H. G. MORRIS.

By-Pass for Gas-Works.

No. 200,799. Patented Feb. 26, 1878.

FIG. 1.

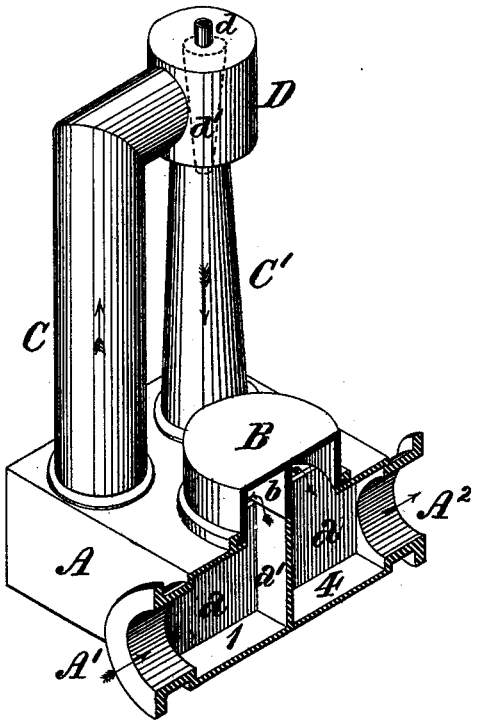
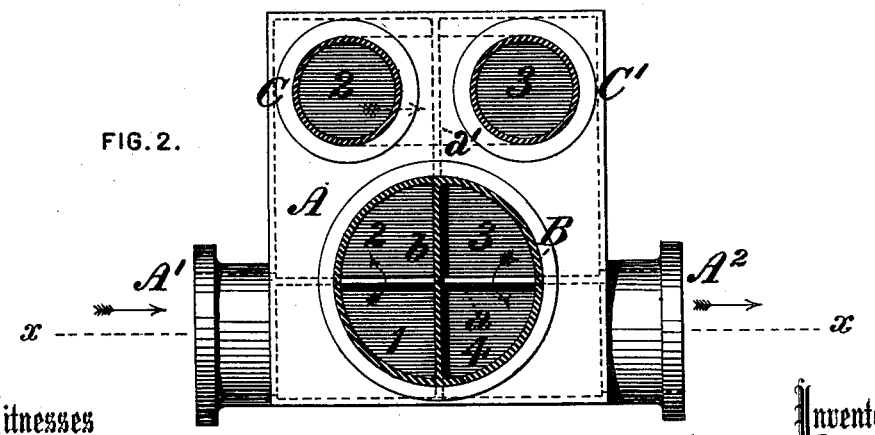


FIG. 2.



Witnesses

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HENRY G. MORRIS, OF PHILADELPHIA, PENNSYLVANIA, ASSIGNOR TO HENRY MORRIS, OF SAME PLACE.

IMPROVEMENT IN BY-PASSES FOR GAS-WORKS.

Specification forming part of Letters Patent No. **200,799**, dated February 26, 1878; application filed December 28, 1877.

To all whom it may concern:

Be it known that I, HENRY G. MORRIS, of the city and county of Philadelphia, in the State of Pennsylvania, have invented certain new and useful Improvements in By-Passes for Gas-Works, of which the following is a specification:

The object of my invention is to simplify the construction of a by-pass, and reduce its cost and the space which it occupies in relation to the exhauster with which it is connected; to which ends my improvements consist in combining a case or chest having supply and discharge nozzles, partitions dividing said case into four compartments, a movable cap or regulator, by which communication may be established between the supply and discharge nozzles, either directly through the two compartments with which said nozzles respectively communicate, or indirectly through all four of the compartments of the case, and through suction and discharge pipes, connecting an exhauster with two of the compartments of the case, all as hereinafter more fully set forth.

In the accompanying drawings, Figure 1 is an isometrical view of a by-pass embodying my improvements, in section, at the line *x x* of Fig. 2; and Fig. 2, a plan or top view of the same, with the cap and the suction and discharge pipes of the exhauster in section.

To carry out my invention, I provide a rectangular case or chest, A, which is divided by two partitions, *a a'*, placed at right angles with each other, and extending from top to bottom of the case, into four compartments, 1 2 3 4.

A supply-nozzle, A^1, is formed upon or secured to the compartment 1, and a discharge-nozzle, A^2, is similarly connected to the compartment 4.

A cylindrical cap or regulator, B, which is closed at top and open at bottom, and divided into two equal parts by a central partition, *b*, is mounted upon the top of the case A, above an opening of corresponding diameter, its center being coincident with the intersection of the partitions *a* and *a'*. The cap B is fitted so as to have the capacity of movement through an arc of ninety degrees around its center, for a purpose presently to be described.

A vertical suction-pipe, C, is connected at bottom to the compartment 2, and at top to an exhauster, D, which is preferably of the well-known and approved class, in which exhaustion is effected by the action of a jet or current of steam admitted through a supply-pipe, *d*, to an internal cone or nozzle, *d'*.

I do not confine myself, however, to an exhauster of this description, as a different construction may be similarly combined with the by-pass.

The discharge-pipe C' of the exhauster is connected at top to the latter, and at bottom to the compartment 3 of the case.

In operation, the cap or regulator being in the position shown in the drawings—that is to say, with its partition *b* in line with the partition *a'* of the case—the gas from the retorts or condenser enters the compartment 1 through the supply-nozzle A, and, by the action of the exhauster, is drawn through one-half of the cap B over the partition *a* into the compartment 2; thence through the suction-pipe, exhauster, and discharge-pipe into the compartment 3, and through the other half of the cap B, over the partition *a'*, into the compartment 4, whence it passes through the discharge-nozzle A^2 to the scrubber or purifier.

When from any reason it becomes necessary or advisable to shut off the supply of gas from the exhauster, the cap B is turned so that its partition *b* stands in line with the partition *a*, and the gas then passes directly from the compartment 1, over the partition *a'*, to the compartment 4 and discharge-nozzle A^2, without entering the compartments 2 and 3 or the exhauster D.

In the use of my improvements I am enabled to obviate the necessity of the series of valves and bends by which the exhausters and by-passes generally employed are connected, and obtain the advantages of corresponding accessibility to the exhauster for renewal or repair, reduction of space occupied by the apparatus, and economy in cost of construction.

I claim as my invention and desire to secure by Letters Patent—

The combination of a case or chest divided by partitions into four chambers, and having supply and discharge nozzles communicating with two of its chambers, respectively, an exhauster having its suction and discharge pipes respectively connected to the other two chambers, and a movable regulator having a partition registering with the partitions of the case, so as to establish communication between the supply and discharge nozzles, either directly or intermediately through the exhauster, substantially as set forth.

HENRY G. MORRIS.

Witnesses:
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