W. BURROWS.

Hot-Air Furnace.

No. 160,644. Patented March 9, 1875.

Fig. 1.

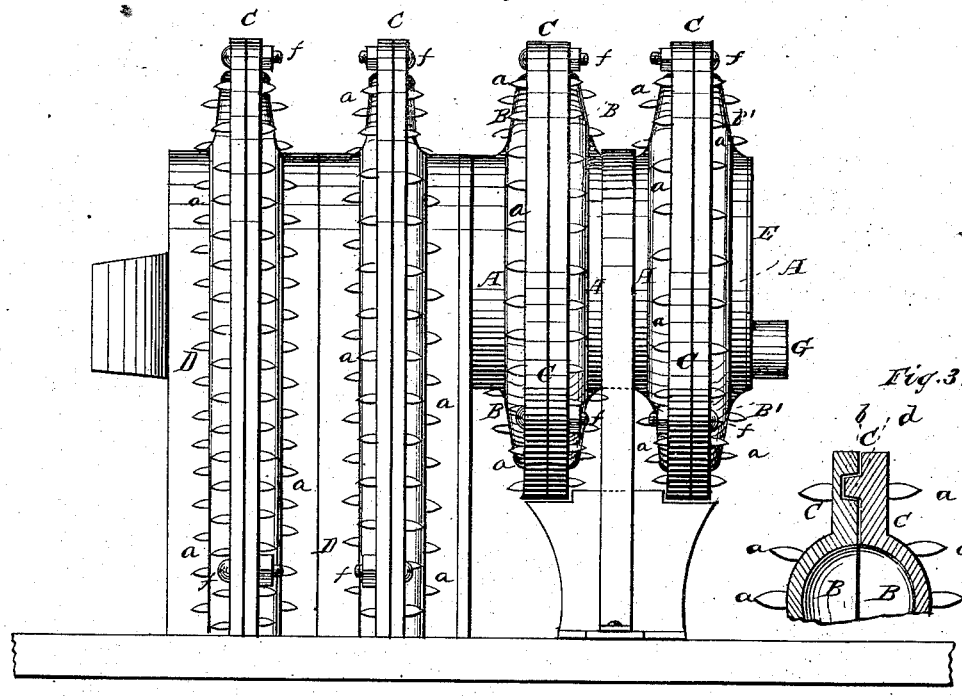


Fig. 3.

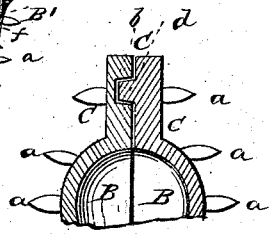
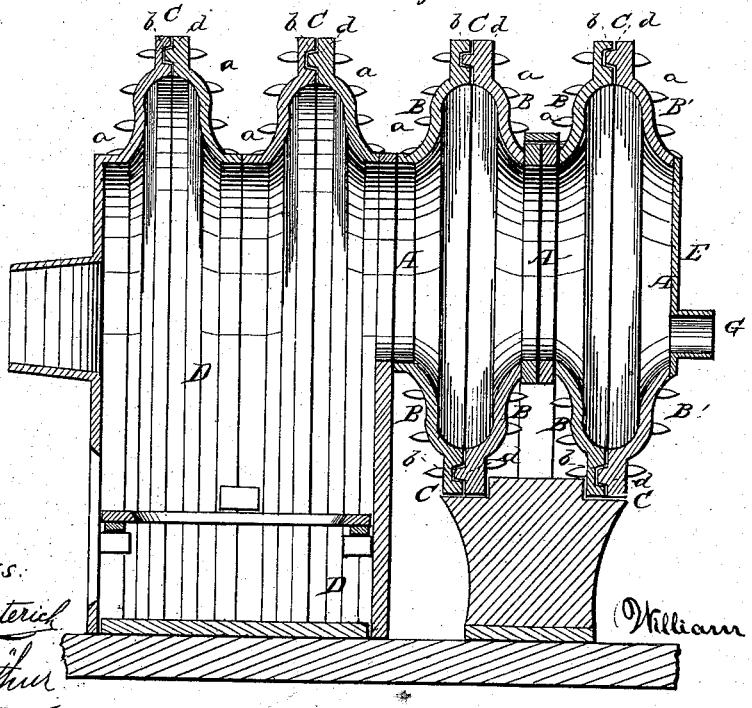


Fig. 2.



WITNESSES.
P. C. Dieterich
W. McArthur

INVENTOR.
William Burrows.
per
C. H. Watson & Co
ATTORNEYS.

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

UNITED STATES PATENT OFFICE.

WILLIAM BURROWS, OF BROOKLYN, NEW YORK.

IMPROVEMENT IN HOT-AIR FURNACES.

Specification forming part of Letters Patent No. **160,644**, dated March 9, 1875; application filed February 18, 1875.

To all whom it may concern:

Be it known that I, WILLIAM BURROWS, of the city of Brooklyn, in the county of Kings and State of New York, have invented certain new and useful Improvements in Hot-Air Furnaces; and I do hereby declare that the following is a full, clear, and exact description thereof, which will enable others skilled in the art to which it pertains to make and use the same, reference being had to the accompanying drawings, and to the letters of reference marked thereon, which form a part of this specification.

My invention relates to that class of hot-air furnaces which are made in sections and provided with flanges studded with projections, between and among which the air to be heated is made to pass; and the nature of my invention consists in the construction and combination of parts, as will be hereinafter more fully described and pointed out by the claims.

In the annexed drawing, Figure 1 is a side elevation of a device embodying my invention. Fig. 2 is a longitudinal section, and Fig. 3 a detail view, of the same.

The rear sections of my furnace are each formed of a central hub, A, provided at its ends with concave circumferential flanges B B, studded upon the outside with numerous projections *a a*. Around the periphery of each flange B is a rim, C, as shown. One rim in each section is formed with an annular groove, *b*, on the outer side, while the other rim has a corresponding circular bead, *d*. When the sections are put together the bead *d* of one section fits in the groove *b* of the adjoining section, and they are then united by bolts *f f*, passed through the rims C C. D represents the fire-box, and the furnace-sections which surround the same are constructed with their flanges of semicircular form on top, and then running straight down on both sides to the base. Otherwise the flanges are formed and united in the same manner. The rear end of the furnace is formed of a simple studded flange, B′, with a center-plate E, having the smoke-outlet G below the center to retain the same longer in the furnace.

By the construction of the sections as described, the studded flanges are made hollow, allowing the smoke, heat, &c., to pass into the same, heating them more thoroughly than if made solid, as is now generally the case; and, by uniting the sections at the periphery, there is no liability of any injury being caused by the contraction and expansion of the metal.

It will be readily understood that any number of sections may be used, and that the furnace can be enlarged and contracted, as desired, by adding or taking off sections.

I am aware that a furnace provided with solid flanges studded with projections is not new, and I do, therefore, not claim such as my invention.

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

1. The combination, in a furnace, of the rear sections, each having hub A, projections *a*, and concave flanges forming the open spaces between the flanges, all substantially as and for the purpose set forth.

2. The combination of the rear furnace-sections, each consisting of the hub A, concave flanges B, and the rims C C, having projections *a*, grooves *b*, and beads *d*, all substantially as and for the purpose set forth.

In testimony that I claim the foregoing as my own I affix my signature in presence of two witnesses.

WILLIAM BURROWS.

Witnesses:

FENTON ROCKWELL,

CHAS. E. SHEDD.