

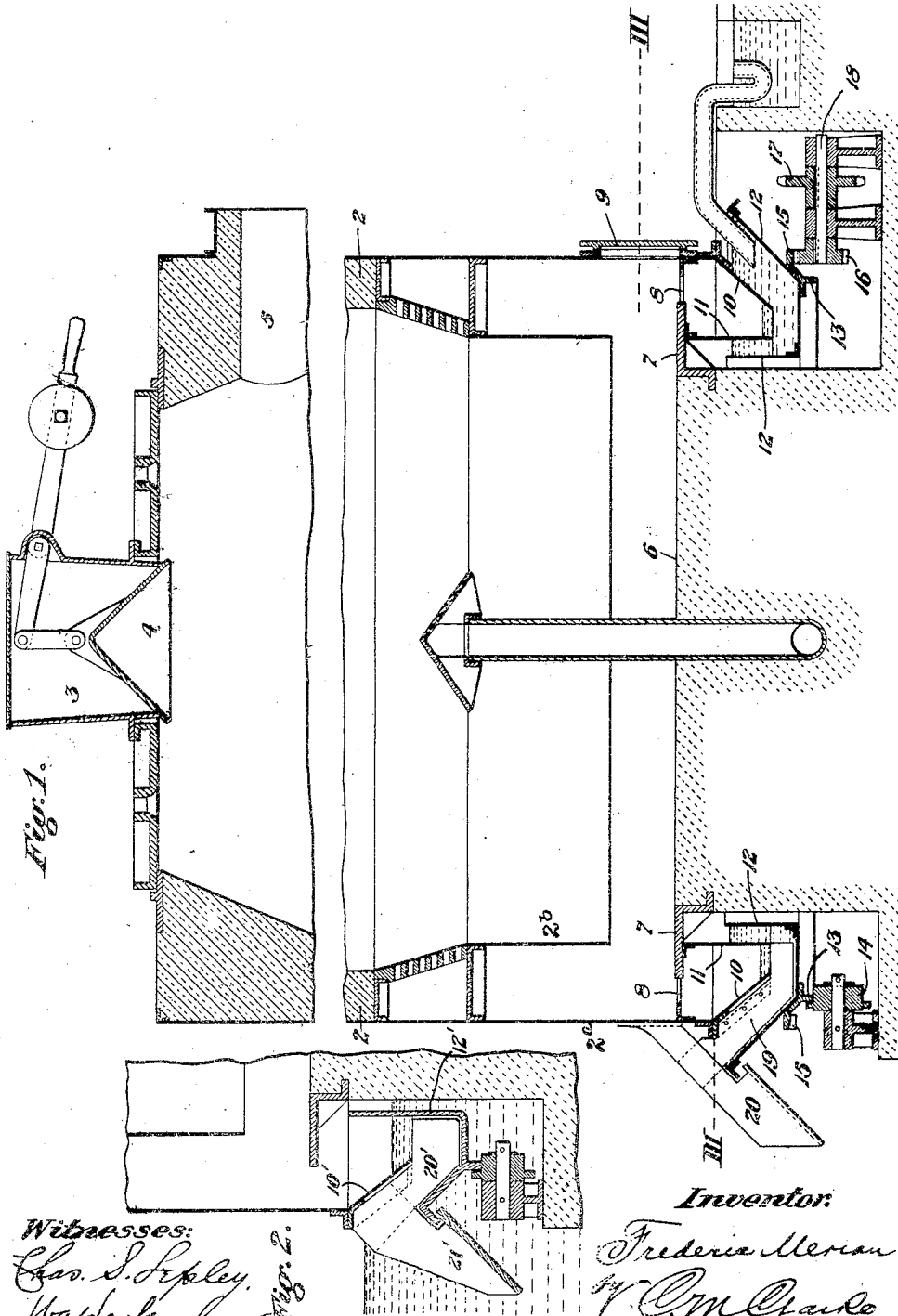
F. MERIAN.
GAS PRODUCER.

APPLICATION FILED MAR. 14, 1911.

Patented Oct. 8, 1912.

2 SHEETS—SHEET 1.

1,040,723.



Witnesses:
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Wm. Seckman

Inventor:
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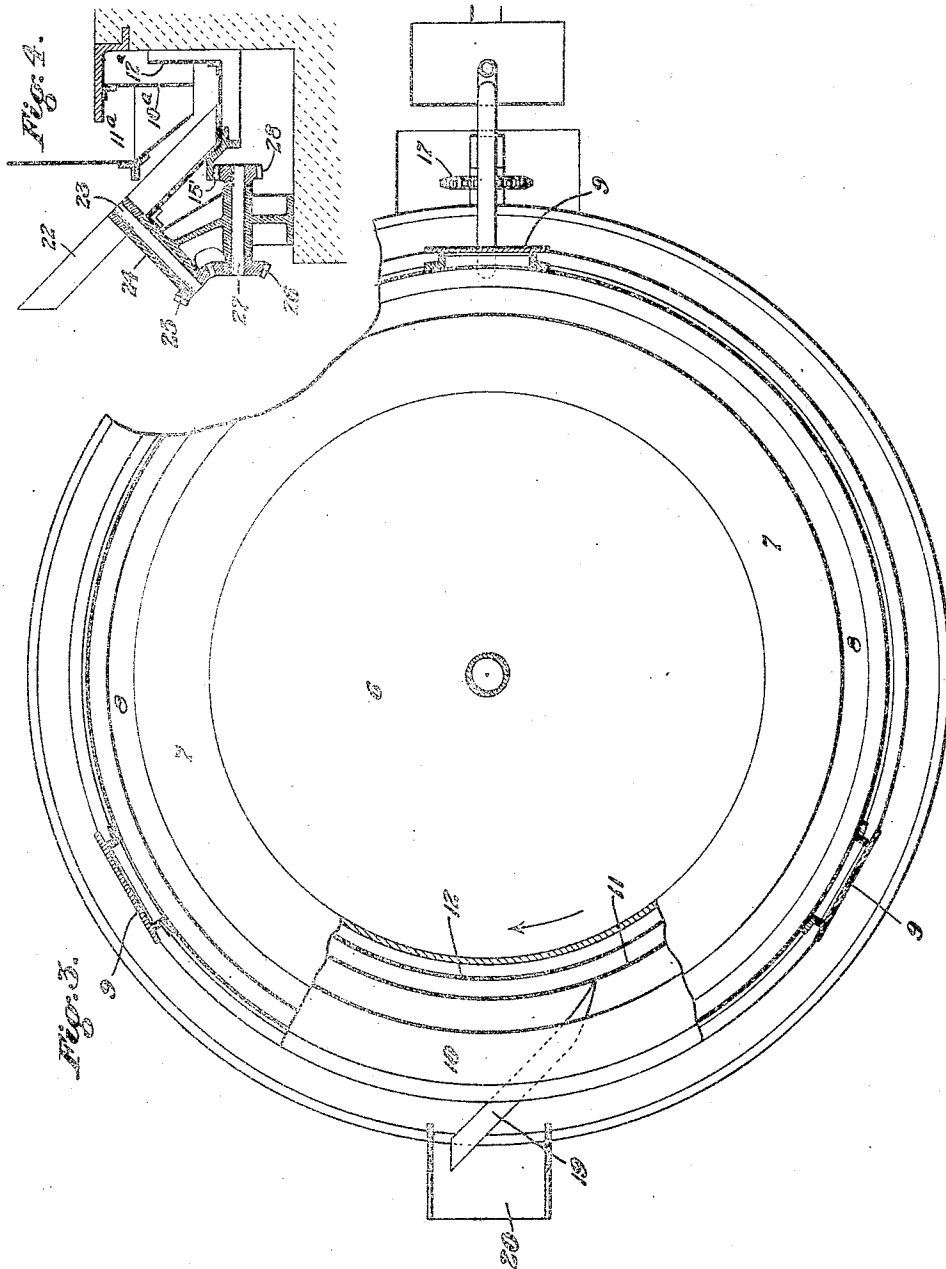
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UNITED STATES PATENT OFFICE.

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GAS-PRODUCER.

1,040,723.

Specification of Letters Patent.

Patented Oct. 8, 1912.

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To all whom it may concern:

Be it known that I, FREDERIC MERIAN, citizen of the Republic of Switzerland, residing at Pittsburgh, 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.

My invention relates to the class of gas producers and has for its object to provide means for easily collecting ash and clinker which have been removed from the bottom of the producer, either by hand or by any of the well known automatic means, and to discharge the same at any convenient point.

The invention consists in combining with the circular base or bottom of the producer, an annular rotatable ash bin and where desired a relatively stationary discharge blade and chute, with means for operating the same as shall be more fully hereinafter described. I have also included a construction in which a relatively movable discharging device is embodied with the rotatable ash bin.

In the drawings—Figure 1 is a vertical sectional view of a gas producer, partly broken away, provided with one form of the invention. Fig. 2 is a similar sectional detail view showing a modified construction. Fig. 3 is a horizontal cross-sectional view on the broken line III, III, of Fig. 1. Fig. 4 is a sectional detail view showing a further modification, embodying a rotatable discharge wheel in combination with the rotatable ash bin.

In the drawings, 2 represents the annular wall of a producer having at its lower portion the outer shell 2^a and inner shell 2^b, said shells being spaced radially apart, also the usual charging hopper 3 and bell 4, the gas outlet opening 5, etc. and any suitable base construction with means for supplying air for combustion of well known construction.

6 is the bottom of the producer upon which the ash and clinker are deposited, preferably surrounded by a circular plate or floor 7 spaced inwardly from the outer shell of the wall 2 as at 8, through which annular space the ash, etc., may be discharged from time to time by the workmen, operating through the customary doors 9. The ashes, etc. may also be discharged out-

wardly from the center by any other of the well known mechanical means employed in producers of this type. Fixedly secured to and extending downwardly from the outer shell of the producer and the plate 7 is the outer inwardly sloping annular wall or skirt 10 and the interior downwardly extending annular wall 11, respectively. 12 is the rotatable annular ash bin located immediately below said walls 10 and 11, forming therewith a water seal, and rotatably mounted by an annular track 13 upon a corresponding series of supporting rollers 14. Integral with track 13, or separately constructed, if preferred, and connected with said rotatable ash bin 12, is an annular rack 15 engaged by an actuating pinion 16 and operated by sprocket gearing 17 or other suitable means, and shaft 18, whereby the ash bin is rotated at the desired speed, intermittently or continuously.

At the desired discharging point a plate or blade 19 extends angularly down into the interior of the rotatable bin 12, at a suitable inclination to effect the upward and outward travel of the contents of the bin as the same is rotated in the direction of the arrow, Fig. 3. As the ash bin is rotated, the accumulated ash, etc., passes upwardly and outwardly on the surface of the blade 19, over the outer edge of the ash bin, and downwardly through a chute 20 to a receiving vessel, traveling conveyor, or any other suitable receiving or transporting means. The blade 19 is inclined, as to its lower inner end at a proper angle with relation to the floor of the bin, to effect discharge of the contents with the least resistance. Said plate and the chute 20 are fixedly secured to the outer wall 10 and the outer shell of the producer or in any other suitable way as will be readily understood. It will also be understood that the blade and chute may however be dispensed with, if desired, and the contents of the ash bin removed in any other suitable manner, as by workmen, using a shoe or rake, at a convenient point of discharge. In the construction just described the rotatable ash bin and the downwardly extending outer and inner shells 10, 11, comprise in themselves the required water seal connection.

In the construction shown in Fig. 2 the rotatable ash bin 12' is, as to its outer wall, completely submerged below the body of the

water contained in the surrounding pit 21. The discharge chute 20' is likewise also submerged therein, as is the single outer downwardly extending wall 10'. By this construction, the necessity for the inner wall 11 is obviated, the foundation wall of the producer itself forming the inner retaining wall for the water. The construction and operation otherwise is the same as above described, it being understood that the receiving or conveying vessel or mechanism is likewise submerged.

In the construction shown in Fig. 4, I employ a revolving discharge wheel 22 having generally radially arranged blades or paddles, mounted by its hub on an angularly disposed supporting shaft 23 carried in a bearing 24 provided at its lower end with a gear 25 meshing into a gear 26, which in turn is actuated by shaft 27 and pinion 28 intermeshing with rack 15'. The construction of the rotatable ash bin 12^a and the inner and outer depending walls 11^a, 10^a, respectively, with the other portions of the apparatus, are the same as above set forth.

In operation, the wheel 22 rotates simultaneously with the rotation of the ash bin, the blades or paddles of the wheel passing through the ash bin whereby to discharge the contents upwardly and outwardly therefrom upon any suitable receiving chute or equivalent element located exteriorly of the ash bin.

The construction and operation of the invention will be readily understood from the foregoing description, its advantages reside in its simplicity of construction, efficiency of operation to discharge the accumulated ash, etc., with a minimum of expense and a constant maintenance of the water seal condition.

The relative proportions, design, and detail construction may be variously changed or modified by the skilled mechanic, but all such changes are to be considered as within the scope of the following claims.

What I claim is:—

1. In a gas producer, the combination with inner and outer concentric radially spaced annular walls forming the bottom portion of the producer chamber, of a stationary supporting base having an annularly projecting portion, and an annular rotatable ash bin extending inwardly underneath said portion.
2. In a gas producer having an outer shell, the combination therewith of an inner annular wall forming the bottom portion of the producer chamber, a stationary supporting base spaced downwardly therefrom and having an annularly projecting portion, and an annular rotatable ash bin extending inwardly underneath said portion.
3. In a gas producer, the combination with an inner annular wall forming the bot-

tom portion of the producer chamber, of a stationary supporting base having an annularly projecting portion extending outwardly underneath said wall, an annular rotatable ash bin extending inwardly underneath said base portion, and means for supporting and rotating said ash bin.

4. In a gas producer, the combination with an inner annular shell forming the bottom portion of the producer chamber and an outer shell radially spaced away therefrom having a depending skirt, of a stationary supporting base having an annularly projecting portion, and a rotatable ash bin extending inwardly below said skirt and projecting portion.

5. In a gas producer, the combination with an inner annular shell forming the bottom portion of the producer chamber and an outer shell radially spaced away therefrom having a depending skirt, of a stationary supporting base having an annularly projecting portion and an annular wall depending therefrom, and a rotatable ash bin extending inwardly below said skirt and annular wall.

6. In a gas producer, the combination with an inner annular shell forming the bottom portion of the producer chamber and an outer shell radially spaced away therefrom having a depending skirt, of a stationary supporting base having an annularly projecting portion and an annular wall depending therefrom, and a rotatable ash bin extending inwardly below said skirt and annular wall, a series of bearing rollers therefor, and means for actuating the ash bin.

7. A gas producer provided with a solid circular base having an annular projection and an annular reservoir space thereunder, an outer shell radially spaced away from the floor portion having a depending wall extending into said reservoir space, and a rotatable annular ash bin extending inwardly underneath said depending wall and annular projection and forming with said depending wall a water seal.

8. In a gas producer, the combination of a bottom structure having an annularly projecting floor portion and an annular space thereunder, providing a stationary water reservoir, an outer shell radially spaced away from the floor portion having a skirt depending downwardly into said reservoir, and a rotatable annular ash bin extending inwardly below said floor portion.

9. In a gas producer, the combination of a bottom structure having an annularly projecting floor portion and an annular space thereunder, an outer shell radially spaced away therefrom having a downwardly and inwardly depending skirt, a rotatable annular ash bin extending inwardly below said floor portion, and an inwardly

disposed discharging scoop secured to said skirt and extending into the ash bin.

10. In a gas producer, the combination of a bottom structure having an annularly projecting floor portion and an annular space thereunder, an outer shell radially spaced away therefrom having a downwardly and inwardly depending skirt, a rotatable annular ash bin extending inwardly below said floor portion and having an outer upwardly sloping annular wall, and means for dis-

charging the contents of the ash bin outwardly therefrom located between said depending skirt and the outer portion of the ash bin and disposed at an inclination corresponding thereto. 15

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

FREDERIC MERIAN.

Witnesses:

O. M. CLARKE,

CHAS. S. LEPLY.