(No Model.)

G. W. COLEMAN.

GASOLINE GAS MACHINE.

No. 540,536. Patented June 4, 1895.

Fig. 1.

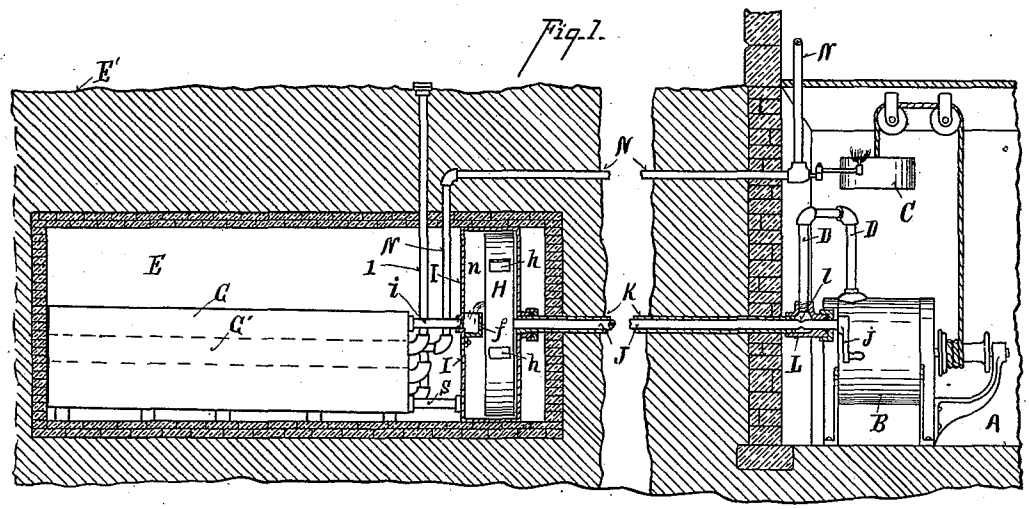


Fig. 2.

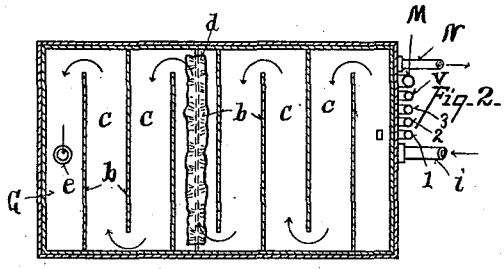


Fig. 3.

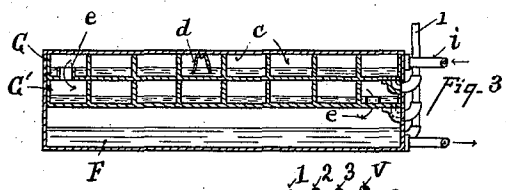


Fig. 4.

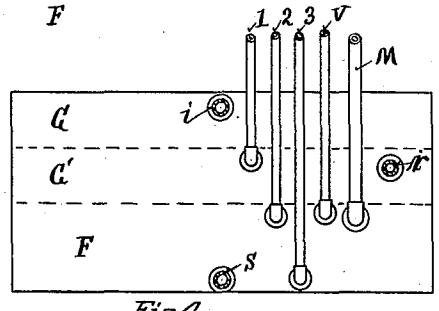


Fig. 5.

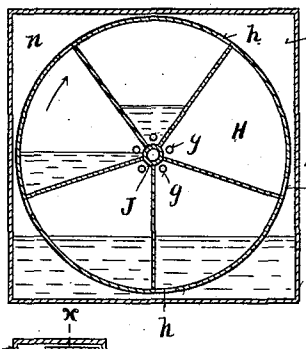
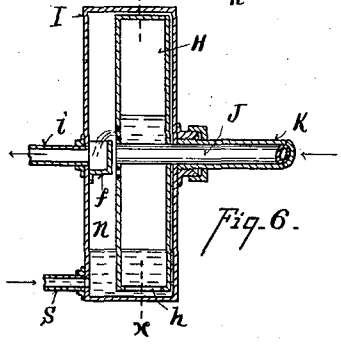


Fig. 6.



Witnesses
C. W. Miles
Oliver B. Kaiser.

Inventor
Geo. W. Coleman
By Wood & Boyd
Attorney

UNITED STATES PATENT OFFICE.

GEORGE W. COLEMAN, OF CINCINNATI, OHIO.

GASOLINE-GAS MACHINE.

SPECIFICATION forming part of Letters Patent No. 540,536, dated June 4, 1895.

Application filed March 14, 1895. Serial No. 541,806. (No model.)

To all whom it may concern:

Be it known that I, GEORGE W. COLEMAN, residing at Cincinnati, in the county of Hamilton and State of Ohio, have invented certain new and useful Improvements in Gasoline-Gas Machines and Generators, of which the following is a specification.

My invention relates to a carburetor of a gasoline gas machine and the attachments to be used therewith.

One of the objects of my invention is to construct the carburetor with a reservoir at the bottom and one or more carbureting compartments composed of zigzag or winding passages in which the wicking is suspended and through which the gas and air are compelled to travel to effect the carbureting.

Another object of my invention is to provide means for charging the carbureting compartments from a reservoir so arranged that small charges may be introduced from time to time as the machine is wound. This accomplishes a new and useful result as but a small amount of gasoline is in the carbureting compartments and it is more completely evaporated. In the evaporation of gasoline the lighter portions of the gasoline go off first and there is a large amount of heavy gasoline which will not evaporate with sufficient rapidity to form an air gas rich enough to burn readily. Hence there is an accumulation of heavy gasoline in the carbureting compartments which has to be pumped out from time to time. This heavy product is less valuable and it is practically lost. By my method there is very much less waste product, as the pump dips in at the bottom of the reservoir and consequently carries the heavy oil into the carburetor so that the oils are kept thoroughly mixed and an accumulation of the heavy oil is prevented.

Another very important object also obtained is that the quantity of gas is much more uniform as the small charges produce a much more uniform quality of air gas and hence a more uniform quality of light results.

Other features and objects of my invention will be more fully set forth in the description of the accompanying drawings, making a part of this specification, in which—

Figure 1 is a sectional elevation of my improvement in position for use. Fig. 2 is a top plan view of one of the carburetors. Fig. 3 is a central vertical section of the carburetors and reservoirs. Fig. 4 is an end view of the reservoir. Fig. 5 is an end view of the gasoline-pump. Fig. 6 is a central vertical section of Fig. 5.

A represents the cellar in which is located the meter wheel pump B which is operated by the weight C.

D represents the air pipe for conveying air to the carburetor.

E represents a vault outside of the building and under the ground or earth E′.

F represents the reservoir tank which is located in the vault E.

G, G′, represent carburetors. The lower one is set into the reservoir and the upper carburetor upon the lower one. Preferably I employ two carburetors, but one or any desired number may be used according to the required capacity of the apparatus. The carburetors are provided with a series of partitions *b* running part way across the pan and are set alternately so as to form a series of zigzag passages *c*. Along these passages there is preferably attached either at the top or bottom a wicking or flannel *d* which absorbs the gasoline forced through the passages *c*. In order that there may be a small quantity of gasoline held in these passages to insure the saturation of the wicking I provide a collar *e* which forms an over-flow outlet from each carburetor, the lower outlet voids the surplus gasoline back into the reservoir F.

The upper carburetor over-flows into the lower one, so that the carburetors cannot be flooded and too large a quantity is not held subject to the action of the wicking and currents of air in the carburetors.

H represents a bucket-wheel pump preferably located in the casing I. It may be located however, directly in the reservoir tank instead of in the casing I. This pump journals upon a hollow axis J which serves as the air supply pipe for the carburetor. Said hollow shaft is journaled in the pipe K which is connected to the casing I at one end, the other end being journaled in the cap of the box L. The air pipe D from the meter wheel pump taps into the box L. Said hollow shaft is provided with one or more air openings *l* to receive the air supplied by the meter wheel

pump through the pipe D which conveys air through the hollow axis of the bucket wheel H.

The operation of supplying the carburetor or carburetors with a charge of gasoline is as follows:

s represents a supply pipe tapping at one end through the casing I, the other end tapping through the wall of the reservoir. The bucket wheel pump is provided with a series of compartments and an opening *h* for each compartment for admitting the gasoline into the buckets. As said wheel is revolved by the crank *j* the gasoline passes out of the buckets through the openings *g* into the spout *f* and thence by pipe *i* into say, the upper carburetor when two or more are employed. The gasoline passes around through the zigzag or winding passages *c* and thence into the lower pan passing in a transverse direction through the winding zigzag passages therein. This pump is operated by the handle *j* in the end of the hollow axis J. The air passing through the said hollow axis J into the space *n* and casing I, and passes from there by the same pipe as that by which the gasoline is conveyed to the carburetor. The air passes through the zigzag or winding passages in the carburetor in the same manner as the gasoline and is carried off to the service pipes by the pipe N.

M represents a pipe for filling the reservoir.

v represents a vent.

The pipes 1, 2, 3 tap the bottom of the carburetors and the bottom of the reservoir compartments for pumping out the heavy oil should there be any occasion to use the same.

There may be various modifications made in this device without materially affecting the operation. Other kinds of revolving pumps might be used for pumping the gas out of the reservoir into the carburetors. The pump might be located directly in the end of the reservoir tank instead of in a separate casing, but the construction herein shown is the preferred form.

By the use of the above described apparatus there is no danger of over-charging or flooding the carburetors because the surplus gasoline pumped up passes right back into the reservoir tank. In case there should be some heavy oil at the bottom of the carburetors the tank can be re-filled with oil of a light specific gravity and the bucket pump operated to fill the carburetors and the light oil will then mix with the heavy oil and run back into the tank, and in this way very much of the heavy oil can be utilized by the thorough mixing of the light and heavy oils, and the necessity of pumping out the heavy oil from the carburetors will seldom if ever be required.

I claim—

1. In a gasoline gas machine, the combination with the gasoline reservoir and carburetor arranged outside of the building, of a pump connected to the gasoline reservoir, a hollow axis connected to said pump and connected to an air supply device within the building, and passages connecting the said pump with the carburetor, and means for operating said pump within the building, whereby air and gasoline are supplied to the carburetor, substantially as described.

2. In a gasoline gas machine, the combination with the gasoline reservoir and carburetor arranged outside the building, of an air supply device arranged within the building, a pump mounted upon a hollow drive-shaft extending to and connected with the air-supplying device and connected to said carburetor and reservoir, and means for operating said pump from the inside of the building, substantially as described.

3. In a gasoline gas machine, the combination of the reservoir arranged outside of the building, one or more pans suspended in the top of the reservoir, said pans being provided with overflow pipes leading to the reservoir and passages containing absorbents for the circulation of gasoline and air through said pans, a pump for lifting the gasoline from the reservoir to said carburetors, a hollow drive-shaft connected to the air supply device and forming the axis of said pump, and means for operating the pump from the inside of the building, substantially as described.

4. In a gasoline gas machine, the combination with a gasoline reservoir and carburetor, a rotary pump arranged outside of the building, an axis connecting said pump with a blower inside of a building and journaled within an air supply pipe, and means for operating said pump within the building independent of the operation of the air supplying device, substantially as described.

5. In a gasoline gas machine, the combination with the carburetor formed of one or more pans having zig-zag passages, a rotary pump located within the gasoline reservoir and a passage connecting the carburetor with the pump, a rotary axis extending from the reservoir within the building, and means for operating said pump, substantially as described.

6. In a gasoline gas machine, the combination of the carburetor with a gasoline reservoir, a rotary pump located within said reservoir and passage connecting said pump with the reservoir, an axis journaled in the air supplying pipe, and means for operating said pump outside of the air supply-pipe, substantially as described.

In testimony whereof I have hereunto set my hand.

GEORGE W. COLEMAN.

Witnesses:

W. R. WOOD,

E. E. WOOD.