W. F. RUST.

AUTOMATIC POKER FOR GAS PRODUCERS.

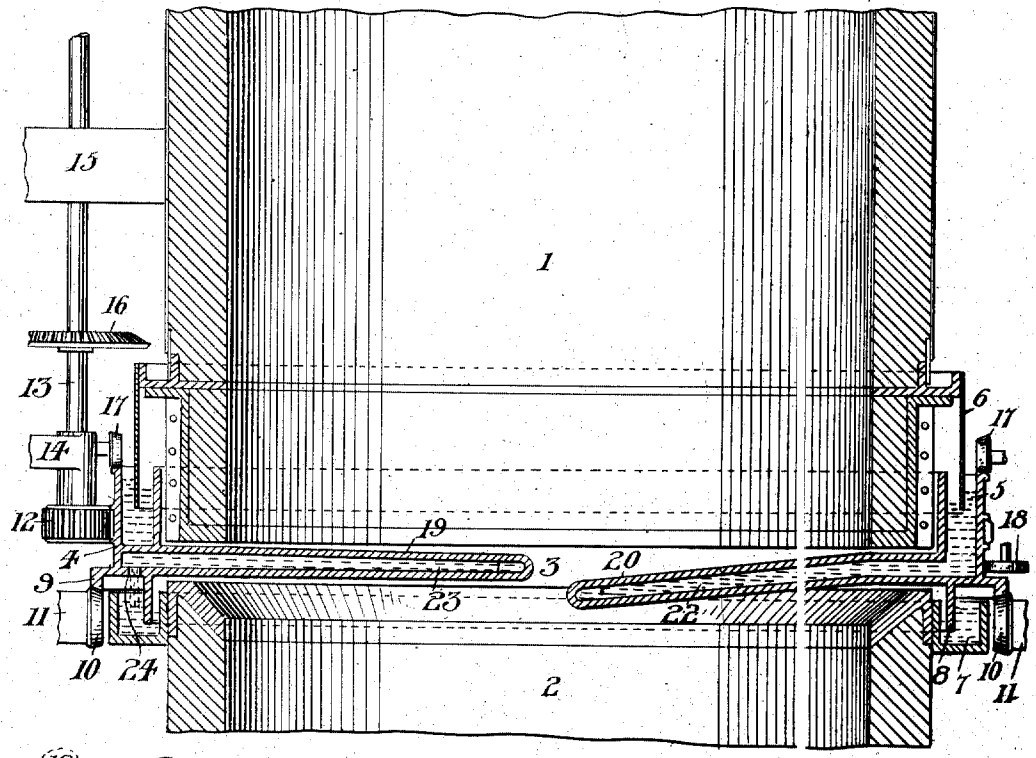
APPLICATION FILED DEC. 31, 1910.

1,008,494.

Patented Nov. 14, 1911.

2 SHEETS—SHEET 1.

FIG. 1



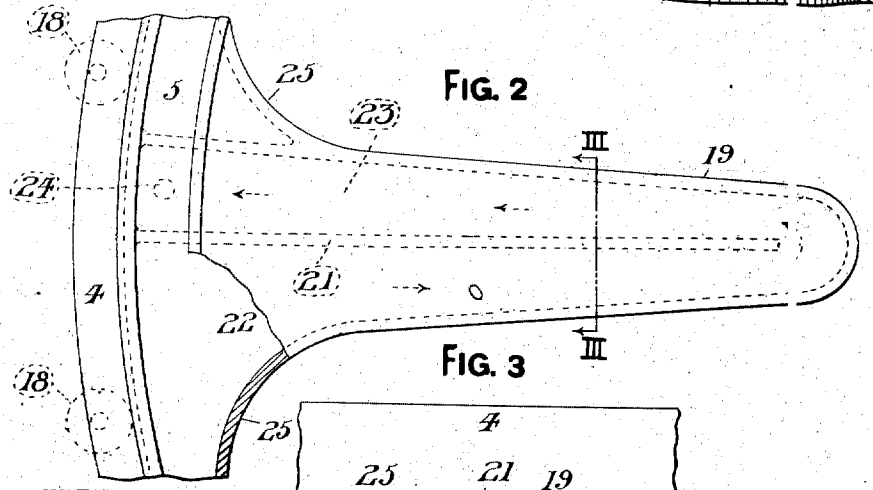
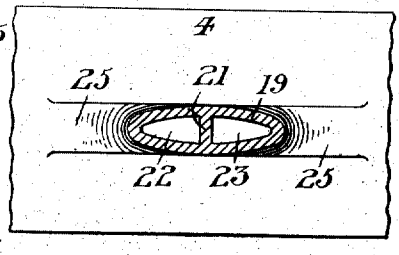


FIG. 2

FIG. 3



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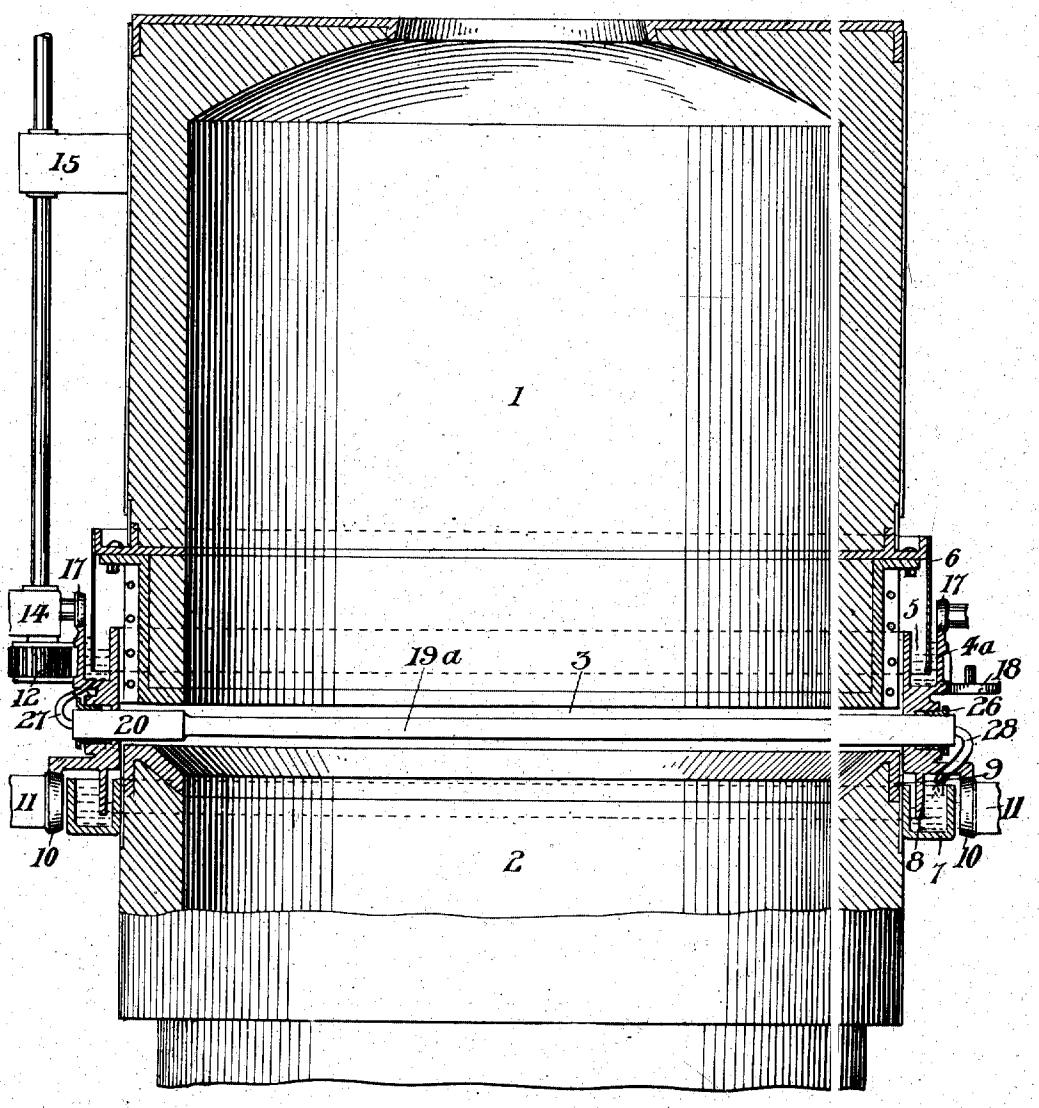
2 SHEETS—SHEET 2.

FIG. 4



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AUTOMATIC POKER FOR GAS-PRODUCERS.

1,008,494. Specification of Letters Patent. Patented Nov. 14, 1911.

Application filed December 31, 1910. Serial No. 600,353.

To all whom it may concern:

Be it known that I, WILLIAM F. RUST, 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 Automatic Pokers for Gas-Producers, of which the following is a specification.

My invention relates to power-driven pokers for gas-producers and their equivalents and its object is to provide a poker or pokers which work through an annular slot in the producer-wall, the supporting and driving devices for the same being wholly exterior to the said wall.

Referring to the accompanying drawings, Figure 1 is a vertical central section through the central portion of a gas-producer; Fig. 2, a plan, partly broken away, of a poker, broken away from its supporting ring; Fig. 3, a section of Fig. 2 on the line III—III; and Fig. 4, a vertical section partly in elevation of a gas producer, the lower portion being omitted.

Referring first to Figs. 1, 2, and 3, I show the producer-wall composed of the two vertical sections 1 and 2, having the same diameter, the section 1 being directly over the section 2. The sections are separated by the space 3 which extends entirely around the producer. The section 1 may be supported in various ways which will readily suggest themselves to those acquainted with the art to which my improvements belong. I place external to the producer wall the ring 4, having the upwardly-open-trough 5 containing water supplied from any convenient source. The section 1 carries an annular sheet-metal guard 6 which projects into the water in the trough 5 to prevent the gas within the producer from escaping between the section 1 and the ring 4. Around the upper end of the section 2 of the wall I provide the annular trough 7, the ring 4 having an annular guard 8 projecting into the water in the trough 7. The ring has the flange 9 which rests on the rollers 10, carried by the arms 11 which are secured to suitable fixed supports, not shown. The ring 4 is rotated around the producer wall by means of the pinion 12 which meshes with teeth on the ring. The pinion is carried by the shaft 13 having bearings in the arms 14 and 15, their outer ends being secured to any suitable fixed support, not shown. The shaft 13 has the bevel gear 16 driven from any suitable source of power. The rollers 17, secured to suitable fixed supports (one as 14 being shown), ride on the top of the outer side of the ring 4 to prevent the ring from moving upwardly. Any number of rollers 18 rest against the periphery of the ring 4 to prevent lateral movement of the ring. The ring 4 carries one or more water-cooled poker-arms, as 19 and 20, which project through the space or slot 3 into the interior of the producer at such angle or angles as may be desired. I have shown the poker-arm 19 projecting radially and horizontally into the producer, but the direction of projection may be varied. I have shown the poker-arm 20 projecting downwardly. Other poker-arms may be provided projecting in various directions, or all may be alike.

As the arms 19 and 20 are alike except as to directions they take in the producer, I will describe the arm 19 only. The poker-arm 19 has therein a vertical partition 21 which extends from the outer wall of the ring 4 below the trough 5 nearly to the outer end. The passage 22 at one side of the partition communicates with the trough 5. From the passage 22 the water flows past the end of the partition 21 into the return passage 23 in the poker-arm at the other side of the partition. At the outer end of the passage 23 and in the bottom thereof I provide the outlet 24 which discharges water into the trough 7. The water in the trough 7 may be carried off to any desired place, as the usual water-pit at the bottom of the producer.

The poker arms and the ring 4 are provided at one or both sides of the poker arms with the plows or curved surfaces 25 which lie in the slot 3 and merge at opposite ends into the poker-arms and the ring as shown on Figs. 2 and 3. The surfaces or plows 25 are drawn from radii having centers lying in the angle between the poker arms and the ring 4, so that as the ring 4 revolves around the producer wall, the plows 25 will push back into the producer such fuel as may have lodged in the slot 3.

The principal difference between Fig. 1 and Fig. 4 lies in the different style of the poker used and the consequent changes. In Fig. 4 the poker or poker arm 19ª extends entirely across the producer and has its ends connected to the ring 4, in which there are the stuffing-boxes 26 around the poker-ends to prevent the producer gas from escaping.

The water from the trough 5 enters one end of the poker 19ª through the pipe 27 and is discharged from the other end of the poker into the trough 7 by the pipe 28. The ring 4ª may have plows like the plows 25 on Figs. 2 and 3, if desired, but they would not be connected to the poker 19ª. Additional rings and pokers may be used at different levels, if desired. I have provided a two section wall for a gas-producer and provided a narrow slot between them to accommodate the thickness of the poker arm or arms. The ring 4 is wholly outside the producer-wall, where the fuel cannot wear and burn it.

I claim—

1. In a gas-producer or the like, an inclosing vertical wall having two sections separated by a horizontal space, a rotatable ring located outside the periphery of the inclosing wall whereby the fuel within the said wall cannot contact therewith, fuel-agitating means secured to the ring and projecting through the said horizontal space and beyond the inclosing wall, and means for rotating the ring.

2. In a gas-producer or the like, an inclosing vertical wall, having two sections separated by a horizontal space, a rotatable ring located outside the periphery of the inclosing wall whereby the fuel within the said wall cannot contact therewith, an annular water-trough on said ring, an annular guard on the upper section extending into the trough, an annular trough on the lower section, an annular guard on the ring extending into the lower trough, a hollow poker extending through the said space and into the producer and having one end of the hollow arranged to receive water from the upper trough and the other end arranged to discharge water into the lower trough, and means for rotating the ring.

3. In a gas-producer or the like, an inclosing vertical wall, having two sections separated by a horizontal space, a rotatable ring outside the periphery of the wall, a poker secured to the ring and extending through the said space into the producer, a plow carried by the ring and located in the said space to push into the producer any fuel lodging in the said space, and means for rotating the ring.

Signed at Pittsburgh, Pa., this 22nd day of December, A. D. 1910.

WILLIAM F. RUST.

Witnesses:

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