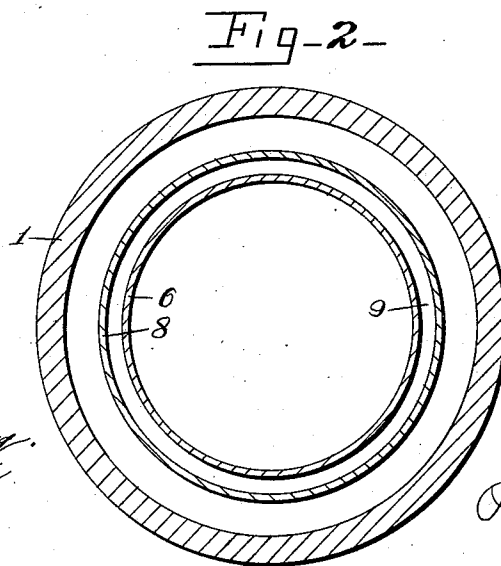
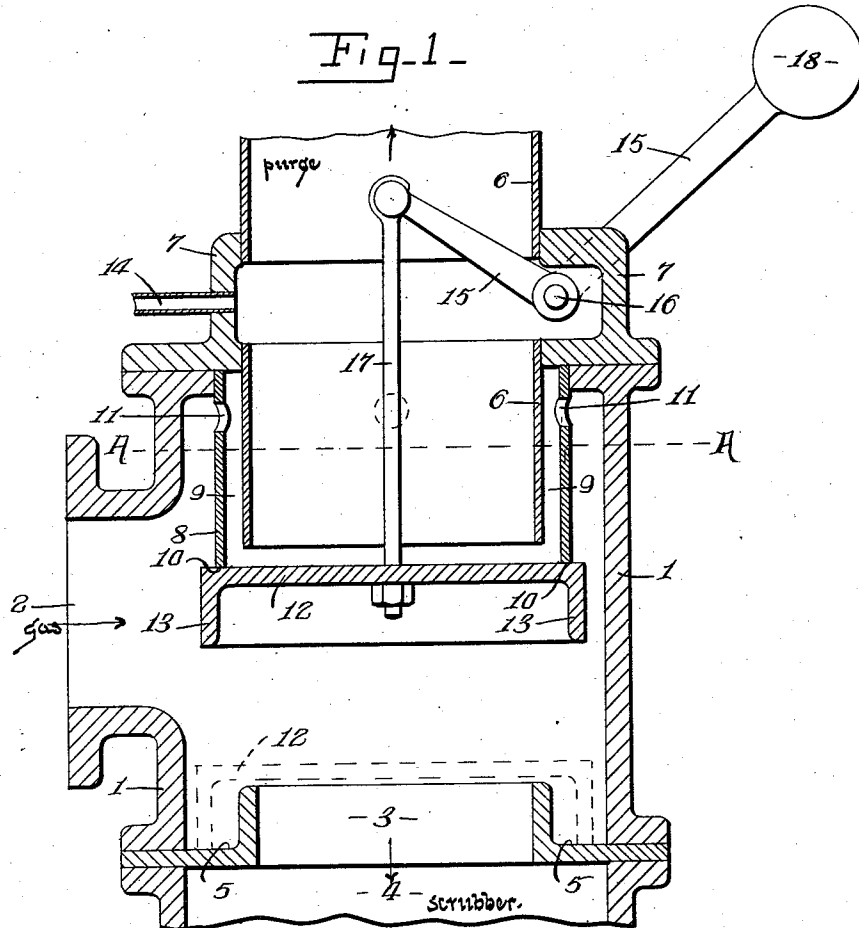


N. H. HENDERSON.
PURGE VALVE FOR GAS PRODUCER PLANTS.
APPLICATION FILED SEPT. 29, 1910.

1,001,028.

Patented Aug. 22, 1911.



WITNESSES:

Chas. H. Young
Lillian J. Davis

INVENTOR

Nelson H. Henderson

BY

Parsons Hall Bodell
ATTORNEYS

UNITED STATES PATENT OFFICE.

NELSON H. HENDERSON, OF VERNON, NEW YORK, ASSIGNOR TO SYRACUSE INDUSTRIAL GAS COMPANY, OF VERNON, NEW YORK, A CORPORATION OF NEW YORK.

PURGE-VALVE FOR GAS-PRODUCER PLANTS.

1,001,028.

Specification of Letters Patent. Patented Aug. 22, 1911.

Application filed September 29, 1910. Serial No. 584,405.

To all whom it may concern:

Be it known that I, NELSON H. HENDERSON, of Vernon, in the county of Oneida and State of New York, have invented a certain new and useful Purge-Valve for Gas-Producer Plants, of which the following is a specification.

This invention has for its object a particularly simple and efficient purge valve for gas producer plants, and it consists in the combinations and constructions hereinafter set forth and claimed.

In describing this invention reference is had to the accompanying drawings in which like characters designate corresponding parts in all the views.

Figure 1 is a vertical sectional view of this purge valve and contiguous parts. Fig. 2 is a sectional view on line "A—A", Fig. 1. 1 is the valve casing having an inlet 2 connected to the gas producer, not shown, and an outlet 3 communicating with the scrubber 4, the inlet and outlet being usually arranged with their axes horizontal and vertical, respectively, and the outlet 3 being formed with a valve seat 5 having an upwardly facing channel for holding water for sealing the purge valve when the purge pipe is open.

6 is the purge pipe extending through the top 7 of the casing 1, this purge pipe being alined with the outlet 3 and having its inner end spaced apart from said outlet 3.

8 is a pipe depending from the top of the casing and fixed in position, said pipe 8 encircling the purge pipe 6 and being spaced apart therefrom forming an annular chamber 9. The pipe 8 extends beyond the inner end of the purge valve 6 and is provided at its inner end with a valve seat 10 opposed to and spaced apart from the valve seat 5. The pipe 8 is also formed with passages 11 above its inner end and here shown as near the top 7 of the casing, the passages 11 establishing communication between the chamber 9 and the interior of the casing 1.

12 is a valve head movable between the valve seats 10 and 5 and being normally engaged with the seat 10 when the plant is in operation and being movable into engagement with the valve seat 5 when the plant is shut down. As here shown the valve head is formed with a depending annular flange 13 for entering into the channel of the seat 5 and with a plane upper face

for engaging the seat 10, the valve head together with the pipe 8 forming a receptacle for water for sealing the valve head 12, when in normal position. The water enters the purge pipe through a conduit 14, and can be maintained at any desired depth and is drawn during the suction strokes of the pistons of the engine to which the scrubber is attached upwardly and through the passages 11, and drips down into the channel of the valve seat 5 and runs off into the scrubber, thus supplying the scrubbing water to the scrubber.

The valve head 12 is operated by a lever 15 pivoted between its ends at 16 to the top 7 of the casing and having one arm thereof connected to the stem 17 of the valve head 12, and its other arm provided with a weight 18 which holds the valve head 12 in engagement with the valve seat 10.

When the plant is in operation, the parts are in the position shown in Fig. 1, but when the plant is shut down in order to shut off the scrubber from the producer and thus prevent the accumulation of explosive gases therein, the valve head is moved from its position shown in Fig. 1 into the position indicated in dotted lines, Fig. 1, the water running around the edge of the valve head 12 and into the channel of the valve seat 5 or into the scrubber 4. When the valve head is in engagement with the valve seat 5, the gas from the producer passes through the purge pipe 6 to the atmosphere.

This purge valve is particularly advantageous in that the valve head moves a minimum distance from one of its positions to the other and the water seal in the purge pipe may be made any desired depth, and further when the valve is in either of its positions, it has no parts which obstruct the passage of the gas.

This valve being both water sealed and cooled is absolutely gas tight at all times, and therefore the valve head and seat will not warp or corrode. A little leakage of the water does not hinder the successful operation of the valve or the maintenance of the water seal.

What I claim is:—

1. A purge valve for gas producer plants, the valve comprising a casing having an inlet and an outlet for the gas, the outlet being formed with a valve seat, a purge pipe extending into the casing and having its inner

end spaced apart from the valve seat, a pipe carried by the casing and encircling the purge pipe and together therewith forming an annular chamber between said pipes, the outer pipe being formed with a valve seat at its inner end, and a valve head movable between the valve seats into engagement with either of said seats, and being normally engaged with the seat at the inner end of the pipe encircling the purge valve for forming a receptacle for a water seal, substantially as and for the purpose described.

2. A purge valve for gas producer plants, the valve comprising a casing having an inlet and an outlet for the gas, the outlet being formed with a valve seat, a purge pipe extending vertically into the casing and having its lower end spaced apart from the valve seat, a pipe fixed to the casing and encircling the purge pipe and together therewith forming an annular chamber between said pipes, the outer pipe being formed with a valve seat at its inner end, and having an outlet opening above its lower end and discharging into the casing, and a valve head movable between the valve seats into engagement with either of said seats and being normally engaged with the seat at the inner end of the pipe encircling the purge pipe for forming a receptacle for a water seal, substantially as and for the purpose specified.

3. A purge valve for gas producer plants, the valve comprising a casing having an inlet and an outlet for the gas, the outlet being formed with a valve seat, a purge pipe extending into a casing and having its inner end spaced apart from the valve seat, a pipe fixed to the casing and encircling the purge pipe and together therewith forming an annular chamber between said pipes, the outer pipe extending beyond the inner end of the purge pipe and being formed with a valve seat at its end, a valve head movable between the valve seats into engagement with either of said valve seats, the valve head normally engaging the seat at the inner end of the pipe encircling the purge pipe, for forming a receptacle for a water seal, substantially as and for the purpose specified.

4. A purge valve for gas producer plants, the valve comprising a casing having an inlet and an outlet for the gas, the outlet being formed with a valve seat, the purge pipe extending into the casing and having its inner end opposed to and spaced apart from the valve seat, a pipe fixed to the casing and

encircling the purge pipe and together therewith forming an annular chamber between said pipes, the outer pipe projecting beyond the inner end of the purge pipe and having a valve seat at its inner end, said outer pipe also having passages above its inner end establishing communication between said annular chamber and the interior of the casing, and a valve head movable between the seats into engagement with either of said seats and being normally engaged with the seat at the inner end of the pipe encircling the purge pipe, for forming a receptacle for a water seal, substantially as and for the purpose set forth.

5. A purge valve for gas producer plants, the valve comprising a casing having an inlet and an outlet for the gas arranged respectively with their axes in horizontal and vertical positions, a purge pipe extending vertically into the casing and alined with the outlet, the inner end of the purge pipe being spaced apart from the outlet and the outlet being formed with a valve seat having an annular channel for receiving a water seal, a pipe depending from the top of the casing and surrounding the purge pipe and together therewith forming an annular chamber, the last-mentioned pipe projecting beyond the inner end of the purge pipe and having a valve seat at its inner end and also having passages above its inner end for establishing communication between said chamber and the interior of the casing, a valve head movable between said seats into engagement with either of said seats, and being normally engaged with the seat at the inner end of the pipe encircling the purge pipe, for forming a receptacle for a water seal, the valve head having an annular flange for entering the channel of the valve seat of the outlet, and having a surface for engaging the valve seat at the lower end of the pipe surrounding the purge pipe, and means for operating the valve, substantially as and for the purpose described.

In testimony whereof, I have hereunto signed my name in the presence of two attesting witnesses, at Vernon, in the county of Oneida, in the State of New York, this 24th day of Aug. 1910.

NELSON H. HENDERSON.

Witnesses:

S. E. MITCHELL,
GEO. D. POHL.