J. P. DAUTH.
Heater.

No. 199,803. Patented Jan. 29, 1878.

Fig. 1

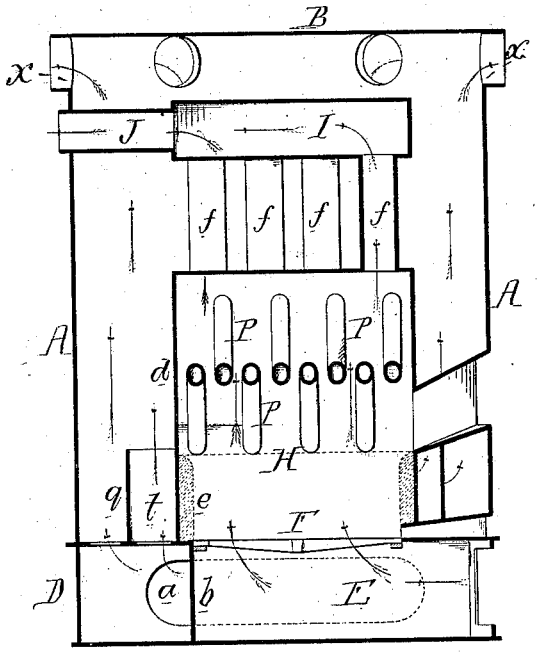


Fig. 2

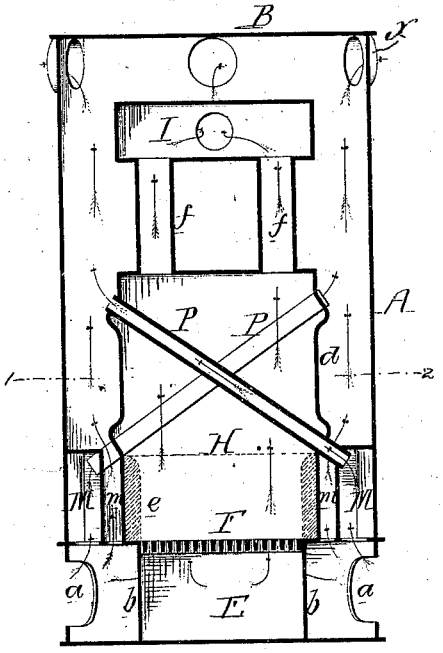
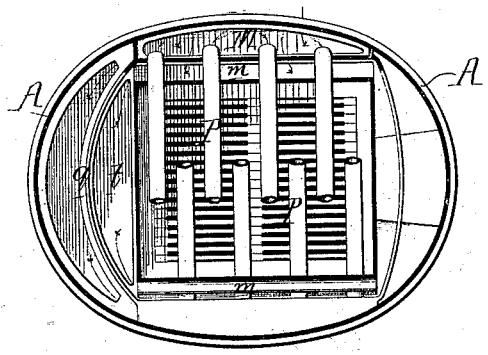


Fig. 3



Witnesses
Richard L. Gardiner
Harry Smith

Inventor
John P. Dauth
by his Attorneys
Howson & Howson

UNITED STATES PATENT OFFICE.

JOHN P. DAUTH, OF READING, PENNSYLVANIA, ASSIGNOR OF ONE-HALF HIS RIGHT TO FRANCIS JOSEPH OBERT, OF SAME PLACE.

IMPROVEMENT IN HEATERS.

Specification forming part of Letters Patent No. **199,803**, dated January 29, 1878; application filed December 8, 1877.

To all whom it may concern:

Be it known that I, JOHN P. DAUTH, of Reading, Pennsylvania, have invented a new and useful Improvement in Heaters, of which the following is a specification:

The object of my invention is to construct a simple and economical heater having a larger air-heating capacity than heaters of the ordinary construction.

In the accompanying drawing, Figure 1 is a vertical section of my improved heater; Fig. 2, a transverse vertical section, and Fig. 3 a sectional plan on the line 1 2.

A is the outer casing of the heater, and is preferably of the oval form illustrated in Fig. 3. B is the top of the heater, and D is the base, in which are openings *a* for the admission of cold air. Within the base is a casing, *b*, of the ash-chamber E, which extends outward to the front of the casing A, where there is an opening furnished with a suitable door and register. On the top of the ash-chamber is a grate, F, and above the latter is the casing *d* of the combustion-chamber H, the latter containing a fire-pot, *e*, (shown by dotted lines,) and communicating at the top through pipes *f f* with the chamber I, and the latter with the outlet-pipe J, communicating with the chimney. Above the base of the heater there are two chambers, M M, one on each side of the combustion-chamber, between which and each of the said chambers M M there is a passage, *m*, through which air from the base can pass upward into the interior of the casing A. Air from the base can also pass into each of the chambers M, and thence, through inclined tubes P, which cross the combustion-chamber, into the casing A. At the rear of the combustion-chamber there is a shield, *q*, so that a portion of the air from the base may pass upward near the rear of the casing of the said combustion-chamber, and may be highly heated by contact therewith.

The air admitted to the chambers M M passes rapidly therefrom through the inclined tubes D D, and there being exposed to the direct action of the products of combustion, a high degree of heat must be imparted to the air before it reaches the main hot-air chamber in the casing.

The volumes of air which take their courses through the passages *m m* and *t* are also highly heated by contact with the casing of the combustion-chamber, and additional heat is imparted to the air within the casing A by the casing of the combustion-chamber, the pipes *f f*, and the casing of the chamber I.

The upper portion of the casing A is provided with any desired number of branches, *x*, for receiving the ends of the distributing-pipes.

I claim as my invention—

1. The combination of the casing A, inclosing a hot-air chamber, the closed chambers M near the bottom of the same, the combustion-chamber H, and the tubes P, which extend diagonally through the combustion-chamber, communicate at their lower ends with the chambers M, and at their upper ends with the hot-air chamber, as specified.

2. The combination of the casing A, combustion-chamber H, the tubes P, chambers M, shield *q*, and passages *m* and *t*, all substantially as specified.

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

JOHN P. DAUTH.

Witnesses:

EDWIN SHALTER,

ARNOLD DAUTH.