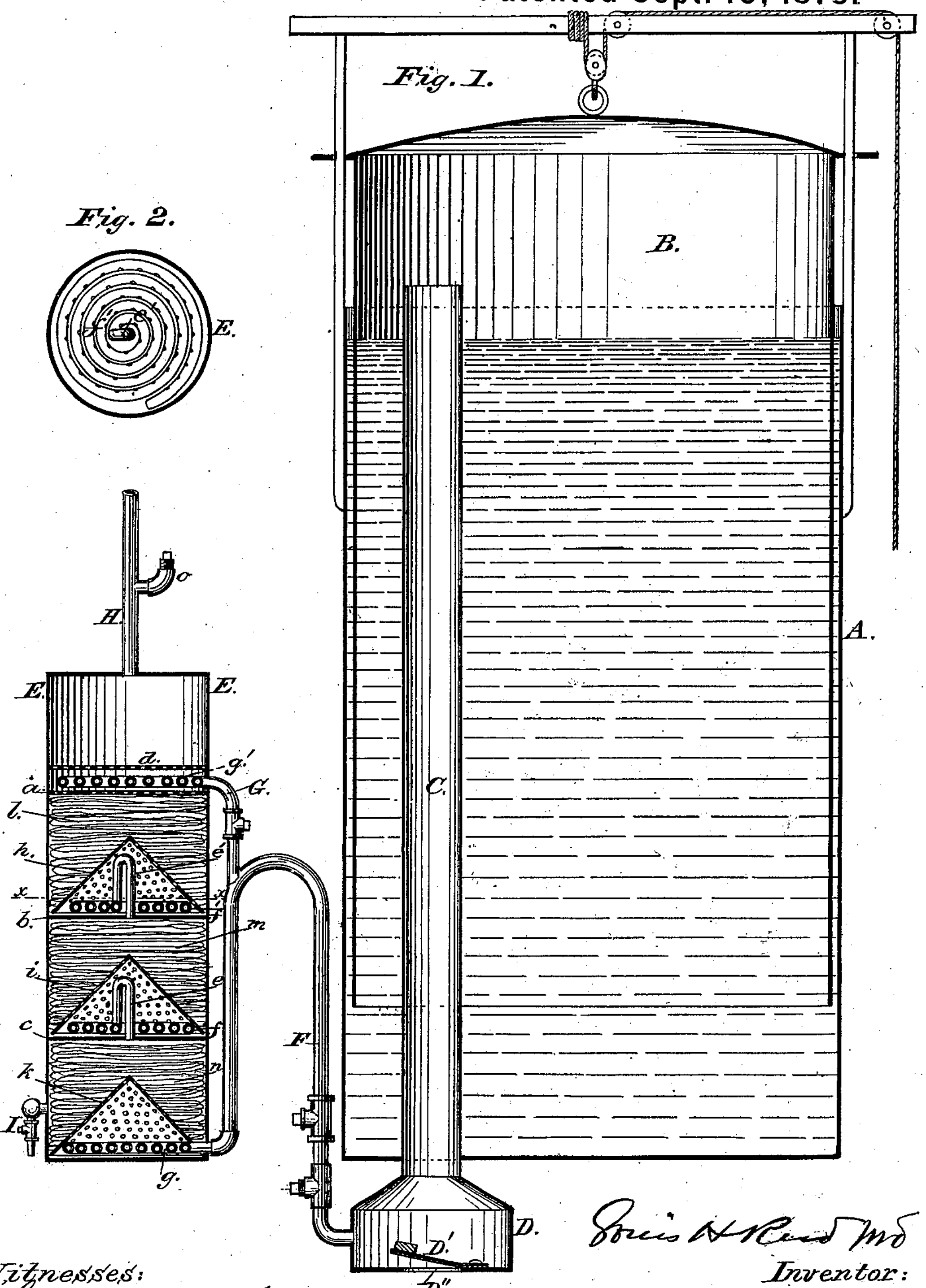
L. H. REID.
Carbureting Apparatus.

No. 207,983.

Patented Sept. 10, 1878.



Witnesses:

Geo M Lockwood

T. E. Brecht

Louis H Reid MD

Inventor:

N. PETERS, PHOTO-LITHOGRAPHER, WASHINGTON, D. C.

UNITED STATES PATENT OFFICE.

LOUIS H. REID, OF WASHINGTON, NORTH CAROLINA.

IMPROVEMENT IN CARBURETING APPARATUS.

Specification forming part of Letters Patent No. **207,983**, dated September 10, 1878; application filed July 9, 1878.

To all whom it may concern:

Be it known that I, LOUIS H. REID, M. D., of Washington, in the county of Beaufort and State of North Carolina, have invented certain new and useful Improvements in Carbureting Apparatus; and I do hereby declare that the following is a full, clear, and exact description thereof, which will enable others skilled in the art to which it pertains to make and use the same, reference being had to the accompanying drawing, and to the letters of reference marked thereon, which form a part of this specification.

My invention relates to a new and useful improvement in apparatus for carbureting or charging atmospheric air with the vapor of hydrocarbon liquid for illuminating purposes.

The invention consists in an improved carbureter provided with a series of independent partitions, upon which rest perforated coils of pipe, through which the gasoline first passes when the carbureter is charged, after which the air is forced through them, in combination with perforated cones, upon which a packing material of cord or other fibrous material is placed, and through which the gasoline or other hydrocarbon liquid passes, while at the same time it retards the passage of the air; also in the combination of certain other parts.

Figure 1 represents a vertical section of the air-tank and carbureter. Fig. 2 is a cross-section on line *x x* of the carbureter, showing the perforated coil-pipe.

In the drawing, A represents a tank of the ordinary construction, filled or nearly filled with water, into which the bell B loosely fits. The bell of the air-tank is raised by suitable cords and pulleys, or any other suitable means, when the air is drawn into it through the valve D′. To the bottom of the tank A is secured the pipe C, extending a little above the top edge of the tank, and it is provided at its lower end with a chest, D, in which is hinged a flap-valve, D′, opening inward, for the admission of the air into the bell B through the opening D″ and pipe C. The carbureter consists of a closed vessel, E, divided by the partitions *a b c*, the upper one being perforated. To the partitions *b c* is secured one end of the pipes *e e′*, rising to the top of the inside of the cones, hereinafter described, and are turned downward and connect with coils of pipe *f f′*, perforated on their inner sides. On the bottom of the vessel is arranged a coil, *g*, and on the upper partition, *a*, is a similar coil, *g′*. The lower coil, *g*, connects with a curved pipe, F, provided with suitable cocks for regulating the amount of air, and the upper coil, *g′*, with a branch pipe, G, also provided with a cock, which serves for the admission of additional air when required. Over the three lower coils of pipe are secured the perforated cones *h i k*, and upon these the packing material *l m n* is closely coiled. The cones prevent the packing material from clogging up the holes in the coils. The outlet-pipe H in the top of the carbureter is provided with a curved branch pipe, *o*, through which the gasoline is filled into the carbureter; and this is also an important feature, as it prevents cutting an additional hole into the top of the carbureter, and thereby avoids an additional chance for leakage. The object of the packing over the cones is to retard the passage of the air, and thereby to more thoroughly carburet it. Above the upper coil, *g′*, is arranged a perforated partition, *d*, which assists in more thoroughly diluting the carbureted air when it is too rich. A drip-pipe, I, is arranged near the bottom of the carbureter, and serves to regulate the amount of gasoline at a proper level; and, if desired, the contents may be withdrawn through it.

The operation is as follows: The gasoline is poured through the branch *o*, passes through the perforated plates *d* and *a*, percolates through the packing and through the perforated cone *h* until it rises above the top of the curved pipe *e*. It then forces its way through the perforations in the coil up through the curved pipe *e*, thence flowing in a similar manner through the other compartments into the lower one. The air, being admitted through the valve D′ into the air-tank, is forced out by the slowly-descending bell B, passes through the pipe F and perforations in the coil *g* and cone *k* and the packing *n*, and, entering the curved part of the coils *f f′*, passes through the perforations therein, as also the perforated cones *h i* and packing *l m* above them, and finally into the space between the partitions *a* and *d*. Having been thoroughly carbureted and mixed

with the gasoline, it passes out through the service-pipe H, and is ready for use. If the gas is too rich, it may be mixed with more air, admitted through the branch pipe G and the perforated coil g'.

In cities or towns one or more air-forcing apparatus may be used, connected by means of distributing-pipes leading to carbureting apparatus in or near the place to be lighted.

Having thus described my invention, what I claim, and desire to secure by Letters Patent, is—

1. In a carbureter, the vessel E, divided by partitions *a b c d*, in combination with perforated coils of pipe *g g' f f'*, for supplying air, and cones *h i k*, for supporting the packing material and distributing the air, substantially as shown, and for the purpose set forth.

2. The combination of the branch pipe G, having cock *e*, and provided at one end with a perforated coil, g', in the carbureter, with the curved pipe F, connecting with the air-tank A, substantially as shown, and for the purpose set forth.

3. The carbureter herein described, consisting of a vessel provided with partitions and successive coils of perforated pipe and cones, in combination with an air-tank provided with a pipe, C, having enlarged chest D, containing valve D', and the pipe F, all constructed and arranged substantially as and for the purpose described.

In testimony that I claim the foregoing as my own I hereby affix my signature in presence of two witnesses.

LOUIS H. REID, M. D.

Witnesses:
T. C. BRECHT,
GEO. M. LOCKWOOD.