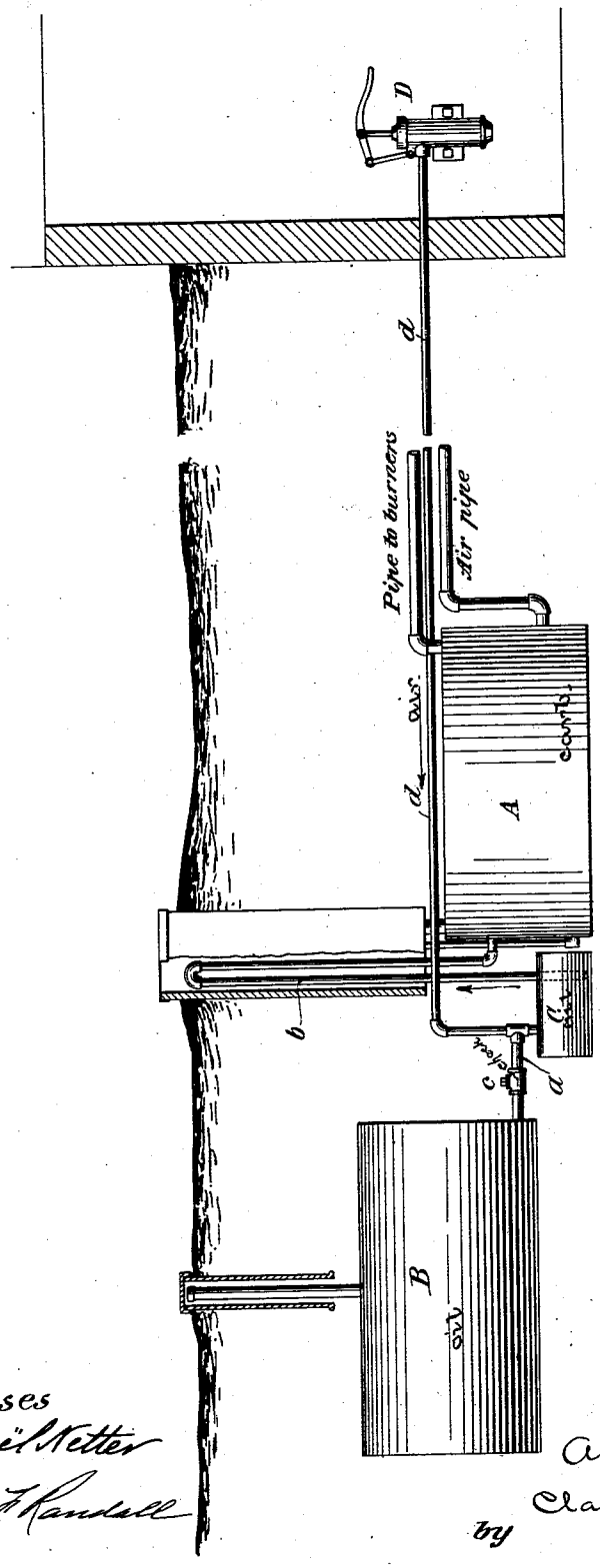
(No Model.)

A. B. GRIFFEN.

DEVICE FOR CHARGING HYDROCARBON GAS GENERATORS.

No. 568,944. Patented Oct. 6, 1896.



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UNITED STATES PATENT OFFICE.

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DEVICE FOR CHARGING HYDROCARBON-GAS GENERATORS.

SPECIFICATION forming part of Letters Patent No. 568,944, dated October 6, 1896.

Application filed January 22, 1895. Serial No. 535,769. (No model.)

To all whom it may concern:

Be it known that I, ARTHUR B. GRIFFEN, a citizen of the United States, residing at Verona, in the county of Essex and State of New Jersey, have invented certain new and useful Improvements in Devices for Charging Hydrocarbon-Gas Generators, of which the following is a specification.

My invention relates to that class of apparatus used in producing an illuminating-gas by passing atmospheric air through a vessel, commonly called a "generator" or "carbureter," containing a volatile hydrocarbon liquid, such as commercial gasolene, and more particularly to that form of such apparatus in which the volatile hydrocarbon liquid is admitted into the carbureter from time to time and in limited quantities, as required, from a feed or storage tank. As such apparatus is usually constructed the storage-tank and carbureter are buried in the ground at some distance from the building lighted, while the means for admitting the hydrocarbon liquid are so located that they may be operated from within the building lighted or at some point convenient for observation of the burners supplied by the apparatus.

The object of my invention is to provide a convenient means for charging the carbureter by manipulations performed at a point more or less remote therefrom, by which a definite quantity of liquid can be admitted from the feed-tank to the carbureter as desired, and which shall afford no possibility of leakage from the feed-tank into the generator. To this end I provide, in connection with the feed-tank and carbureter, a small supplementary tank, preferably of such size as to contain, when full, such a quantity of hydrocarbon liquid as will make a proper charge to be admitted into the generator at one time. This supplementary tank is connected with the feed-tank by a pipe passing from the bottom of the feed-tank into the top of the supplementary tank, and also with the carbureter by a pipe which passes upward from near the bottom of the supplementary tank to a point above the highest level of liquid in the feed-tank and then downward to such part of the carbureter as it is desired the liquid shall enter. A third pipe entering the upper part of the supplementary tank is connected with an air-pump or any suitable air-forcing device. The liquid in the feed-tank is free to flow into the supplementary tank, but its return is prevented by a check-valve located in the connecting-pipe.

When it is desired to charge the generator with hydrocarbon liquid, air is forced under pressure into the supplementary tank by means of the air-forcing device, and the contents of the tank are driven over into the carbureter through the connecting-pipe, the return of the liquid and the escape of air into the feed-tank being prevented by the check-valve.

When the supplementary tank is emptied, the air-pressure is relieved through the pipe leading to the carbureter, and more liquid can flow from the feed-tank into the supplementary tank, and the operation can be repeated as often as desired.

The invention will be better understood by reference to the accompanying drawing, which shows a side elevation of the device.

Referring to the drawing, A indicates a generator or carbureter buried in the ground and supplied with the usual pipe connections, B a feed or storage tank, and C a small supplementary tank, so placed that its top is at or below the level of the bottom of the tank B. From a point at or near the bottom of the feed-tank B a pipe *a* leads into the top of the tank C, and from a point within the tank C, and near the bottom thereof, a pipe *b* extends upward to a point above the highest level of liquid in the tank B, and thence downward and into the carbureter A. In the pipe *a* is a check-valve at *c*, opening toward the tank C. From the top of the tank C a third pipe *d* leads to an air pump or compressor D, which is located at any convenient point, preferably within the building lighted.

In using the apparatus the tank C is filled with the hydrocarbon liquid, which flows into it from the tank B. In order to charge the generator A, air is forced by the air pump or compressor D through the pipe *d* into the tank C. The pressure closes the check-valve

c and forces the liquid from the tank C through the pipe *b* over into the carbureter A, and the operation is continued until the whole, or as much as may be desired, of the contents of the tank C are forced into the carbureter A. When the tank C is emptied, the air-pressure is relieved through the pipe *b*, and the liquid in the tank B is free to again flow into the tank C.

By means of my invention I am able to force the liquid into the carbureter much more quickly and with greater certainty than would be possible if the pipe from the air-compressor communicated directly with the feed-tank, and I can also graduate the amount of liquid supplied as may be desired, while at the same time all possibility of leakage from the feed-tank into the carbureter is prevented, advantages which will be readily apparent to those skilled in the art.

What I claim as new, and desire to secure by Letters Patent, is—

In an apparatus for carbureting air the combination of a carbureter, a storage-tank, a supplementary tank located below the level of the storage-tank, a pipe leading from the storage-tank into the top of such supplementary tank and a check-valve therein, a pipe extending from a point within and near the bottom of such supplementary tank upward to a point above the highest level of liquid within said storage-tank and thence downward and into said carbureter, an air-compressor and a pipe leading from such air-compressor into the top of said supplementary tank, substantially as and for the purposes set forth.

In testimony whereof I have hereunto subscribed my name this 17th day of January, A. D. 1895.

ARTHUR B. GRIFFEN.

Witnesses:
SANDS F. RANDALL,
CLARKSON A. COLLINS.