W. T. Barnes,

Tuyere,

No. 5,682. Patented July 25, 1848.

Fig. 1.

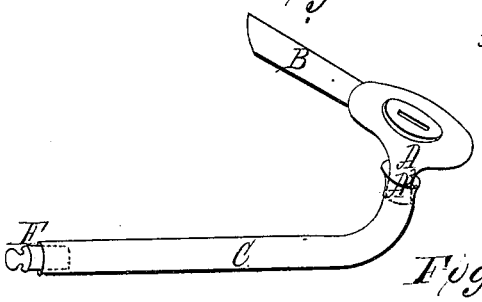

Fig. 2.

Fig. 3.

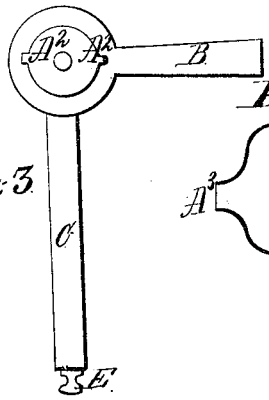

Fig. 4.

UNITED STATES PATENT OFFICE.

WILLIAM T. BARNES, OF BUFFALO, NEW YORK.

TWYER.

Specification of Letters Patent No. 5,682, dated July 25, 1848.

To all whom it may concern:

Be it known that I, WM. T. BARNES, of Buffalo, in the county of Erie and State of New York, have made certain Improvements in Twyers.

Figure 1 is a general view thereof, Fig. 2 shows the under side of the cover, Fig. 3 plan of the parts with the cover removed, Fig. 4 section of the air chamber.

The most important desideratum in the formation and arrangement of twyers yet to be attained is a freedom from being clogged by cinders and dirt. Many attempts have been made to obviate this, but, so far as I am aware, without success. There is another great difficulty in twyers now in use, having an air chamber, owing to the constant liability of heating the iron plate, composing the upper surface thereof, so as to cause it to warp and become useless whenever the blast from the bellows is stopped. My construction is intended to correct these defects, and is as follows:—An air chamber A of the form spheroid, has a circular opening in its upper or flattened surface of eight inches, more or less, in diameter, onto which a cover D fits. This cover is fastened by means of two hooks, A′, that shut into two notches A^2 in the hole above named, when by turning around they are caught, as shown in Fig. 4. In this cover there is a long narrow fissure, through which the blast is emitted, and this can be turned so as to make what blacksmiths denominate a long or broad fire, according to the work to be done. Directly below the cover just described, in the bottom of the air chamber, there is an opening of tunnel form, A^3, on to which a pipe (*c*) is affixed, that curves down and outward to any distance and beyond the side of the furnace that is found convenient. In the side of the air chamber, and at right angles to it, there is a pipe B, which is connected with the bellows or fan used for producing the blast.

In operating this twyer the lower tube (*c*) may be stopped with the stopper E, and the blast from the bellows enters the air chamber, in which there is no angles to obstruct it, the whole interior being clear, and issues through the fissure before described, blowing off all the dirt which tends to accumulate over it, and lodging it on one side, and should any portion of dirt accidentally fall below the blast, into the tube (*c*), from whence it is readily cleared, and should anything lodge in the fissure it is forced straight down into the tube by a clearing iron. The top of this twyer being convex, it can at any time be scraped off, and all the cinders scraped off by passing a shovel or other iron over it. When the bellows is stopped, the stopper E is withdrawn from the pipe (*c*), and a current of air is thus introduced through it by the rarefication of the air in the air chamber, so as to keep up a gentle draft, enough to keep the said air chamber cool and prevent it melting down and warping.

Having thus fully described my improvements in twyers, what I claim therein as my invention, and for which I desire to secure Letters Patent, is—

The twyer constructed substantially as herein described—that is to say, having a spheroidal air chamber with a convex top and movable cover, through which the blast is blown, and which can be turned to make a long or broad fire at pleasure.

WILLIAM T. BARNES.

Witnesses:
SELAH BARNARD,
H. J. FORD.