

971,271.

Patented Sept. 27, 1910.

2 SHEETS-SHEET 1.

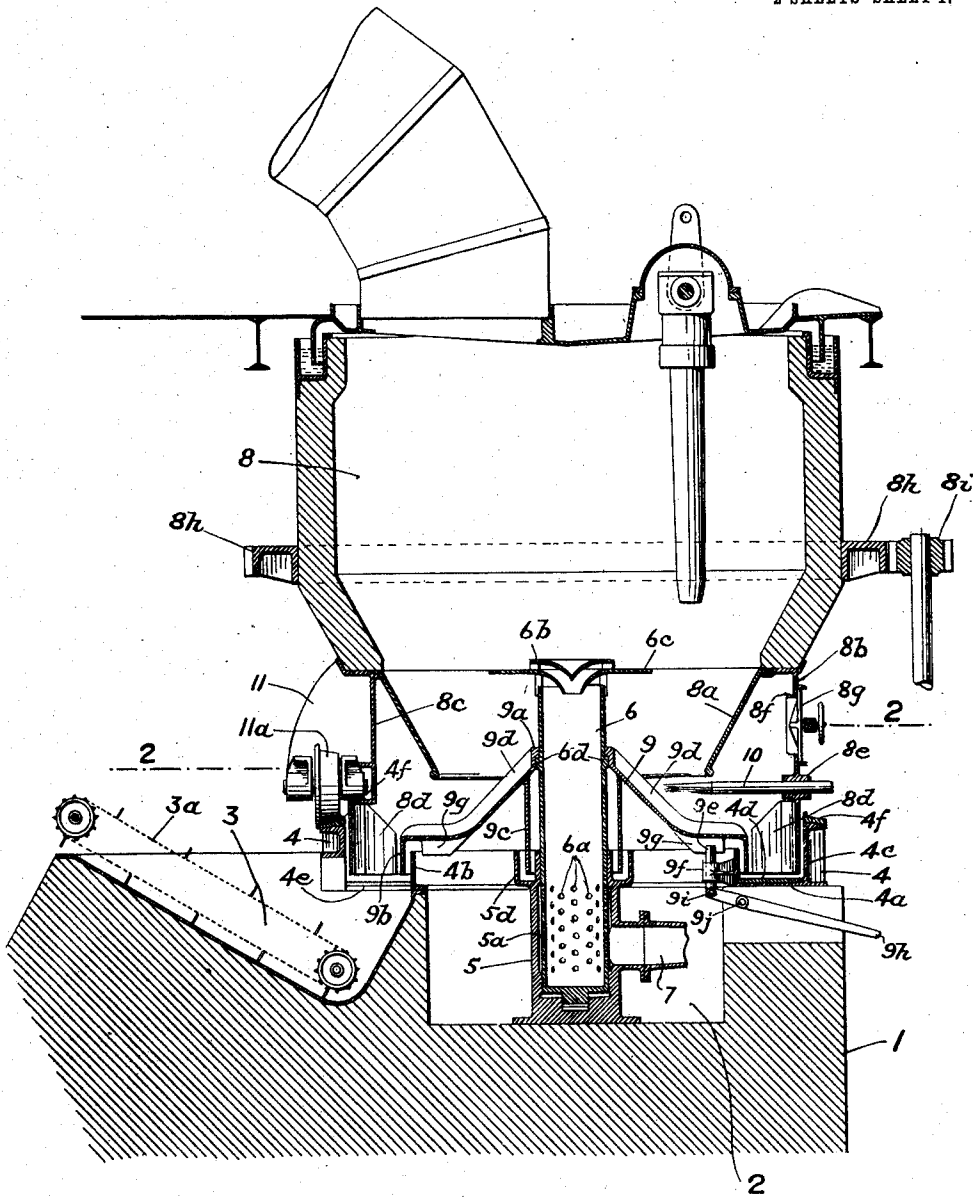


FIG. 1.

WITNESSES:

Robt. R. Kitchel.
Jos. G. Henry Jr.

INVENTOR

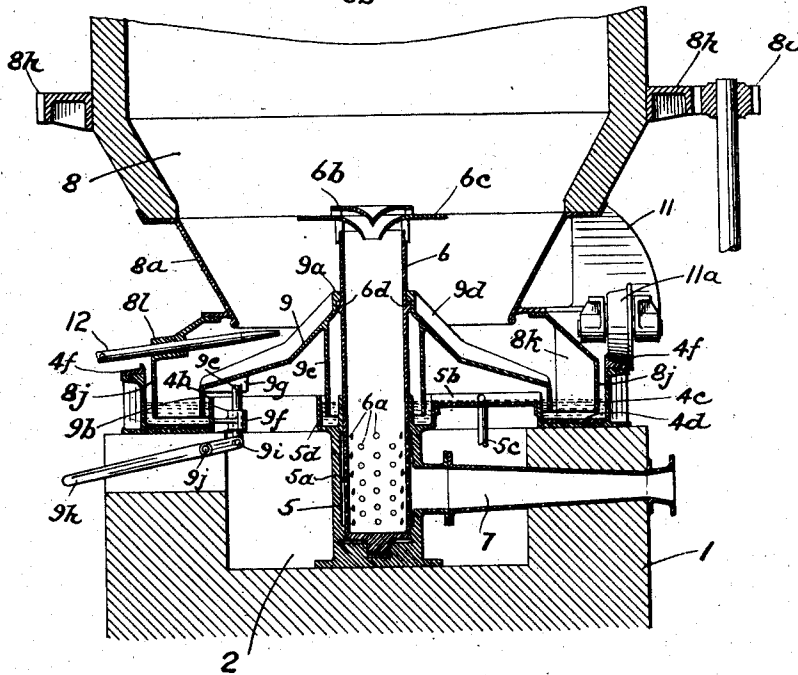
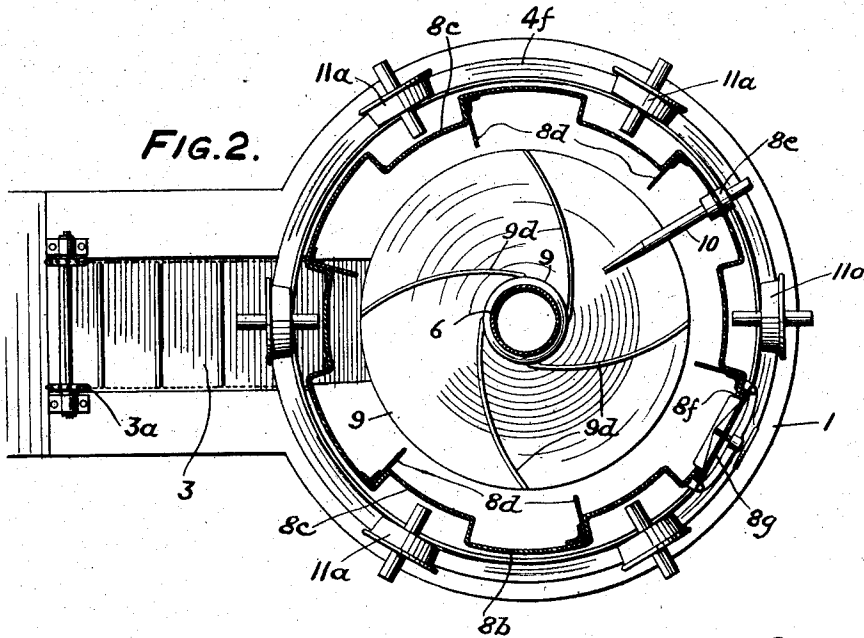
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2 SHEETS—SHEET 2.



WITNESSES:

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FIG. 3.

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WILLIAM B. HUGHES, OF CLEVELAND, OHIO.

GAS-PRODUCER.

971,271.

Specification of Letters Patent. Patented Sept. 27, 1910.

Application filed November 9, 1909. Serial No. 526,944.

To all whom it may concern:

Be it known that I, WILLIAM B. HUGHES, a citizen of the United States, residing at Cleveland, in the county of Cuyahoga and State of Ohio, have invented certain Improvements in Gas-Producers, of which the following is a specification.

My invention is a gas producer having improved means for sealing its bottom and removing the ashes therefrom.

The features characterizing my improvements are disclosed in the following description and the accompanying drawings in illustration thereof.

In the drawings, Figure 1 is a vertical sectional view of a gas producer embodying my improvements; Fig. 2 is a sectional view taken on the line 2—2 of Fig. 1; and Fig. 3 is a vertical sectional view showing modifications of my improvements.

The apparatus embodying my invention, as illustrated in the drawings, comprises the foundation 1 containing the central cavity 2 and the laterally extending pit 3. A circular channel 4 has a bottom 4^a which rests upon the foundation, a circular inner wall or flange 4^b rising from the bottom 4^a around the top of the cavity 2 and a circular outer wall 4^c concentric with the wall 4^b. The channel 4 is provided with the removable bottom plate 4^d to prevent wear by the ashes on the bottom 4^a and the bottom has the aperture 4^e therethrough by which ashes are discharged from the channel to the pit 3, whence they are removed by the conveyor 3^a.

A hollow column 5 provides a step bearing for the revoluble blast pipe 6 which contains holes 6^a for admitting blast thereto from the blow pipe 7. This latter pipe provides a passage through the foundation and the column to a space 5^a surrounding the holes, the blast passing thereby to the blast pipe and being diffused in the body 8 of the producer by the superposed deflectors 6^b and 6^c fixed to the top of the blast pipe.

A circular bottom member 9 (serving as a supporting table, a grinder and a conveyor) is provided with a collar 9^a which is fixed on the pipe 6 and engaged by the collar 6^d thereof. The body of the member 9 is inclined downwardly and outwardly to a termination in a peripheral flange 9^b extending into the channel 4, the flange being adapted for coaction with water contained in the channel to effect a seal. A

cylindrical apron 9^c extends downwardly from the part 9 into a channel 5^d at the top of the column 5, the channel containing water to seal the blast. The channels 4 and 5^d are connected by a duct 5^b from which water is delivered to a pipe 5^e, whereby water is discharged from the channels. Helical ribs or blades 9^d, for breaking up and moving ashes, are formed on the top of the member 9. A pin 9^e is movable through a stationary bearing 9^f into engagement with lugs 9^g on the bottom of the part 9. The pin is operated by a lever 9^h connected thereto by the pivot 9ⁱ and fulcrumed on the pivot 9^j, whereby the part 9 can be held against revolution or permitted to revolve.

As shown in Fig. 1, the producer body 8 is provided with the conical ash hopper 8^a, into which the parts 6 and 9 extend, and the apron 8^b surrounding the hopper 8^a and extending into the channel 4, the apron having the sections 8^c lying within the generally cylindrical contour thereof. The lower part of the apron 8^b has fixed thereto the inwardly extending wings 8^d which are adapted to move in the channel 4 to remove the ashes therefrom. A poker or stirring bar 10 is movable through the bearing 8^e between the parts 8^a and 9 to break up the ashes. Access is had to the interior of the apron 8^b by the manhole 8^f having the removable cover 8^g. The body is carried by brackets 11 having wheels 11^a journaled thereon, the brackets being set in recesses formed by the sections 8^c, and a circular track 4^f carried by the wall 4^c, the wheels being adapted for revolving upon the track. The body is revolved by means of a rack 8^h fixed thereon and a revolving gear 8ⁱ engaging therewith.

In operation, it will be understood that the revolving body acts through the ashes discharged therefrom and bearing upon the part 9 whereby the latter is revolved. When the part 9 is held stationary, by the engagement of the part 9^e with the part 9^f, the continuing revolution of the body and the stirring rod break up the ashes and the helical blades 9^d pass them outwardly to the channel 4, whence they are carried by the wings or scrapers 8^d to the outlet 4^e and thence to the pit 3, from which they are carried by the conveyor 3^a.

As shown in Fig. 3, the body 8 is provided with the ash hopper 8^a, having fixed thereto the apron 8^b which extends out-

- wardly and downwardly into the channel 4 and has thereon the inwardly projecting blades or scrapers 8^k for removing ashes from the channel. The body is supported
 5 by the brackets 11 having journaled thereon the wheels 11^a which run on the track 4^f; and the body is revolved by means of the rack 8^h driven by the pinion 8ⁱ as previously described. A poker 12 is movable, through
 10 the bearing 8ⁱ carried by the apron 8ⁱ, between the parts 8^a and 9. In this second form of mechanism, it will be understood that the operation is analogous to that already described; the part 9 being revolved,
 15 by the weight and friction of the ashes discharged from the revolving body 8, or held against revolution by the engagement of the pin 9^e with a lug 9^s when the ashes become packed so that it is desirable to grind them.
- 20 Having described my invention, I claim:
1. A gas producer having a revolving body, in combination with a revoluble bottom member adapted for receiving and discharging ashes; a stationary channel to
 25 which said member discharges, and means for moving ashes in said channel.
 2. A gas producer having a revoluble body, a revoluble bottom member which receives ashes from said body, said body being
 30 revoluble independently of said member, a channel to which ashes are discharged from said member, and means movable in said channel for collecting ashes therein.
 3. A gas producer having a body, a revoluble member beneath said body, said member having blades adapted for giving an
 35 outward movement to ashes deposited thereon, a stationary channel for receiving said ashes, and means for moving the ashes in said channel.
 4. A gas producer having a revoluble body and an independently revoluble member adapted for receiving ashes discharged from said body, said member having means
 40 fixed thereto for moving ashes thereon outwardly from its center.
 5. A gas producer having a revoluble body, a revoluble bottom member beneath said body, and one or more scrapers revoluble about said bottom member.
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 6. A gas producer having a revoluble body, an independently revoluble bottom member beneath said body, and one or more scrapers revolved by said body around said
 55 member.
 7. A gas producer having a revoluble body, a revoluble bottom member beneath said body, a channel into which said bottom member discharges, and revoluble scrapers
 60 acting in said channel.
 8. A gas producer having a body, a channel, and a revoluble bottom member having an apron extending into said channel.
 9. A gas producer having a body, a channel, and a revoluble bottom member having a
 65 conical part and an apron, said apron depending into said channel.
 10. A gas producer having a body, a revoluble member beneath said body, and a channel, said member having helical blades
 70 thereon and a peripheral apron depending into said channel.
 11. A gas producer having a revoluble body, a revoluble member beneath said body, a channel extending around the periphery of
 75 said member, and one or more scrapers revoluble by said body in said channel.
 12. A gas producer having a body with an ash hopper and an apron depending therefrom, a channel into which said apron
 80 depends, a bottom member having an apron depending into said channel, and one or more scrapers movable in said channel.
 13. A gas producer having a revoluble body with an ash hopper and an apron depending therefrom, a bottom member revoluble independently of said body, and a
 85 channel into which said bottom member discharges.
 14. A gas producer having a revoluble
 90 body with an ash hopper and an apron depending therefrom, a bottom member, a channel surrounding said bottom member, and one or more scrapers revolved by said body in said channel.
 15. A gas producer having a column provided with a sealing channel, a blast pipe carried by said column, a revoluble bottom member surrounding said blast pipe and
 95 having an apron depending into said channel, and an independently revoluble body above said bottom member.
 16. A gas producer having a revoluble body with an apron depending therefrom, a revoluble bottom member beneath said body,
 100 and a stirring rod extending through said apron above a part of said member.
 17. A gas producer having a revoluble body with an ash hopper and an apron depending therefrom, a revoluble bottom member, means for engaging said bottom member
 110 and holding it against revolution with said body, and a stirring rod carried by said body above the periphery of said bottom member.
 18. A gas producer having a blast pipe, a revoluble bottom member sleeved thereon, said member having concentric aprons depending therefrom, and concentric channels
 115 into which said aprons depend.
 19. A gas producer having a channel, a revoluble body, means depending into said channel for sealing the bottom of said body, and a revoluble bottom member having sealing means depending into said channel, said
 120 body being revoluble independently of said bottom member.
 20. A gas producer comprising a body member, a bottom member, means whereby one of said members can be revolved rela-
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tively to the other, a stirring bar disposed between said members, a channel, and an apron extending into said channel, said apron being adapted for sealing said body member

5 and holding said bar.

21. A gas producer comprising a revoluble body member, a revoluble bottom member, means for holding said bottom member during the revolution of said body member, a

10 channel, an apron depending into said channel, said body member and channel having

coacting sealing means, and a stirring member fixed to said apron and extending between said bottom and body members.

In witness whereof I have hereunto set my name this 28th day of October, 1909, in the presence of the subscribing witnesses. 15

WILLIAM B. HUGHES.

Witnesses:

W. A. JONES,

C. L. SWARSGOOD.