

Feb. 9, 1932.

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1,844,194

BLOWPIPE FOR BLAST FURNACES

Filed Jan. 6, 1930

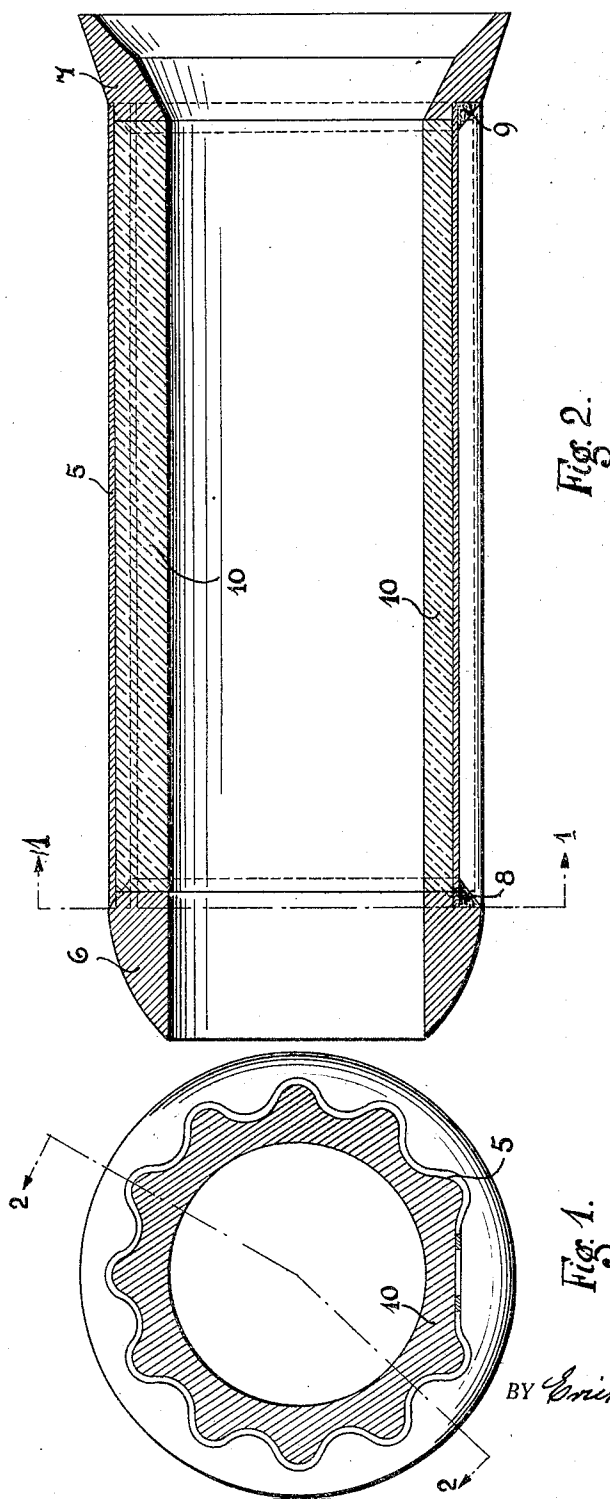


Fig. 1.

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BLOW PIPE FOR BLAST FURNACES

Application filed January 6, 1930. Serial No. 418,766.

The invention relates to blast furnaces and more especially to blow pipes commonly used in connection with such furnaces and serving to establish a connection between the tuyère and the hot wind main or bustle pipe.

The object of the invention is to provide a blow pipe made of a thin plate instead of cast iron.

A further object of the invention is to provide a blow pipe made of thin metal plate and having a lining of heat resisting material in order to protect the thin metal pipe against the high temperature of the wind blown into the blast furnace.

Another object of the invention is to provide the thin metal blow pipe, according to the present invention, on its inner surface with means for holding the heat resisting lining in proper position in the pipe.

Other objects of the invention not specifically mentioned may be easily ascertained and understood from the following description in connection with the accompanying drawings forming a part thereof. It is however to be noted, that the invention is not to be limited or restricted to the exact construction and formation shown in the drawings and described in the specification, but that said invention is only to be limited by the scope of the claim appended hereto.

In the drawings illustrating a preferred embodiment of the invention:

Fig. 1 is a sectional view taken on line 1—1 of Fig. 2, and

Fig. 2 is a sectional view taken on line 2—2 of Fig. 1.

The blow pipe 5 is made from a thin metal plate which is either riveted or welded along its edges abutting each other after it has been formed into a pipe by bending it over a mandrel or in any other convenient and suitable manner.

In order to make the proper connection between the blow pipe and the tuyère on one end of the blow pipe, and between the connecting elbow, called goose neck, leading downward from the main wind pipe and the other end of the blow pipe, collars 6 and 7 respectively are welded to the ends of the blow pipe. These collars are made either of cast

steel or may be machined from steel bars bent into a circle and welded together and the shape of the collars is to be such, that a proper air tight connection between the blow pipe and the tuyère on one end and between the goose neck and the blow pipe at the other end, can be made. As stated above these rings are welded to the ends of the blow pipe as indicated at 8 and 9 in the drawings.

Since the wind blown into a blast furnace is of high temperature it would be impossible to use a thin metal pipe without protecting it against this high temperature of the wind passing through the pipe. Therefore the blow pipe according to the present invention is to be lined on its inside with a heat resisting material 10, such as a high temperature cement of which various grades are obtainable on the market. Means are to be provided on the inside of the blow pipe for holding the refractory lining 10 in place and for this purpose small angles or metal strips bent into any suitable shape could be used but in order to avoid the labor and expense connected with arranging these angles or metal strips in the pipe, the pipe proper is preferably made out of corrugated sheet metal, the corrugations whereof are fully sufficient to insure a strong hold for the high temperature cement.

The blow pipes known and used heretofore have been made as stated above from cast iron and had to have a wall thick enough to withstand the rough handling by the working men around the furnace, when a tuyère is to be exchanged. The weight of such blow pipe therefore is a considerable one and it requires a number of men to handle the blow pipe when the same is removed and reset during the work of exchanging the tuyère, so that this work is not only retarded on account of the heavy weight of the blow pipe whereby the expense of the work is increased but the work itself becomes very hard and strenuous. By constructing a blow pipe according to the present invention the weight of the blow pipe becomes less than $\frac{1}{2}$ of the weight of a blow pipe of the known construction, so that with the use of the blow pipe according to the present invention the

work of handling the blow pipe is facilitated requiring less men and less time in exchanging a tuyère that means cutting the expense of this work considerably. In addition to
5 that, a blow pipe according to the present invention can be easily and readily removed in order to repair any defective places of the refractory lining.

Having described my invention and how
10 the same is to be performed, I claim as new and desire to secure by Letters Patent:

A blast furnace blow pipe made out of corrugated sheet metal, and an inner heat
15 resisting lining, the corrugations of the sheet metal forming the pipe, serving as means for holding the lining in place.

In witness whereof I affix my signature.

EDMUND VON MALTITZ.

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