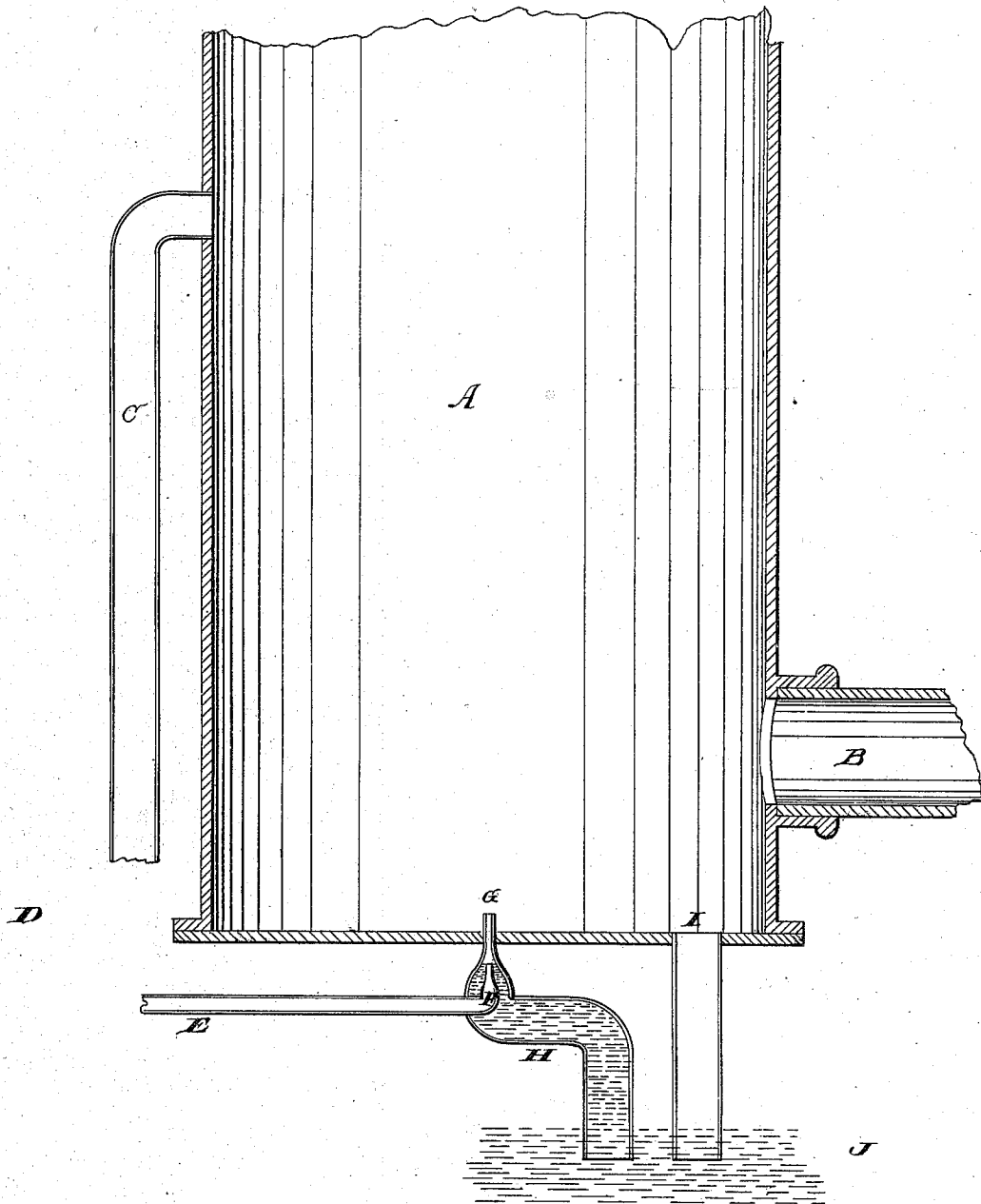


B. E. CHOLLAR.

Improvement in Purifying Illuminating-Gas by Atomized Liquids.

No. 131,740.

Patented Oct. 1, 1872.



WITNESSES

Quar Noble
John Gimper.

INVENTOR.

Byron E. Chollar.

UNITED STATES PATENT OFFICE.

BYRON E. CHOLLAR, OF LEAVENWORTH, KANSAS.

IMPROVEMENT IN PURIFYING ILLUMINATING-GAS BY ATOMIZED LIQUIDS.

Specification forming part of Letters Patent No. 131,740, dated October 1, 1872.

To all whom it may concern:

Be it known that I, BYRON E. CHOLLAR, of Leavenworth, in the county of Leavenworth and State of Kansas, have invented a new and Improved Method of Atomizing Water and other Fluids for use in the Scrubbers or Washers of Gas-Works; and I do hereby declare that the following is a full and clear and exact description of the same, which will enable those skilled in the art to make and use the same, reference being had to the accompanying drawing forming a part of this specification.

The invention relates to a new and improved method of atomizing water and other fluids for use in the scrubbers or washers of gas-works, whereby such water becomes more effectual for the removal of ammonia, carbonic acid, sulphureted hydrogen, and other impurities from the gas, and wherefrom results a stronger and more valuable ammoniacal liquor and an increase in the illuminating power of the gas by reason of the use of a smaller quantity of water for washing the gas than has been usual heretofore; and it consists in providing for the use of a jet of gas so as to discharge against a stream or jet of water or other fluid in such a manner as to atomize the same for the purpose of rendering it more effectual for the purpose named by reason of being reduced to a state of minute subdivision, like fine spray or mist.

The accompanying drawing represents a vertical section of the lower part of a cylindrical scrubber or washer, one of the connecting-pipes for the gas, the atomizing-jet and connecting-pipes for the same, the water-supply pipe, the escape-pipe for the water from the scrubber, and the supply-cistern for the water used in washing the gas.

A is a vertical section of the lower part of a cylindrical scrubber or washer. B is the outlet-pipe for the gas from the same. C is a pipe connected with the scrubber or other convenient part of the apparatus, by which a supply of gas is conveyed to the atomizing-jet by means of a pump located at D. E is a pipe, which conveys the gas from the pump at D to the atomizing-jet. F is the atomizing-jet, and is the extension of the pipe E, turned so as to

be in the axis or middle of the water-supply pipe H and in line with the nozzle G. The jet-pipe F I have found best, generally, to project slightly into the nozzle G. G is the nozzle, the axis of which coincides with that of the atomizing-jet F. H is the pipe which conveys a supply of water from the cistern J to the nozzle G, inside and near the end of which is inserted the atomizing-jet. I is a pipe, by which the water, after being used in the scrubber, flows back to the cistern J.

The gas-jet can be applied to the water in several different ways; but I have found that the way above described answers all practical purposes.

The operation of the improvement is as follows: The scrubber A, being full of gas flowing through the pump at D, is set in motion, which causes a flow of gas through the pipe C toward the pump at D, and, under pressure through the pipe E to atomizing-jet F, causes a partial vacuum above the jet, thereby producing a flow of water from the cistern J, through the pipe H, to the top of the jet-pipe F, from which point the force of the gas-jet drives the water through the nozzle G into the scrubber in the form of a fine spray or mist. The pressure of the gas at the jet will vary according to circumstances. Ordinarily fifteen to thirty pounds to the inch will operate satisfactorily. The spray gradually settles to the bottom of the scrubber, more or less charged with impurities absorbed from the gas, whence it flows through the pipe I to the cistern J, to be used over and over again as often as may be desired, or until it becomes saturated.

I do not claim as new any particular form or style of gas-jet or water-jet, or any particular form or style of scrubber or washer.

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

The use of a jet of gas in such a manner as to atomize a jet or stream of water or other fluid for use in the scrubbers or washers of gas-works, substantially as described.

BYRON E. CHOLLAR.

Witnesses:

JOHN GIMPER,
JOHN S. SCHOLLARS.