S. N. CHAMBERLIN.

APPARATUS FOR GENERATING GAS FOR ILLUMINATING.

No. 52,946. Patented Feb. 27, 1866.

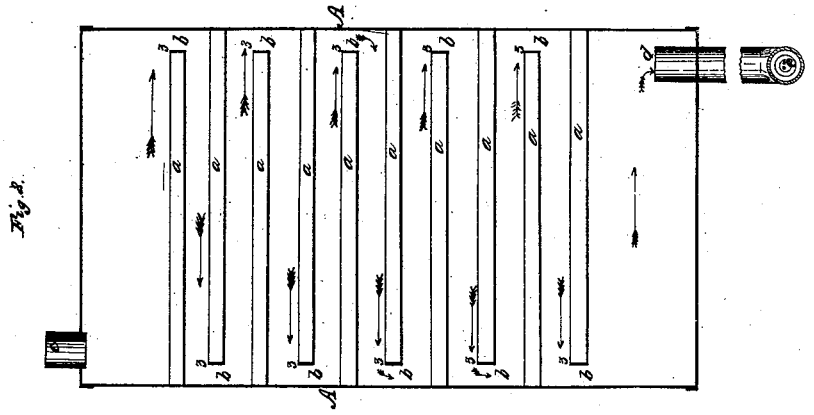

Fig. 2.

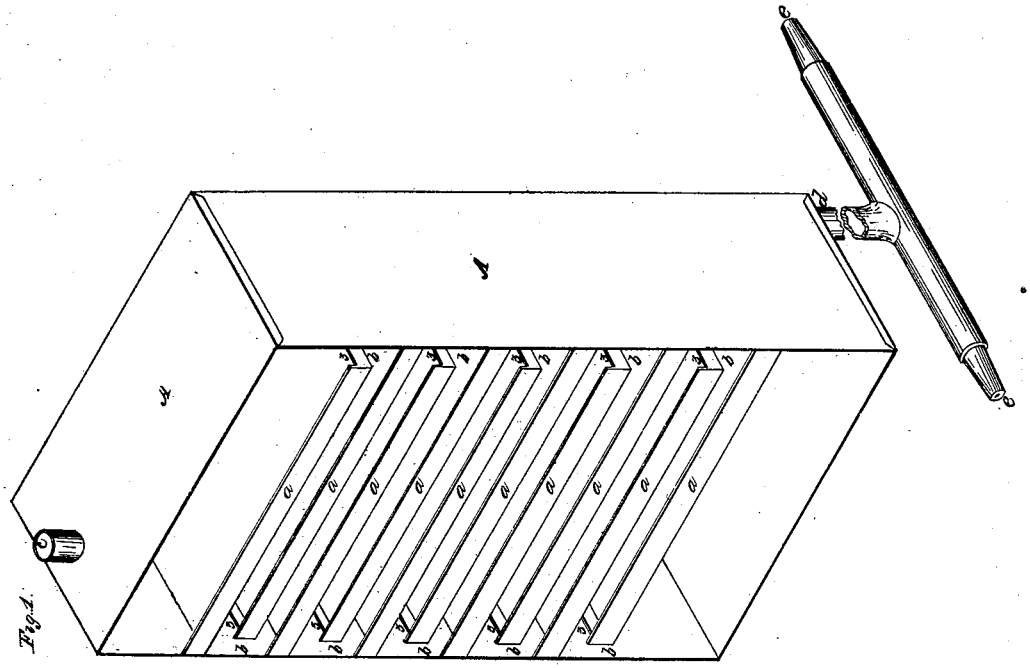

Fig. 1.

Witnesses:

N. W. Stevens

P. B. Pendleton

Inventor:

S. N. Chamberlin

UNITED STATES PATENT OFFICE.

SAMUEL N. CHAMBERLIN, OF ABINGTON, MASSACHUSETTS.

IMPROVED APPARATUS FOR GENERATING GAS FOR ILLUMINATING.

Specification forming part of Letters Patent No. **52,946**, dated February 27, 1866.

To all whom it may concern:

Be it known that I, SAMUEL N. CHAMBERLIN, of Abington, in the county of Plymouth and State of Massachusetts, have invented an Improved Apparatus for Generating Gas for Illuminating Purposes, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, making part of this specification, in which—

Figure 1 represents a perspective view of my improved apparatus, one side being removed to show the construction of the interior. Fig. 2 is a longitudinal vertical section through the same.

My invention consists in a reservoir provided with cells or receptacles placed one above the other, which contain gasoline or other lighter grades of hydrocarbon oils, an opening being made in the top of the reservoir for the entrance of air, which mixes with the vapor arising from the gasoline and forms a cheap gas of superior illuminating qualities in a convenient and expeditious manner.

To enable others skilled in the art to understand and use my invention, I will now proceed to describe the manner in which I have carried it out.

In the said drawings, A is a reservoir provided with cells or receptacles *a* of the size required for the quantity of gas to be generated. These receptacles are constructed in the form of shallow pans, and are soldered or otherwise secured in place parallel to and at a short distance from each other within the reservoir A, their length being such as to extend nearly across the reservoir, leaving a space, *b*, between the side 3 of each receptacle and alternate sides of the reservoir, the top of which is provided with an opening, *c*, through which is poured the fluid to be converted into gas, and this opening *c* also forms a passage for the air to enter the reservoir and circulate freely through the spaces between the cells or receptacles *a* within it.

A pipe, *d*, proceeds from the bottom of the reservoir A to any convenient place in the room where the light is required, and the upper end of the pipe *d* projects up a short distance into the interior of the reservoir to prevent any fluid which may flow over the lower receptacle from running down into the pipe.

e e are burners, which are fitted into the pipe *d* at any desired point.

A fluid called "gasoline" (one of the lighter products of coal-oil or petroleum) being poured into the top of the reservoir runs down from one receptacle to the other until all are filled, and the hole *c* being open, the air is allowed to mix with the volatile fluid which arises from the gasoline in the receptacles. The gas thus formed, being heavier than air, flows down through the spaces *b* and between the several receptacles, as indicated by the arrows, Fig. 2, to the bottom of the reservoir, whence it passes through the pipe *d* to the burners.

A glass or window may be placed near the bottom of the reservoir, by means of which I am enabled to ascertain when a sufficient quantity of the fluid has been poured in to fill the several receptacles *a*, and I am also enabled to observe when they require to be refilled.

The apparatus above described is simple in construction, and may be readily fitted up in any apartment, so as to produce a beautiful and exceedingly cheap light.

I am aware that reservoirs with pans or equivalent devices for holding hydrocarbon fluids have been made for carbureting air, but it has been with the design of having the air forced through them, and the passage of the air through them has been obstructed by stop-cocks, wire screens, perforated plates, or the like, so as to regulate the flow. No such apparatus will consequently allow the air to flow through it with sufficient freedom and in sufficient quantity where the current is produced by the mere superior gravity of the carbureted air.

I am also aware that others claim to have carbureted air by means of apparatus in which the air was carried over the surface of the hydrocarbon fluid through the operation of the superior gravity of the air so charged; but the apparatus was different in its construction and principle from that above described, and has not accomplished the object.

Others, also, have employed apparatus still more nearly resembling that above described, but having fewer pans and a discharge-pipe in the form of a siphon, through which no current can be produced until by some extraneous means the air charged with the gasoline or other hydrocarbon has been forced into the

siphon, so as to fill the longer or outer leg, and if the inner leg hangs too low the orifice is liable to be stopped by the fluid, and I find that the desired effect can only be produced where as many as eight or ten pans are employed.

I do not, therefore, claim at present the production of a current of air over a hodrocarbon fluid through the superior gravity of the air charged with the vapor of such fluid. Neither do I claim the apparatus above described, except when used and employed as above mentioned and constructed as specially described; but

What I do claim as my invention, and desire to secure by Letters Patent, is—

1. The reservoir-pans or shelves contained therein, when constructed with a discharge-pipe and otherwise, as above described, and used as above described, for carbureting atmospheric air forced through it by the change produced in such air by this process and by no other means.

2. The column or vessel A, with a series of pans, *a*, openings *b*, and discharge-pipe *d*, as herein described.

S. N. CHAMBERLIN.

Witnesses:
P. E. TESCHEMACHER,
N. W. STEARNS.