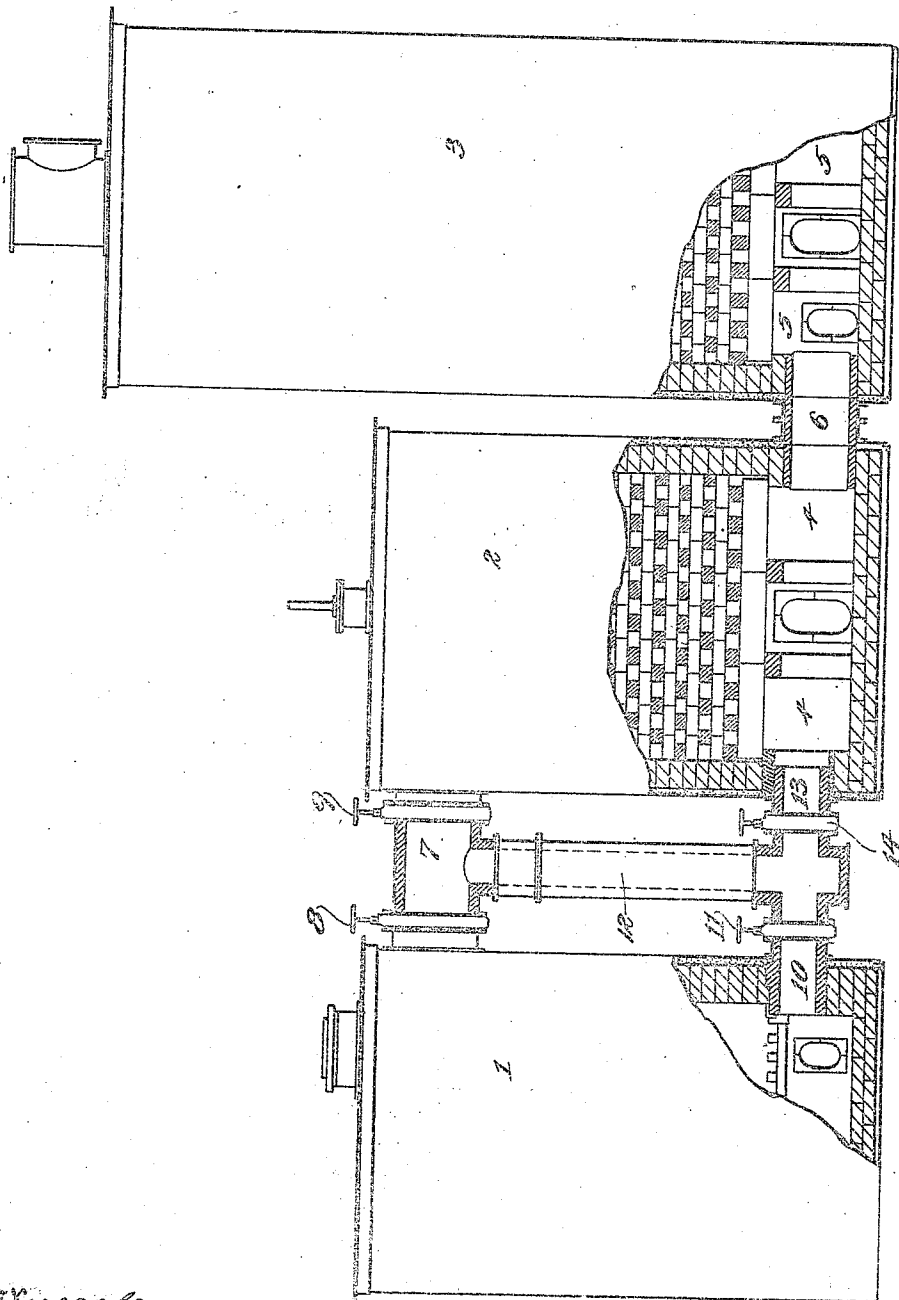


R. M. SEARLE.
 WATER GAS APPARATUS.
 APPLICATION FILED APR. 3, 1906.

969,411.

Patented Sept. 6, 1910.



Witnesses
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UNITED STATES PATENT OFFICE.

ROBERT M. SEARLE, OF MOUNT VERNON, NEW YORK.

WATER-GAS APPARATUS.

969,411.

Specification of Letters Patent.

Patented Sept. 5, 1910.

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To all whom it may concern:

Be it known that I, ROBERT M. SEARLE, a citizen of the United States, residing at Mount Vernon, New York, have invented certain new and useful Improvements in Water-Gas Apparatus, of which the following is a specification.

Objects of the present invention are to effect economy in the use of oil and fuel; to maintain during the "run" or gas making process a more uniform temperature in the carbureter than was hitherto possible; to improve the generation of oil gases and their commingling with the water gases; and by mechanically simple changes, adapt a water gas set to accomplish the objects named as well as others hereinafter set forth.

The invention comprises the improvements to be presently described and finally claimed.

The accompanying drawings illustrate, partly in section and partly in elevation, the invention in application to an ordinary water gas set.

In the drawing, 1 is the generator, 2 a chamber in ordinary water gas practice called the carbureter; and 3, the superheater. The chamber 2, and superheater shells contain checkerbrick, beneath which are spaces 4 and 5. There is a connection 6, between the spaces 4 and 5. Between the top of the generator 1, and the top of the chamber 2, there is a connection 7, provided with valves 8 and 9. The connection 10, from the bottom of the generator may communicate by way of the valve 11, with the pipe or conduit 12, that discharges into the connection 7, between the valves 8 and 9. So much of the apparatus as has been described is in use and is well understood.

To practice my invention I provide a connection as 13, having a valve 14, from the pipe or conduit 12, to the space 4, beneath and on the outlet side of the checkerbrick of the chamber 2, and I operate this connection 13, in conjunction with the rest of the apparatus in a manner to be presently described, bearing in mind that in showing the connection 13, and describing it along with an ordinary water gas set, I am describing the best but not the only embodiment of my

invention. In use the "blow" is conducted as heretofore, so that the interior of the apparatus including the checkerbrick is heated. During the "run" the water gas or gases by-pass the checkerbrick of the chamber 2, and draw the oil gases generated and fixed in the chamber 2, from its checkerbrick and along with them, and the mixture traverses the checkerbrick of the superheater 3, so that the water gases protect the oil gases in their travel therethrough. Since the water gases do not traverse the checkerbrick of the chamber 2, the same is not cooled thereby and its temperature consequently remains more uniform during the "run." Furthermore the movement of the oil gases through the checkerbrick of the carbureter is comparatively slow, so that they remain for a comparatively long time in contact therewith and are therefore more perfectly made. These operations may be accomplished in the apparatus shown in the drawings by closing the valve 9, and introducing the water gases through the connection 13, into the space 4, and the velocity of the water gases induces descent of the oil gases through the checkerbrick. The mixture of gases passes by way of 6, to the superheater through the checkerbrick of which it passes in the usual manner, the water gas protecting the oil gas in its passage. Toward the end of the "run" the valve 14, may be closed and the valve 9, opened so as to pass the generator or water gases through the checkerbrick of the carbureter in order to remove and utilize whatever oil gas may be contained therein.

It is not my intention to have this specification construed as necessarily limiting my claim to the precise form of apparatus shown, but

Having thus described the nature and objects of my invention, what I claim as new and desire to secure by Letters Patent is:

The combination with the generator and the checkerbrick lined superheater of a water gas set of a chamber containing checkerbrick beneath which there is space and said checkerbrick adapted for making oil vapors into fixed oil gas, a gas connection from the top of the generator to said chamber above said checkerbrick for blast gases, a gas con-

section from the base of the generator through the side wall of said chamber to said space beneath the checkerbrick, and a gas connection from said space beneath said checkerbrick through the side wall of said chamber to the base of the superheater whereby fixed oil gas descending from the checkerbrick of the chamber meets water

gas traversing the second mentioned gas connection, substantially as described.

In testimony whereof I have hereunto signed my name.

ROBERT M. SEARLE.

Witnesses:

C. S. McCLELLAN,
GEORGE SPICER.