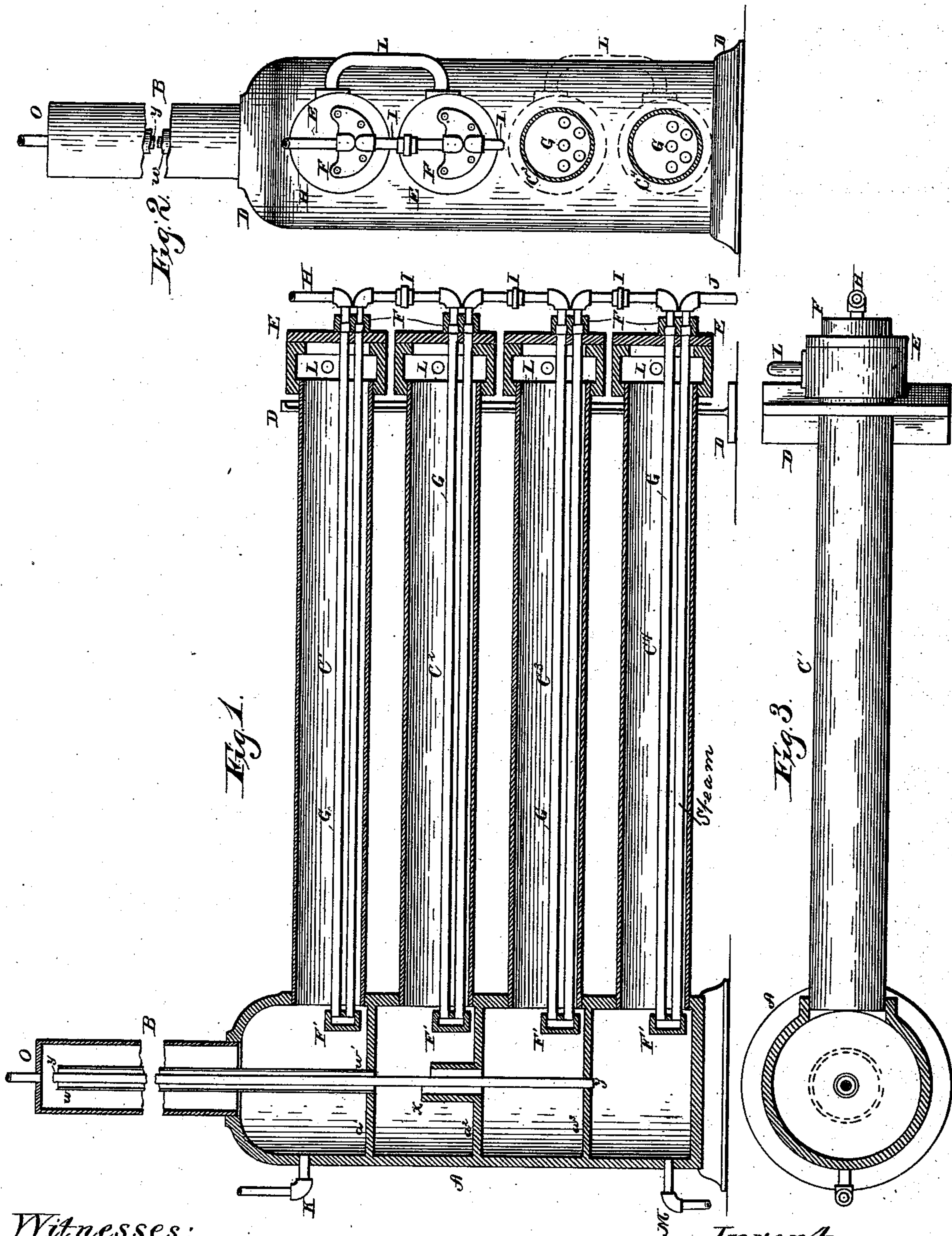


(No Model.)

M. POSCHINGER.
AMMONIA GAS GENERATOR.

No. 376,905.

Patented Jan. 24, 1888.



Witnesses:

Edwin L. Jewell

John Enders, Jr.

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Inventor:
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Attorneys v.
J. L. Brown
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UNITED STATES PATENT OFFICE.

MATHIAS POSCHINGER, OF LOUISVILLE, KENTUCKY, ASSIGNOR TO SULZER
& VOGT, OF SAME PLACE.

AMMONIA-GAS GENERATOR.

SPECIFICATION forming part of Letters Patent No. 376,905, dated January 24, 1888.

Application filed September 28, 1887. Serial No. 250,882. (No model.)

To all whom it may concern:

Be it known that I, MATHIAS POSCHINGER, a citizen of the United States, residing at Louisville, in the county of Jefferson and State of Kentucky, have invented certain new and useful Improvements in Ammonia-Gas Generators; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

Figure 1 is a longitudinal sectional view of my machine. Fig. 2 is a perspective view of the front of the same. Fig. 3 is a horizontal plan view of the same, partly in section.

In the different figures like letters indicate like parts.

A is a chamber divided into compartments by the horizontal partitions a' a^2 a^3 . The tubes w and y are attached to the partitions a' and a^3 , respectively. The tube w extends into the gas-receiver B, which forms an upper portion of the chamber A. The tube y passes through the tubes x and w into B. The tube x has one part of the circumference of the upper end lower than the other part, so as to allow the ammonia to flow from the tube C^2 into the tube C^3 over the lower part of the circumference, and at the same time to permit the gas generated in the tube C^3 to pass upward through it unobstructed by the ammonia. The large horizontal tubes C' C^2 C^3 C^4 are attached to the side of the chamber A, and each opens into a compartment formed by the partitions a' a^2 a^3 . These tubes lie in a vertical plane to economize space. Their free ends pass through circular openings in the stand D, and are thereby supported.

E are heads covering the free ends of the tubes C' C^2 C^3 C^4 , and which have the manifolds F attached to them.

G are coils of steam-pipe which connect the manifolds F and F'.

H is the steam-inlet pipe, which connects with a boiler. The steam passes through H into the upper part of the manifold F, through the upper pipes of the coil G into the manifold F', and then through the lower pipes of G into the lower part of the manifold F.

I are pipes through which the steam passes from the lower part of the manifold F into the

upper part of the next succeeding manifold F, and so on through the next succeeding manifolds and coils of pipe to J—the steam-outlet pipe through which the steam and water escape.

K is an inlet-pipe, through which the strong ammonia is pumped into the generator.

L are pipes through which the ammonia passes from the tube C' to the tube C^2 and from the tube C^3 to the tube C^4 .

M is the outlet-pipe for the ammonia, which is weakened in its passage through the generator by coming in contact with the heated coils of steam-pipe and having the gas driven from it by evaporation.

O is a pipe through which the gas passes from the receiver B.

In practice the ammonia is introduced into the generator through the pipe K, supplying first the upper compartment of the chamber A and the tube C' , and then successively supplying the other compartments of A and the tubes C^2 C^3 C^4 by flowing through the upper tube L, the tube x , and the lower tube L, and then in a state of weak ammonia it passes out through the outlet-pipe M. The coils of pipe G, which lie below the level of the ammonia in the large tubes, are heated by means of steam conveyed from a boiler through the pipe H, and by the heat thus supplied the gas is driven off from the ammonia and passes from the tube C' and the upper compartment of A, and through the tubes w , x , and y from the other compartments of A and the tubes C^2 C^3 C^4 into the gas-receiver B, from which it passes through the outlet-pipe O.

The chamber A and the tubes C' C^2 C^3 C^4 as far as the stand D may be incased in wood or other material to prevent the radiation of heat.

Any number of rows of tubes C' C^2 C^3 C^4 and any number of tubes in a row may be used to attain the desired capacity of the generator, which has as many compartments in the chamber A as there are tubes in a row.

Among the advantages of my invention are: the large heating-surface; the ready passage of gas from the liquid into the gas-receiver; the gas is dry, not having to pass through much of the liquid; a large percentage of the gas is driven out of the ammonia in passing through the generator; the small quantity of ammonia

required to use the generator; the economy in fuel; the rapidity with which the gas is produced, and all the parts are easy of access for repairs; and the coils of steam-pipe may be
5 taken out of any one of the large tubes without disturbing that in the others.

Having fully described my improved generator, what I claim as new and of my invention, and desire to secure by Letters Patent,
10 is—

1. In an ammonia-gas generator, the combination of a chamber, A, divided into compartments by partitions $a' a^2 a^3$, large tubes $C' C^2 C^3 C^4$, coils of steam-pipe G, upper and lower
15 pipes L, and tubes w, x , and y , substantially as and for the purpose set forth.

2. In an ammonia-gas generator, the combination of a chamber, A, divided into compartments by partitions $a' a^2 a^3$, large tubes $C' C^2 C^3 C^4$, coils of steam-pipe G, and connecting-pipes
20 I, to give a large heating-surface, substantially as and for the purpose set forth.

3. In an ammonia-gas generator, the combination of a chamber, A, divided into compartments by partitions $a' a^2 a^3$, large tubes $C' C^2 C^3 C^4$, upper and lower tubes L, and tube x , to
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allow the ammonia to pass through the generator, substantially as and for the purpose set forth.

4. In an ammonia-gas generator, the combination of a chamber, A, divided into compartments by partitions $a' a^2 a^3$, large tubes $C' C^2 C^3 C^4$, and tubes w, x , and y , to allow the gas to pass to the receiver dry, substantially as and
30 for the purpose set forth.

5. In an ammonia-gas generator, the combination of tubes $C' C^2 C^3 C^4$ with pipes L, which permit the ammonia to flow from one tube to another, substantially as and for the purpose
35 set forth.

6. In an ammonia-gas generator, the combination of tubes $C' C^2 C^3 C^4$ with a pipe, x , allowing the ammonia to flow down and gas to rise simultaneously, as and for the purpose set
40 forth.

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

MATHIAS POSCHINGER.

Witnesses:

H. C. BRANNIN,
H. R. PHILLIPS.