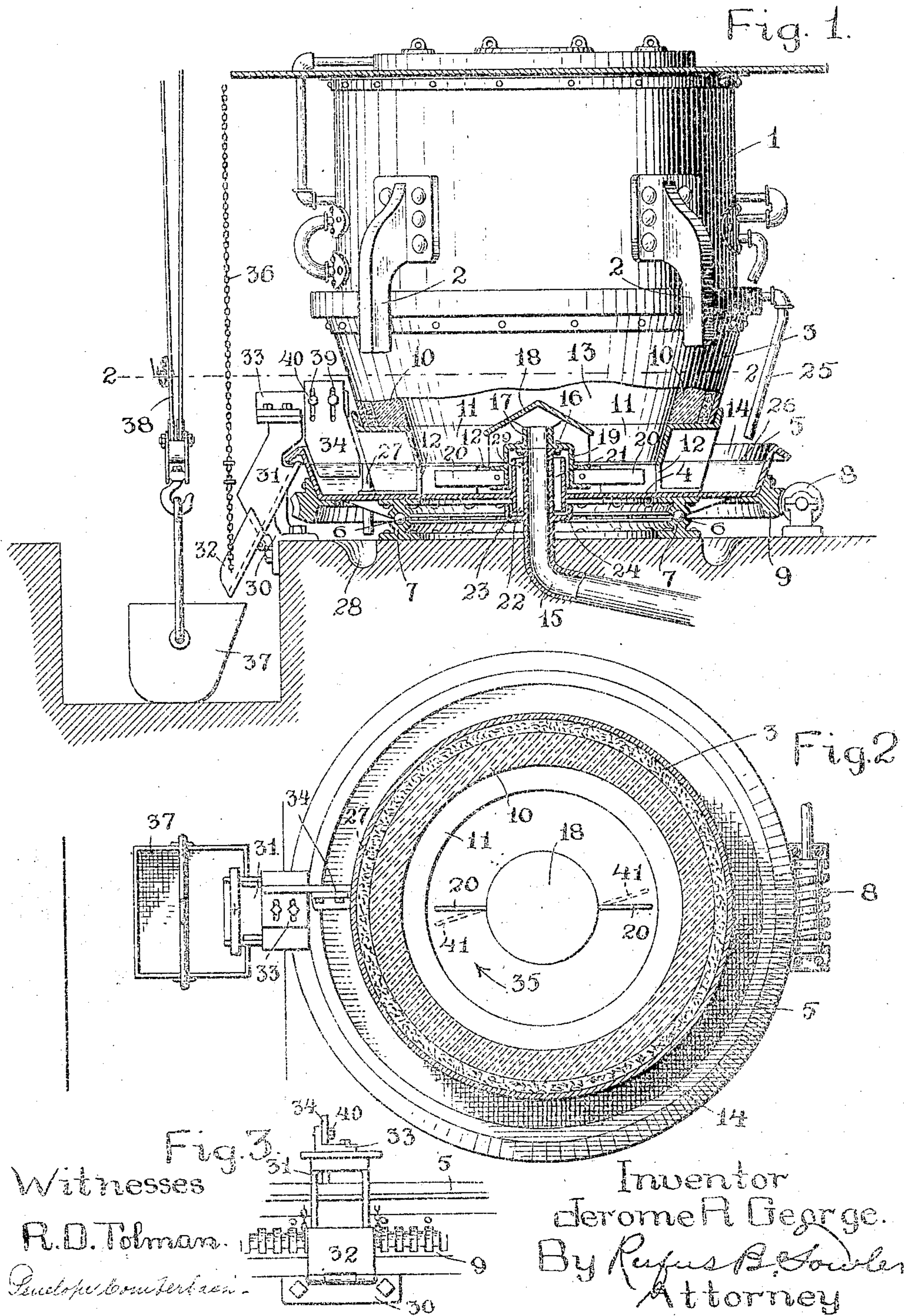


J. R. GEORGE.  
GAS PRODUCER.  
APPLICATION FILED MAR. 19, 1907.

932,853.

Patented Aug. 31, 1909.





# UNITED STATES PATENT OFFICE.

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GAS-PRODUCER.

932 853.

Specification of Letters Patent.

Patented Aug. 31, 1909.

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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 is a side elevation of my improved gas producer with the lower portion shown in central sectional view. Fig. 2 is a transverse sectional view on the plane of the broken line 2—2, Fig. 1. Fig. 3 is a detail of the ash receptacle.

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

The object of my present invention is to provide means for the delivery of the ashes from the gas producing chamber, and to provide means for their final removal from the gas producer; and I accomplish these results by the construction and arrangement of parts as hereinafter described and pointed out in the annexed claims.

Referring to the accompanying drawings Fig. 1 represents in side elevation a gas producer comprising two sections one above the other, the upper section 1 being stationary and supported upon legs 2, and a lower rotatable section 3, the latter being preferably hopper shaped and supported upon the bottom 4 of a rotatable pan 5, which is capable of being turned about a vertical axis upon a series of balls 6 which run in an annular track 7. The pan 5 and lower section 3 of the gas producer can be rotated in any convenient manner, but in the present instance it is turned by means of a rotating worm 8 engaging an annular track 9 attached to the periphery of the pan 5. The inclosing wall 10 of the lower section 3 is made of some refractory material which is upheld by an annular casing 11, supported upon the bottom 4 of the pan, and having a series of openings 12 which form a means of communication between the inclosed gas producer chamber 13 and an annular space 14 between the side of the pan and the wall of the gas producer chamber.

The construction of the gas producer sections 1 and 3 and the ash pan 5 may be of any known form and will not be further described as they form no part of my present invention, which relates to means for agitat-

ing the ashes deposited in the bottom of the gas producer chamber 13, forcing them from the gas producer chamber through the openings 12 into the annular space 14 of the ash pan 5, and finally removing them from the ash pan. I do not therefore confine myself to any specific construction of the gas producer chamber and ash pan, except so far as they are directly concerned in the embodiment of my present invention.

During the operation of the producer air is supplied to the bottom of the gas producer chamber 13 through a stationary stand pipe 15. The upper end of the stand pipe 15 is provided with a flange 16 which supports a collar 17 which carries a pyramidal hood 18 and the depending arms 19. To the lower ends of the arms 19 are bolted the radial blades 20. The pan 5 is provided at its center with an integral sleeve or hollow hub 21 which projects upward into the gas producer chamber between the depending arms 19, and also downward below the bottom of the pan, with its lower edge 22 entering the annular water space 23 formed in the cup shaped flange 24 on the stand pipe 15. Water is admitted to the pan 5 from any convenient source of water supply through a pipe 25, and is maintained in the pan on the water line 26, by means of an overflow pipe 27 which delivers water into a waste trough or channel 28. A small opening 29 in the hub 21 at the height of the water line admits a small supply of water through the hub 21 into the annular water space 23, thereby water sealing the lower edge 22 of the hub.

Supported upon a bracket 30 just outside the rotating pan 5 is an inclined ash receptacle 31, having its upper end open for the reception of ashes from the pan 5, and its lower end closed by a hinged gate 32.

Supported upon the sides of the ash receptacle 31 is a plate 33, which is horizontally adjustable relatively to the ash receptacle. The inner end of the plate 33 extends over the annular space 14 in the rotating pan, and supports a vertically adjustable plow 34, consisting of a blade which extends downwardly into the annular space 14 and serves to impede the ashes, and cause them to accumulate in front of the plow as the pan 5 is rotated, in the direction of the arrow 35, Fig. 2. As the mass of ashes rises in front of the plow they fall over the edge of the pan into the receptacle 31, and lodge against the gate 32.



which is represented as closed in Fig. 2, and as open in Fig. 1, being raised or lowered by a chain 36.

Below the lower end of the ash receptacle 31 is placed a bucket 37 which may be supplied with a hoisting rope 38 connected with an overhead electric crane, not shown, or other convenient means for its removal.

The plow 34 is vertically adjustable by means of slots 39 and bolts 40, in order to control the delivery of ashes from the gas producer by the action of the radial blades 20, 20. By raising the plow some distance above the bottom 4 of the pan 5, a mass of ashes is maintained in the pan which checks the outward flow of ashes through the openings 12 in the sides of the producer. If it is desired to accelerate the removal of ashes from the gas producer chamber 13 the plow 34 is lowered and the resisting mass of ashes removed from the annular space 14, allowing a freer movement of ashes through the openings 12.

The operation of the ash removal mechanism is as follows:—A slow rotary motion is given to the pan 5 by means of a rotating worm 8 and the mass of ashes within the gas producing chamber 13, and resting upon the bottom 4 of the pan 5 are carried against the fixed radial blades 20 and crowded outwardly through the openings 12 into the annular space 14. The rotation of the pan carrying the ashes against the plow 34 forces the ashes upward above the edge of the pan over which they fall into the receptacle 31. When the receptacle is filled the gate 32 is opened and the ashes delivered into a bucket 37. The gate 32 is again closed and the bucket 37 removed during the refilling of the ash receptacle 31.

In Fig. 2 I have shown by the broken lines 41 a modified arrangement of the blades 20 which consists in bending the blades at an oblique angle to a radial line, so the advancing surfaces of the blades will present an acute angle to the movement of the ashes as they are carried by the rotating pan, thereby facilitating the outward movement of the ashes through the openings 12. When the blades are arranged radially, as at 20, the agitation of the ashes as they are moved past the blades will be at its maximum, but when the blades are placed at an oblique angle, as shown at 41, the agitation of the ashes will be reduced, but the outward movement of the ashes will be increased.

I do not wish to confine myself to any particular arrangement of the blades as the angle at which the blades can be advantageously placed will be governed by the conditions of use.

I claim,

1. A gas producer, with a heating cham-

ber inclosed by annular upper and lower sections, with said upper section stationary and said lower section supported upon a rotatable ash pan of larger diameter than the bottom of said lower section, with the bottom of said lower section provided with openings, and a stationary blade supported at its inner end and inclosed within the bottom of said lower section and above said rotatable ash pan.

2. In a gas producer, the combination with a heating chamber, of a rotatable bottom, a stationary air pipe extending through said rotatable bottom, said air pipe provided with depending arms, fixed blades attached to said depending arms, and a water seal for said rotatable bottom around said stationary air pipe.

3. In a gas producer, the combination with a heating chamber provided with an opening for the exit of ashes, a rotatable pan shaped bottom for said heating chamber extending beyond the wall of said chamber, thereby forming an annular space for ashes, means for forcing the ashes through said opening into said annular space, and a stationary plow extending into said annular space, said plow being vertically adjustable to allow for the varying accumulation of ashes upon the bottom of the pan, thereby varying the size of the exit openings.

4. A gas producer, with an annular section inclosing a heating chamber and a rotatable ash pan below said chamber of larger diameter than said chamber, with the lower portion of said section provided with openings for ashes, and means for removing automatically ashes from said ash pan beyond said openings, said means adjustable to vary the amount of ashes removed.

5. In a gas producer, the combination with a rotatable ash pan, of a stationary plow for removing the ashes from said pan and guiding them into an ash receptacle, an ash receptacle attached to said plow and having an opening provided with a gate.

6. In a gas producer, the combination with a heating chamber provided with an opening for the exit of ashes, a rotatable pan shaped bottom for said heating chamber extending beyond the wall of said chamber, thereby forming an annular space for ashes, means for forcing the ashes through said opening into said annular space, a vertically adjustable stationary plow extending into said annular space, and an ash receptacle attached to said plow having an exit opening provided with a gate.

Dated this 16th day of March 1907.

JEROME R. GEORGE.

Witnesses:

PENELOPE COMBERBACH,  
RUFUS B. FOWLER.