

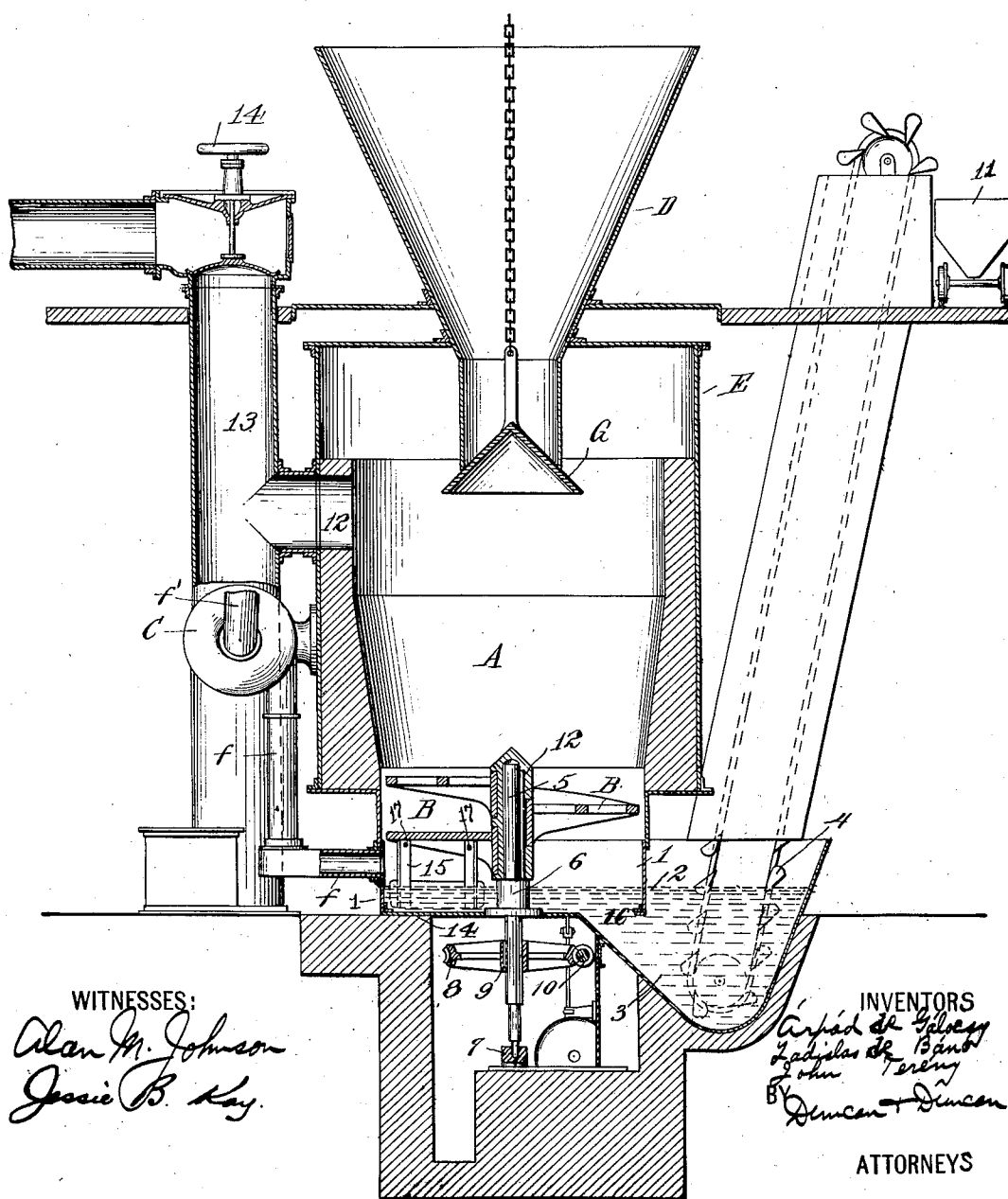
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GAS PRODUCER.

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GAS-PRODUCER.

No. 856,137.

Specification of Letters Patent.

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To all whom it may concern:

Be it known that we, ÁRPÁD DE GÁLOCSY, metallurgical and civil engineer, LADISLAS DE BÁNÓ, mechanical and civil engineer, and JOHN TERÉNY, metallurgical and Hungarian State engineer, of Budapest, Austria-Hungary, have invented certain new and useful improvements in Gas-Producers, of which the following is a specification, taken in connection with the accompanying drawings, which form a part of the same.

This invention relates to grates and especially to helical grates and is a division of our application 244,617 filed February 7, 1905 for gas producers.

The accompanying drawing illustrates an embodiment of this invention in vertical section.

In the illustrated embodiment of this invention the helical grate B is shown in operative position with the gas generator chamber A of a gas producer. This chamber A is mounted on an iron or steel ring 1 which is so shaped as to serve as a water seal 2 for the gas generator. A suitable ash receiving basin 3 is formed on one side of the water seal to receive the slag and ashes falling from the grate B and a suitable bucket elevator 4 working in this basin operates in an obvious manner to continuously remove this waste material and load it on the cars 11 as indicated. The helical grate B is keyed to the vertical shaft 5 by the key 12. This shaft passes down through a stuffing box 6 in the water seal and is supported on a step bearing 7 beneath the water seal. The grate may be rotated in either direction by the worm wheel 8, keyed upon the shaft 5 by means of the key 9, and in mesh with the worm 10 which may be operated in either direction by any suitable power.

In the operation of the devices shown coal is fed in the hopper D which may be closed by a suitable device, such as a bell G and falls upon the helical grate B. The coal burning upon this surface forms gas in an obvious manner which is drawn off through the port 12 and flows into the gas main 13 which is controlled by a suitable valve, such as 14. To assist in the production of gas, a fan C is used having an intake f' and an outlet f beneath the grate B but above the water of the

water seal as shown. This feature, however, may be omitted if desired.

The grate B is normally rotated at such a rate of speed that merely ashes and slag are discharged from it into the water of the water seal. The ashes and the slag falling upon the surface 14 is forced over by the paddle 15, which is secured to the under surface of the grate B by rivets 17 or other suitable means, into the opening 16 of the basin 3.

In gas producers the coal frequently cokes to a considerable extent forming an arch extending from the sides of the generator to the center and preventing very largely the successful operation of the gas producer. By using the helical grate of our invention the coal, coke and slag within the producer A can be agitated and the crown of coke and slag broken up by running the helical grate B in such a direction that the ashes and slag are not discharged from the bottom of the chamber, but is merely given an intermittent vertical movement. When the helical grate is rotated in the usual or discharge direction the ashes are regularly discharged from the lower end of the generator chamber and as the grate must make a complete revolution before the material first separated from the bottom of the coal bed is discharged from the grate sufficient time elapses for its complete combustion and the coal is thus absolutely burned out before the slag and ashes drop into the water seal where they serve to generate steam to a considerable extent.

While I have shown the helical grate in connection with a gas producer it is of course not limited to such use as it is adapted for general application.

Without limiting ourselves to the exact details of the disclosure in this case what we claim as our invention is:

1. In gas producers, a generator chamber, means for feeding material into the upper portion of the chamber, a helical grate closing the lower portion of the chamber, and means for rotating the grate in either direction for the purpose specified.

2. In gas producers, a generator chamber, means for feeding material to the upper portion of the generator chamber, a helical grate mounted beneath the chamber, an ash pit beneath the helical grate, having an ash re-

ceiving basin and a paddle secured to the grate adapted to force the ashes from the higher portion of the ash pit into the discharge basin for the purpose specified.

5 3. In gas producers, a generator chamber, means for feeding material to the upper portion of the chamber, a helical grate mounted beneath the chamber and of substantially the same cross-section, a ring connected to
10 and extending downward from the chamber forming a water seal, for the purpose specified.

4. In gas producers, a generator chamber, a ring upon which it is mounted and which is adapted to form a water seal for the generator chamber, means for feeding material into
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the upper portion of the generator chamber, a helical grate mounted beneath the chamber and within the ring and of substantially the same cross-section as the chamber, an ash receiving basin, a vertical shaft upon which the helical grate is mounted, and means for rotating the same in either direction for the purpose specified.

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