

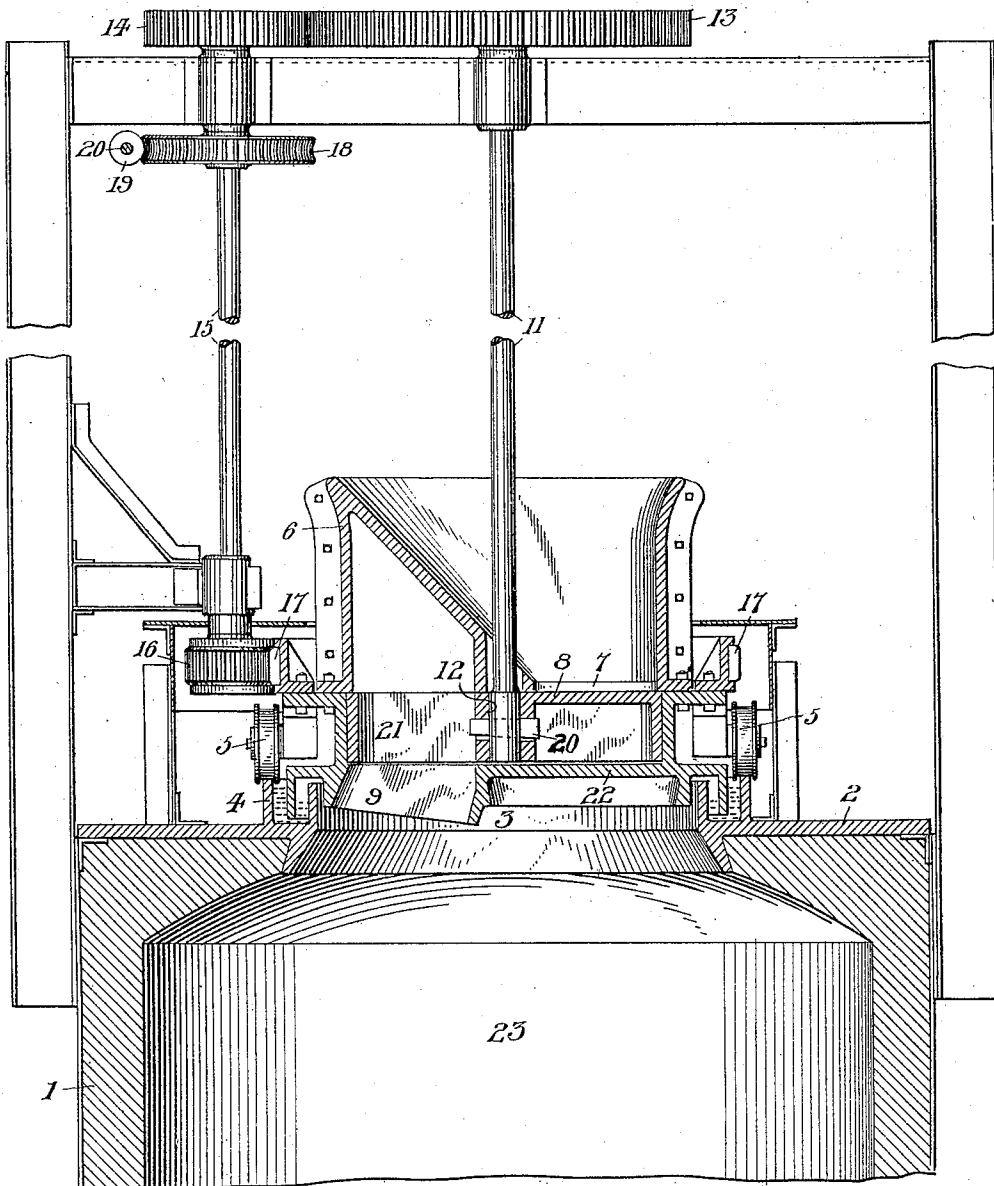
L. LEE.
FEEDING APPARATUS FOR GAS PRODUCERS.
APPLICATION FILED JAN. 9, 1911.

992,431.

Patented May 16, 1911.

2 SHEETS-SHEET 1.

FIG. 1



WITNESSES:

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2 SHEETS-SHEET 2.

FIG. 2

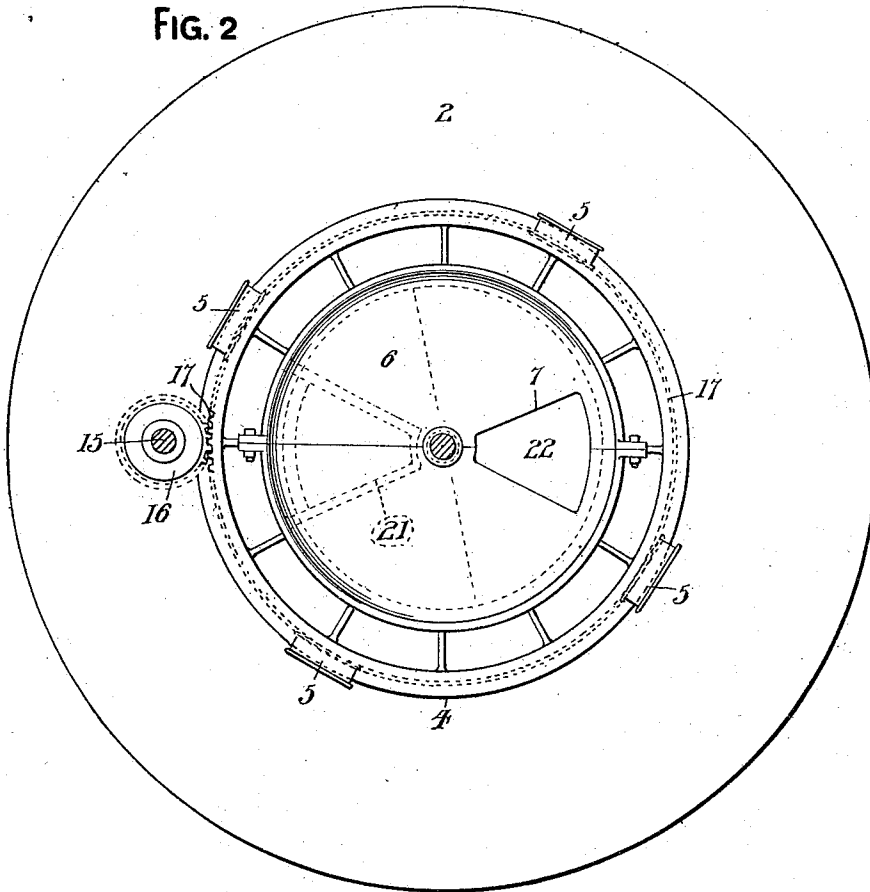
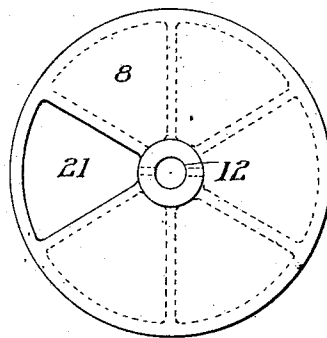


FIG. 3



WITNESSES:

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UNITED STATES PATENT OFFICE

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FEEDING APPARATUS FOR GAS-PRODUCERS.

992,431.

Specification of Letters Patent.

Patented May 16, 1911.

Application filed January 9, 1911. Serial No. 601,538.

To all whom it may concern:

Be it known that I, LEIF LEE, a citizen of the United States, residing at Youngstown, in the county of Mahoning and State of Ohio, have invented new and useful Improvements in Feeding Apparatus for Gas-Prod-
5 ucers and the Like.

My invention relates to fuel-feeding devices for delivering measured quantities of fuel uniformly around the center of a gas-producer or equivalent.

It is the principal object of my invention to provide a rotatable hopper with a rotatable measuring device, each rotating on a
15 vertical axis and at different angular speeds, so that a series of measured quantities of fuel may be deposited in different positions around the center of the producer to form a layer of uniform depth.

Referring to the accompanying sheets of drawings which illustrate the preferred form of my invention, Figure 1 is a central vertical section of the upper portion of a gas-producer, parts being shown in elevation; Fig. 2 a horizontal section taken on
25 Fig. 1 above the hopper, the frame-work being omitted; and Fig. 3, a plan of the rotary measuring device.

On the drawings, 1 designates the inclosing wall of a gas-producer or the like, having thereon the top plate 2 with the central circular opening 3, through which fuel is discharged into the producer. The opening 3 is surrounded by the annular water
35 trough 4. The outer wall or side of the trough 4 constitutes a track for the wheels 5, which support the fuel-feeding device, having at the upper end a chute-like receptacle 6 for fuel, the sides of the receptacle
40 being shaped so as to conduct the fuel to one side of the axis of the hopper where a wedge-like horizontal discharge-opening 7 is arranged to deliver fuel to the rotary measuring device 8, which in turn delivers the
45 fuel to the discharge opening 9 in the cover 22 which covers the opening 3 and has a circular flange in the water-trough 4. The cover 22 is rigidly connected to the hopper 6 so that they rotate in a fixed relation.
50 The opening 9 is located at one side of the center of the cover so as to discharge material through the opening 3 into the producer. The opening 9 should not be in vertical alinement with the opening 7. These
55 openings are shown 180° apart, but they may be arranged differently.

The measuring device 8 is a horizontal disk provided with at least one measuring opening 21 arranged eccentrically with respect to the axis of rotation of the disk. The said axis of rotation is included in the vertical shaft 11 which extends into the central opening 12 in the disk and up through the axial center of the hopper 6, and has its upper end provided with the spur-gear 13 gearing with the pinion 14 on the shaft 15 parallel with the shaft 11. The shaft 15 carries the pinion 16 which meshes with the peripheral teeth 17 on the hopper 6. The shaft 15 carries also the worm wheel 18 meshing with the worm 19 on the shaft 20, which is driven in any suitable manner. The shaft 11 is secured by the cross-pin 20' extending through the shaft 11 and the hub of the disk 8, which has its bottom cored out as shown on Fig. 3 and below the opening 7
on Fig. 1.

The disk 8 is shown with a single measuring opening 21 which extends through the disk from one face to the other. When the measuring opening 21 is beneath the hopper-opening 7, fuel drops into the opening 21 and is supported by the cover 22 in which the aforesaid opening 9 is located. When the disk 8 is rotated so that the openings 9 and 21 register, the fuel in the opening 21 falls through the opening 9 and into the chamber 23 of the producer. The opening 21 has its sides defined by radii of the disk, thereby causing the fuel therein to have a
80 w. age-like shape with the narrow part nearest the center of the disk. This shape of the opening 21, the opening 9 having substantially the same shape, causes more fuel to be deposited at the outer portions of the chamber than at the central portions, thereby depositing the fuel in the chamber in a substantially even manner from circumference to center. The shape of the openings may be variously shaped so as to distribute the
90 fuel as desired.

I have shown the hopper 6 and the disk 8 rotatable in the same direction, but with the pinion 16 smaller than the pinion 14, and the periphery of the rack of teeth 17 greater than that of the gear-wheel 13, whereby the measuring disk is made to rotate faster than the hopper. The fuel in the opening 21 can be discharged only as often as the opening 21 overtakes the opening 9. The gearing can
105 be proportioned so as to make the opening 21 overtake the opening 9 any desired num-
110

ber of times at different angular distances from any given position of the said openings before these openings again assume the said given position, each deposit of fuel being
5 dropped the same angular distance from the position where the next preceding deposit was dropped.

I do not limit myself to the precise details of construction shown as various changes
10 may be made without departing from the gist of my invention. It is clear that my improvements may be employed for feeding charges to furnaces or other apparatus.

I claim—

15 In a gas-producer or the like, a top having an opening, a rotatable gas-seal cover therefor, having a discharge opening arranged to deliver material through the open-

ing in the top, a hopper rigidly connected to the said cover and having a discharge
20 opening out of vertical alinement with the opening in the cover, a horizontally rotatable disk located between the hopper and the cover and provided with one or more
25 measuring pockets arranged to be brought into register alternately with the discharge openings in the hopper and the cover, means for rotating the hopper and the cover, and
30 means for independently rotating the measuring device.

Signed at Youngstown, Ohio, this 5th day of January, A. D. 1911.

LEIF LEE.

Witnesses:

JOHN C. CASEY,
J. F. KING.