

J. H. STEINER.
APPARATUS FOR GENERATING AND CARBURETING GAS FOR LIGHTING
RAILROAD CARS.

No. 92,391.

Patented July 6, 1869.

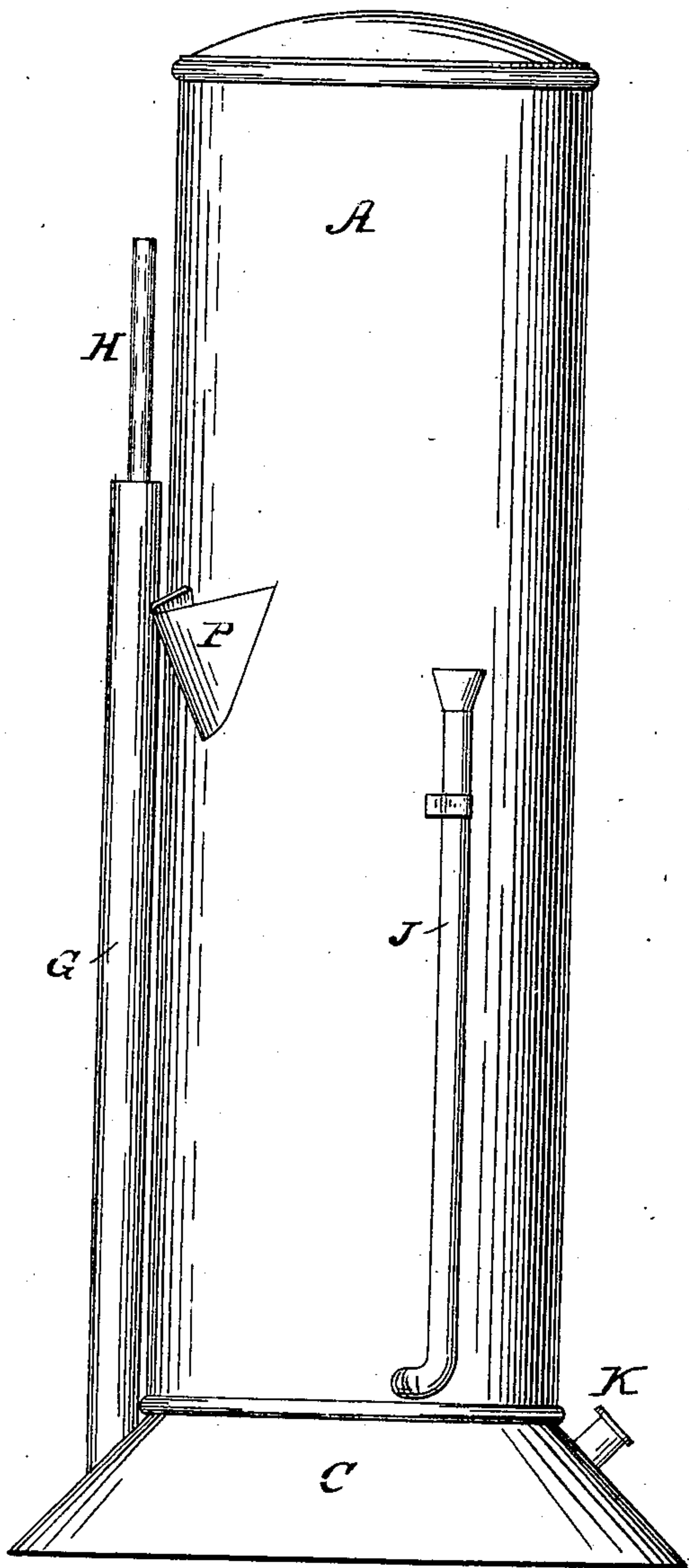


Fig. 1.

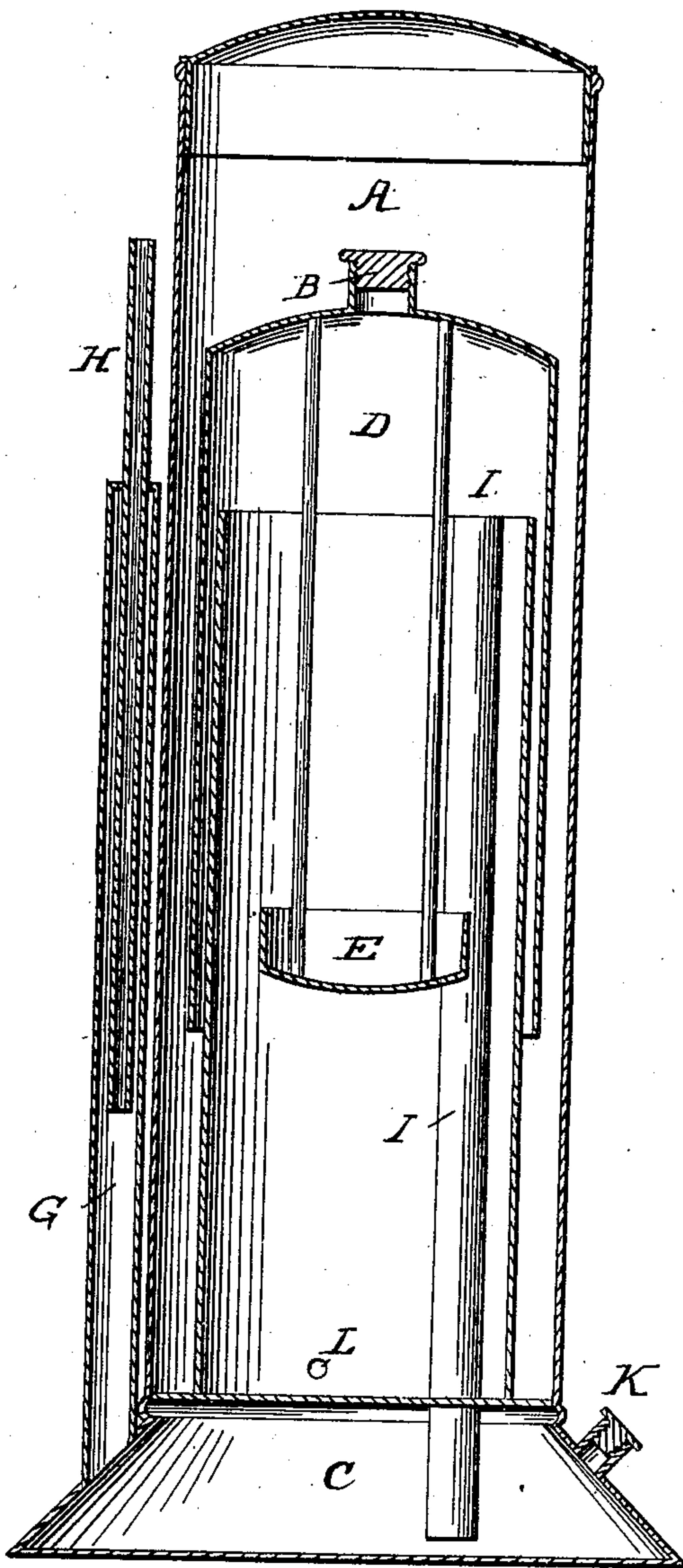


Fig. 2.

Witnesses:
J. J. Coombs
C. L. Coombs

Inventor
John H. Steiner
by *J. J. Coombs & Son*
Attys.

United States Patent Office.

JOHN H. STEINER, OF ST. LOUIS, MISSOURI.

Letters Patent No. 92,391, dated July 6, 1869.

IMPROVED APPARATUS FOR GENERATING AND CARBURETTING GAS FOR LIGHTING RAILROAD-CARS.

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, JOHN H. STEINER, of St. Louis, in the county of St. Louis, and State of Missouri, have invented new and useful Improvements in Apparatus for Generating and Carburetting Gas for Lighting Railroad-Cars, Steamboats, and other similar structures; and I do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawings, making part of my specification.

My invention relates to that class of gas-apparatus in which pure hydrogen is generated and carburetted for use; and consists of a generator and gas-holder arranged within a closed cylinder; the said gas-holder communicating with the carburetting-chamber, which forms the base of the cylinder, by means of a suitable pipe.

The cylinder is so constructed that an air-chamber is formed in its upper part, into which the gas-holder rises. The object of said chamber is to form a cushion against which the gas-holder will play as it rises, and thereby be steadied against the motion of a car, steamboat, or other similar structure, for which my apparatus is specially designed.

To enable others skilled in the art to make and use my invention, I will proceed to describe it.

The apparatus consists of a cylinder, A, provided with a closely-fitting cover, which has an aperture in the top, to allow the air to escape as the holder rises. The aperture must be small enough to offer some resistance to the passage of the air, and not allow any great volume to escape suddenly. By this means an air-cushion or spring is formed above the gas-holder, which prevents it from rising suddenly or being jolted by the motion of the car.

Within said cylinder is a smaller cylinder, B, attached to and extending from its bottom to about two-thirds the height of said cylinder.

The cylinder A rests upon a hollow base or chamber, which forms the carburetter of the apparatus.

The annular space between the cylinders A and B is designed to contain water.

A gas-holder, D, is arranged to rise and fall within said annular space.

From the top of said gas-holder is suspended a wire basket, E, which reaches nearly to the mouth of the gas-holder, and rises and falls with it. It is designed to contain iron or zinc-filings or turnings.

The acid solution is contained in the lower part of

the vessel B, and is introduced through a tube, J. The contents of said vessel may be withdrawn through a tube, I.

A condenser, G, is attached to the outside of the carburetter, and communicates with the pipe that conveys the gas to the burners.

The operation of the apparatus is as follows:

The basket E is filled with iron or zinc-turnings, and the gas-holder placed properly within the cylinder A, and the cover properly adjusted. The annular space is then filled with water by means of the spout or funnel P, which communicates with it. The acid solution is poured in through tube J until it stands at the proper height in the vessel B, and the carburetter C is properly filled through opening K. The acid attacks the metal filings in the basket, and generates pure hydrogen-gas, which collects in the upper part of the holder, and from thence is carried through pipe I into the carburetter B, and then through the condenser, where all moisture is condensed, to the pipe communicating with the burners.

When the apparatus is not in use, the holder becomes filled with gas, and rises, carrying the basket out of the acid solution, so that no more gas is generated until wanted for use, when the holder falls, and allows the basket to again dip into the acid.

Having thus described my invention,

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

1. A gas-generating apparatus, consisting of a cylindrical vessel, containing a gas-holder and generator, substantially as herein described.

2. In combination with the cylinder A and gas-holder D, the air-chamber above the gas-holder, substantially as and for the purposes set forth.

3. In combination with the cylinder A, containing a generator and gas-holder, the carburetting-chamber C; substantially as herein described.

4. In combination with the carburetter, the condenser G, as and for the purpose described.

5. The combination of the cylindrical vessel A, the cylindrical vessel B, and gas-holder D, with the carburetter C and condenser G, substantially as herein described.

JOHN H. STEINER.

Witnesses:

CHAS. L. COOMBS,
JOS. L. COOMBS.