

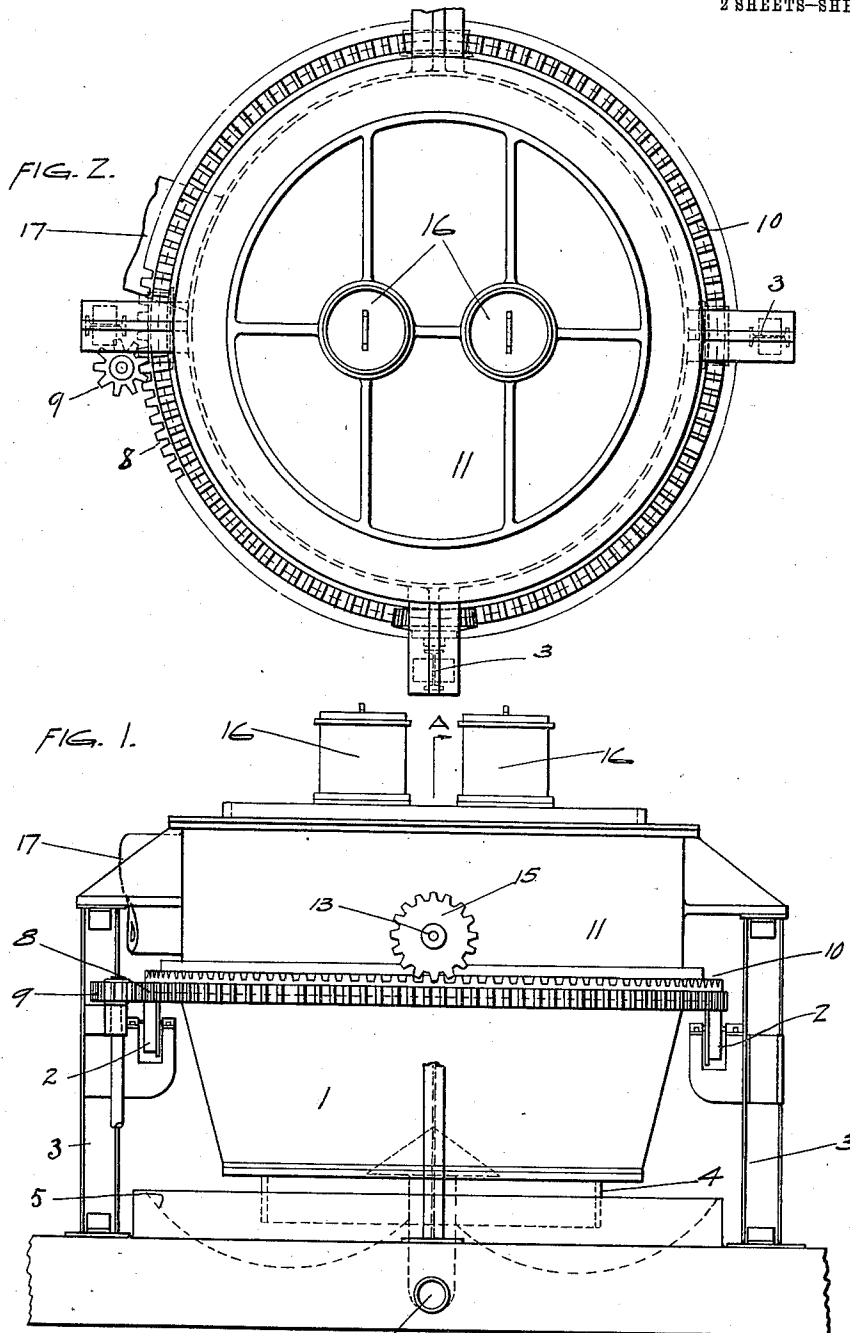
A. RUSBATCH.
GAS PRODUCER.

APPLICATION FILED NOV. 5, 1910.

1,006,797.

Patented Oct. 24, 1911.

2 SHEETS—SHEET 1.



WITNESSES:
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Jno. F. Obelin

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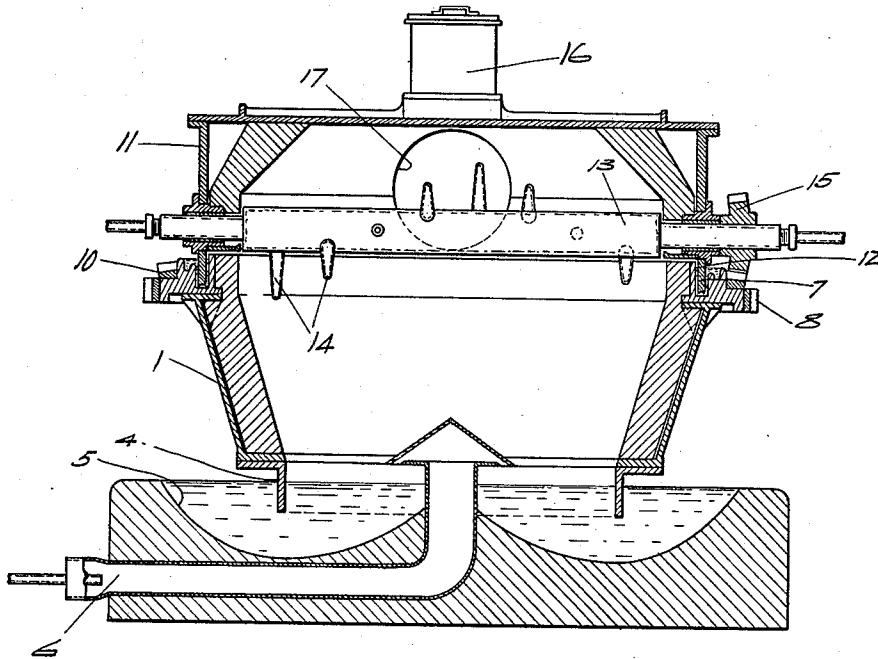


FIG. 3.

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UNITED STATES PATENT OFFICE.

ALFRED RUSBATCH, OF CLEVELAND, OHIO.

GAS-PRODUCER.

1,006,797.

Specification of Letters Patent.

Patented Oct. 24, 1911.

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To all whom it may concern:

Be it known that I, ALFRED RUSBATCH, a citizen of the United States, and a resident of Cleveland, county of Cuyahoga, and State of Ohio, have invented a new and useful Improvement in Gas-Producers, of which the following is a specification, the principle of the invention being herein explained and the best mode in which I have contemplated applying that principle, so as to distinguish it from other inventions.

My invention relates to gas producers, and its general object is the provision of means for automatically poking the mass of fuel in the producer.

The invention broadly comprehends means whereby the mass of fuel is automatically leveled off, and also means whereby it is subjected to a vertical poking operation.

To the accomplishment of these and related ends, said invention, then, consists of the means hereinafter fully described and particularly pointed out in the claims.

The annexed drawings and the following description set forth in detail certain mechanism embodying the invention, such disclosed means constituting, however, but one of various mechanical forms in which the principle of the invention may be used.

In said annexed drawings:—Figure 1 is a side elevation of a gas producer embodying my invention; Fig. 2 is a plan view thereof, and Fig. 3 is a vertical section on the line A—A in Fig. 1.

In the structural embodiment of the invention used for illustrative purposes, the producer comprises a container which is formed in two separate sections. The lower section 1 is supported on rollers 2 which, in turn, are supported by suitable uprights 3. A flange 4, at the bottom of section 1, depends into a liquid pit 5 so that its bottom is closed by a liquid seal, while the usual blast-pipe 6 extends upwardly within the container. At its periphery on its upper edge the section 1 is provided with a trough 7, and exteriorly the section 1 is provided with an annular spur gear 8 meshing with a power driven pinion 9, and also with an annular bevel gear 10.

The upper section 11 of the container is rigidly supported from the uprights 3 and is provided on its lower edge with a peripheral flange 12 which depends into the trough 7 so that a liquid seal may close the joint between the sections 1 and 11. A rotatable

hollow shaft 13 is supported transversely in the upper section 11, and bears a series of radial pokers 14 which are hollow and which open into the interior of the shaft 13. The shaft 13, it is contemplated, will be connected with a suitable fluid supply. A bevel pinion 15 is fixed on shaft 13 exteriorly of the container and meshes with the annular bevel gear 10 on the lower section 1. Suitable feed-hoppers 16 are provided in the section 11 for the admission of fuel to the producer, while an outlet pipe 17 opens from the upper section of the container for the discharge of the gas.

In operation, a suitable supply of fuel is introduced into the container through the feed-hoppers, is ignited, and an air blast forced through the blast-pipe. During the continuous operation of the producer, the lower part of the lower section will be largely filled with ashes, while above the ashes is the layer of incandescent fuel, the combustion of which, with the passage of air therethrough, produces the gas. It is this mass of incandescent fuel which must be constantly stirred in order to prevent uneven burning and to insure its maintenance in relatively fine form. This operation is also necessary to prevent the fuel forming clinkers and to insure its forming a fine ash. These objects are accomplished in the illustrated producer by rotating the lower section by means of the power driven pinion and causing rotation of such section to rotate the shaft with its pokers which is carried by the upper section. Consequently, the mass of fuel is constantly rotated with relation to the pokers, and at the same time, the pokers, by rotation in vertical planes, subject the fuel to a vertical jabbing or poking. In this manner, the fuel is constantly kept in the desired state in an entirely automatic manner, and the shaft and pokers are prevented from overheating by water supplied through the shaft.

Although I have illustrated my invention in one form, it will be obvious that either or both sections may be rotatable, the essential characteristic being that the two sections of the container shall be rotatable relatively to each other. Similarly, other means than the shaft with its radial pokers may be devised for poking the fuel, the essential characteristic here being that the poking means be such as to subject the fuel to vertical poking simultaneously with the ro-

tating stirring operation. While instead of the particular driving connections shown any desired arrangement of gearing may be employed, power being applied either to the lower rotatable section as in the structure described and thence communicated to the shaft 13, or vice versa. The latter arrangement would possess the advantage of lessening the gear involved.

I therefore particularly point out and distinctly claim as my invention:—

1. In a device of the character described, the combination of a container comprising two sections, one of said sections being constructed to rotate relatively to the other; a horizontally disposed shaft supported in one of said sections and constructed to rotate; and a plurality of pokers supported by said shaft and extending radially therefrom.

2. In a device of the character described, the combination of a container comprising two sections, one of said sections being constructed to rotate relatively to the other; a liquid seal between said sections; a horizontally disposed shaft supported in one of said sections and constructed to rotate; and a plurality of pokers supported by said shaft and extending radially therefrom.

3. In a device of the character described, the combination of a container comprising a fixed section and a section constructed to rotate; a horizontally disposed shaft supported in said fixed section and constructed to rotate; and a plurality of pokers supported by said shaft and extending radially therefrom.

4. In a device of the character described, the combination of a container comprising a lower section constructed to rotate and an upper fixed section; a horizontally disposed shaft supported in said upper section and constructed to rotate; and a plurality of radially extending pokers supported by said shaft.

5. In a device of the character described, the combination of a container comprising a lower section constructed to rotate and an upper fixed section; a horizontally disposed hollow shaft supported in said upper section and constructed to rotate; and a plurality of radially extending hollow pokers supported by said shaft and opening into the interior of the shaft.

6. In a device of the character described,

the combination of a container comprising two sections, one of said sections being constructed to rotate relatively to the other; a horizontally disposed shaft supported in said other section and constructed to rotate; means arranged to rotate said shaft upon rotation of said one section; and a plurality of pokers supported by said shaft and extending radially therefrom.

7. In a device of the character described, the combination of a container comprising two sections, one of said sections being constructed to rotate relatively to the other; an annular gear secured to the section which is constructed to rotate; a horizontally disposed shaft supported in said other section and constructed to rotate; a pinion fixed on said shaft exteriorly of the container and meshing with said gear; and a plurality of pokers supported by said shaft and extending radially therefrom.

8. In a device of the character described, the combination of a container comprising a lower section constructed to rotate and an upper fixed section; a horizontally disposed hollow shaft supported in said upper section and constructed to rotate; a pinion fixed on said shaft exteriorly of the container, said lower section being provided with an annular gear meshing with said pinion; and a plurality of radially extending hollow pokers supported by said shaft and opening into the interior of the shaft.

9. In a device of the character described, the combination of a container comprising a lower section constructed to rotate and having a trough at its periphery and being provided exteriorly with an annular gear, and an upper fixed section having a peripheral flange depending into said trough; a horizontally disposed hollow shaft supported in said upper section and constructed to rotate; a pinion fixed on said shaft exteriorly of the container and meshing with said gear; and a plurality of radially extending hollow pokers supported by said shaft and opening into the interior of the shaft.

Signed by me this 2nd day of November, 1910.

ALFRED RUSBATCH.

Attested by—

ANNA L. GILL,
JNO. F. OBERLIN.