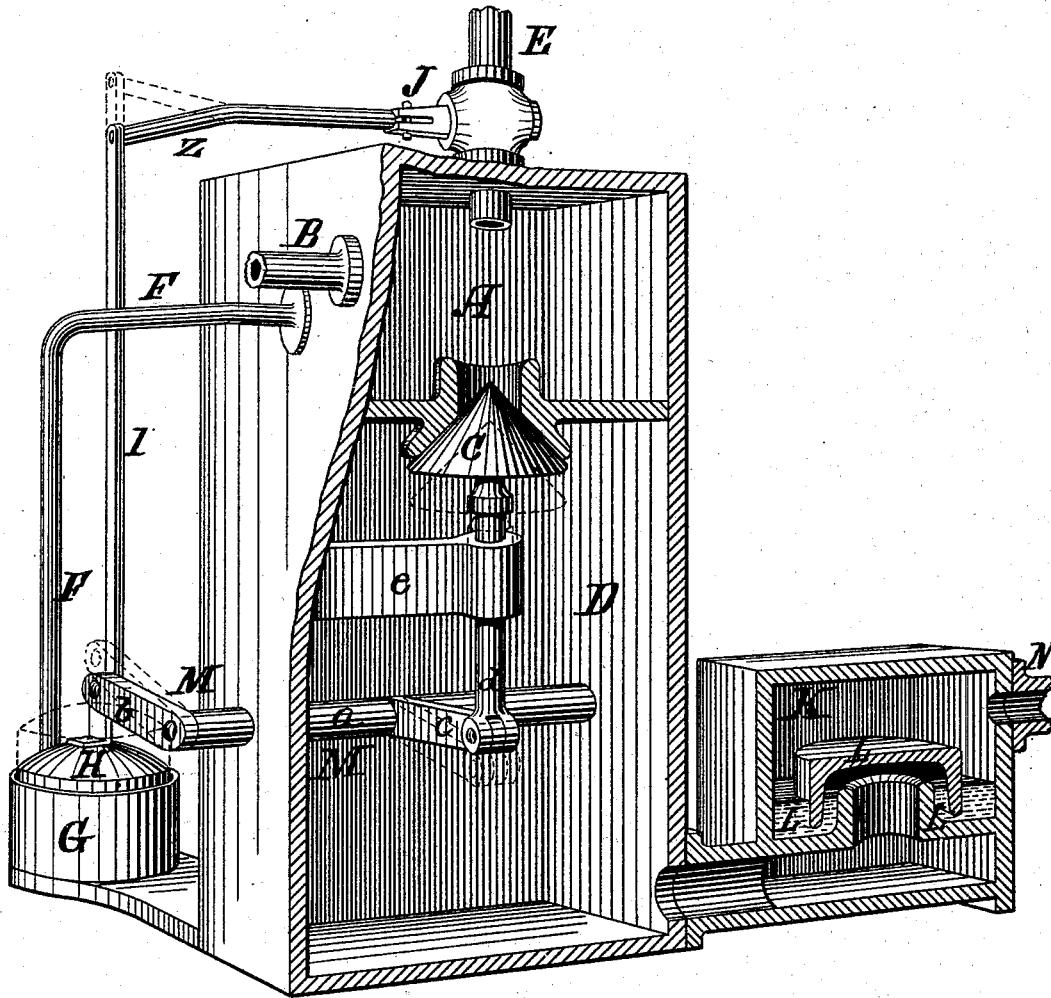


P. MUNZINGER.

AUTOMATIC RETORT EXHAUSTER.

No. 189,900.

Patented April 24, 1877.



Witnesses

W. R. Wright  
W. C. Hawbridge

By

Peter Munzinger

Bonsall Taylor

Inventor

Attorney

# UNITED STATES PATENT OFFICE.

PETER MUNZINGER, OF PHILADELPHIA, PENNSYLVANIA, ASSIGNOR TO  
MORRIS, TASKER & CO., (LIMITED,) OF SAME PLACE.

## IMPROVEMENT IN AUTOMATIC RETORT-EXHAUSTERS.

Specification forming part of Letters Patent No. 189,900, dated April 24, 1877; application filed  
December 27, 1876.

To all whom it may concern:

Be it known that I, PETER MUNZINGER, of the city and county of Philadelphia, in the State of Pennsylvania, have invented a new and useful Automatic Retort-Exhauster, of which I hereby declare the following to be a full, clear, and precise description, sufficient to enable those skilled in the art to which my improvement appertains to comprehend and employ it, reference being to the accompanying drawing, which forms part of this specification, and is a view in perspective of apparatus embodying my invention.

This improvement relates to exhausters for the retorts of gas-works which make use of a vacuum to effect the exhaustion; and has for its object the automatic regulation, by the flow of gas exhausted, of the formation of the vacuum, to the end that the formation of the vacuum and the flow of gas may be regulated and controlled when the exhaustion becomes too great for the perfect generative powers of the retort, and a compensated or proportionate operation maintained.

It consists essentially as follows:

A is the vacuum-chamber; B, the inlet-pipe to the same from the generating-retort; C, the escape-valve connecting the vacuum-chamber and the escape-chamber D. E is the injection-pipe, by which the jet of water for the condensation of the gas to form the vacuum is admitted. F is an over-pressure pipe connecting the vacuum-chamber A with a float-tank, G, in which is, surrounded by water, a cylindrical open-bottomed float, H, beneath and inside of which the over-pressure pipe opens. The float H supports and operates a connecting rod and lever, I Z, connected with a supply-cock, J, on the injection-pipe, while it also supports and operates a rock-shaft and lever-arms, M, connected with the stem of the escape-valve C, all in such manner that when the float is elevated, the injection-cock J is turned on, and the escape-valve C opened wide. K is a seal-chamber between the escape-chamber and the main N leading to the washers and purifiers, in which is located a liquid seal, L, to permit of the free passage of gas to the main, but prevent its return.

I have represented a very simple system of

levers, M, between float and valve, consisting of a shaft, a, pivoted through the escape-chamber in such manner that one of its extremities extends outside, to which shaft are attached lever-arms, one of which—the outside—b, is connected with the float, and the other—the inside—c, with the valve-stem d, which is supported in a slide-bearing, e; but it is obvious that any system connecting the float and valve in such manner that when the float is lifted the valve is depressed, may be employed. It is also obvious that a different system of connections between the float and injection-cock may be adopted.

Such being the construction of my invention, its operation is as follows:

The float H, at the commencement of the operation, is down within its tank, and the injection-cock J and escape-valve C both closed.

The gas generated in the retort flows through the inlet-pipe B into the vacuum-chamber A, filling the latter, and then flows through the pipe F into the float so as to lift it. By the rise of the float, through the medium of the lever-system I Z, the injection-cock J is opened, so as to admit the injection-water into the vacuum-chamber and open the escape-valve C, through the medium of the lever-system M depressed to the position indicated by the dotted lines in the drawing, opening it so as to permit the escape of the gas from the vacuum-chamber into the escape-chamber, and thence through the liquid seal to the main.

The injection, by condensing the gas in the chamber, pipe F, and float, forms a vacuum, and thus relieving the float H of its supporting agent, thereby permits said float to descend, so as to close the valve and shut off the injection, through the medium of the lever system described, thus leaving a vacuum in the vacuum-chamber, into which the gas from the retort is exhausted until said chamber is again filled with gas and the float again lifted to the repetition of the action described.

The above is in some degree an exaggerated description of the action of my apparatus, for the sake of clearer illustration. In practice, the compensation is such that the flow of gas is practically continuous, and an abso-

lute stoppage only effected when the exhaustion has been carried to an extent surpassing the perfect generative powers of the retort, to remedy which condition of things is especially the object of this my invention.

The advantage of my arrangement, therefore, is that the apparatus constituting it is adapted to utilize, in the most effectual manner, the pressure of a too great expansion from the retort to the closing of the valve of egress, so as to give time for the evolving of a more perfect product from the charge in the retort, and is further adapted to the more perfect utilizing of an over-supply of gas, too quickly accumulating in a chamber, to the raising of a float controlling both the injection and the valve of egress.

I do not claim, broadly, the utilization of an excess of exhaust gas from the retort for the raising of a float to close the injection-valve of a vacuum gas-exhauster, to the automatic regulation of its action; but

What I do claim, and desire to secure by Letters Patent of the United States, is—

1. In a vacuum-exhauster for retorts, the combination of a float, H, adapted to be elevated by an excess of gas in the valve-chamber A, with the injection-cock J, and with the escape-valve C, substantially as and for the purposes set forth.

2. As a means of connecting the float H with the injection-cock J and with the escape-valve C, respectively the lever-system I, Z, and M, substantially as described.

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

PETER MUNZINGER.

Witnesses:

J. BONSALE TAYLOR,  
LISLE STOKES.