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H. GERDES.

APPARATUS FOR MAKING OIL GAS.

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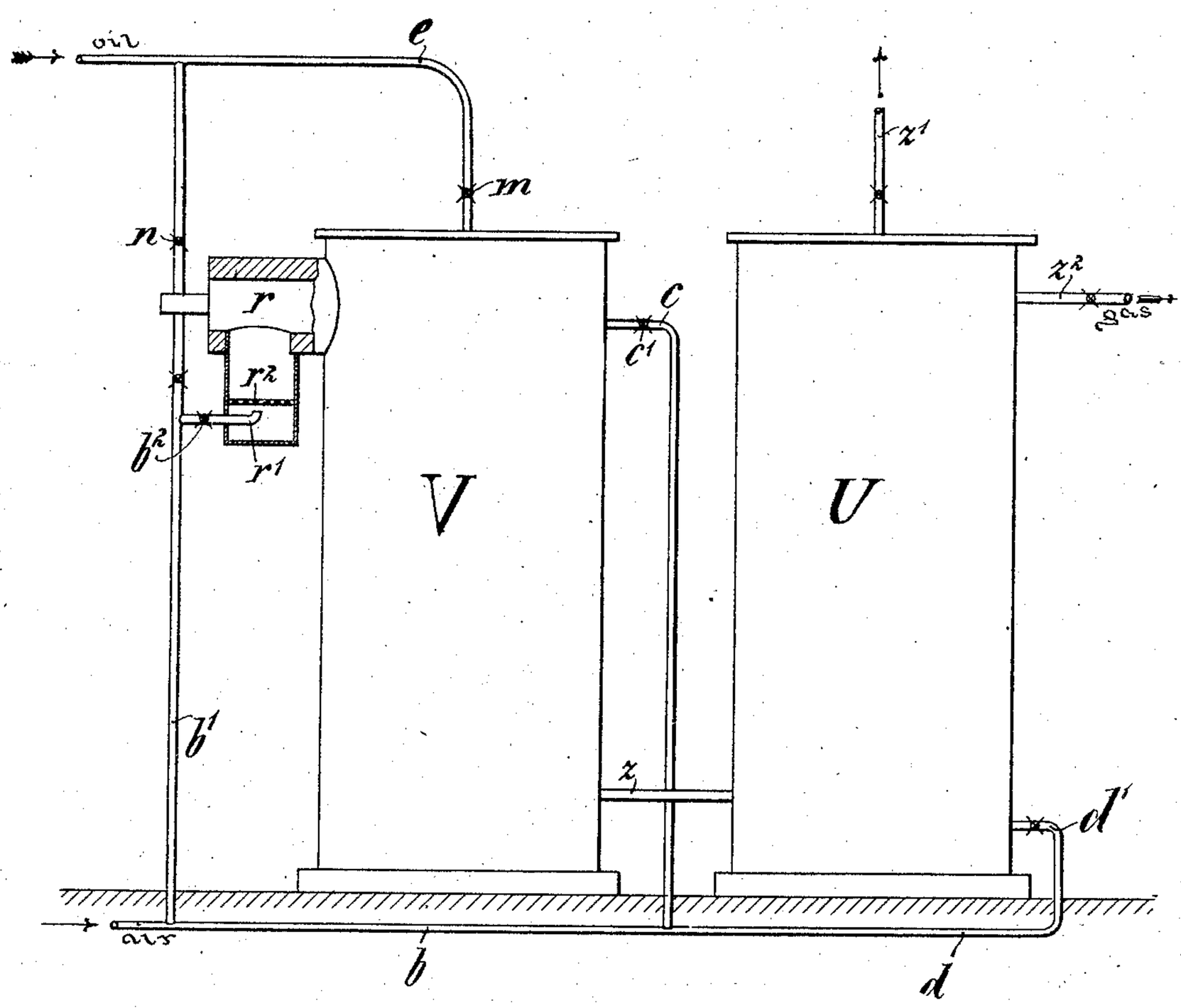

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UNITED STATES PATENT OFFICE.

HEINRICH GERDES, OF BERLIN, GERMANY.

APPARATUS FOR MAKING OIL-GAS.

No. 883,681. Specification of Letters Patent. Patented March 31, 1908.

Original application filed July 26, 1905, Serial No. 271,307. Divided and this application filed March 20, 1907. Serial No. 363,509.

To all whom it may concern:

Be it known that I, HEINRICH GERDES, a subject of the German Emperor, and residing at Berlin, Germany, have invented a new and useful Improved Apparatus for Making Oil-Gas, of which the following is a full, clear, and exact description.

The present invention consists of an apparatus for making oil gas.

Oil gas has hitherto been made in retorts and in some cases retorts of fire brick have been made and used when large quantities of gas had to be made. Now according to the present invention the oil gas is made in a generator, lined and suitably fitted with fire proof material and heated by means of oil or tar.

In order to render the present specification easily intelligible reference is had to the accompanying drawing in which a diagram representing an oil gas generator partly in section is shown.

In the drawing a plant is illustrated in which the generator V and superheater U are heated by oil or tar. In this plant m represents the oil feed for making the oil gas, while n is a valve for admitting oil or tar to a chamber r for heating the oil gas generator and superheater. The oil gas generator V is provided with a combustion chamber r into which an oil or tar atomizer opens as at r' and the oil or tar is wholly or partially burned, the air for combustion entering partly through pipe b' and partly at c through valve c'. The chamber r is advantageously lined with fire bricks and is provided with a grate r^2 on which charcoal may be placed, to assist in igniting and burning the oil or tar supplied through the atomizer.

In operation the valve m is closed and oil or tar admitted through n to the chamber r, air being admitted as described. The heating gases pass through the generator V, pipe z to the superheater U and are led off at z'. When the apparatuses have been brought to the required temperature valves n and b^2 are closed and valve m is opened to admit oil for the manufacture of the oil gas, which then passes through z to the superheater U and may be taken off to the usual other apparatuses of oil gas manufacture, through pipe z^2, the air feed to both apparatuses being closed during the gas making period.

If the plant has cooled down very considerably, there may be danger in shifting from gas-making to heating the apparatus, that the temperature may not be high enough, when the heating oil or tar enters with atmospheric air, to immediately ignite the same. In this case vaporization might take place and then, if the vapors of tar or oil together with the air fed in pass on to the superheater, an ignition temperature might be reached, for instance in the superheater, and an explosion would occur, which might cause considerable damage. This will, in the present case be prevented by the combustion chamber r which will be rendered very hot by the whole or partial combustion of the oil or tar fed to the same and, in its glowing condition, will ignite any oil or tar vapors produced. The temperature in the chamber r will not be reduced to any great extent, when making oil gas, because there is no circulation of gases through the same, so that at the commencement of the heating period, it will remain quite hot enough to ignite any vapors of oil or tar generated, and thus to obviate any danger of explosions.

Spy-holes or pyrometers may be arranged at suitable points in the whole plant in order to show when the desired temperature for oil gas making has been attained.

I claim as my invention:—

A plant for manufacturing oil gas comprising an oil gas generator, a superheater in open communication therewith, pipes for delivering air to said generator and superheater, valves in said pipe, an oil pipe for feeding oil to the generator, a valve in said pipe, a combustion chamber formed by a projecting part on one side of the generator near the top thereof said chamber being in communication with said generator, a branch pipe leading from the oil pipe into said chamber, a valve in said branch pipe and means for feeding air to said chamber.

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

HEINRICH GERDES.

Witnesses:
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