

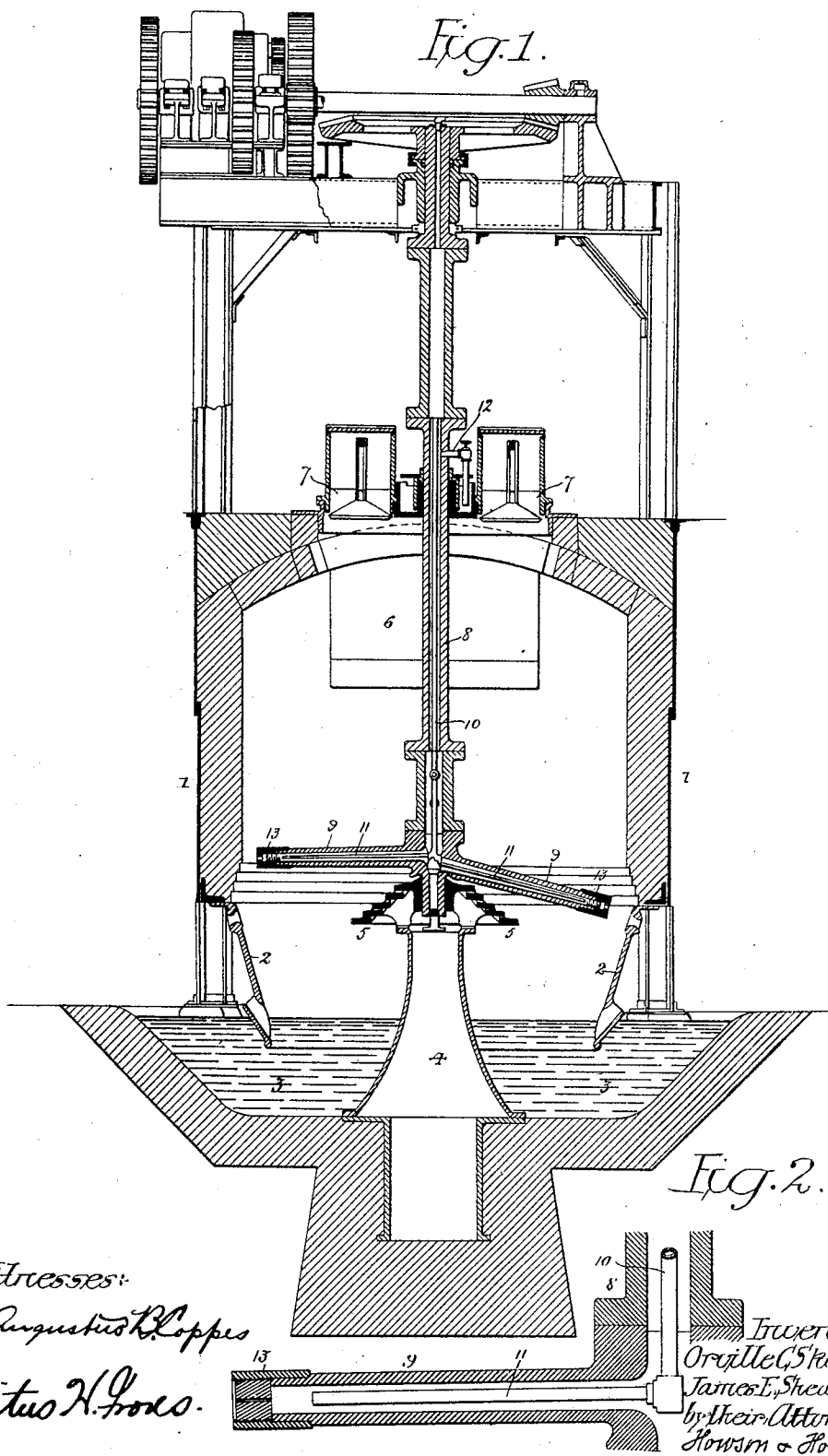
No. 809,023.

PATENTED JAN. 2, 1906.

O. C. SKINNER & J. E. SHEAFFER.

GAS PRODUCER.

APPLICATION FILED JULY 27, 1904.



Witnesses:
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UNITED STATES PATENT OFFICE.

ORVILLE C. SKINNER AND JAMES E. SHEAFFER, OF BURNHAM, PENNSYLVANIA.

GAS-PRODUCER.

No. 809,023.

Specification of Letters Patent.

Patented Jan. 2, 1906.

Application filed July 27, 1904. Serial No. 218,352.

To all whom it may concern:

Be it known that we, ORVILLE C. SKINNER and JAMES E. SHEAFFER, citizens of the United States, residing at Burnham, Pennsylvania, have invented certain Improvements in Gas-
5 Producers, of which the following is a specification.

The object of our invention is to provide means for preventing the formation of clinker
10 on the walls of a gas-producer.

In a companion application filed of even date herewith by James E. Sheaffer the process of preventing clinker is claimed, and this application is limited to the apparatus for carrying
15 the process into effect.

In the accompanying drawings, Figure 1 represents, in vertical section, a well-known type of gas-producer illustrating our invention; and Fig. 2 is an enlarged sectional view
20 of part of Fig. 1.

In the drawings, 1 represents the cylindrical body of the producer; 2, the tapering ash-hopper at the bottom of the same; 3, the water-sealed ash-pit; 4, the central air-pipe; 5, the
25 air-distributing hood of the same; 6, the gas-outlet, and 7 the valved feeders for the fuel. The producer has a central hollow vertical shaft 8, provided with projecting hollow arms 9, which extend into the fuel at or near the
30 hot zone of the same—that is to say, between the bed of ashes in the ash-hopper and the green fuel in the upper portion of the producer—these arms having the purpose of agitating and stirring up the mass of fuel in the
35 producer, so as to insure the proper flow of air therethrough and prevent the formation of clinker. Each of the arms 9 is water-cooled, the water being conveyed thereto through a central pipe 10 in the hollow shaft
40 8, this pipe being provided with branches 11, one in each of the hollow arms 9, the water being delivered by these branches at the outer end of each hollow arm and returning through the arms and hollow shaft to a discharge-pipe
45 12 above the top of the furnace. Instead of closing the ends of the arms 9, as usual, however, we provide the same with perforated nozzles 13, from each of which a jet or stream
50 of water will be projected against the walls of the producer in the hot zone of the furnace, the effect being that the incandescent

material which would otherwise adhere to the walls and unite to form clinker is cooled and softened, so that it will readily pass down into the hopper 2 along with the ashes, the walls
55 of the fuel-chamber being thereby maintained relatively free from accumulations of clinker, so that the orderly and continuous operation of the furnace is not interfered with.

Having thus described our invention, we
60 claim and desire to secure by Letters Patent—

1. The combination in a gas-producer, of a stirring-arm mounted within the producer, the arm having a nozzle through which water is projected into the mass of fuel at the point
65 where clinker usually forms, substantially as described.

2. The combination of a gas-producer with a water-supply pipe mounted within the producer, said pipe having a nozzle adjacent to
70 the inner wall of the producer for projecting a jet or stream of water toward the said inner wall of the producer into the mass of fuel where the clinker usually forms, substantially as described.

3. The combination of a gas-producer having a rotating shaft with hollow arms projecting into the mass of fuel in the producer, and means for discharging jets or streams of water from said arms into the fuel, substantially as
75 specified.

4. The combination of a gas-producer having a rotating shaft with a hollow arm projecting into the mass of fuel in the producer, and means for discharging a jet or stream of water
80 from the outer ends of said arm against the walls of the producer, substantially as described.

5. The combination of a gas-producer having a hollow rotating water-cooled shaft, with
85 projecting water-cooled arms thereon, and water-discharging nozzles secured to the ends of said arms, substantially as specified.

In testimony whereof we have signed our names to this specification in the presence of
90 two subscribing witnesses.

ORVILLE C. SKINNER.
JAMES E. SHEAFFER.

Witnesses:

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