

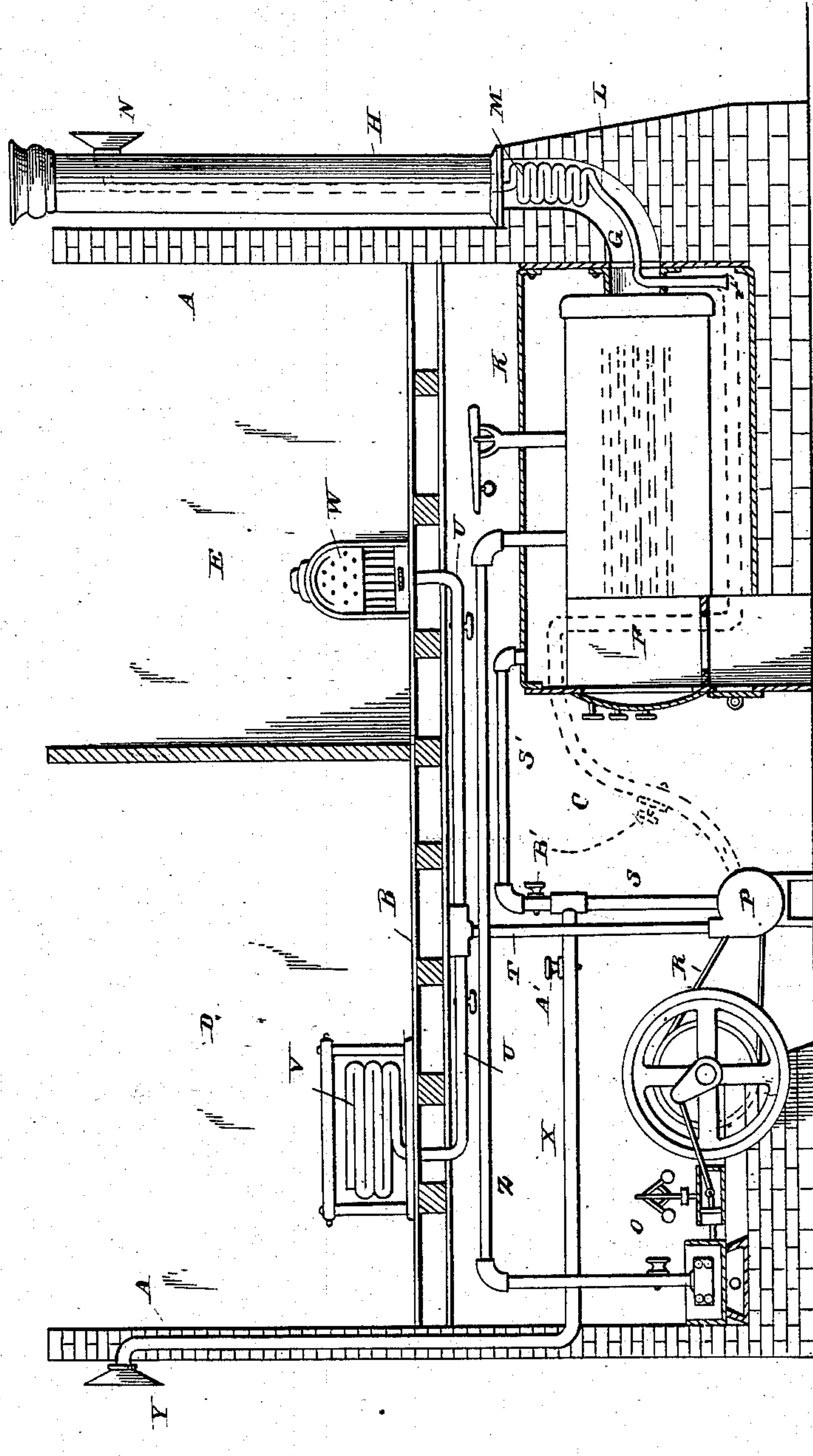
No Model.

T. McGRORY.

APPARATUS FOR VENTILATING, HEATING, AND COOLING BUILDINGS.

No. 284,140.

Patented Aug. 28, 1883.



Witnesses.
Edwin L. Georce
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UNITED STATES PATENT OFFICE.

THOMAS McGRORY, OF PHILADELPHIA, PENNSYLVANIA, ASSIGNOR OF
ONE-HALF TO HOWARD BANES, OF SAME PLACE.

APPARATUS FOR VENTILATING, HEATING, AND COOLING BUILDINGS.

SPECIFICATION forming part of Letters Patent No. 284,140, dated August 28, 1883.

Application filed November 2, 1882. (No model.)

To all whom it may concern:

Be it known that I, THOMAS McGRORY, of Philadelphia, in the county of Philadelphia, and in the State of Pennsylvania, have invented certain new and useful Improvements in Apparatus for Ventilating, Heating, and Cooling Buildings, &c.; and I do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawing, and to the letters of reference marked thereon, making a part of this specification.

This invention relates to certain improvements in heating, ventilating, and cooling buildings, and it has principally for its object to utilize the waste heat from steam-boiler or other furnaces for heating and ventilating purposes, as more fully hereinafter specified. This object I accomplish by the means illustrated in the accompanying drawing, in which is represented a sectional view of my invention.

The letter A indicates the walls of a building of any description; B, one of the floors thereof; C, a room or a cellar in the lower part of the building, and D E two upper rooms.

The letter F indicates a steam-boiler, which may be of any description, but which is in the present instance in the form of an ordinary horizontal tubular boiler, having a flue, G, for the escape of the products of combustion, and the usual smoke-stack, H. The said boiler is surrounded by a jacket, K, into which extends the lower end of a pipe, L, which is extended up through the smoke-stack, and is provided with a coil or series of return-bends, M, the upper end extending laterally through the smoke-stack and terminating in a funnel, N, at its upper end, as indicated. The boiler is located in the lower room or cellar, in which is also located a steam-engine, O, the fly-wheel of which drives a fan-blower, P, by means of a belt, R. The induction-port of the blower connects, by means of pipe S and S', with the upper part of the jacket before mentioned. From the induction-port of the blower extends a pipe, T, which connects with branches U, entering the respective rooms above, and connecting with a radiating-coil in one room, as indi-

cated by the letter V, and with a register, W, in the other.

The letter X indicates a pipe leading from the pipe S up through the wall of the building and projecting laterally, where it terminates in a funnel, Y.

The letter Z indicates the pipe leading from the steam-space of the boiler to the valve-chest of the engine. The pipes S and X are provided with valves A' and B', as shown.

Instead of passing the pipe L into the jacket K and there terminating it, the said pipe may be extended to the exhaust-fan, as seen and indicated by the dotted lines, in which instance it is carried through the fire-box, and then to the fan. When this form of construction or arrangement is adopted, the pipe S' and the jacket are dispensed with, and a cock, B', is applied to the pipe. When the casing is not employed, the pipe L may be made to enter through the boiler-space or the fire-chambers, or through both to the fan-case.

The operation of my invention is as follows: The hot products of combustion, passing out through the smoke-stack, heat the pipe and coil leading through the same. The air drawn through the said pipe and coil by the exhaust-fan passes through the jacket, or, in some instances—as when the said jacket is dispensed with—directly through the said pipe, being heated on its way, as above indicated, and may be delivered to the radiator to heat the rooms above in winter by opening the cock B', the cock A' being closed. In warm weather the cock B' is closed and the cock A' opened, permitting cold air to be supplied to the rooms above.

In some instances I propose to use a water-motor to operate the exhaust-fan.

I am aware that it is not broadly new to divide a smoke-stack or chimney in such a manner as to form smoke and air conduits, and do not for this reason desire to be understood as claiming such.

Having thus described my invention, what I claim, and desire to secure by Letters Patent, is—

The combination, in an apparatus for ventilating, heating, and cooling buildings, of the

exhaust-fan and blower, and the hot-air pipe
for delivering heated air to the said blower,
with the cold-air pipe extending from the
outer air and connecting with the hot-air pipe,
5 and the pipe extending from the blower to
the registers located in the building, the said
pipes being provided with valves, by means
of which hot air may be shut off and the cool
air turned on, or vice versa, substantially as
10 specified.

In testimony whereof I affix my signature,
in presence of two witnesses, this 25th day of
September, 1882.

THOS. McGRORY.

Witnesses:

JAS. McGEOGH,
T. J. CORE.