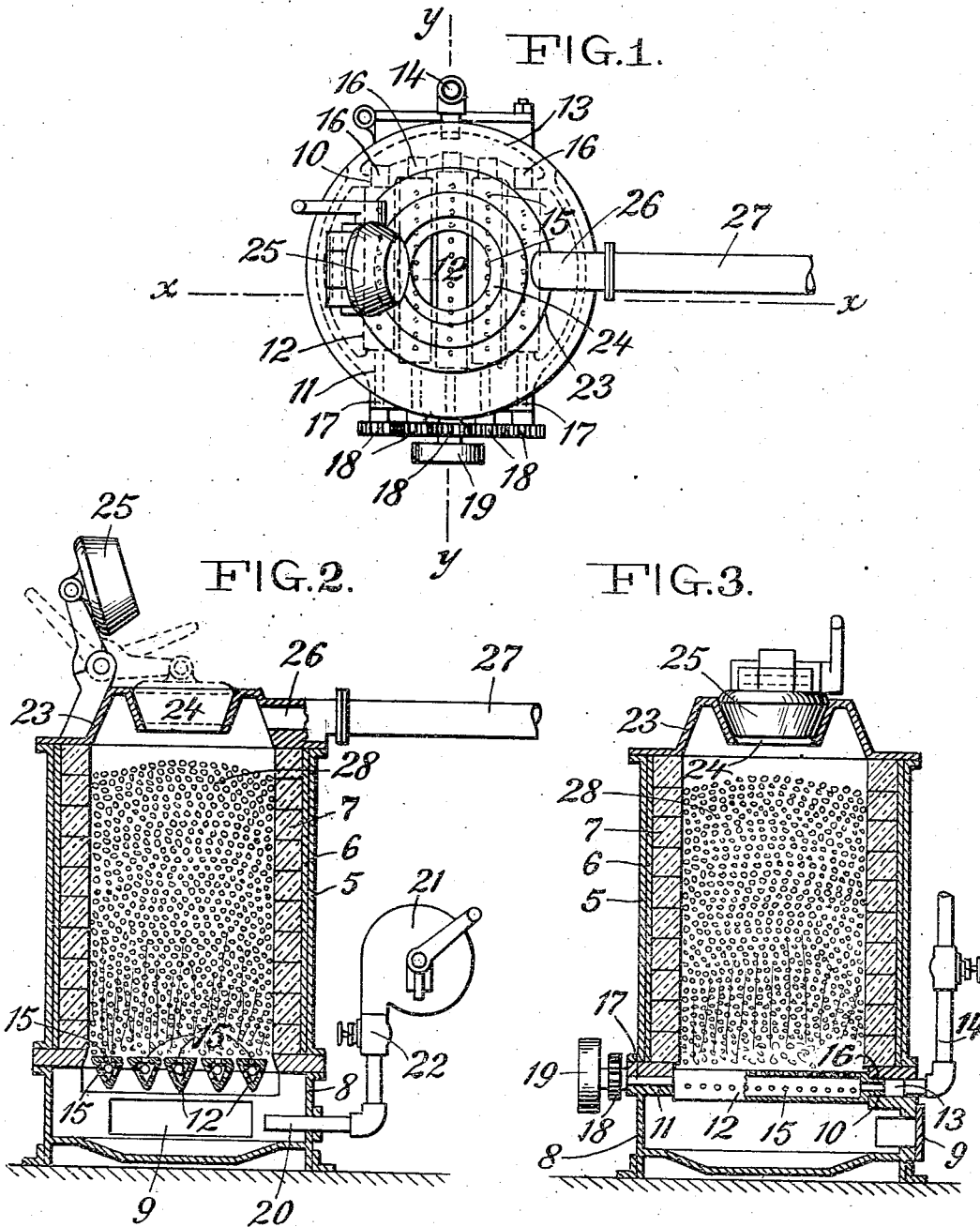


W. C. FINCK.
GAS PRODUCER.
APPLICATION FILED DEC. 31, 1906.

968,458.

Patented Aug. 23, 1910.



WITNESSES:
G. A. Blount
J. R. Blount

INVENTOR
William C. Finck
BY
Benjamin
ATTORNEY

UNITED STATES PATENT OFFICE.

WILLIAM CHRISTIAN FINCK, OF ELIZABETH, NEW JERSEY, ASSIGNOR TO GEORGE H. BENJAMIN, OF NEW YORK, N. Y.

GAS-PRODUCER.

968,458.

Specification of Letters Patent. Patented Aug. 23, 1910.

Application filed December 31, 1906. Serial No. 350,122.

To all whom it may concern:

Be it known that I, WILLIAM CHRISTIAN FINCK, a citizen of the United States, residing at Elizabeth, county of Union, State of New Jersey, have invented certain new and useful Improvements in Gas-Producers, of which the following is a specification.

My improvement relates more particularly to gas producers of the type employed to produce what is commonly known as semi-water gas or "Dowson's gas," although the producer may be employed for the production of ordinary producer gas containing a very much smaller proportion of hydrogen.

The object of my invention is to simplify the construction of the producer and increase its gas generating capacity.

The accompanying drawings will serve to illustrate my invention.

Figure 1 is a plan view looking from the top of the producer, showing the arrangement of the grate bars in dotted lines. Fig. 2 is a vertical section taken on the line X—X of Fig. 1. Fig. 3 is a section taken on the line Y—Y of Fig. 1.

Referring to the drawings: 5 indicates an inclosing shell for the body of the producer. The shell may be made of steel or iron, and be given any desirable shape. In Fig. 1 the producer is shown as a cylinder. Situated within the inclosing shell is a second shell or lining 6, and within it a refractory brick wall 7. The second lining 6 may be omitted, and the refractory wall or lining 7 may be formed of brick or it may be formed by building up a continuous lining of any refractory material. The body of the producer is carried on a base portion which consists of a casting 8, having an ash door 9. The casting 8 is also provided with bearings 10 and 11 for the rotatable grate bars 12, and in the right hand side of the casting there is a pocket 13, to which is connected a water pipe 14.

The grate bars 12 are V-shaped in section and are hollow and perforated, as shown at 15, on their three surfaces. The ends 16 of grate bars 12, where they project into the bearings 10, are also hollow, so that the water which flows by pipe 14 into the pocket 13 also flows into the grate bars 12, to be discharged through the perforations 15.

I do not limit myself to any particular shape for the grate bars. They may be tri-

angular in section or have any other shape which may be found desirable, preferably one which will act mechanically on the ash in the bottom of the producer when rotated.

Connected to the ends 17 of the grate bars are gears 18. These gears intermesh and are driven by the pulley 19. The pulley 19 may be operated by power or it may be operated by a hand-crank so that the grate bars may be manually operated. Projecting into the base is the delivery pipe 20 of a hand blower 21. This blower, as is usual with producers of this type, is of service in originally starting the producer, or where it is desired to force combustion in the producer, and can be shut off from pipe 20 by a valve 22. The body of the producer is surmounted by a casting 23, having the usual charging orifice 24 and hand operated pipe closure 25. The right hand side of the casting 23 has an opening 26, which connects with a pipe 27 which, as is usual with producers of this type, is connected either to a gas engine, pump, or other pipe, which makes suction upon the producer, through which the gas produced in the producer is conveyed from the producer.

28 represents fuel in the producer.

The operation of my device is as follows: Assuming that the fuel in the producer has been ignited at the bottom in the usual way, water is introduced through the pipe 14, pocket 13 and grate bars 12. This water is discharged in two directions,—upward into the fuel and downward into the base. The heat, due to the combustion of the fuel, vaporizes this water and such vapor is decomposed in passing through the zone of combustion in the body of the producer into its elements—oxygen and hydrogen, the oxygen combining with the burning fuel to increase combustion, and the hydrogen uniting with the carbon oxid to form a gaseous fuel.

It will be observed that the delivery pipe from the producer is situated at the highest point in the producer. This location is given to this pipe as experience has demonstrated that the exit from the producer should be free from obstruction, and, therefore, above the body of fuel in the producer.

From time to time the grate bars 12 are rotated, the effect of which is to carry down the ash and maintain the zone of combustion at a definite point slightly above the top of the grate bars.

Having thus described my invention, I claim:

5 A gas producer comprising a body portion, a base portion having a water pocket, perforated, hollow grate bars rotatably mounted in said base portion and communicating at one end with said water pocket, means for feeding water into said pocket and through said grate bars, means for re-

velving said grate bars, and a cap portion 10 provided with an exit flue for the generated gas.

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

WILLIAM CHRISTIAN FINCK.

Witnesses:

FREDERICK A. BLOUNT,
FRANK O'CONNOR.