 the upper section and 3 the central or intermediate or rotating section. The upper section 2 is provided at its top with an opening 4 for the admission of fuel. The opening 4 is closed by a cover 5 having an annular depending flange 6 which enters water 7 held on the top of the gas producer in order to water-seal the cover. The upper section 2 of the shell or casing is supported upon brackets 8 attached at their upper ends to the section 2 and at their lower ends to the lower section 1. The upper edge of the lower section 1 is provided with an annular water trough 9. The outer edge 10 of the trough 9 forms a track for truck wheels 11 which rotate upon studs 12 carried by the rotating central section 3. The upper edge of the central rotating section 3 is provided with an annular rack 13 which is engaged by a pinion 14 carried upon a rotating shaft 15 to which power is applied in any convenient manner. The walls 16 and 17 of the upper and lower sections 1 and 2 are constructed of any suitable refractory

material. The central rotating section is constructed of tubular-plate in the form of a shell inclosing an annular water space 18 which is open at the top to receive a depending flange 19 on the bottom of the upper section 2 which extends downward into the water contained in the annular water space 18. The lower edge of the rotating central section 3 is provided with a similar depending flange 20 which dips into the water contained in the water trough 9.

The joints between the upper and lower section and the central rotating section are thereby water sealed. Openings are provided on diametrically opposite sides of the central section 3 through which passes a water pipe 21 which is preferably slightly inclined to allow water to flow freely through it. The upper end of the water pipe 21 communicates at 22 with the annular water chamber 18 and the lower end 23 is arranged to deliver water into the annular water trough 9. The water 7 at the top of the gas producer overflows through a pipe 24 into the annular water chamber 9, and the water trough 9 overflows through a pipe 25 into an ash pit 26 below the gas producer. The jet of mingled air and steam is supplied in the usual manner through a pipe 27 to the lower end of the gas producer chamber and the gas produced from the incandescent coal is removed from the top of the gas producer chamber through an opening 28.

In the operation of my improved gas producer coal is supplied, as often as needed, through the central opening 4 at the top of the gas producer, keeping the gas producer filled nearly to the top of the central section 3 and above the water pipe 21. During the process of combustion a slow rotary movement is imparted to the central section 3 by the rotating shaft 15 and pinion 14, thereby rotating the water pipe 21 through the mass of coal near its top. The rotary movement of the water pipe 21 through the mass of coal levels the upper surface of the coal, breaks up any mass formed by the coking of the coal, and maintains a solid layer of coal at the top of the fuel preventing the formation of any flues or openings through the mass of coal due to unequal combustion.

The inclination of the water pipe 21 not only allows water to flow through the pipe, but it also causes the mass of fuel to become agitated to a depth equal to the distance be-

tween the horizontal planes of the upper and lower ends of the water pipe, thereby more effectually breaking up any clinkers which may be formed.

5 What I claim as my invention and desire to secure by Letters Patent is:—

1. A gas producer, having a heating chamber with an opening for the admission of air near the bottom and an opening for the withdrawal of gas near the top of said chamber, and with an inclosing wall divided into three sections upon two horizontal planes of division, the lower plane above said air admission opening and the upper plane below said gas escape opening, and means for rotating the middle section.

2. A gas producer, having a heating chamber with an opening for the admission of air near the bottom of said chamber, an opening for the withdrawal of gas near the top of said chamber, and an inclosing wall divided into three sections upon two horizontal planes of division, the lower plane above said air admission opening and the upper plane below said gas escape opening with the middle section rotatable, a transverse poker with its ends attached to opposite sides of said rotatable section, and means for rotating said section.

3. A gas producer, having a heating chamber with an opening for the admission of air near the bottom of said chamber, an opening for the withdrawal of gas near the top of said chamber, and an inclosing wall divided into three sections upon two horizontal planes of division, the lower plane above said air admission opening and the upper plane below said gas escape opening with the middle section rotatable, a transverse water pipe carried by said rotatable section, and means for rotating said section.

4. A gas producer, having a heating chamber, comprising a stationary fuel receptacle at the bottom provided with an inclosing wall, an annular water trough upon the upper edge of said inclosing wall, a rotatable section of wall inclosing the central

portion of said heating chamber and supported upon said trough, and means for rotating said rotatable section.

5. A gas producer, having a heating chamber with an inclosing wall, provided with a rotatable section consisting of a hollow wall, means for maintaining a water circulation in said wall, a water trough below said rotatable section, a water pipe extending transversely across said chamber and arranged to receive water at one end from the top of said hollow wall, and to discharge it at the other end into said water trough.

6. A gas producer, having a heating chamber with an inclosing wall, provided with a rotatable section, a water pipe extending transversely across said chamber with its ends held at opposite points in the wall of said rotatable section, and means for supplying said pipe with water from said rotatable section.

7. A gas producer, having a heating chamber with a stationary inclosing wall at the bottom, a rotatable wall above said stationary wall, and a water pipe carried by said rotatable section and extending transversely across said heating chamber, having one end higher than the other.

8. A gas producer having relatively rotatable body sections, a water seal between such sections, a water cooled agitating beam extending across one of the sections and means for circulating the water from one of such devices to the other.

9. A gas producer having relatively rotatable body sections, a water seal between such sections, a water cooled agitating beam extending across one of the sections, means for circulating the water from one of such devices to the other, and the ends of the beam being open at the outer sides of the producer body to receive the water.

Dated this 22nd day of April 1905.

JEROME R. GEORGE

Witnesses:

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