D. MILSON.

Hot-Air Furnace.

No. 213,676. Patented Mar. 25, 1879.

FIG. 1.

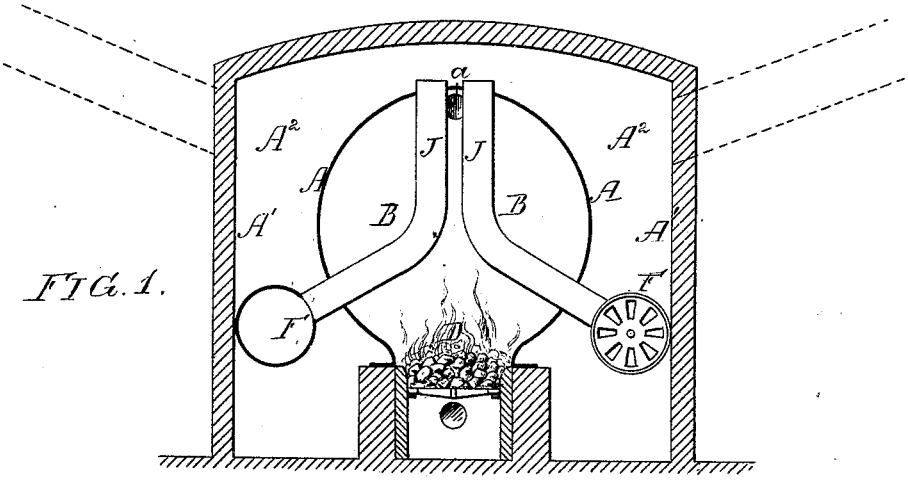


FIG. 2.

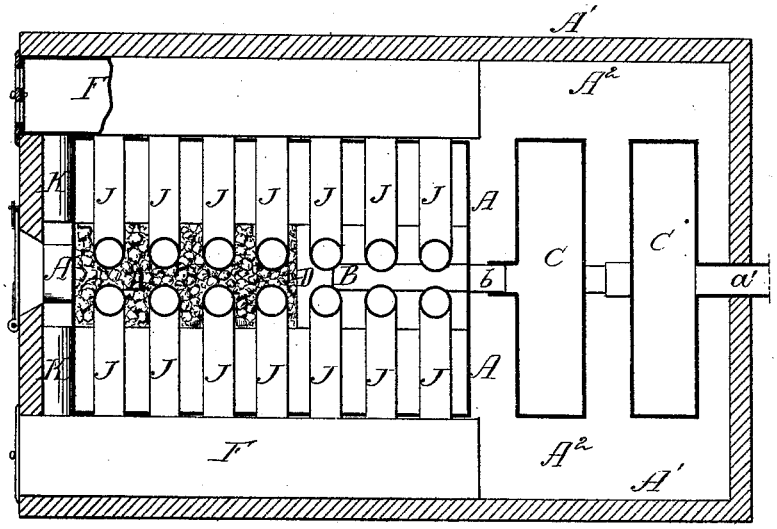
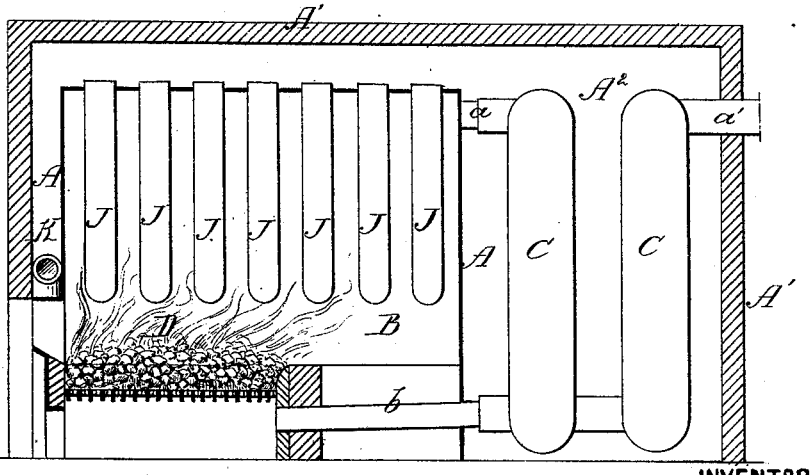


FIG. 3.



WITNESSES

Harry Smith

E. M. Dunn.

INVENTOR

Daniel Milson

by his Attys. Howson and Sons

UNITED STATES PATENT OFFICE.

DANIEL MILSON, OF CATASAUQUA, PENNSYLVANIA.

IMPROVEMENT IN HOT-AIR FURNACES.

Specification forming part of Letters Patent No. **213,676**, dated March 25, 1879; application filed October 24, 1878.

To all whom it may concern:

Be it known that I, DANIEL MILSON, of Catasauqua, Lehigh county, Pennsylvania, have invented a new and useful Improvement in Heaters, or Hot-Air Furnaces, of which the following is a specification:

The object of my invention is to so construct a heating-furnace that large volumes of air may be rapidly and highly heated; and this object I attain in the manner which I will now proceed to describe, reference being had to the accompanying drawings, in which—

Figure 1 is a vertical section of my improved heater; Fig. 2, a sectional plan view of the same, and Fig. 3 a longitudinal vertical section.

A is the casing of the combustion-chamber B, this casing being inclosed by an outer casing, A^1, so as to leave an intervening chamber, A^2, from which hot air is drawn off through the pipes shown by dotted lines. B is the combustion-chamber, which is supplied with products of combustion from a fire-place, D, at the front, the said products of combustion escaping from the chamber B through a pipe, *a*, and then passing through radiators C C, prior to their passage to the chimney through a pipe, *a'*.

A dust-pipe, *b*, communicates with the ash-pit, to carry off the dust from the same when the fire is being raked.

Arranged on both sides of the casing A, and within the outer casing, A^1, are cylinders F, the front ends of which extend through the front wall of the outer casing, and are provided with suitable dampers, so that the access of cold air to said cylinders may be governed.

From each cylinder F project a number of pipes, J, which penetrate the sides of the casing A, and are bent upward within the combustion-chamber, so as to emerge from the top of the casing A at or near the longitudinal center of the same.

Those portions of the pipes J within the chamber B are exposed to the direct action of the products of combustion in their course from the fire-place to the point of exit, so that the air in passing through said pipes must necessarily become highly heated before it escapes into the hot-air chamber A^2, surrounding the casing A. The latter casing itself becomes highly heated, and thus aids materially in heating the air which surrounds it.

From each cylinder F, near the front end of the same, extends a straight pipe, K, these pipes supplying cold air to the space which intervenes between the front of the casing A and the front wall of the outer casing, and this air, in its upward passage, comes into intimate contact with the highly-heated front plate of the casing A, and has its temperature increased thereby.

The cylinders F are of such a size that an ample supply of fresh air is continually fed to the pipes J; and, owing to the fact that the pipes on one side are directly opposite to those on the other side of the furnace, I am enabled to arrange the pipes on either side as closely together as may be desired, thereby overcoming a serious objection to that class of heaters in which the pipes pass diagonally across the combustion-chamber.

I claim as my invention—

1. The combination of the casing A, forming the combustion-chamber B of a heater, the air-supply cylinders F, and the two sets of pipes J, which extend through the sides of the casing A, and are bent upward within the combustion-chamber, so as to emerge at the top of the said casing A, as set forth.

2. The combination of the casing A of the combustion-chamber, the cylinders F, and the pipes K, arranged adjacent to the front plate of the casing A, as specified.

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

DANIEL MILSON.

Witnesses:

ALEX. PATTERSON,

HARRY SMITH.