C. J. ATKINSON.

GAS PRODUCER.

APPLICATION FILED FEB. 4, 1909.

1,028,524.

Patented June 4, 1912.

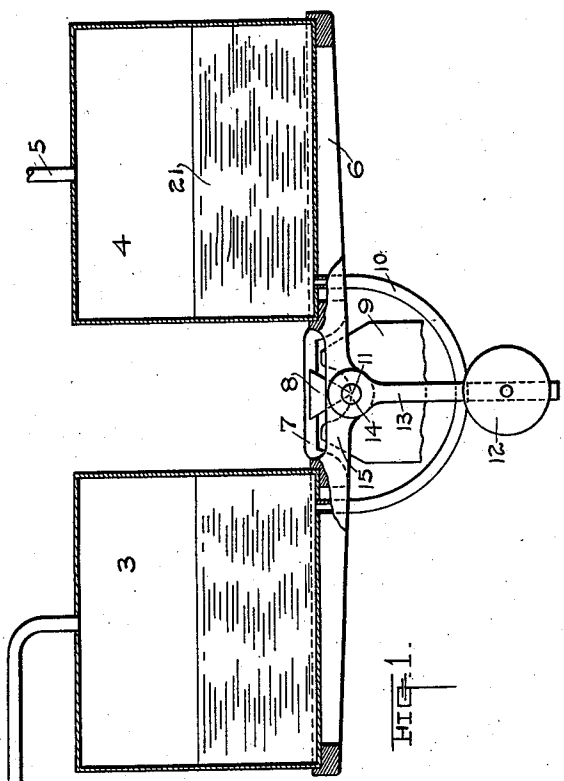

FIG. 1.

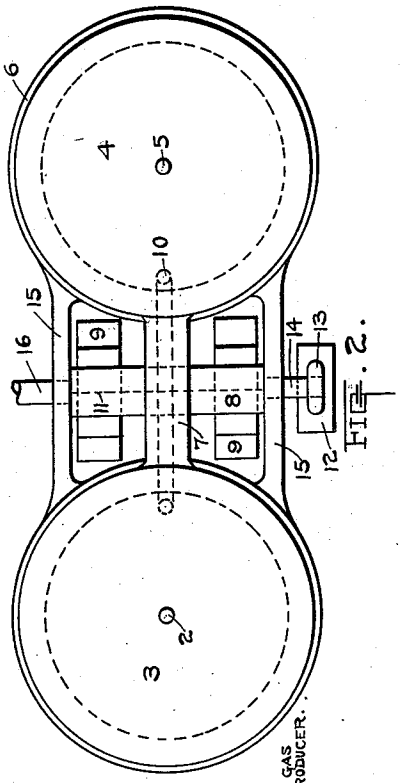

FIG. 2.

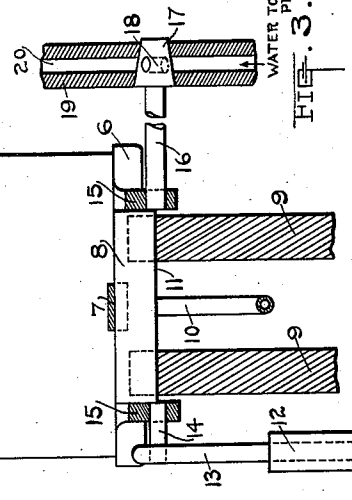

FIG. 3.

WITNESSES=

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CYRIL J. ATKINSON, OF MILWAUKEE, WISCONSIN.

GAS-PRODUCER.

1,028,524. Specification of Letters Patent. Patented June 4, 1912.

Application filed February 4, 1909. Serial No. 476,012.

To all whom it may concern:

Be it known that I, CYRIL J. ATKINSON, residing at Milwaukee, Wisconsin, have invented new and useful Improvements in Gas-Producers, of which the following is a specification.

This invention relates to improvements in what are commonly called "suction-producers" in the above class of invention, being those in which a current of air is caused to flow to the producer for the purpose of assisting combustion by the suction operation of an explosive-engine connected therewith and receiving explosive mixture therefrom, and it is designed to automatically regulate the supply of water to the vaporizer forming part of the complete producer in proportion to the demand for gas therefrom caused by the suction action of the engine in drawing in a charge of explosive mixture.

Referring to the drawings, Figure 1 is a vertical section of the device, parts being in elevation, and of the gas producer fragmentarily shown. Fig. 2 is a plan; and Fig. 3 is a transverse central section of the device.

Supports 9, 9, provide bearings for oscillation thereon at knife edge 11 of a bar 8 mounted in a bridge 7 and between bars 15, 15, both bridge and bars being rigidly connected to the foundation rings 6, 6, upon which rest closed chambers 3, 4. A conduit 10 connects the lower parts of chambers 3, 4. The foundation rings 6, 6, and connected framework are balanced on the knife edge 11 of bar 8 and to better maintain stability, a weight 12 is adjustably mounted on an arm 13 rigidly carried by a short shaft 14 axially in line with knife edge 11 and rigidly carried by one of the bars 15 of the framework. This is on one side of the apparatus. On the opposite side is mounted in the other bar 15 and also in line with knife edge 11, a short shaft 16 directly carrying a rotary valve 17 whose single perforation 18 is registrable with the thoroughfare 20 of water pipe 19 delivering water to the vaporizer of gas producer 1. The chamber 3 connects by flexible tube 2 with gas producer 1, and chamber 4 connects by flexible tube 5 to the atmosphere. It is only necessary that chambers 3, 4, be movable to different levels and the easiest way to do this is to mount them as described.

The operation of the device is as follows: Water is supplied the vaporizer of the gas producer through pipe 19 controlled by valve 17. The pressure of gas in gas producer 1 is communicated through flexible pipe 2 to chamber 3. Should the supply of gas in the producer 1 be removed therefrom more rapidly than normal so as to cause the pressure to drop, atmospheric pressure would through pipe 5 cause liquid 21 to flow from chamber 4 through conduit 10 to chamber 3. This would overbalance the oscillatable parts and they would oscillate on knife edge 11 moving the chambers to different levels in such a way as to open valve 17 more, thus admitting more water through pipe 19 to the vaporizer of gas producer 1. Should the supply of gas in producer 1 not be required in the normal amount, the pressure in producer 1 would rise, thus communicating same to chamber 3 and driving liquid 21 toward chamber 4. This overbalances the device to rock same in a direction to move the chambers to different levels and to cut off more of the flow of water through pipe 19 supplying the vaporizer of the producer.

It is claimed and desired to secure by Letters Patent,—

1. The combination of a gas producer, means for supplying water thereto, closed chambers movable to different angles to govern the locus of the liquid therein, connections between the means for supplying water to the producer and the movable chambers, means of communication between said chambers, an adjustable weight tending to bring said chambers to level neutral position, and connections from the gas space of said producer to said chambers whereby the movement of said chambers is governed by the gas pressure within said producer to operate said connections to control said water supplying means.

2. The combination of a gas producer, means for supplying water thereto, closed chambers movable to different levels, means of communication between said chambers, a liquid within said chambers controlling movement thereof by its location, a pipe connecting the upper portion of said producer and one of said chambers, an adjustable weight tending to bring said chambers to level neutral position and means governed by the movement of said chambers for controlling said water supplying means.

3. The combination of a gas producer,

means for supplying water thereto, closed chambers, a pivotal support upon which said chambers may vibrate up and down, a conduit connecting the lower parts of said chambers, a constant quantity of liquid within said chambers controlling vibration thereof by its location, a pipe connecting the upper space of said producer and one of said chambers, an adjustable weight tending to bring said chambers to level neutral position and means governed by the movement of said chambers for controlling said water supplying means.

4. The combination of a gas producer, means for supplying water thereto, chambers mounted to vibrate up and down, a conduit connecting the lower parts of said chambers, a constant quantity of liquid within said chambers controlling vibration thereof by its location, an adjustable weight tending to bring said chambers to level neutral position, and means governed by the movement of said chambers for controlling said water supplying means.

In witness whereof, I sign my name in the presence of two witnesses.

CYRIL J. ATKINSON.

Witnesses:
G. F. De Wein,
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