G. C. F. VATER.

GAS PRODUCER.

APPLICATION FILED JAN. 15, 1907.

916,806. Patented Mar. 30, 1909.

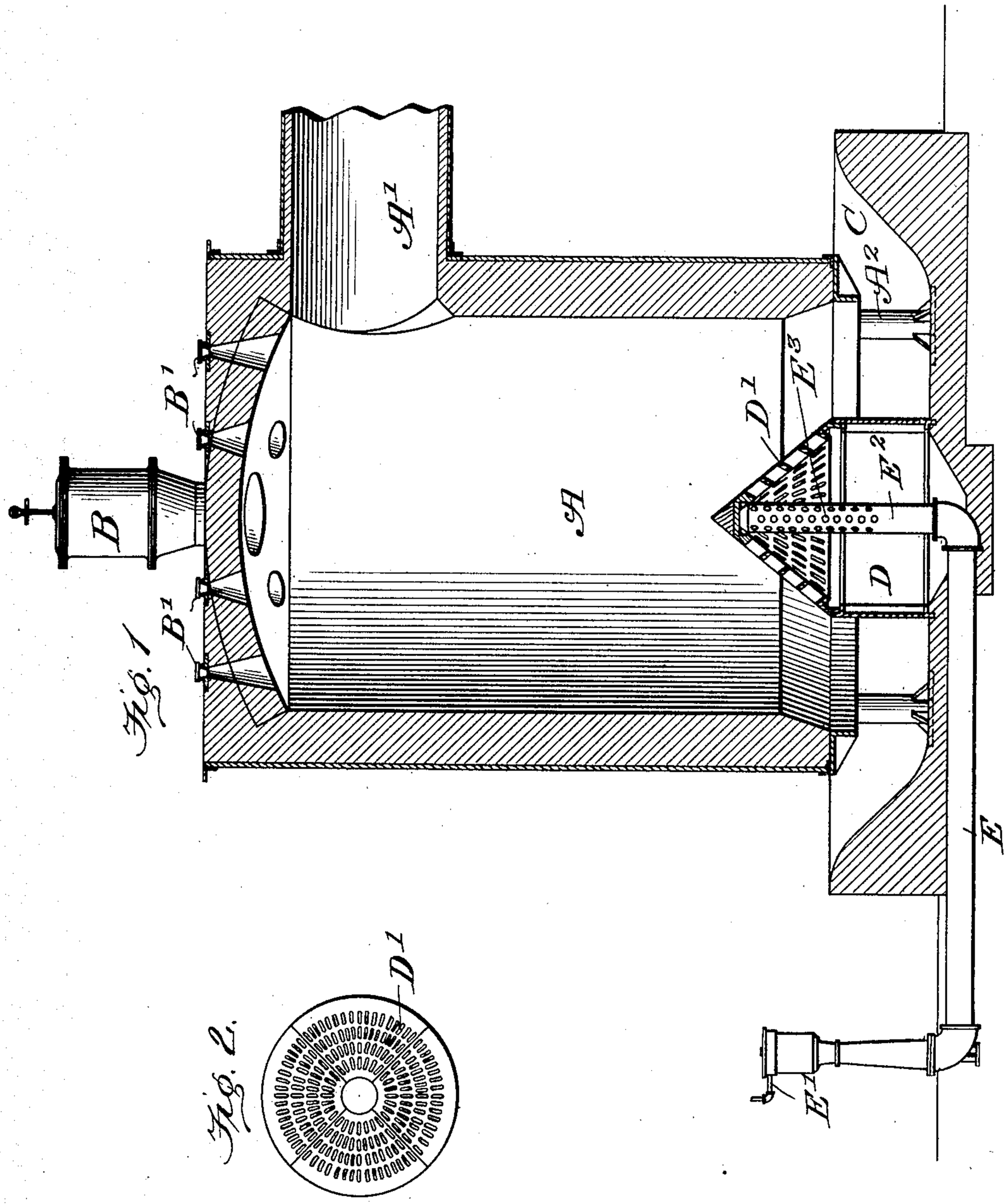

Fig. 1.

Fig. 2.

Witnesses
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GEORGE C. F. VATER, OF ST. LOUIS, MISSOURI.

GAS-PRODUCER.

No. 916,806. Specification of Letters Patent. Patented March 30, 1909.

Application filed January 15, 1907. Serial No. 352,437.

To all whom it may concern:

Be it known that I, GEORGE C. F. VATER, a citizen of the United States, residing in the city of St. Louis, State of Missouri, have invented a new and useful Improvement in Gas-Producers, of which the following is a specification.

The object of this invention is the production of a rich and uniform gas by uniformly distributing the air admitted into the producer, and a further object is to utilize to the best advantage the fuel placed in the said producer, by supplying to the said fuel an even flow of air, thereby securing complete and uniform combustion.

The invention relates especially to the form of grate employed and to the manner of admitting air to the said grate.

In the accompanying drawings—Figure 1 is a vertical elevation through a producer with my grate and air pipe applied thereto; Fig. 2 is a plan view of the grate.

In these drawings, A represents the combustion chamber, the walls of which are formed preferably of fire brick and from which extend a gas pipe A′. Coal hoppers B and poke holes B′ are also provided and these portions of the device are of the usual form. I also provide the usual water pan C into which the ashes fall and which forms a sill for the lower end of the combustion chamber. The grate D consists of a cylindrical casing arranged centrally in the water pan C and extending upwardly into the combustion chamber A. The cylinder D supports and opens into a cone D′ which is provided with a plurality of slots, the cone forming substantially upon its side a plurality of grate bars, the apex being closed or solid. An air pipe E is provided at its outer end with a suitable steam injector E′ and its inner end is provided with a suitable elbow which connects it to the upwardly extending pipe E^2 which pipe is arranged centrally and vertically in the casing D and extends upwardly into the cone D′ and terminates in the solid cap or apex of the cone. The pipe E^2 throughout the upper portion of its length is provided with a plurality of perforations as shown at E^3. In use the ash line is above apex of the cone and the upper coal line is adjacent the gas neck or pipe A′. The air passing out of the perforations E^3 will pass uniformly through the slots of the cone D′ and upwardly through the ashes and fuel. This form of grate allows an even fall of the coal line as the ashes are raked down, and also permits the ready withdrawal of all clinkers which may collect in the producer, the ashes, clinkers, etc. sliding readily down the cone-shaped grate into the water pan.

By means of a producer provided with a grate of this description and provided with an air cylinder into which air is admitted through the perforation of the pipe E^2 I am enabled to secure a rich and uniform gas, and also to utilize to the best advantage the fuel fed to the combustion chamber A.

Having thus fully described my invention what I claim as new and desire to secure by Letters Patent is—

In combination with a producer having a combustion chamber and a water pan, a cylindrical air receptacle mounted centrally in said pan, an air pipe extending upwardly through the said air receptacle, a conical grate supported upon the receptacle and opening outwardly into the receptacle, said grate having a non-perforated apex portion, the said air pipe being perforated and having its upper end closed by the apex of the cone, the perforations being in the horizontal plane of the grate openings as and for the purpose set forth.

GEO. C. F. VATER.

Witnesses:
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