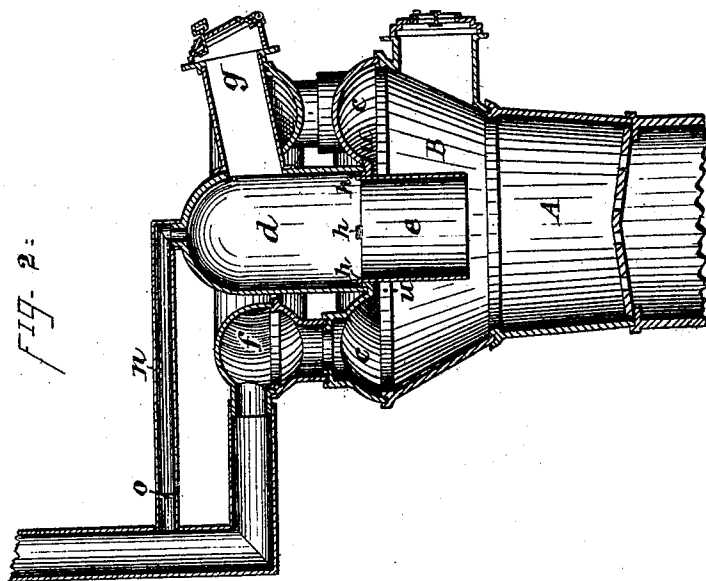
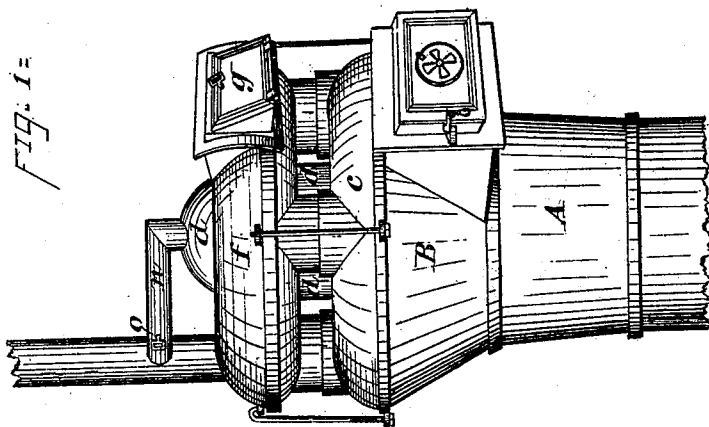


J. F. PEASE.
HOT-AIR FURNACE.

No. 171,846.

Patented Jan. 4, 1876.



WITNESSES

INVENTOR

Christian Holmstrupp John F. Pease

Chas. H. Hey

per C. Laass Atty.

UNITED STATES PATENT OFFICE

JOHN F. PEASE, OF SYRACUSE, NEW YORK.

IMPROVEMENT IN HOT-AIR FURNACES.

Specification forming part of Letters Patent No. **171,846**, dated January 4, 1876; application filed December 8, 1875.

To all whom it may concern:

Be it known that I, JOHN F. PEASE, of Syracuse, in the county of Onondaga, in the State of New York, have invented a new and useful Improvement in Hot-Air Furnaces, of which the following, taken in connection with the accompanying drawing, is a full, clear, and exact description.

My invention relates to an improved construction and combination of the integrant parts of a hot-air furnace, which renders the furnace self-feeding, and increases its heating capacity, and at the same time renders it cheap and simple in construction, and capable of being readily taken apart.

In the accompanying drawing, Figure 1 is an exterior view of that portion of the furnace to which my improvements are applied; and Fig. 2, a transverse section of same, showing more fully the construction and combination of the several parts.

Similar letters of reference indicate corresponding parts.

A is the fire-pot; B, the combustion-chamber, increasing in circumference from its base to its junction with the cap c. The latter is of the form of a top section of an annular flue, convexed or semicircular in cross-section of its body, and supported at its outer edge in a cup-shaped flange on the top edge of the combustion chamber. The inner bottom edge or small circumference of the annular cap c is provided with an upward-projecting flange, which forms an annular cap or U-shaped groove, *u*, extending around the said edge. This groove *u* answers two purposes, namely: First, it supports the feed-pot *e*, which is suspended therefrom by hooks *h* cast on the top edge of the feed-pot; and, second, it furnishes a sand-joint for the dome *d*, which rests therein. This dome, for the purpose of facilitating the molding and casting of same, and its attachment and removal from the furnace, is made of a straight cylindrical body and hemispherical top, and is void of flanges or projections on its sides. It projects upward through the circular opening formed by the annular smoke-flue *f* mounted on top of the cap *c* to an elevation of about two or three inches above the highest point of the feed-door, *g*, and forms a chamber at the top for

gases that may ascend in the feed-pot, *e*, which is directly under it, and of which it is an extension. By the combination of the feed-pot *e* with the flaring combustion-chamber B and cap *c*, in the manner shown and described, the heat is thrown out against the sides of the furnace without in the least impairing the draft, and by the novel and simple construction of the feed-pot *e* and cap *c* and their connection the feed-pot is easily applied or removed, and by the combination of the dome *d* with the parts aforesaid, and its position in the furnace, and its height relative to the feed-door and the furnace, as herein described, the furnace is rendered self-feeding, and its radiating-surface greatly increased. At the same time the dome is attached to the furnace in such a manner that it can be readily detached and replaced. *n* is a pipe attached to the top of the dome *d*, and extended to the exit-flue or chimney, and provided with a valve or damper, *o*, which is opened to allow the gases that may have accumulated in the top of the dome *d* to escape before opening the feed-door *g*. For the purpose of obtaining greater room for the gases that ascend in the dome the damper *o* is placed some distance from the dome.

Any one of ordinary mechanical skill will perceive at a glance the advantages of this improved construction and combination of the dome, feed-pot, and the cap or ring *c*, which supports them. The feed-pot being the part most exposed to the fire, and requiring removal, is readily removed bodily through the top opening after the dome *d* has been removed, which latter is equally as easy and in like manner accomplished.

By the semicircular form of the body of the cap or ring *c*, and its increased circumference, the radiating-surface of the furnace is greatly increased, and the escape of the heat through the smoke-flue retarded. The feed-pot *e*, throwing the fire out, brings the same more intimately in contact with the cap *c*.

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

1. In combination with the flaring combustion chamber B the annular cap or ring *c*, of semicircular form in cross-section of its body,

and provided with the cup-shaped flange *u* around the bottom edge of the small circumference of the ring, and the feed-pot *e*, having outward-turned hooks *h* on top, engaging the free top edge of the flange *u* aforesaid, constructed substantially as described and shown.

2. The dome *d*, having the lower portion of its body cylindric and the top semicircular in form, and divested of flanges or projections on its sides, in combination with the feed-pot *e*, having outward-turned hooks *h* on top, engaging the free top edge of the flange *u*, an annular cap or ring *c*, of semicircular form in cross-section of its body, and provided with the cup-shaped flange *u*, around the bottom edge of the small circumference of the ring, and the flaring combustion-chamber *B*, all constructed and combined substantially in the

manner shown and described, for the purpose set forth.

3. In combination with the dome *d*, having its top hemispherical in form, and extended above the annular smoke-flue *f* and feed-door *g*, in the manner described and shown, the pipe *n*, having, at a distance from its intersection with the dome, the valve *o*, substantially as and for the purpose specified.

In testimony whereof I have signed my name and affixed my seal, in the presence of two attesting witnesses, at Syracuse, in the county of Onondaga and State of New York, this 2d day of December, 1875.

JOHN F. PEASE. [L. S.]

Witnesses:

E. LAASS.

CHRISTIAN HOLMSTRUPP, Jr.