F. BOLENDER.

TUYERE.

No. 169,947. Patented Nov. 16, 1875.

Fig. 1

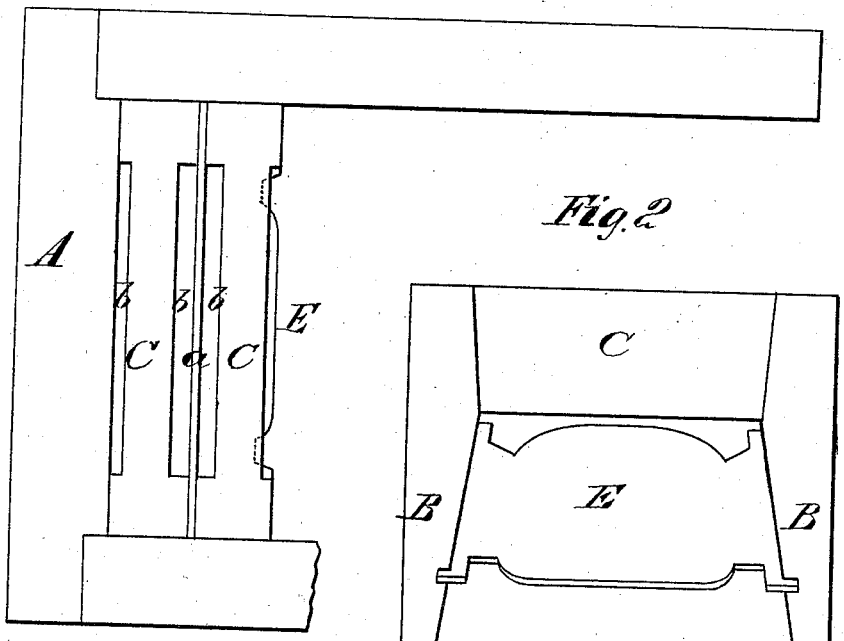


Fig. 2

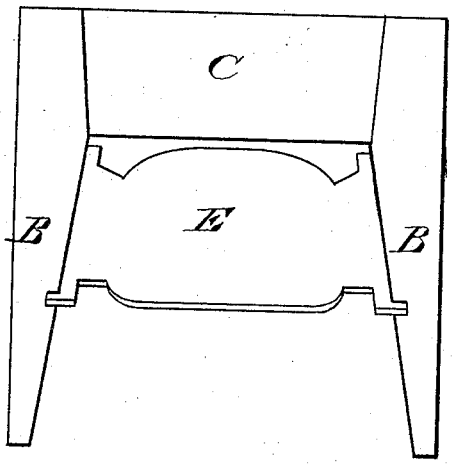
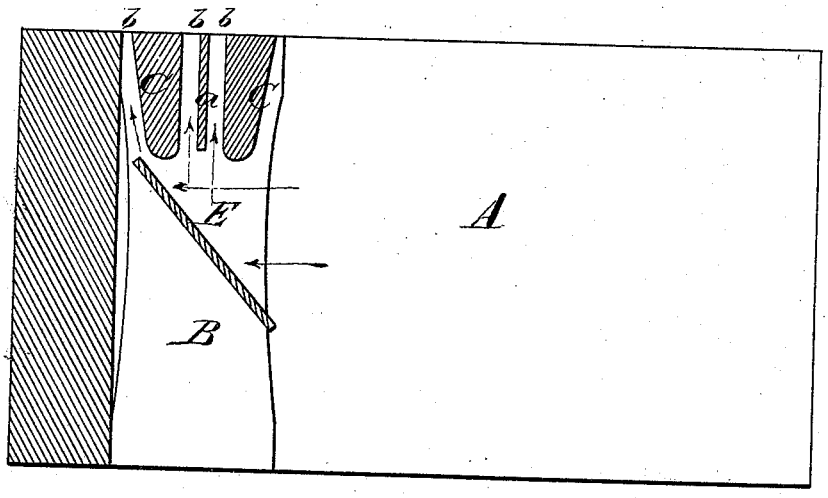


Fig. 3



WITNESSES

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UNITED STATES PATENT OFFICE.

FREDERICK BOLENDER, OF CINCINNATI, OHIO.

IMPROVEMENT IN TUYERES.

Specification forming part of Letters Patent No. **169,947**, dated November 16, 1875; application filed October 23, 1875.

To all whom it may concern:

Be it known that I, FREDERICK BOLENDER, of Cincinnati, in the county of Hamilton and State of Ohio, have invented a new and valuable Improvement in Tuyeres; and I do hereby declare that the following is a full, clear, and exact description of the construction and operation of the same, reference being had to the annexed drawings making a part of this specification, and to the letters and figures of reference marked thereon.

Figure 1 of the drawings is a representation of a plan view of my tuyere, and Fig. 2 is an end view thereof. Fig. 3 is a vertical sectional view of the same.

This invention has relation to tuyeres which are designed for forges and all kinds of blast-furnaces; and the nature of my invention consists in the arrangement inside of a suitable box, with which the neck of the bellows communicates, of removable dividing-bars, forming narrow slots, through which the air is forced, in combination with an inclined distributing-plate, which will direct the currents of air up through the said slots into the fire, as will be hereinafter explained.

In the annexed drawings, A designates a rectangular box, composed of two vertical sides and one end. The opposite open end of the box A is designed to receive the neck of a bellows or other blast-engine, which may be operated either by hand or steam power. Inside of the box A, and at its closed end, is my improved cooler, which may be cast in sections, or in one piece. B B designate two vertical legs, which taper downward, and have horizontal bars C C C constructed on their upper ends. Between the bars C is a thin plate, *a*, which leaves narrow slots *b*, through which currents of air are forced into the bed of coals lying on the hearth. The ends of the slots are directed upward and outward, leaving the upper ends of the legs or supports beveled.

In cross-section the bars C C are thicker at their upper edges than at their lower edges, which latter are considerably reduced, so as not to offer any material resistance to the ascending currents of air. The intermediate plate *a* may be permanently or removably applied between bars C. There will also be a narrow slot, *b*, between the end of the tuyere-box A and the bar C lying next to it. Below the bars C is an inclined plate, E, which directs upward the currents of air thrown into the tuyere-box and distributes the air uniformly through the spaces between the bars C and plate *a*, and the bar C and end of the tuyere-box.

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

The bars C C and divisions *a*, forming slots *b*, and supported by legs B B, in combination with the deflecting-plate E, substantially as described.

In testimony that I claim the above I have hereunto subscribed my name in the presence of two witnesses.

FREDERICK BOLENDER.

Witnesses:
P. R. FORTNEY,
JOHN WILLOUGHBY.