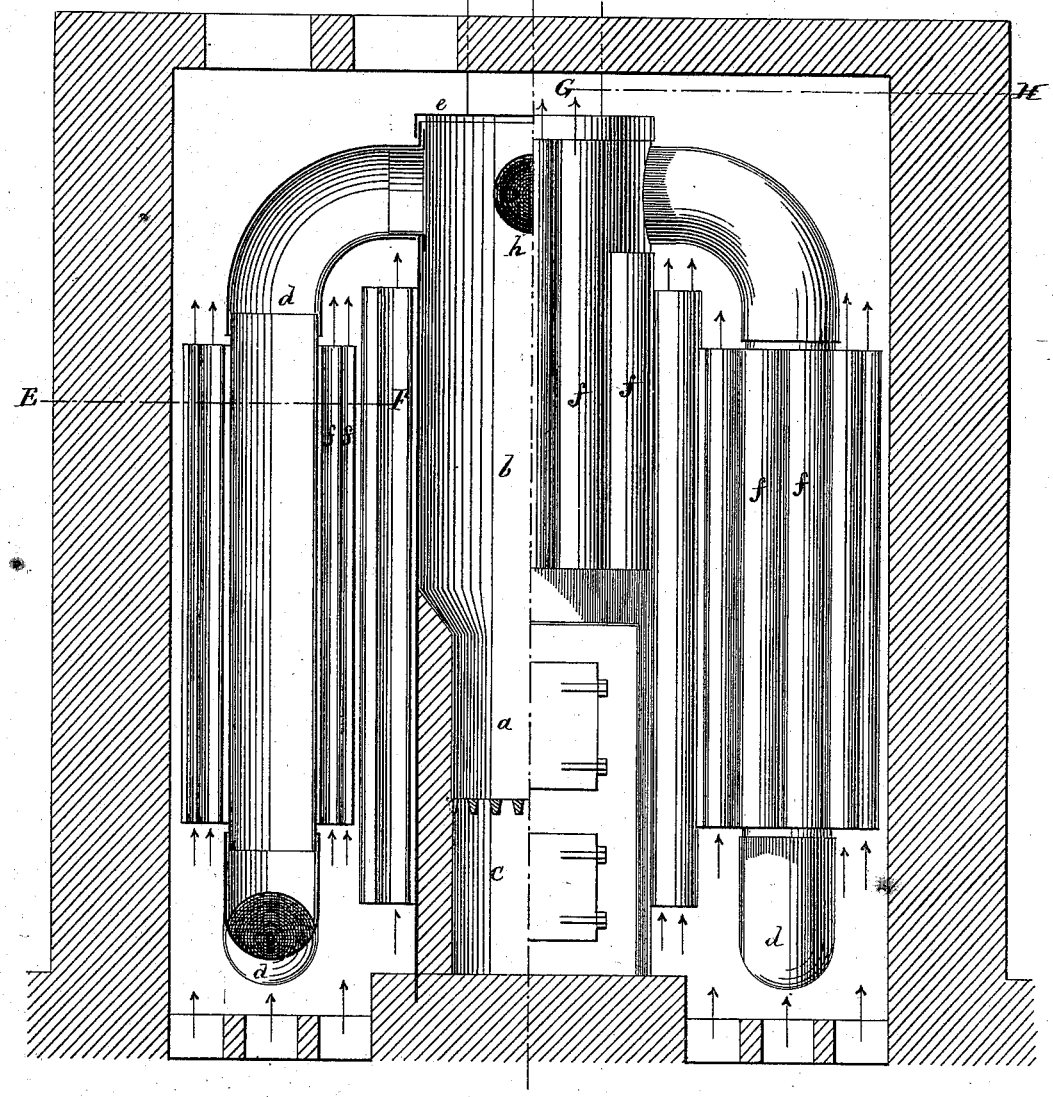
2 Sheets--Sheet 1.

L. DUPORT.

Hot-Air Furnace.

No. 162,907. Patented May 4, 1875.

Fig: 1



Witnesses:

A. Moraga.
F. V. Briesen

Inventor:

Louis Duport
by his attorney
A. V. Briesen

THE GRAPHIC CO. PHOTO-LITH. 39 & 41 PARK PLACE, N.Y.

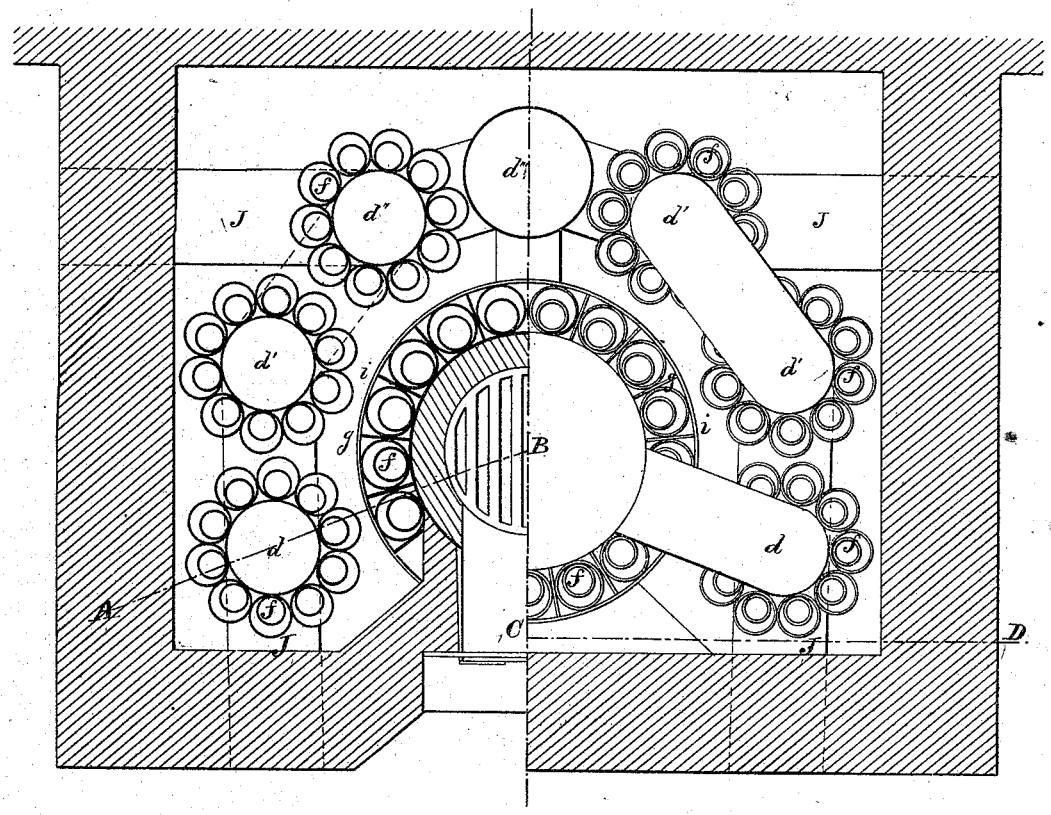
2 Sheets--Sheet 2.

L. DUPORT.

Hot-Air Furnace.

No. 162,907. Patented May 4, 1875.

Fig. 2



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UNITED STATES PATENT OFFICE.

LOUIS DUPORT, OF LYONS, FRANCE.

IMPROVEMENT IN HOT-AIR FURNACES.

Specification forming part of Letters Patent No. **162,907**, dated May 4, 1875; application filed August 28, 1874.

To all whom it may concern:

Be it known that I, LOUIS DUPORT, of Lyons, France, have invented a new and Improved Hot-Air Stove, of which the following is a specification:

My invention relates to an improvement in hot-air stoves or furnaces by the introduction of sheet-iron plates rolled into double eccentric hot-air pipes, to increase the heating-surface of the stove or furnace.

I have represented in the accompanying drawings a hot-air stove with my improvements attached thereto, Figure 1 being a vertical section of said stove through the line A B C D of Fig. 2, and Fig. 2 being a horizontal section of the same, through the line E F G H of Fig. 1.

In these two figures the same letters of reference stand for the like parts wherever they occur.

a is the fire-box; *b*, a sheet-iron cylinder, forming the casing for the fire-box and the ash-pit; C, the ash-pit of the stove. *d d' d'' d'''* are pipes for conducting the burnt gases downwardly from the upper part of the cylinder *b*. *e* is the top of the cylinder *b*. *f f* are air-flues formed of double pipes of sheet-iron, one placed in the other, for the purpose the purpose of increasing the heating-surface, the inner pipe being eccentric to the outer, and in contact therewith, as shown. *g g* are radial sheet-iron partitions, which may be used to communicate the heat of the cylinder *b* to the double pipes *f*, and the sheet-iron casing *i*, as indicated in Fig. 2. *h* is a direct smoke-flue provided with a damper to be opened at starting a fire. Otherwise the damper is closed, so that the gases may pass downward in the pipes *d d'*, &c. *i* is a sheet-iron casing around the coiled sheets or double pipes *f* that embrace the cylinder *b*. *j j j j* are sweeping-pipes leading into the lower parts of the pipes *d d'*, &c.

The radiating heat crosses but does not heat the metallic surfaces as well as direct bodily contact of metal with metal, and furthermore heat is more thoroughly transmitted to the ascending air by direct contact with hot metal. It is therefore advisable to obtain the largest practicable proportion of metallic heating-surface. In order to do this I arrange around the cylinder *b*, and between the radial partitions *g* and around the pipes *d d' d'' d'''*, the metal tubes *f f*, forming double eccentric pipes, so that the inner pipe is heated by direct contact with the outer, which again, at any suitable point of its circumference *d*, is in direct contact with the cylinder *b* or *d*, from which it derives heat by contact.

I do not confine myself to the particular arrangement of stove or furnace herein described, as my invention of double eccentric air pipe can be applied to any suitable stove, furnace, or heating apparatus.

I claim as my invention—

The double eccentric air-flue *f* arranged in a stove or furnace, and formed of double pipes, one placed within the other, substantially as and for the purpose described.

LOUIS DUPORT.

Witnesses:

LOUIS ROUS,

HENRY ANGELIER.