No. 779,935. PATENTED JAN. 10, 1905.

J. A. HERRICK.

GAS PRODUCER.

APPLICATION FILED NOV. 27, 1903.

FIG 1

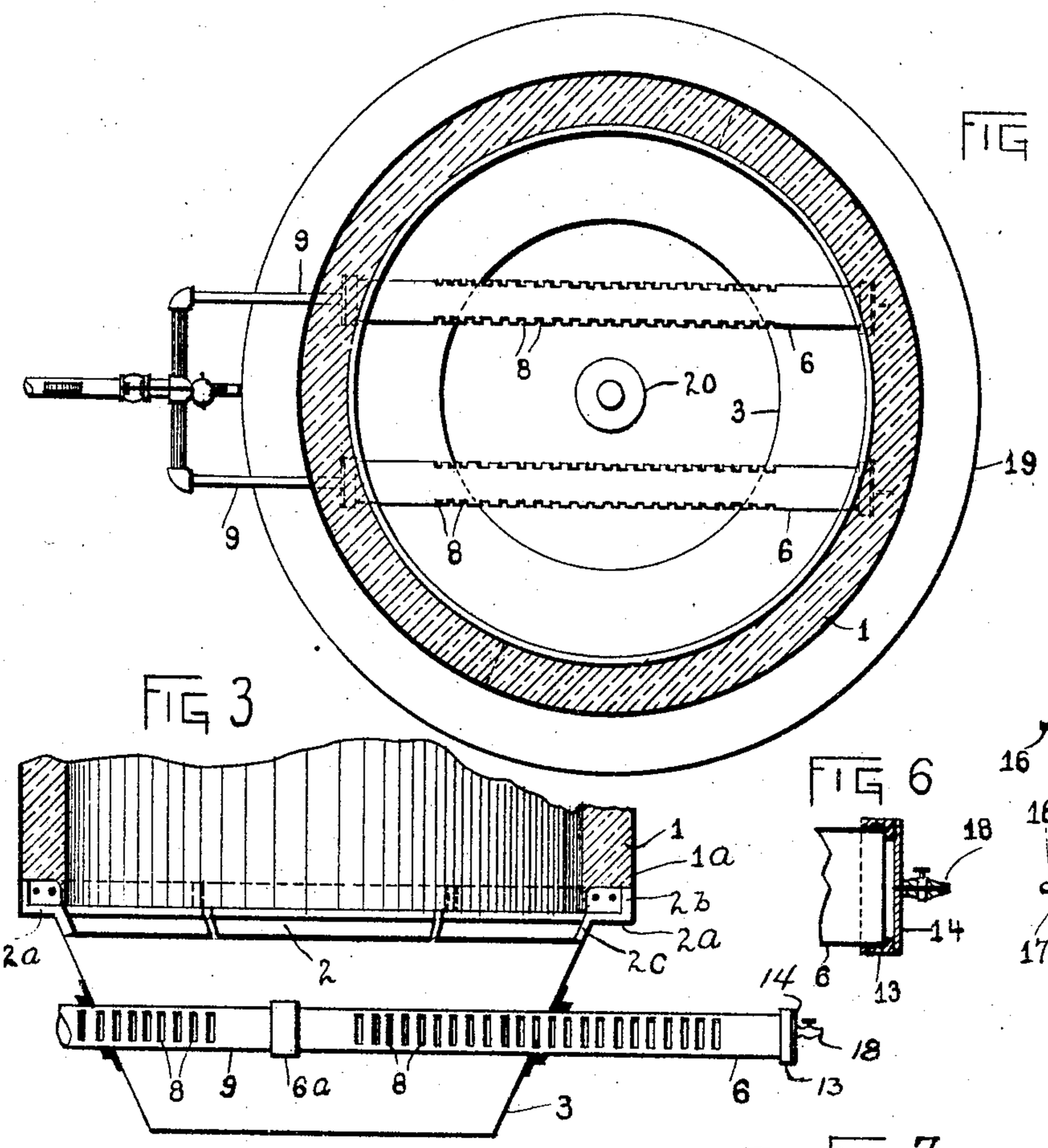
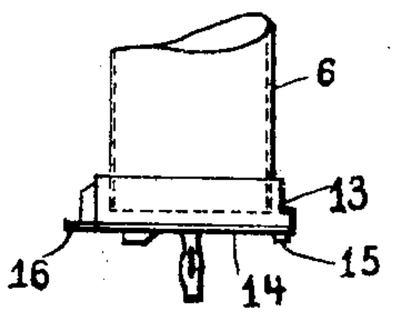


FIG 3

FIG 6

FIG 4



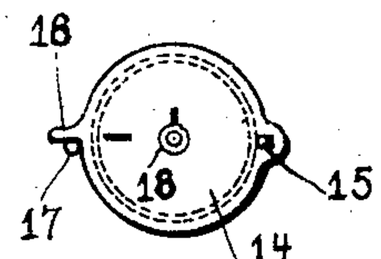


FIG 5

FIG 7

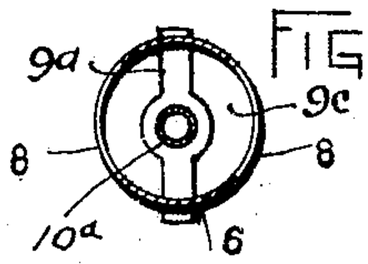


FIG 2

WITNESSES:

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BY

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ATTORNEY.

No. 779,935. Patented January 10, 1905.

UNITED STATES PATENT OFFICE.

JAMES A. HERRICK, OF PHILADELPHIA, PENNSYLVANIA.

GAS-PRODUCER.

SPECIFICATION forming part of Letters Patent No. 779,935, dated January 10, 1905.

Application filed November 27, 1903. Serial No. 182,741.

To all whom it may concern:

Be it known that I, JAMES A. HERRICK, a citizen of the United States, residing at Philadelphia, in the county of Philadelphia and State of Pennsylvania, have invented certain Improvements in Gas-Producers, of which the following is a specification.

The primary object of the present improvements is to provide a simple and efficient gas-producer having means for introducing the blast necessary for carrying on combustion at a very low pressure.

It has as further objects the ready examination and control of the action of the blast, the ready inspection, cleaning, and repairing of the blast-pipes, and facility of assemblage and dissociation of the parts.

The nature and characteristic features of the improvements will more fully appear by reference to the following description and the accompanying drawings in illustration thereof, of which--

Figure 1 represents a plan view of the base of a gas-producer having my improvements applied thereto. Fig. 2 represents a sectional elevation thereof. Fig. 3 represents a sectional elevation illustrating the removal and introduction of blast-pipes. Fig. 4 represents a top plan view of an end of the blast-pipe. Fig. 5 represents an end elevation of the construction shown in Fig. 4. Fig. 6 represents a longitudinal sectional view of the construction shown in Fig. 4, and Fig. 7 represents a transverse sectional view taken through the air-ports of the blast-pipe.

As shown in the drawings, the producer-body 1 is supported upon the separated ring-sections 2, each comprising a horizontal web or base 2^a for supporting the weight of the producer-body, a vertical flange 2^b for the lateral support of the producer-body, and a connection for the sheet-iron shell 1^a and a conical flange 2^c for supporting the conical ash-hopper or base 3, the sectional rings being supported by the struts 4, carried by the foundation 5.

Passing through and supported by the ash-hopper 3 or the base of the producer-body are the blast-pipes 6, which rest in the collars 7, secured to the base or hopper, the pipes having the lateral ports 8, through which streams of air are blown and distributed to the body of burning fuel contained in the producer, the pipes being suitably of ordinary straight cylindrical construction having vertical slits cut in their sides. The open inlet end of the respective blast-pipes has a blower 9 inserted therein and supported in any suitable manner, as by a spider 9^a, which permits the steam-nozzles 9^b to draw air through the spider-openings 9^c and inject it into the pipe. The blowers are connected with the steam-pipe 10 by the branch pipes 10^a, through which steam is delivered to the blowers, the flow of steam being controlled by a manually-operated shut-off valve 11 and an automatic reducing-valve 11^a, which may be set to maintain the desired pressure. The gages 12 and 12^a, attached to the pipe 10, show the pressure on either side of the automatic valve, which may be adjusted with relation thereto. A cock 11^b, connected to an extension of the pipe 10 below its connection with the pipes 10^a, serves to test the steam and as an outlet for products of condensation. By these means the injection of air into the blast or twyer pipes 6 and thence through their ports 8 into the body of burning fuel may be regulated and maintained at the comparatively low pressure under which the apparatus is designed to operate. The outer ends of the pipes are respectively fitted with the sleeves or flanges 13, which have the gates or cap-plates 14 pivotally connected thereto by bolts 15, the gates having the latches 16, which respectively engage with the hasps or studs 17, carried by the flanges. These gates permit ready access to the interiors of the pipes for inspection, cleaning, or repairing. Each gate is provided with a valve or cock 18 for testing the blast or action of the air in the pipe.

The ash-hopper 3 preferably projects into a pit or basin 19, adapted for sealing the bottom of the hopper, and the pit contains the pedestal 20 for acting as an abutment against which to shovel in removing the ashes.

It will be observed that this construction permits the ready removal and insertion of

pipes without disturbing the contents of the producer by merely connecting together the ends of the pipe to be removed and the pipe to be inserted by a collar 6[a], and the blower 9 having been disconnected, pushing the one pipe out and the other one in through the path vacated by the outgoing pipe, the sleeve 13, with the mechanism carried thereby, being removed for this purpose. It will also be observed that the blast-pipes pass through the base or ash-hopper above the bottom thereof and that the air is introduced wholly within the producer-body above the bottom of the ash-outlet, by which all of the air necessary for complete combustion is introduced at a very low pressure and without waste and is uniformly distributed to the body of burning fuel.

Having described my invention, I claim—

1. A gas-producer having a blast-pipe extending across the base thereof, said pipe having one end connected with a blower and the other end provided with a test-valve, substantially as specified.

2. A gas-producer having a blast-pipe whose ends project beyond the producer-base, blast-ports along the sides of said pipe, a blower connected with one end of said pipe, and a removable cap closing the other end thereof, substantially as specified.

3. A gas-producer having a hopper, and parallel pipes extending into and through said hopper, said pipes having blast-ports discharging within said hopper, substantially as specified.

4. A gas-producer having a straight blast-pipe of circular cross-section extending into and through the base thereof, said pipe being supported by said base and having blast apertures along the side thereof, substantially as specified.

5. A gas-producer having a base, collars carried by said base, and parallel straight blast-pipes of circular cross-section extending through said collars and base, said pipes having lateral ports along their lengths discharging above the outlet from said base, substantially as specified.

In testimony whereof I have hereunto set my hand, this 21st day of November, A. D. 1903, in the presence of the subscribing witnesses.

JAMES A. HERRICK.

In presence of—

DANL. G. LACEY,

GUY C. HEILMAN.