No. 46,526. PATENTED FEB. 21, 1865.

J. R. HARRINGTON.

TWYER.

Fig 2.

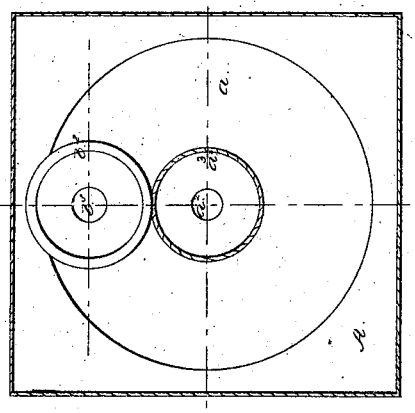
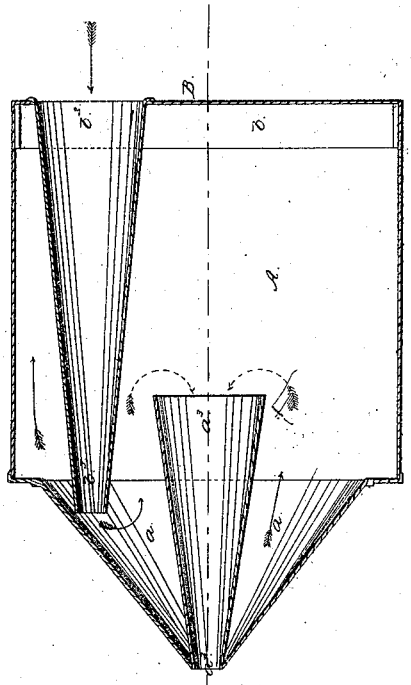


Fig 1.



Witnesses.

Geo. P. Gordon.

Fred. Dowd.

Inventor.

John R. Harrington by

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UNITED STATES PATENT OFFICE.

JOHN R. HARRINGTON, OF BROOKLYN, NEW YORK, ASSIGNOR TO AGNES V. HARRINGTON, OF SAME PLACE.

IMPROVED TUYERE.

Specification forming part of Letters Patent No. **46,526**, dated February 21, 1865.

To all whom it may concern:

Be it known that I, JOHN R. HARRINGTON, of Brooklyn, Kings county, New York, have invented, made, and applied to use a new and and Improved Tuyere for Blacksmiths' Use; and I do declare that the following is a full, clear, and correct description thereof, reference being had to the accompanying drawings, making part of this specification, and to the letters of reference thereon, in which—

Figure 1 is a longitudinal sectional view of my improved tuyere; Fig. 2, an end view of the same.

In the drawings like parts of the invention are indicated by similar letters of reference.

The nature of my invention consists in the construction and operation of an improved tuyere, as hereinafter fully explained.

To enable those skilled in the arts to make and use my invention, I will speak of its construction and operation.

A shows the box, provided at its front end with the projection *a*. This projection *a* is made convex and is provided with the central opening, a^2. Within the interior of this convex projection *a* is inserted the conical tube a^3, inserted at its forward end in the central opening, a^2, and extending for some distance beyond the base of the projection *a*, and terminating in the box A. B shows the back of the box A, provided with the flanges *b* and the opening b^2, in which opening b^2 is inserted and held the conical tube b^3, terminating in the convex projection *a*.

My improved tuyere being thus constructed, and the space between the flanges *b* of the back B and the sides of the box A having been packed with plaster, rendering the box air-tight, the operation is as follows: The air producing the blast passes from the bellows or pipe through the opening b^2 in the back of the box and through the conical tube b^3 into the interior of the convex projection *a*, and thence into the interior of the box A which answers as a reservoir. From this reservoir the air passes through the conical tube a^3 and opening a^2 to the fire.

It will be observed that the convex projection *a*, projecting into the fire, has its exterior sufficiently heated to heat the air introduced into its interior through the conical tube b^3, and that as fast as a body of humid air enters the interior of the projection *a*, it, being heavier than the heated air, is sufficient to drive the same out of the interior of the projection *a* into the interior of the box A, whence it passes to the fire as described.

The peculiar advantages claimed for the present improvement are, that by heating the air prior to its presentation to the fire very much less time is required to produce the desired degree of heat for working, attended by great economy of fuel.

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

In combination with the box A, provided with the projection *a* and tube a^3, the back B, provided with the tube b^3, when the same shall be combined and operated in the manner and for the purpose specified.

JOHN R. his + mark HARRINGTON.

In presence of—

A. SIDNEY DOANE,

A. TURNER.