

(No Model.)

T. S. C. LOWE.
GAS CLEANER.

No. 529,625.

Patented Nov. 20, 1894.

Fig. 1.

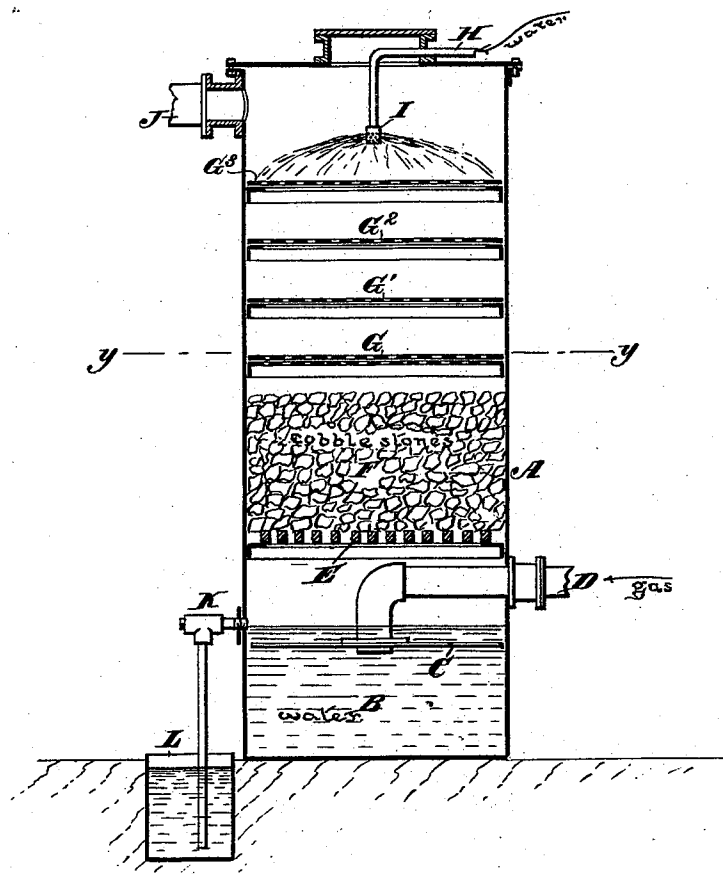
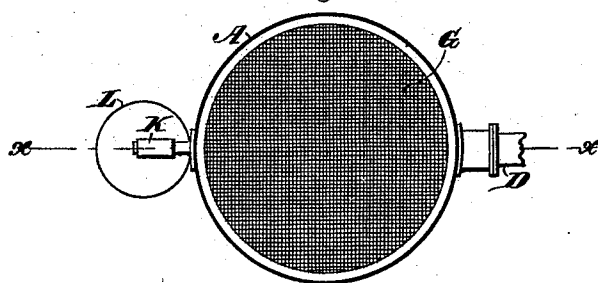


Fig. 2.



Witnesses:
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Atty.

UNITED STATES PATENT OFFICE.

THADDEUS S. C. LOWE, OF NORRISTOWN, ASSIGNOR TO THE GUARANTEE TRUST AND SAFE DEPOSIT COMPANY, TRUSTEE, OF PHILADELPHIA, PENNSYLVANIA.

GAS-CLEANER.

SPECIFICATION forming part of Letters Patent No. 529,625, dated November 20, 1894.

Application filed November 28, 1888. Serial No. 292,113. (No model.)

To all whom it may concern:

Be it known that I, THADDEUS S. C. LOWE, a citizen of the United States, residing at Norristown, in the county of Montgomery and State of Pennsylvania, have invented new and useful Improvements in Gas-Cleaners, of which the following is a specification.

My invention relates to a gas purifier or cleaner so constructed as to afford an inexpensive apparatus capable of performing the functions of a washer, a scrubber, a condenser and a strainer for the purpose of removing from the gas, at a single operation, motes, dust, ashes, small particles of coke, cinders and other solid impurities, which, if left in the gas, choke and stop up the gas burners and divide the flames, and also any oily, tarry and other condensible matters which should be removed in order to prevent them from being carried to the ordinary lime or other purifiers when these are used as auxiliaries for the removal of sulphur and carbonic acid from the gas.

In the annexed drawings Figure 1 is a vertical section of my improved gas cleaner, on the line *xx* of Fig. 2 which is a horizontal section of the same on the line *yy* of Fig. 1.

The letter A. designates an upright shell or hollow cylinder, of any required height, and in the lower part of which is a body of water B. which serves as a hydraulic seal and as a medium for washing and cooling the gas. Below the surface of the water seal B. is a gas scrubber diaphragm C. supported by a gas inlet pipe D. through which the gas to be cleaned is conducted to the under side of the diaphragm C. below the surface of the water. Above the water seal are grate bars E. on which cobble stones F. or equivalent scrubbing and condensing materials are supported to a suitable depth or thickness.

Above the cobble stones F is a series of wire cloth sieves G, G', G², G³ having meshes, preferably lessening in size from the first or lowest sieve G. to the last or uppermost sieve G³, the object being to keep back the solid particles and allow the gas to pass up through the sieves, while at the same time the water introduced at the top of the cleaner through

the pipe H, which preferably has a spraying nozzle I. attached to it, passes in a contrary direction down through the meshes of the sieves.

To the upper part of the shell A. is attached a pipe J. through which the cleaned gas passes out to a holder or to a place of consumption or when necessary, to the auxiliary lime purifiers above mentioned.

K. is an ordinary overflow pipe, and L. an ordinary trap or seal.

The gas to be cleaned enters the cleaner through the pipe D. under the diaphragm C. and is washed by the body of water B. It then passes up through or between the grate E. and cobblestones F. (kept cool by the water running down over them) which break up the current of gas and condense any oil, tar and other condensible substances. The gas then passes up through the sieves G, G', G², G³ which strain out the motes, dust, particles of coke and other solid impurities, which being met by the falling water, are carried back into the body of water B. in the lower part of the shell A. the lighter portions running out through the overflow pipe K. while the heavier portions fall on top of the diaphragm C. or sink to the bottom of the cleaner. Other materials, such as broken stones of any kind, anthracite coal, coke, bricks, or pieces of wood may be substituted for the cobblestones; or, if the number of sieves be increased, the cobblestones or other condensing materials may be dispensed with, but I prefer to use cobblestones as described. Instead of making the effective portions of the sieves of wire cloth, splints of wood, cane, bamboo or cloth of any kind that will act as a fine strainer may be used, but I prefer the wire cloth. Instead of admitting the water through a spraying nozzle, it may be admitted at the top of the cleaner in any way, but I prefer to spray the water in as described.

I do not wish to confine myself to the use of four sieves, as a greater or less number may be employed with benefit; neither is it absolutely necessary that the meshes of the successive sieves should diminish in size from the bottom toward the top as above de-

scribed, although I prefer to construct and arrange them in this manner.

What I claim is—

1. In a gas cleaner, the combination of an
5 upright shell having a water seal in its lower
part, a gas inlet pipe entering said water
seal, scrubbing material supported in said
shell above the water seal, a series of fine
10 mesh screens located above the scrubbing
material, and a water inlet pipe and a gas
exit pipe connected with the shell above said
screens, substantially as described.

2. In a gas cleaner, the combination of the
upright shell A. provided below with a gas
15 inlet pipe D, water seal B. and overflow pipe
K. the diaphragm C. located on the gas inlet

pipe D. above its inner end and below the
surface of the water seal, the grate E. con-
densing and scrubbing material F. and fine
mesh sieves G, G', G², G³, all arranged above 20
the water seal, the gas exit pipe J. leading
from the upper part of the shell, and the wa-
ter inlet pipe H. entering the upper end of
the shell and provided with a spraying noz-
zle I. above the upper sieve, substantially as 25
described.

In testimony whereof I affix my signature in
presence of two witnesses.

THADDEUS S. C. LOWE.

Witnesses:

WALTER C. RODMAN,
RANDAL MORGAN.