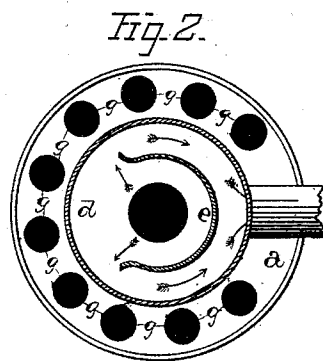
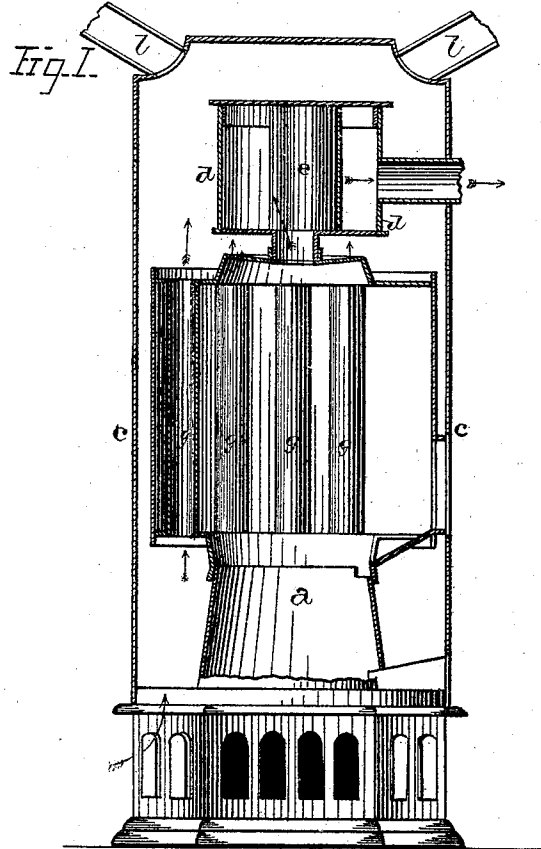


W. S. STEVENSON.
Hot-Air Furnaces.

No. 147,444.

Patented Feb. 10, 1874.



WITNESSES=

Geo. E. Hutchinson
W. W. J. Murphy

INVENTOR.

W. S. Stevenson
per
F. A. Lehmann, atty.

UNITED STATES PATENT OFFICE.

WALTER S. STEVENSON, OF PHILADELPHIA, PENNSYLVANIA.

IMPROVEMENT IN HOT-AIR FURNACES.

Specification forming part of Letters Patent No. **147,444**, dated February 10, 1874; application filed December 23, 1873.

To all whom it may concern:

Be it known that I, WALTER S. STEVENSON, of Philadelphia, in the county of Philadelphia and State of Pennsylvania, have invented certain new and useful Improvements in Heating-Furnaces; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it pertains to make and use it, reference being had to the accompanying drawings, which form part of this specification.

The nature of my invention relates to an improvement in heating-furnaces; and it consists in a heating-drum placed upon the top of a furnace, in which are inclosed a number of air-tubes, the upper ends of which tubes open around the base of the drum. In this drum is placed a deflector or wall, which throws the heat and products of combustion outward against the walls of the drum, so that, as the air rises from the tubes and strikes against the drum, it will be still further heated before passing off up the pipes.

Figure 1 is a vertical section of my furnace. Fig. 2 is a horizontal section taken through the heating-drum.

a represents the ordinary furnace, which is inclosed by the hood or casing *c*, in the usual manner. Upon the top of the furnace is placed the heating-drum *d*, in which is placed the curved wall or deflector *e*, which throws the heat and products of combustion outward against the walls of the drum, as shown by the arrows, causing them to pass over a greater space before passing up the chimney, and thus utilizing the heat in heating the drum to as high a degree as possible. Placed wholly within the combustion-chamber of the

furnace are a number of hot-air tubes, *g*, through which the air rises from below. The upper ends of these tubes open around the base of the drum, as shown in Fig. 2, so that as the heated air rises upward from tubes it strikes against the heated sides of the drum, and is still further heated before it escapes up the pipes *l* to the rooms above. By means of the deflector *e*, placed in the drum *d*, and which throws the heat outward against the sides of the drum, the heat which would otherwise escape uselessly up the chimney is utilized as nearly as possible, heating the drum to such an extent that the hot air from the tubes is still further heated when it strikes against its sides.

I am aware that a heating-drum placed upon the top of a furnace is not new, and I do not desire to claim such; but my invention is intended as an improvement upon this class of heaters.

Having thus described my invention, I claim—

The combination of the furnace *a*, having the air-tubes *g* arranged within the combustion-chamber, the drum *d*, provided with the deflector *e* for throwing the heat outward against its sides, and the inclosing-hood *c*, the parts being arranged as shown, whereby the hot air rising from the tubes *g* is still further heated before its escape up the pipes, substantially as set forth.

In testimony that I claim the foregoing, I have hereunto set my hand and seal this 8th day of December, 1873.

WALTER S. STEVENSON. [L. S.]

Witnesses:

JOHN H. CAHILL,
ABRAM H. HEMMERLY.