

T. H. PAFFRATH,
GAS PRODUCER.
APPLICATION FILED OCT. 11, 1912.

1,105,688.

Patented Aug. 4, 1914.

Fig. 1.

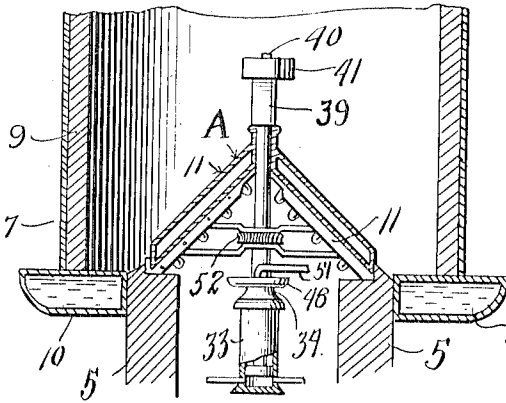


Fig. 4.

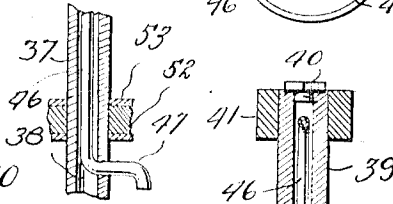


Fig. 6.

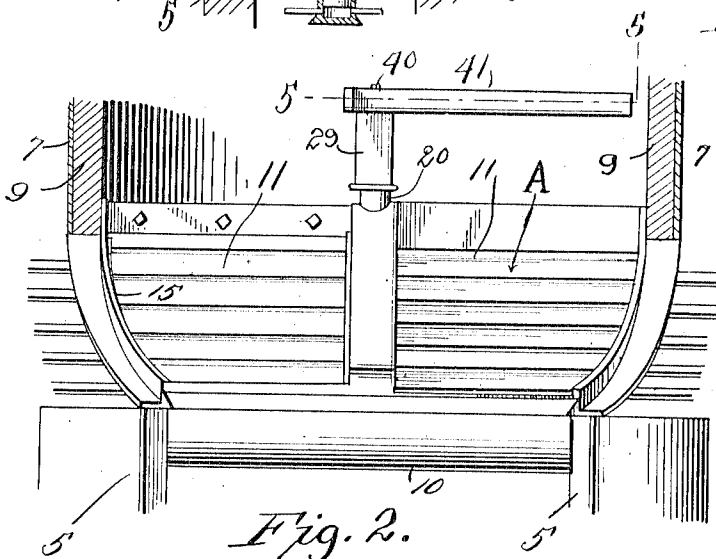
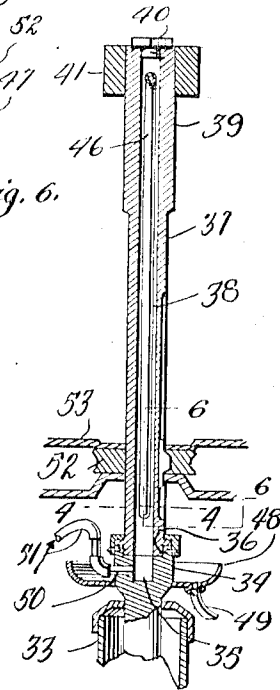


Fig. 2.

Fig. 3.

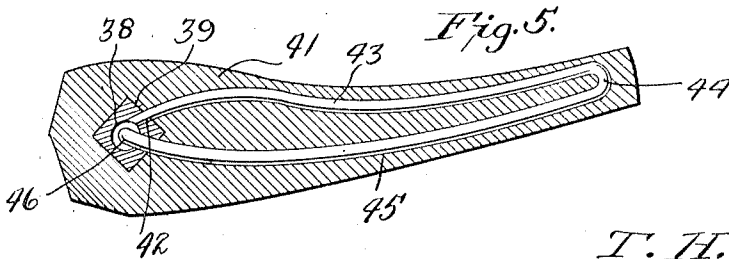


Fig. 5.

Witnesses

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UNITED STATES PATENT OFFICE.

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GAS-PRODUCER.

1,105,688.

Specification of Letters Patent.

Patented Aug. 4, 1914.

Application filed October 11, 1912. Serial No. 725,242.

To all whom it may concern:

Be it known that I, THEODOR H. PAFFRATH, a citizen of the United States, residing at Butler, in the county of Butler, State of Pennsylvania, have invented certain new and useful Improvements in Gas-Producers; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

This invention relates to new and useful improvements in gas producers.

The principal object of the invention is to provide a gas producing apparatus which is mounted upon a solid foundation and which includes a mechanically operated rotating poker which is also adapted to be raised and lowered so as to contact at all times with the coal.

Another object of the invention is to provide a gas producing apparatus in which the poker is kept in a comparatively cool condition by means of running water which passes therethrough.

A still further object of the invention is to provide a gas producer of the character described which is composed of a respectively few number of parts, and is therefore simple in construction and cheap to manufacture.

With these and other objects in view, the invention consists in the construction and novel combination of parts hereinafter fully described, illustrated in the accompanying drawings and pointed out in the claims hereto appended; it being understood that various changes in the form, proportion, size and minor details of construction within the scope of the claims may be resorted to without departing from the spirit or sacrificing any of the advantages of the invention.

In the drawings: Figure 1 is a sectional view through the apparatus taken transversely of the grate, Fig. 2 is a sectional view of the apparatus taken longitudinally of the grate, Fig. 3 is an enlarged vertical sectional view through the poker shaft and support, Fig. 4 is a horizontal sectional view taken on the line 4—4 of Fig. 3, Fig. 5 is an enlarged horizontal sectional view

through the poker, and Fig. 6 is a detail sectional view on the line 6—6 of Fig. 3.

Like reference numerals designate corresponding parts in all the figures of the drawings.

Referring to the drawings my invention comprises a base which consists of a number of spaced walls 5—5, the space between the walls constituting a draft passage. Seated upon the walls is a cylindrical shell 7 said shell being provided with a fired brick lining 9. Formed in the walls 5 of the base below the shell 7 are pockets 10—10 in which water is placed and which form a bottom for said shell.

Supported upon the section 5 of the base is a grate which is designated as a whole by the reference letter A. This grate consists of a supporting element with an inverted V-shaped cross section and comprises two inclined sides, each side comprising a plurality of plate sections 11—11. Disposed at the central portion of the apex of the grate is a vertical sleeve 20.

Centrally supported between the base sections 5—5 and directly below the sleeve 20 of the grate A is a hydraulic jack 33 which may be of any suitable construction, and includes a vertically movable head 34 disposed outwardly of the jack casing and having a bore 35 and a counter bore 36 formed in its upper end. Rotatably mounted with the counter bore 36 is a vertically disposed hollow shaft 37, the bore 38 thereof communicating with the bore 35 of said head. At its upper end the shaft is journaled in the sleeve 20, and the shaft extends beyond the socket in an angular end 39. At the upper end of the bore 38 of the shaft is a laterally extending horizontal rotatable poker 41. A lateral passage 42 is formed in the angular end 39 of the shaft and this passage communicates with the bore 38 thereof and with a passage 43 which is formed in the poker 41. This passage 43 extends longitudinally of the poker and is then returned as at 44 and thus continues rearwardly to the shafting as at 45. This end of the passage 43 is connected to the upper end of the pipe 46 which is disposed within the bore 38 and has its lower end extending through the shaft 37 in a dis-

charge nozzle 47. This nozzle is disposed above a cup 48 which is carried by the shafting, and this cup is provided with a drain pipe 49. A pipe 50 is carried by the head 34 of the jack and this pipe communicates with the bore 38 of the shaft 37 and with a pipe 51 which leads from any suitable cool water supply.

From the foregoing it will be observed that water passes from the pipe 51, through the inlet pipe 50 into the bore 38 of the shaft 37, thence upwardly through said bore through the lateral passage 42, passage 43 and is returned through the pipe 46. The water is then discharged from the nozzle 47 into the cup 48 and from said cup through the discharge pipe 49. It will thus be observed that the poker 41 is kept in a cooled condition by means of the running water regardless of the rotation of said poker or of the vertical passage thereof, due to the movement of the jack 33.

In order to rotate the shaft 37 and consequently the poker 41 a worm wheel 52 is connected to the shaft by a suitable feather, and this wheel is supported upon the grate structure A by means of a suitable brace 53. The worm wheel 52 is driven from any suitable member (not shown).

From the foregoing it is observed that the poker may be rotated and at the same time gradually raised or lowered through the mass of burning fuel, a free flow of water through the poker and its supporting shaft being at all times effected while the apparatus is in operation, so that the poker remains properly cooled.

It is seen that a simple, efficient, durable

and easily operated device has thus been provided.

What is claimed is:

1. In a gas producing apparatus, a slidably journaled shaft, a hydraulic jack having a swiveled connection with the shaft, means for rotating the shaft, the shaft and the head of the jack being formed in alined bores, an inlet pipe communicating with the bore of the jack, a horizontally disposed poker carried by the upper end of the shaft, said poker being formed with a passage having one end communicating with the bore of the pipe and a pipe communicating with the other end of the passage and extending downwardly through the bore of the shaft.

2. In a gas producing apparatus, a hydraulic jack, a slidably journaled shaft swiveled to the head of the jack, said jack and shaft being formed with alining bores, a basin carried by the head of the jack, an outlet for the basin, an inlet pipe communicating with the bore of the head, a horizontally disposed poker carried by the upper end of the shaft and formed with a bent passage having one end communicating with the bore of the shaft, a pipe communicating with the other end of the passage and extending downwardly through the bore of the pipe and directed outwardly of the pipe to discharge in the basin and means for rotating the shaft.

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

THEODOR H. PAFFRATH.

Witnesses:

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