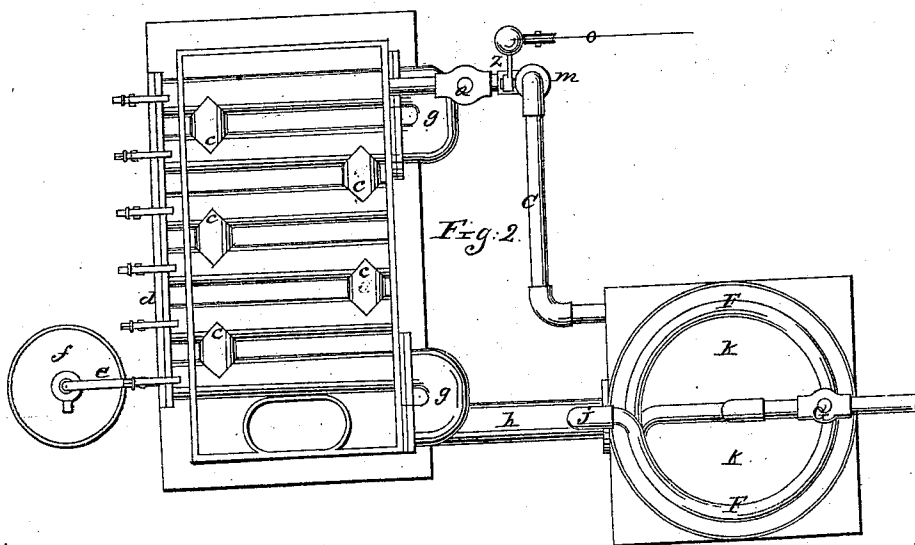
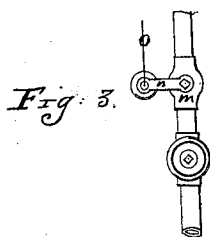
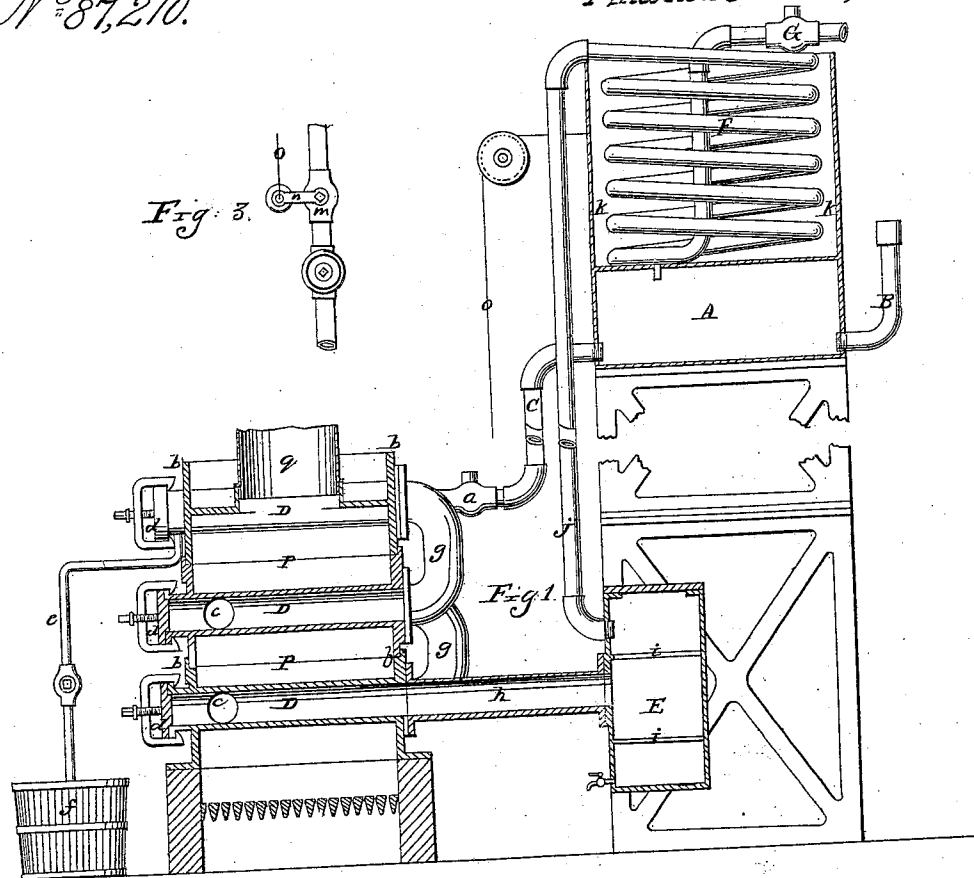


W. M. Stouane.

Gas-Generating Appr's.

N^o 87,210.

Patented Feb. 23, 1869.



Witnesses:

J. Fraser
W. Pruder

Inventor

W. M. Stouane

United States Patent Office.

WILLIAM M. SLOANE, OF BUFFALO, NEW YORK, ASSIGNOR TO HIMSELF AND ALONZO C. RAND, OF NEW YORK CITY.

Letters Patent No. 87,210, dated February 23, 1869.

APPARATUS FOR GENERATING GAS FROM PETROLEUM

The Schedule referred to in these Letters Patent and making part of the same.

To all whom it may concern:

Be it known that I, WILLIAM M. SLOANE, of Buffalo, in the county of Erie, and State of New York, have invented a new and improved Apparatus for Generating Gas from Petroleum or other Oil; and I do hereby declare that the following is a full and exact description thereof, reference being had to the accompanying drawing, and to the letters of reference marked thereon.

My invention consists, in part, in the manner of constructing the retorts, and in the application thereto of a receptacle for the tar produced in the distillation; and also, in the employment of a box and screens for arresting any fixed carbon, or other solid impurities, that pass the retorts with the gas.

It further consists in the application of check-valves to the pipes leading to and from the retorts, to prevent the return of oil or gas through them, and in the arrangement of the condenser above the retorts, and in connecting with the condenser-coil a drip-pipe, which communicates with the supply-cistern, and in the use of an automatic-feed arrangement, all as hereinafter set forth.

Figure 1 is a sectional elevation of my improved apparatus.

Figure 2 is a plan of the same.

Figure 3 is my automatic-feed arrangement, hereinafter described, shown detached.

Like letters of reference indicate corresponding parts in all the figures.

A is the reservoir for supplying the retorts with oil.

B, a pipe for replenishing the reservoir.

C, a pipe communicating with the retorts, and which has interposed, in the break shown in the drawing, the automatic-feed cock and stop-valve, shown in fig. 3. It has also a check-valve, *a*, fitted to it, which allows of the flow of the oil from the reservoir, but will not permit its return thereto.

D D D are three series of retorts, each series being cast in one piece, and having a flange, *b*, cast all round, to admit of their being fitted one upon another, thereby forming also the furnace and flues for the whole apparatus.

Each retort communicates with the next, by the branches *c c*, in the manner shown in fig. 2, and each series has a movable plate, *d*, extending over the mouths of all the retorts in that series, for the purpose of cleaning them out, when fouled with coke, or any impurities deposited from the petroleum or other oil.

A pipe, *e*, communicates from the top series of retorts to the receptacle *f*, which is for the purpose of catching any tar which may be formed in the retorts. The series of retorts to which the pipe *e* is attached is slightly inclined from the horizontal, the lowest point being at its connection with the pipe. The tar, consequently, gravitates to this point, and is conveyed away by the pipe *e*.

Each series of retorts is connected with the next by connecting-pipes *g g*, the lower series communicating with the box E by the pipe *h*.

The spaces *p p*, between the series of retorts, form the flues, which the heat and flame from the fire traverse, and finally issue from the apparatus by the smoke-pipe *q*.

E is a box, divided into three parts by the wire-gauze partitions *i i*, the object of which is to restrain any fixed carbon, or other impurity which may be carried from the retorts with the gas, from entering the condenser by the pipe *j*.

A tap is fitted to the bottom of the box to draw off any oil deposited therein from the retorts.

F is the condenser, which is formed of a coil of pipe placed in the box *k*, continually supplied with cold water, which surrounds the coil.

The bottom convolution of the coil communicates, by the pipe *l*, with the reservoir A, so that any oil which has been simply vaporized in its passage through the retorts, without assuming the gaseous state, is condensed by the cold water, and returned to the reservoir, to be again passed through the retorts.

G is a check-valve, fitted to the pipe leading from the condenser to the gasometer, to prevent the return of any gas from the latter, after it has once passed the valve.

The action of the automatic feed before referred to is as follows:

The feed-cock *m* is connected with and operated upon by a weighted lever, *n*, which is connected by a cord, *o*, passing over pulleys, with a larger weight suspended over the gasometer.

When the gasometer is charged with gas, and has risen to its full height, it comes in contact with and raises the weight suspended over it, at the same time depressing the weighted lever *n* and closing the valve, thus cutting off the supply of oil to the retorts.

The mode of operation of the apparatus is as follows:

Oil being supplied to the cistern A, is conveyed, by the pipe C, to the retorts, entering them by the top series, when, after traversing the whole of them, it passes off in the state of gas, by the pipe *h*, to the box E, the object of which, as before described, is to cleanse it of any impurities brought over in the gas mechanically.

It is conducted thence by the pipe *j* to the condenser, which it traverses, and then passes off to the gasometer, through the valve G.

Any oil which passes the retorts in the form of vapor simply, is condensed by the cold water surrounding the condenser, and returned to the reservoir by the pipe *l*, as before described.

I do not claim the use of two or more retorts, connected together in pairs, so that the first shall volatilize the oil or oily substance, and the second shall com-

plete the conversion thereof into a fixed gas, suitable for illuminating-purposes, as in the Letters Patent granted to Charles Deavs, dated June 25, 1867, and reissued, July 21, 1868.

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

1. Two or more series of retorts, when each series is cast together in one piece, and connected to the other series by the flanges *b b* cast thereon, substantially as and for the purpose described.

2. The receptacle *f* and pipe *e*, connected with the retorts, in the manner and for the purpose substantially as described.

3. The employment of the discharge-pipe *l*, at the bottom of the condenser-coil, in combination with the reservoir *A*, for the purpose described.

4. The box *E*, fitted with the gauze divisions *i i*, for the purpose of arresting any fixed carbon, or other impurity of a like nature carried over from the retorts with the gas, as described.

5. The check-valves *a* and *G*, applied in the manner and for the purposes described and set forth.

6. Placing the condenser *F* at such an elevation above the retort as that the condensed oil or other liquid shall return to the retort, substantially as set forth.

In witness whereof, I have hereunto signed my name in the presence of two subscribing witnesses.

WM. M. SLOANE.

Witnesses:

W. J. NICHOLS,
B. W. PROSSER.