

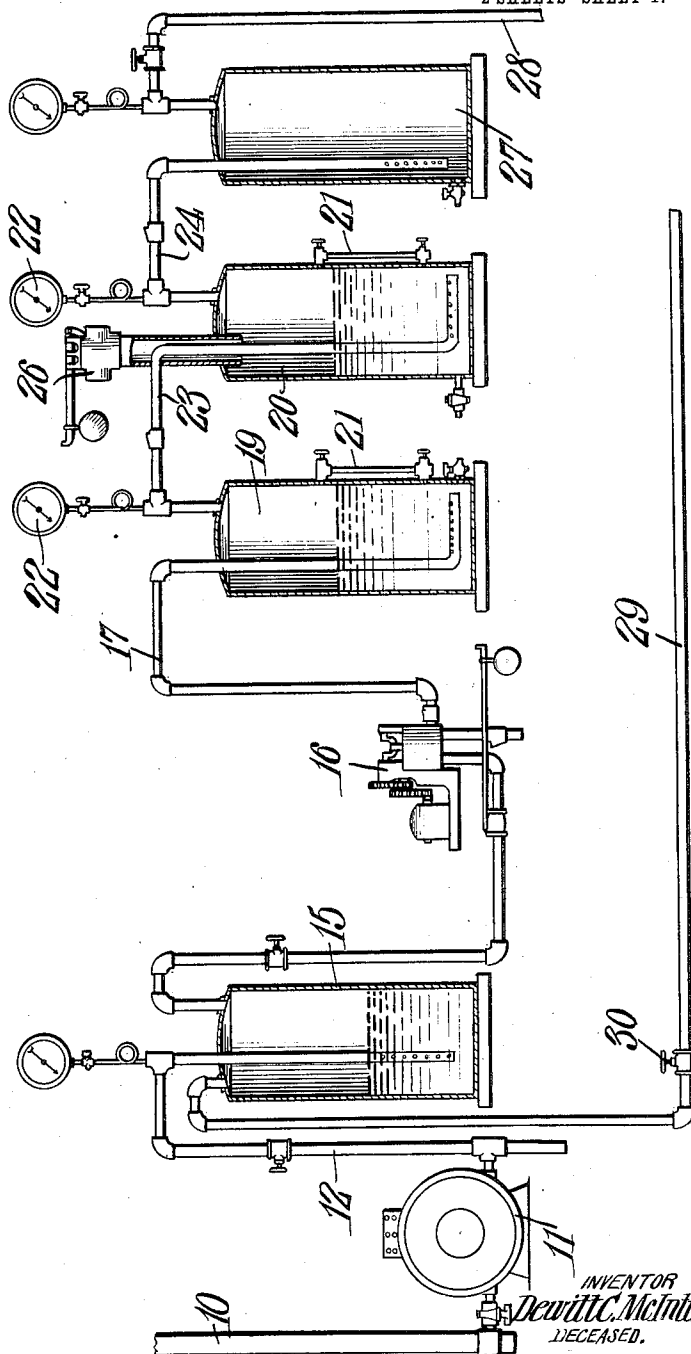
942,863.

D. C. McINTIRE, DEC'D.
L. M. McINTIRE, ADMINISTRATRIX.
APPARATUS FOR TREATING GAS.
APPLICATION FILED MAY 21, 1909.

Patented Dec. 7, 1909.

2 SHEETS—SHEET 1.

Fig. 1.



Witnesses

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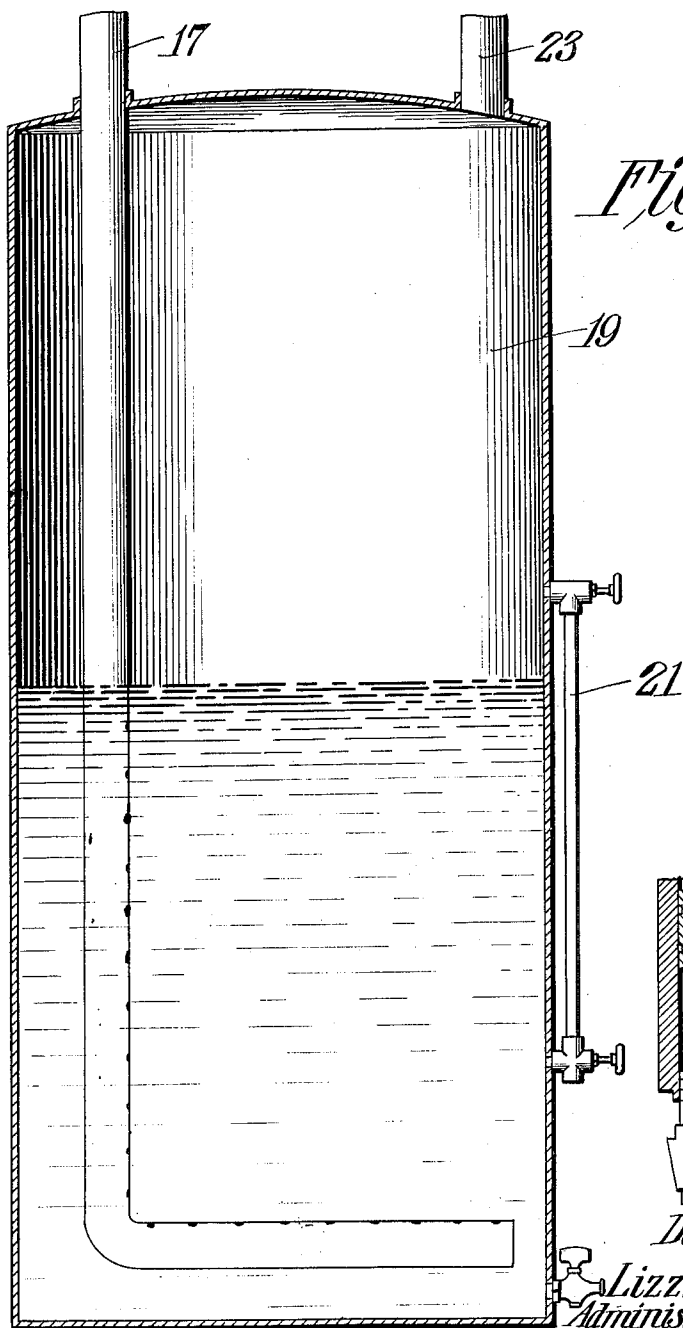
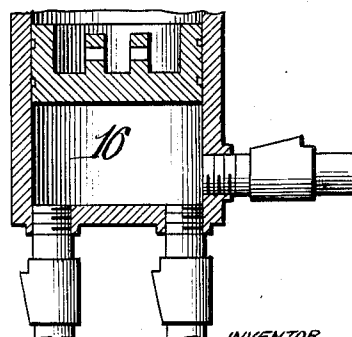


Fig. 3.



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APPARATUS FOR TREATING GAS.

942,863.

Specification of Letters Patent.

Patented Dec. 7, 1909.

Application filed May 21, 1909. Serial No. 497,479.

To all whom it may concern:

Be it known that DEWITT C. MCINTIRE, deceased, late a citizen of the United States and resident of Bradford, county of McKean, and State of Pennsylvania, did invent an Improvement in Apparatus for Treating Gas, of which the following is a specification.

In using natural gas for fuel, lighting and power purposes, considerable difficulty is frequently experienced from the fluctuation in pressure in the main pipe line, and it is found impracticable in many instances to use the gas economically. It is further found that where the gas is taken from a low pressure or main, and, after passing through the meter, is connected directly to the service pipes, the water will, in many cases, indicate the passage of more gas than is actually consumed.

One of the principal objects of the present invention is to provide a system wherein the gas, after passing from the meter, is allowed to enter a storage reservoir where it will exert some back pressure on the meter for the purpose of preventing a rapid operation of the latter, and further to provide means whereby the gas is admixed with the quantity of air before being used for fuel.

A further object of the invention is to provide apparatus whereby approximately equal quantities of natural or artificial gas and air are intermingled and compressed, and while under compression are passed through carbureting or enriching fluids, such as alcohol or gasoline, benzoin, or other liquids rich in carbon.

With these and other objects in view, the invention consists in the improved method and apparatus hereinafter described, illustrated in the accompanying drawings and pointed out particularly in the appended claims.

In the accompanying drawings, Figure 1 is a sectional elevation, partly in the nature of a diagram, illustrating an apparatus constructed and arranged in accordance with the invention. Fig. 2 is a detail view of one of the carbureters. Fig. 3 is a detail sectional view of the compressor.

Corresponding parts in the several figures are indicated throughout by similar characters of reference.

The gas enters through a pipe 10 which may form the ordinary low pressure main

leading directly from the well or other source of supply, and it is to be understood that in carrying out the present invention, gas from any source may be used, that is to say, from a natural gas well, a well producing both petroleum and gas from oil storage tanks, where gas naturally forms and passes off from the body of the oil, or from a plant where the gas is artificially produced. The gas passes through a meter which may be of any ordinary construction and thence passes to a pipe 12 after being measured. After passing through the meter, the gas becomes the property of the purchaser and is then passed through the apparatus and is treated in the manner herein-after described with a view of obtaining much greater efficiency than would be possible where the gas is used directly from the pipe 12.

It is well known to gas engineers that where the gas from a low pressure main passes through a meter directly to the service pipes, the difference in pressure on opposite sides of the meter will cause the latter to operate more rapidly and with less than the full volume, so that the meter will indicate the passage of more gas than is absolutely consumed. In carrying out the present invention, the gas is first admitted into a reservoir 15 that is arranged to contain a comparatively large volume of gas under pressure so nearly equal the pressure in the gas main that the meter will be compelled to register accurately. Arranged adjacent the reservoir 15 is a gas and air compressor 16. This compressor is arranged to take in equal quantities of low pressure gas and air, and to intermingle and compress the two volumes, the mixture being forced out under high pressure through a pipe 17. At a point adjacent the compressor are two carbureters 19 and 20 each of which is in the form of a vertical tank arranged to contain a liquid such as alcohol, gasoline, or other hydrocarbon. At one side of each of the tanks is a suitable gage glass 21 and at the top of each tank is a pressure gage 22 for showing the pressure of the fluid. The gas passing from the pipe 17 is discharged through suitable perforations at a point below the level of the liquid in the carbureter 19, and as this mingled volume of air and gas bubbles up through the liquid, it will be enriched to an extent sufficient to form a good fuel. The

gas from the carbureter 19 passes through a pipe 23 and downward into the carbureter 20 where the carbureting operation is repeated, the gas finally passing out through a pipe 24. The carbureter 20 is preferably provided with a safety valve 26 of any ordinary construction, and the lower portions of both carbureters may be provided with drips and blow-offs of ordinary construction. The gas, after passing through the pipe 24, is delivered to a settling and storage tank 27, where there is opportunity for a deposit of any excess liquid carried by the gases from the carbureting chambers. The gas then passes through a pipe 28 to the point of consumption.

In some instances, it may be desired to use the low pressure gas direct, and for this purpose an auxiliary pipe 29 runs from the tank 15 to the point of consumption and in this pipe is a valve 30 which may be open or closed, as required.

Claims:—

1. In apparatus of the class described, the combination of a gas meter, a gas receiving tank connected to the delivery side of the gas meter, an air compressor connected with said

tank to receive gas therefrom, a carbureter to which the mixed air and gas under pressure is directed, and a storage reservoir to which the carbureted fluid is delivered and in which the excess of carbureting liquid is deposited.

2. In apparatus of the class described, the combination of a gas meter, a gas receiving tank connected to the delivery side of the gas meter, an air compressor connected with said tank and arranged to receive equal volumes of the gas and atmospheric air and to compress the same, a pair of serially connected carbureters through which the compressed fluid is forced, a storage tank and settling device into which the carbureted fluid is delivered in advance of the point of consumption, and a valved pipe forming a by-pass for the low pressure gas between the receiving tank and the point of consumption.

LIZZIE M. McINTIRE,

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