

March 20, 1928.

A. J. EBNER

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TUYÈRE

Filed Feb. 15, 1926

Fig. 1.

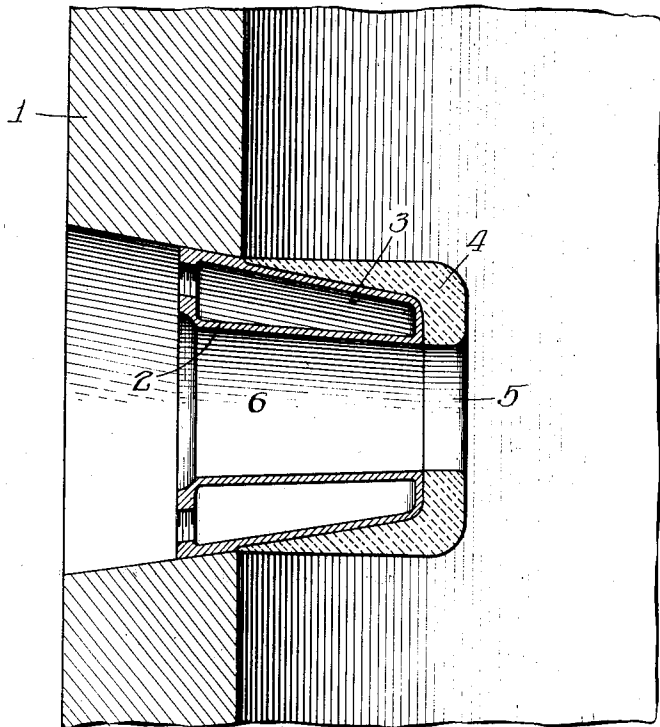
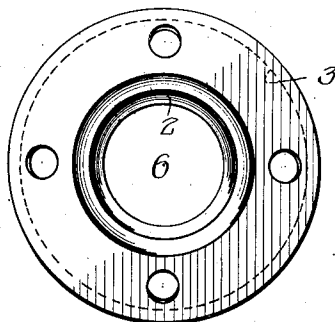


Fig. 2.



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UNITED STATES PATENT OFFICE.

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TUYÈRE.

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The present invention relates to tuyères. More particularly the present invention relates to tuyères suitable for blast furnace practice. In such service the tuyères are subjected to destructive temperatures, and unless specially protected soon burn out, necessitating frequent replacements and consequent delays in operation.

An object of the present invention is to provide a construction of tuyère which has the metal parts thereof fully protected by refractory material.

A further object is to provide a tuyère of the kind referred to which is simple to manufacture.

Further objects will appear as the description proceeds.

Referring to the drawings—

Figure 1 is a cross sectional view of the wall of a blast furnace having one embodiment of the present invention applied thereto; and

Figure 2 is a view in side elevation of the embodiment of the present invention shown in Figure 1.

The numeral 1 indicates the wall of a blast furnace, and the numeral 2 indicates a metal tuyère mounted therein. Said tuyère is provided with the usual water cooling chamber 3, the exterior wall of which is tapered.

According to the present invention, the nose portion, i. e., that portion of the tuyère which extends inwardly of the wall 1, is fully covered and protected by a covering 4 of highly refractory material. Said

covering of highly refractory material may be applied to the exterior of the cooling chamber 3 by molding or any other preferred means, an aperture 5 being of course provided coinciding with the aperture 6 of the tuyère 2.

In service, all of the metal portions of the tuyères are protected against the high temperatures encountered in the blast furnace. There will therefore be no tendency for the metallic portions of the tuyère to burn away and thereby leave the refractory material 4 unsupported.

Though the invention has been described with particular reference to tuyères it will be understood of course that the invention is also applicable to other forms of ports which are subjected to high temperatures and which are liable to be splashed by molten metal.

Though a preferred embodiment of the present invention has been described in detail, it will be clear that many modifications will occur to those skilled in the art. It is intended to cover all such modifications that fall within the scope of the appended claim.

What is claimed is—

In combination, the wall of a furnace, a tuyère mounted in said wall and projecting inwardly of said furnace, said tuyère comprising a metallic portion and a coating of refractory material covering the entire outer wall and nose of said tuyère.

Signed at Chicago, Illinois, this 11 day of Febr., 1926.

ALFRED J. EBNER.