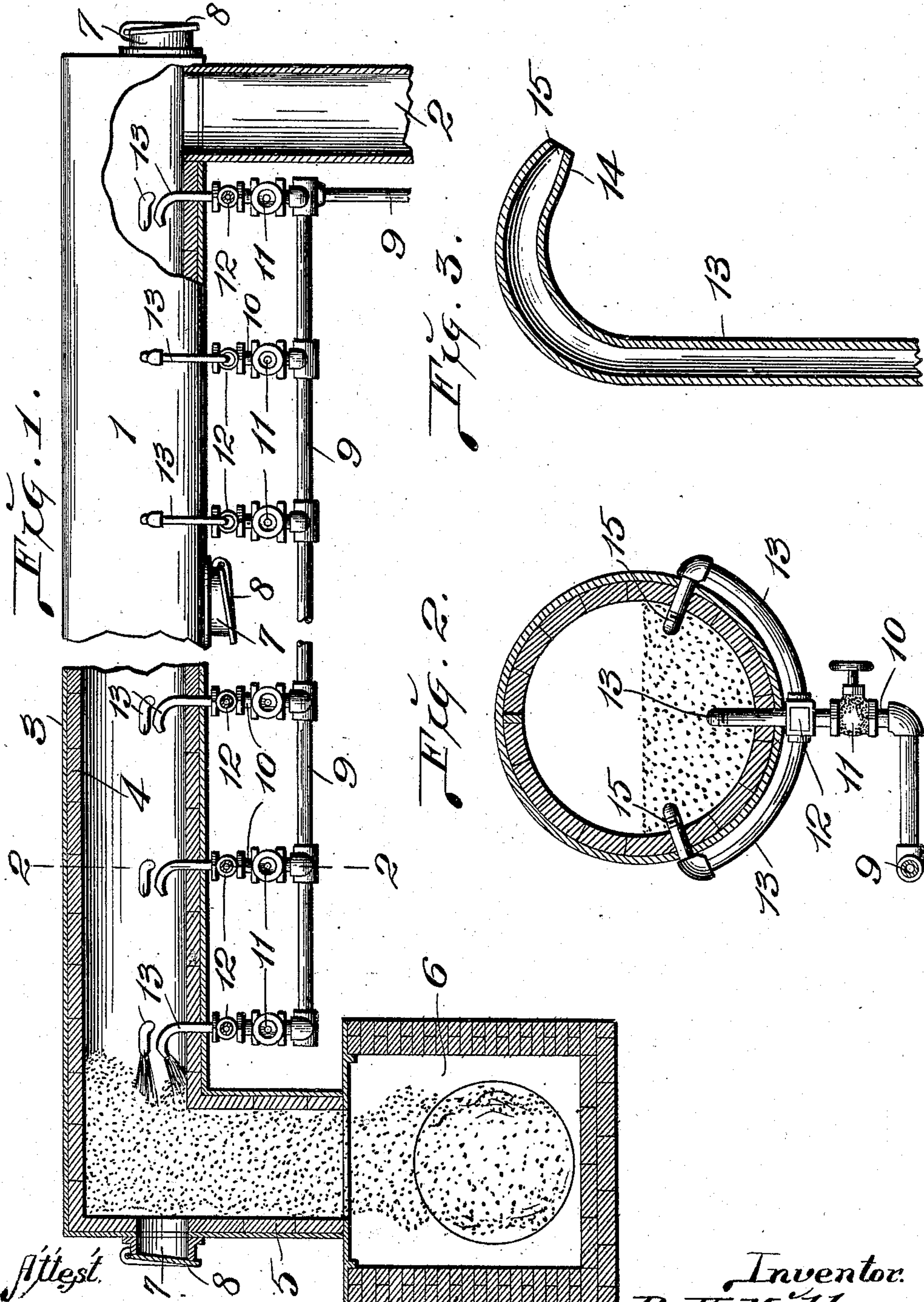


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CLEANING-OUT APPARATUS FOR GAS PRODUCER CONNECTIONS.
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CLEANING-OUT APPARATUS FOR GAS-PRODUCER CONNECTIONS.

No. 924,564.

Specification of Letters Patent.

Patented June 8, 1909.

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To all whom it may concern:

Be it known that I, ROBERT H. MILLER, a citizen of the United States, and resident of St. Louis, Missouri, have invented certain
5 new and useful Improvements in Cleaning-Out Apparatus for Gas-Producer Connections, of which the following is a specification containing a full, clear, and exact description, reference being had to the accompanying
10 drawings, forming a part hereof.

My invention relates to a cleaning out apparatus for gas producer connections, and the object of my invention is to provide
15 means whereby the soot and like matter may be quickly and easily removed from gas producer connections and delivered into the stack, there to be drawn off by the natural draft therethrough.

Heretofore it has been the practice to
20 open the manholes into gas producer connections, and pass suitable tools through said manholes to remove the soot from said connections. But this method requires much time and labor, and also allows air to
25 pass into the interior of the connections, which results in a combustion of the soot that is being removed from said connections. My improved means overcomes these objections, and stationary blowers are ar-
30 ranged which, when turned on, very quickly and efficiently remove the soot from the producer connections.

In the drawings:—Figure 1 is a side elevation, partly in section, of a gas main lead-
35 ing from the producers, and showing my attachment connected thereto; Fig. 2 is an enlarged vertical section taken on the line 2—2 of Fig. 1; Fig. 3 is an enlarged section of the discharge end of one of the blowout
40 pipes.

Referring by numerals to the accompanying drawings:—1 indicates the gas main that leads from the producer connection 2, and which main is constructed of a heavy sheet
45 metal cylinder 3 that is lined with fire brick 4, or analogous material. The end of this main 1, opposite from the end that leads from the producers, is provided with a tubular connection 5 that discharges into a con-
50 duct 6, that leads to and discharges into the stack.

Located at various points on the main 1 are manholes 7 normally closed by doors 8, by means of which access is had to the inte-
55 rior of the main.

Extending along beneath the main 1 is a pipe 9 that leads from a suitable source of steam supply. Connected to and extending upwardly from this pipe 9, at suitable distances apart, are short tubes 10, in which
60 are located suitable cut-off valves 11.

Each pipe 10 is connected to a cross union 12, that is located immediately beneath the main 1 and leading upwardly from this union are three pipes 13, the ends of which
65 are extended through suitably formed apertures in the lower portion of the main, and the ends of these three pipes within the main are curved toward the end that dis-
70 charges into the stack; and said ends are flattened, as indicated by 14, to provide narrow discharge openings 15.

When it is desired to clean out the main 1, the first one of the valves 11 is opened, said first valve being the one nearest the producer
75 connection 2, and upon opening said valve, steam from the pipe 9 passes upwardly through the pipe 10, through the branch pipes 13, and discharges from the flattened
80 nozzles on the end thereof, which are upon the interior of the main 1. These jets are deflected onto the body of the soot located in the end of the main 1 adjacent the connec-
85 tion 2, and said soot is forcibly driven toward the opposite end of the pipe. The operator now successively opens the cut-off valves 11
90 in the remaining pipes 10, and by so doing the soot is forced to the end of the main that discharges into the stack by means of the tubular connection 5, and thus all of the soot
95 in the main is finally blown into said stack from whence it is removed by the natural draft therethrough.

The steam discharging from the flattened ends of the pipes 13 supplies the volume
95 which enables the stack to carry off the soot and like products, which said stack could not do otherwise, as a vacuum would be created unless the manholes were opened, or the pro-
100 ducers kept under pressure.

My improved apparatus for blowing out the main does away with the necessity of opening the manholes in said main, and thus prevents the combustion of the soot, and like
105 products, and reduces the possibility of the brick lining in the main from being heated to such a degree as to injuriously affect the shell by reason of the expansion and contrac-
tion of the brick.

The blowing out operation can very easily
110

be accomplished by opening in sequence the series of cut-off valves, and thus much time and labor is saved, and the operation is completed much more effectually than where
5 suitable instruments are inserted through the manholes to remove the soot.

I claim:—

1. The combination with a gas producer connection, of a series of jet pipes arranged
10 to discharge on the interior of said connection, the ends of which jet pipes are formed into flattened nozzles; and means arranged in each pipe whereby the discharge therefrom is controlled.

15 2. The combination with a gas producer connection, of a plurality of sets of jet pipes arranged to discharge into the connection, the ends of which jet pipes are formed into flattened nozzles; and means whereby the
20 discharge from each set of jets is controlled.

3. The combination with the main of a gas producer, of a series of sets of jet pipes discharging into the main, the ends of which jet pipes are formed into flattened nozzles;
25 means whereby the entire series of jet pipes

are supplied from a single pipe, and means whereby the discharge from each individual set of jet pipes is controlled.

4. The combination with the main of a gas producer connection, of a series of sets of jet
30 pipes arranged to discharge on the interior of the main, the ends of which jet pipes are formed into flattened nozzles; and means whereby the discharge from any one or all of the series of sets is controlled. 35

5. The combination with the main of a gas producer connection, of a series of jet pipes arranged to discharge on the interior of said main, the ends of which jet pipes are formed
40 into flattened nozzles; and means whereby the jet pipes may be opened successively so as to blow the accumulation in the main from one end thereof to the other.

In testimony whereof, I have signed my name to this specification, in presence of two
45 subscribing witnesses.

ROBERT H. MILLER.

Witnesses:

PAUL C. GUIGNON,
J. H. McKELVEY.