

No. 676,329.

Patented June 11, 1901.

A. LAUGHLIN.  
GAS PRODUCER.

(Application filed Aug. 15, 1900.)

(No Model.)

2 Sheets—Sheet 1.

FIG. 1.

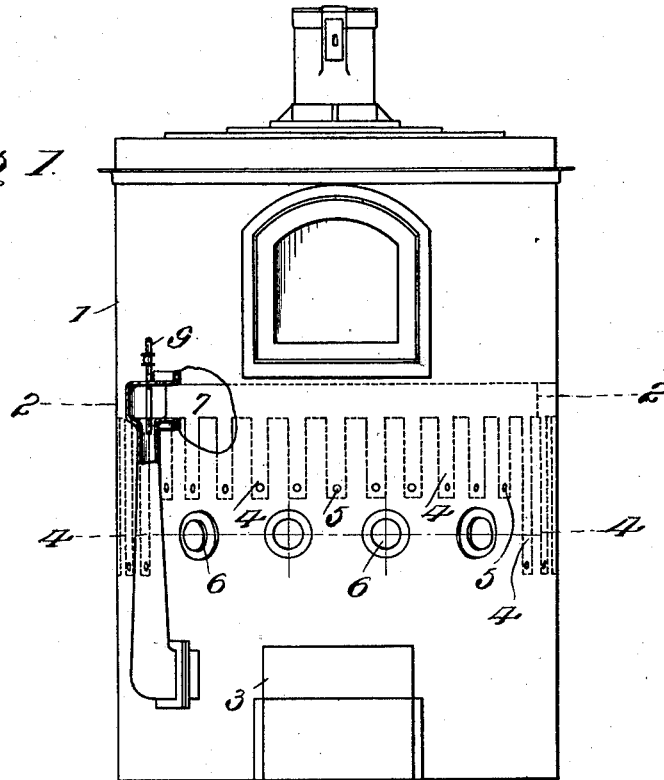
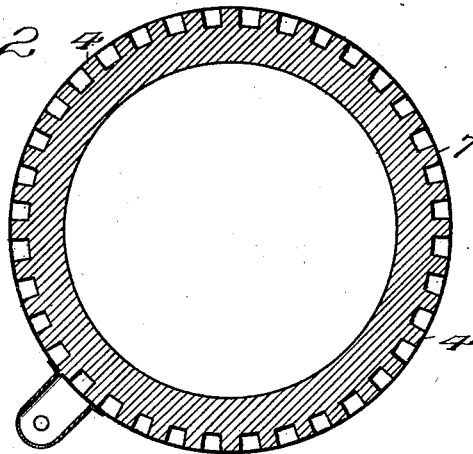


FIG. 2.



WITNESSES:

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INVENTOR,

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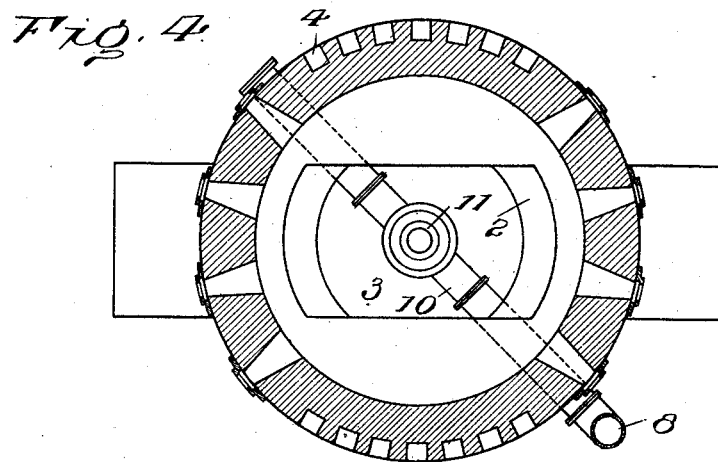
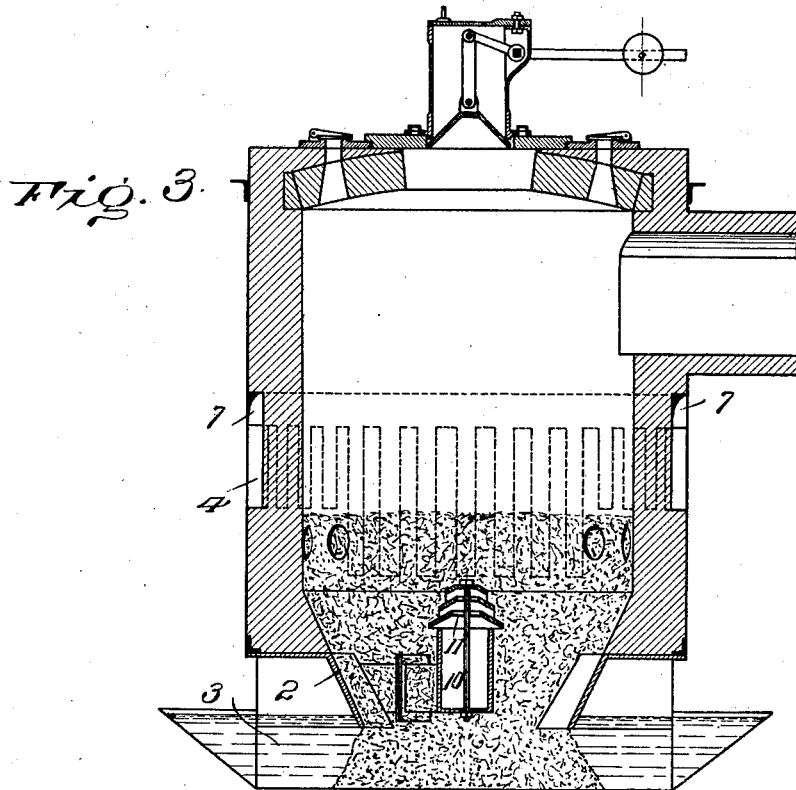
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WITNESSES:

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# UNITED STATES PATENT OFFICE.

ALEXANDER LAUGHLIN, OF SEWICKLEY, PENNSYLVANIA.

## GAS-PRODUCER.

SPECIFICATION forming part of Letters Patent No. 676,329, dated June 11, 1901.

Application filed August 15, 1900. Serial No. 26,982. (No model.)

*To all whom it may concern:*

Be it known that I, ALEXANDER LAUGHLIN, of Sewickley, in the county of Allegheny and State of Pennsylvania, have invented certain  
5 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  
10 use the same.

This invention relates to gas-producers, and has special reference to the blast-supply.

The primary object is to increase the efficiency and expedite the operation of the producer. This I accomplish by thoroughly heating  
15 the air before it is blown into the producer.

A further object is to provide simple and highly-efficient means for effectively heating  
20 the air before its passage into the blast-pipe.

The invention will be hereinafter fully set forth, and particularly pointed out in the claims.

In the accompanying drawings, Figure 1  
25 shows in elevation a producer equipped with my present improvements. Fig. 2 is a horizontal sectional view of the producer-body on line 2 2, Fig. 1. Fig. 3 is a vertical section  
30 on line 3 3, Fig. 1. Fig. 4 is a horizontal sectional view on line 4 4, Fig. 1.

Referring to the drawings, 1 designates the body of the producer, 2 the ash-hopper, and  
35 3 the pit for forming a water seal around the ash-hopper, features which may be of ordinary or preferred form of construction.

Around the body of the producer I arrange spaced-apart air-flues 4, preferably upright, with inlet-openings 5 at or near their lower  
40 ends. Some of these upright air-flues are longer than the others, the poke-openings 6 making it necessary to shorten those flues beneath which they are located. At their upper  
45 ends the several air-flues open into a common conduit or chamber 7, which encircles the body of the producer and connects with the upper end of the blast-pipe 8. The air  
being drawn in through the openings 5 passes  
upward through the flues 4, and thence into  
50 and through the encircling chamber 7. In its transit it is thoroughly heated before being entrained into the blast-pipe by the jet of steam introduced through the small pipe 9. The blast-pipe is shown as discharging at its  
55 lower end into a conduit 10 of a blast-distributor 11; but any other means may be em-

ployed for the distribution of the blast into the mass of fuel in the body of the producer.

The advantages of the present improvement are apparent to those skilled in the art. It is obvious that decidedly better results are  
60 obtained by thoroughly heating the air before its admixture with the steam and the entrance of the blast into the fuel and also that it is specially advantageous to utilize the heat of the producer itself for this purpose. 65

I claim as my invention—

1. The combination in a gas-producer of the following instrumentalities: a body, an air-chamber formed in the wall of such body, a series of flues, also formed in said body,  
70 opening at their upper ends into said chamber and having air-inlets at their lower ends, a blast-conduit opening into the producer at or near the bottom thereof, means connecting said air-chamber and conduit, and means for  
75 entraining the air from said chamber to said conduit, as set forth.

2. The combination in a gas-producer of the following instrumentalities: a body, an encircling air-chamber formed in the wall of  
80 said body, a series of flues, also formed in said body, opening at their upper ends into said chamber and having air-inlets at their lower ends, a blast-conduit opening into the producer at or near the bottom thereof, a blast-  
85 pipe connecting said air-chamber to said blast-conduit, and means for entraining the air from said chamber through said pipe and conduit, substantially as set forth.

3. The combination in a gas-producer of  
90 the following instrumentalities: a body, an encircling air-chamber formed in the wall of said body, a series of flues, also formed in said body, opening at their upper ends into  
95 said chamber and having air-inlets at their lower ends, a blast-conduit opening into the producer at or near the bottom thereof, a blast-pipe connecting said air-chamber to said  
blast-conduit, and a steam-inlet pipe opening into said blast-pipe for entraining the air  
100 from said chamber into such pipe, substantially as set forth.

In testimony whereof I have signed this specification in the presence of two subscribing witnesses.

ALEXANDER LAUGHLIN.

Witnesses:

NEWMAN GROOVES,  
A. K. McMILLEN.