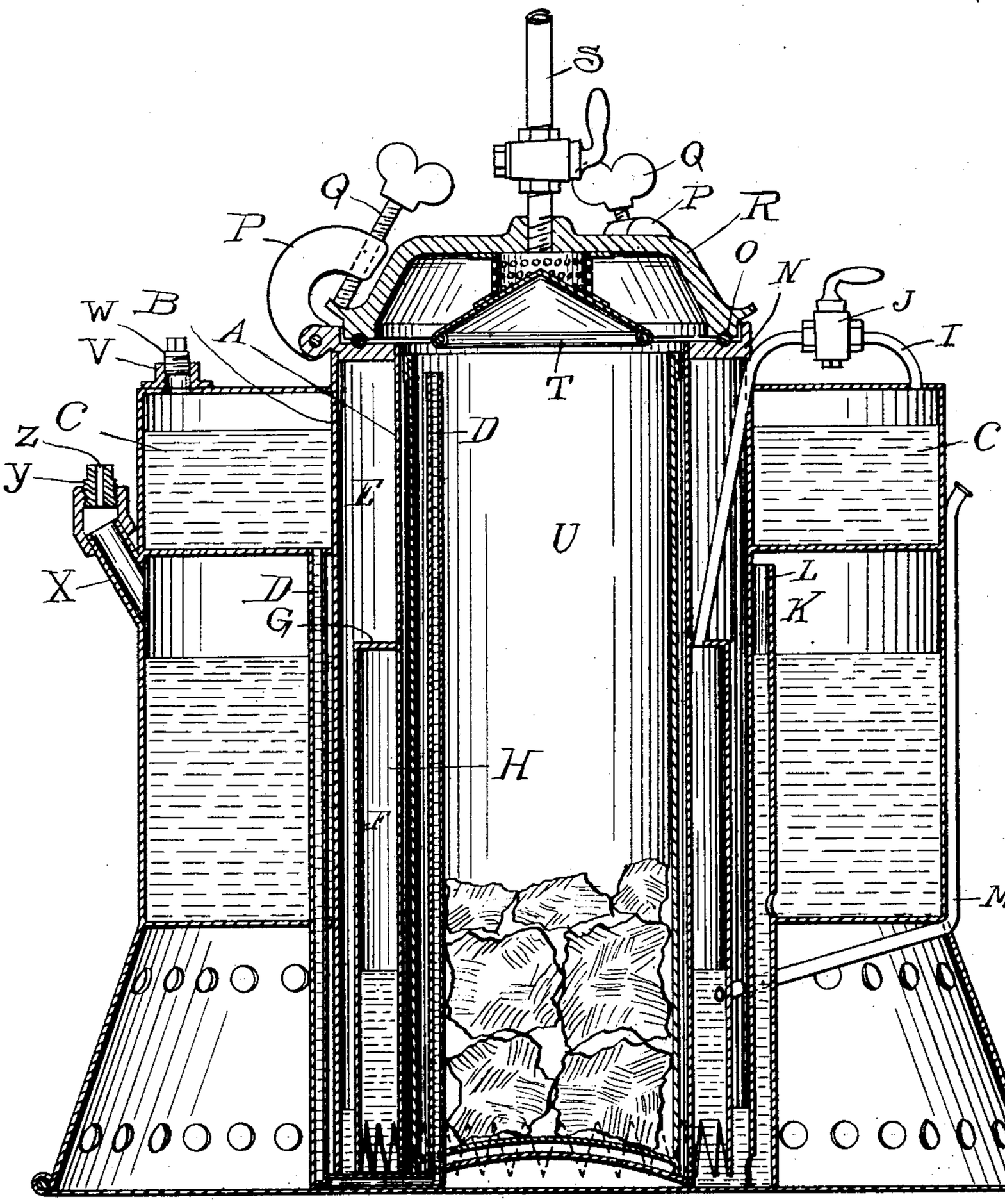
No. 750,618. PATENTED JAN. 26, 1904.

L. DIETSCH.

ACETYLENE GAS GENERATOR.

APPLICATION FILED APR. 23, 1903.

NO MODEL.



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No. 750,618. Patented January 26, 1904.

UNITED STATES PATENT OFFICE.

LORENZ DIETSCH, OF WAPAKONETA, OHIO, ASSIGNOR OF ONE-HALF TO FRANZ KREIN, SR., OF ST. MARYS, OHIO.

ACETYLENE-GAS GENERATOR.

SPECIFICATION forming part of Letters Patent No. 750,618, dated January 26, 1904.

Application filed April 23, 1903. Serial No. 153,980. (No model.)

To all whom it may concern:

Be it known that I, LORENZ DIETSCH, a subject of the Emperor of Germany, residing at Wapakoneta, in the county of Auglaize and State of Ohio, have invented certain new and useful Improvements in Acetylene-Gas Generators; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

My invention relates to a novel construction in an acetylene-gas generator, the object being to provide a compact, cheap, and efficient device of this character which can be made in portable as well as large sizes; and it consists in the features of construction and combinations of parts hereinafter fully described and claimed.

The accompanying drawing, illustrating my invention, shows a generator in central vertical section.

My said generator consists of a central cylindrical chamber A, closed at its lower end and open at its upper end. Concentric with said chamber A is a cylinder B of larger diameter, and to the upper end of same an annular water-chamber C is secured, which communicates with the upper end of the chamber A by means of the U-shaped pipe D, connected with the bottom of said chamber C and terminating in said chamber A at a point higher than the normal water-level in said water-chamber C.

The annular space or chamber E between the chamber A and cylinder B serves as an air and water chamber and is divided into two parts by means of a cylindrical partition-wall F, having a serrated lower end and provided at its upper end with an internal annular flange G, secured to the outer wall of said chamber A, thus forming an inverted annular compartment H, connected by a pipe I, entering through said flange G, with the water-chamber C above the water-level in the latter, a valve J being interposed in said connection.

Below the water-chamber C is a second and larger annular water-chamber K, connected by means of a duct L with the lower end of the annular chamber E, the latter having connection with the compartment H through the recesses in the lower serrated end of said partition-wall F. The said compartment H communicates with the outer air by means of a pipe M, entering said compartment adjacent its lower end. The said annular chamber E is sealed at its upper end by means of an annular plate N, which is provided with a groove to receive a rubber washer O and to which U-shaped arms P are pivotally secured at one end, the said arms P carrying set-screws Q in their free ends, which are adapted to bear upon the annular flange of a cover R and force same down upon the washer O to seal the chamber A. From the said cover a pipe S leads to the point of consumption of the gas. To the lower face of said cover a perforated sleeve is secured, which surrounds the gas-outlet and which carries an inverted conical hood T, partially covering the chamber A. The said chamber A is adapted to receive the carbid-bucket U, provided in its bottom with an opening for the passage of said pipe D. The said water-chamber C is filled through the spout V, sealed by the plug W, while the chamber K is filled through the spout X, closed by a plug Y, having an air-vent Z therein.

The operation of my said generator is as follows: The carbid-bucket V and the water-chambers C and K having been filled and the cover R placed in position to seal the chamber A, the valve J is opened. The water-level being higher in chamber K than in the compartment H, the air contained in the latter above the water-level therein will obviously be under pressure corresponding with the difference in the water-levels in said chambers K and H. By opening the valve J this pressure is exerted on the water in chamber C, thereby causing an overflow at the mouth of pipe D into the chamber A, said water flowing upon the carbid in the bucket U and causing generation of gas. Such generation causes an increase in pressure in the generating-chamber, which acts to cause the water in the pipe D to recede and raises the water-lever in chamber C, thereby in turn forcing the air in said chamber to recede into the compartment and

depressing the water-level therein and raising the water-level in chamber K.

Should the generation of gas be excessive, the latter will obviously force its way into chamber C through said pipe D and thence into the compartment H and by depressing the water-level in the latter below the mouth of the pipe M will escape through said pipe, which serves as the blow-off or safety valve.

As the generated gas passes out of the generating-chamber to the point of consumption of the gas the pressure is gradually released in said chamber until the water again overflows from said pipe D and produces further generation. This operation is repeated until the carbid is exhausted.

It will be noted that I employ two separate and distinct bodies of water, one of which is used only for the purpose of generating gas and the other of which determines the normal gas-pressure and is not diminished in volume during the operation of the generator. This is very advantageous in maintaining constant gas-pressure, whereas in most generators of this type the pressure is varied by the gradual consumption of a part of the water controlling the pressure.

By closing the valve J the further admission of water to the generating-chamber is obviously prevented.

I claim as my invention—

1. In an acetylene-gas generator, the combination with the generating-chamber, and an annular chamber surrounding same, of a feed-water chamber, feed-water connection between said feed-water chamber and said generating-chamber above the normal water-level in the former, a pipe connecting the upper end of said feed-water chamber with the upper end of said annular chamber, a second water-chamber, and a pipe connecting the lower end of the latter with the lower end of said annular chamber, substantially as and for the purpose set forth.

2. In an acetylene-gas generator, the combination with the generating-chamber and a feed-water chamber, and a pipe connecting said feed-water chamber with said generating-chamber at a point within the latter higher than the normal water-level in said feed-water chamber, of an air-chamber, a pipe connecting same with said feed-water chamber above the water-level in the latter, a second water-chamber, and connection from the lower end of same to the lower end of said air-chamber, substantially as and for the purpose set forth.

3. In an acetylene-gas generator, the combination with a generating-chamber, a water-feed chamber connected therewith, an air-chamber, a pipe connecting said air-chamber with said water-feed chamber, and a valve interposed in said connection, of a pressure-controlling water-chamber, and connection between said water-chamber and said air-chamber to compress the air in the latter, whereby when said valve is opened said pressure will be communicated to said water-feed chamber to cause the latter to feed water to the carbid contained in the generating-chamber.

4. In an acetylene-gas generator, the combination with the generating-chamber and a feed-water chamber, of a second water-chamber, a fluid-pressure chamber interposed between said two water-chambers and connected at its upper end with said feed-water chamber above the water-level of the latter, a valve interposed in said connection, and connection between said fluid-pressure chamber and said second water-chamber below the water-level in the latter, substantially as and for the purpose described.

In testimony whereof I affix my signature in presence of two witnesses.

LORENZ DIETSCH.

Witnesses:
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