

T. SHARTS.

Arch-Irons for Furnace Mouths.

No. 146,147.

Patented Jan. 6, 1874.

Fig. 1.

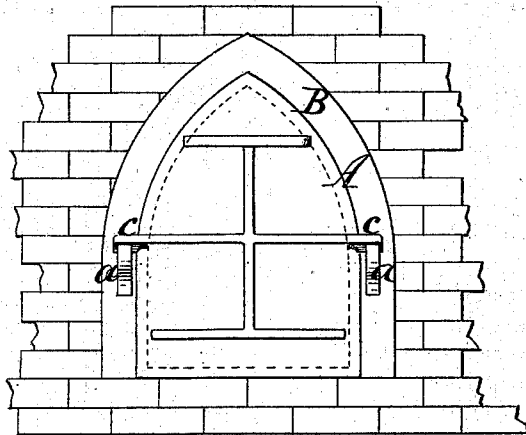


Fig. 2.

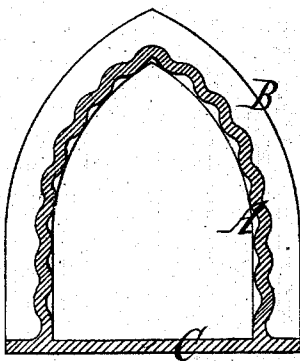
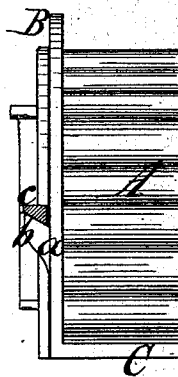


Fig. 3.



Witnesses.

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UNITED STATES PATENT OFFICE

THEODORE SHARTS, OF NEW YORK, N. Y.

IMPROVEMENT IN ARCH-IRONS FOR FURNACE-MOUTHS.

Specification forming part of Letters Patent No. **146,147**, dated January 6, 1874; application filed May 31, 1873.

To all whom it may concern:

Be it known that I, THEODORE SHARTS, of the city, county, and State of New York, have invented a new and useful Improvement in Arch-Irons for Furnace-Mouths; and I do hereby declare the following to be a full, clear, and exact description thereof, which will enable those skilled in the art to make and use the same, reference being had to the accompanying drawing forming a part of this specification, in which drawing—

Figure 1 represents a front view of my invention. Fig. 2 is a sectional rear view of the same. Fig. 3 is a side view of the same.

Similar letters indicate corresponding parts.

This invention relates to an arch-iron, which is corrugated so that, when the bricks from which the arch is formed are placed on said arch-iron, air-chambers are produced, and thereby the heat on both sides of the metal is equalized, and the arch-iron is prevented from warping or cracking by the expansion or contraction. With the arch-iron is combined a flange provided with lugs, the faces or upper ends of which form inclined planes to receive pins projecting from the doors, and made inclined on their under sides, to correspond to the inclines of the lugs, in such a manner that the weight of the door causes the same to slide up close to the face of the flange, and at the same time the door is free to give, if it should warp or expand by the heat, or if it should be desirable from any other cause, thereby avoiding all danger of having the door wedged in too tight, or of having the supporting-lugs broken.

In the drawing, the letter A designates my arch-iron, which, in the example shown, is provided with a flange, B, and with a base-plate, C, but which may be made without such flange and base-plate, according to the position in which it is to be used. The body of my arch-iron is corrugated, as shown in Figs.

2 and 3, so that, when the bricks which form the arch are put on, air-chambers are produced between said bricks and the arch-iron, and thereby the heat throughout the body of the metal which composes the arch-iron is equalized, and the arch-iron is not liable to warp or crack from unequal expansion or contraction. The safety of my arch-iron is still further increased by a certain elasticity which the same attains on account of its corrugated form. On the outside of the flange B of my arch-iron are formed lugs *a*, the upper ends or edges of which form inclined planes *b*, (see Fig. 3,) and on the door D are secured pins *c*, which project beyond its edges, and the under sides of which are inclined to correspond to the inclined planes *b* of the lugs.

If the door is placed against the flange B, and the inclined sides of the pins *c* are made to bear on the inclined planes of the supporting-lugs *a*, the door is held close up to the flange by its inherent gravity; and at the same time, if the door should warp from the heat, or should be forced back from the flange by any inequality in the expansion, or from some other cause, the pins slide up on the inclines of the supporting-lugs, and the danger of having said lugs broken, or of having the door wedged in too tight, is entirely avoided.

My door can always be readily put on or removed, and it can be luted without difficulty.

What I claim as new, and desire to secure by Letters Patent, is—

1. An arch-iron, A, of corrugated form, substantially as described, for the purpose specified.

2. An arch-iron, A, of corrugated form, having a flange, B, and base-plate C, substantially as described, for the purpose specified.

THEODORE SHARTS.

Witnesses:

W. HAUFF,

E. F. KASTENHUBER.