# P. MIHAN.

## APPARATUS FOR COMBINING AERIAL CURRENTS.

No. 194,782. Patented Sept. 4, 1877.

*Fig. 1.*

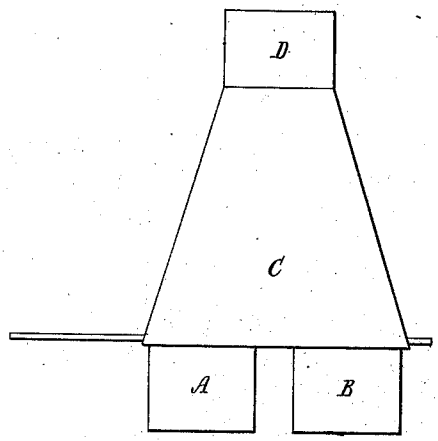



*Fig. 2.*

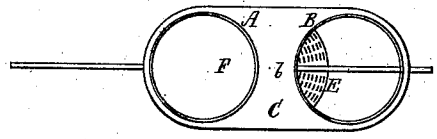



*Fig. 3.*

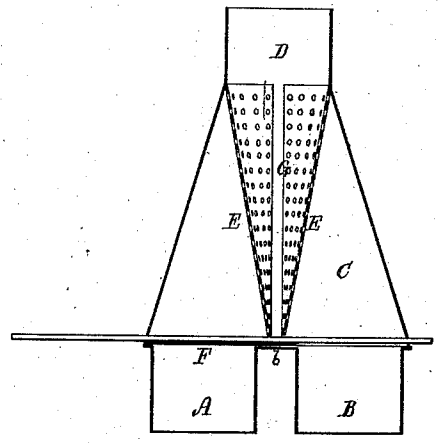
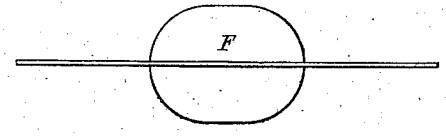



*Fig. 4.*

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# UNITED STATES PATENT OFFICE.

PATRICK MIHAN, OF CAMBRIDGEPORT, MASSACHUSETTS.

## IMPROVEMENT IN APPARATUS FOR COMBINING AERIAL CURRENTS.

Specification forming part of Letters Patent No. **194,782**, dated September 4, 1877; application filed April 24, 1877.

*To all whom it may concern:*

Be it known that I, PATRICK MIHAN, of Cambridgeport, of the county of Middlesex and State of Massachusetts, have invented a new and useful Improvement in Apparatus for Combining Aerial Currents differing in their temperatures; and do hereby declare the same to be described in the following specification and represented in the accompanying drawings, of which—

Figure 1 is a side elevation, Fig. 2 a bottom view, and Fig. 3 a longitudinal section, of the apparatus embodying my invention.

On January 9, 1877, Letters Patent No. 186,051 were granted to me for an apparatus somewhat analogous to that hereinafter explained, though different in having arranged in one only of its pipes one or more foraminous covers, such apparatus having also two dampers to its induction-pipes.

In carrying out my present invention the two induction-pipes or inducts A B open into the base of a tapering box or connection, C, which, at its lesser end, opens into an educt or eduction-pipe, D, and there are extended from the said end across the box, and nearly to its base, and to a position or positions between the two induction-pipes, two foraminous partitions, E E.

Provided the distance between the two induction-pipes be equal to or greater than the diameter of the educt D, there may be substituted for such partitions a foraminous tube having a width or diameter equal to that of the educt.

The induction-pipes A B may have a damper in each, and with such dampers arranged on a single stem or shaft, and so that one damper may stand in a plane at right angles to that of the other; but in lieu of such an arrangement of dampers, which is described and shown in my said patent, I prefer to make use of a single plate or gate, F, which, with its guide-rods, is shown in top view in Fig. 4, it being placed in the connection-box C, and upon its bottom or base *b*, and applied thereto so as to be capable of being moved or slid thereon from end to end thereof. This plate or gate, as shown, is semicircular at each of its ends, and is of a length equal to the diameter of one of the pipes A B, plus the distance between the internal surfaces of the said pipes at their nearest approach to each other. By means of such gate the opening of either induction-pipe into the box C may be entirely closed, while that of the other is entirely open, or each may be partially closed, as will readily be seen by moving the gate endwise in either direction.

If a current of warm air be passing from one and a current of cool air be flowing from the other of the induction-pipes into the connection-box, these currents in no respect can commingle before passing through the foraminous partitions in minute streams. The currents differing in temperature will intermix in the space G, and from thence escape by the educt thereof, their delivery into the box C being regulated or varied by the gate, or by means of dampers applied to the induction-pipes.

The foraminous tube or partitions become also a strainer to separate from the aerial currents passing through them much dust or light extraneous matters, and thereby prevent such from being forced into the apartment or apartments to which the eduction-pipe may lead.

I sometimes make the base of the box C rectangular, with square or rectangular openings for the induction-pipes, in which case I make the gate rectangular. This enables me to open either induct to the same extent that I may close the other by the gate, whatever distance such gate may be moved on the base, such, however, not being the case when the openings of the inducts are circular and the gate is semicircular at its ends.

From the above it will be seen that one distinctive feature of difference between my present herein-described apparatus and that hereinbefore mentioned as patented to me is that the foraminous partitions come together directly between the two inducts, so as to prevent any communication of one induct with the other, except through such partitions. Thus neither current of air passing into the box C can impinge against or interfere with the other until both have passed through the partitions. This is advantageous in the opera-

tion of the apparatus. The gate also has advantages in some respects or situations over the two dampers; therefore,

I claim as my invention as follows:

1. The inducts, the educt, and their connection-box, arranged as described, in combination with the foraminous strainer or partitions extended from the educt to or nearly to the base of the box and between the inducts, all being substantially as set forth.

2. The combination of the single gate, as described, with the connection-box and the inducts, foraminous strainer or partitions, and educt, all being substantially as set forth.

PATRICK MIHAN.

Witnesses:
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J. R. SNOW.