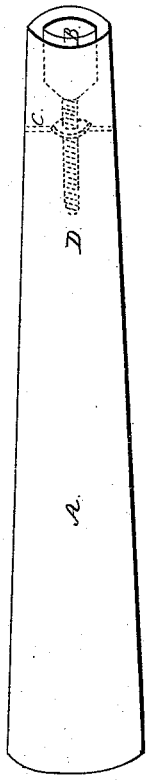
I. Barker,

Tuyere,

No. 134. Patented Mar. 3, 1837.



UNITED STATES PATENT OFFICE.

JOHN BARKER, OF BALTIMORE, MARYLAND.

BLOWPIPE FOR BLAST-FURNACES OF ALL DESCRIPTIONS.

Specification of Letters Patent No. 134, dated March 3, 1837.

To all whom it may concern:

Be it known that I, JOHN BARKER, of the city of Baltimore, in the State of Maryland, have made a new and useful Improvement in Blowpipes for Blast-Furnaces of All Descriptions, which improvement is herein fully described, reference being had to the annexed drawing thereof, which makes a part of this specification.

In the blow-pipe, as ordinarily used, the wind is forced through it in a solid column, as through the nozzle of the common bellows, but my improvement consists in delivering the air into the furnace through a tube or tubes, opening or openings in such a manner as that the same quantity of air may be distributed over a larger surface; effecting this, in general, by means of an annular opening in the mouth of the pipe. For this purpose, I make the pipe considerably larger than usual, and affix a plug centrically in the end thereof in such a manner that the area of the space left between the plug and the pipe shall be equal to that of a round or other formed blow-pipe adapted to the furnace to which it is applied.

In the accompanying drawing, A, represents the blow-pipe; B, the plug fixed at, or near, its mouth, with the requisite space between the two. This plug may be conveniently fixed in the pipe by means of a cross bar C, within the tube, a shank D extending from the center of the plug, so that by means of the screw shank the plug may be graduated so as to project beyond the mouth of the tube, be even with, or stand within it, as may be found most convenient. This plug it will be evident to any competent workman, may be fixed and adjusted in various ways.

It has been found by actual experiment that the air as it issues from the improved annular aperture herein described, becomes heated and rarefied by coming in contact with a larger portion of the heated and rarefied air and ignited fuel in the furnace, and that a beneficial effect is thereby produced, both in the operation of smelting, or of melting.

This improved pipe may be used with any of the various kinds of fuel employed in furnaces; and although I have spoken of it as round, it may be made square, oval, or otherwise; I, however, prefer the round form as more simple and convenient. The form may also be varied in numerous ways; as, for example, instead of making an annular plug, such as I have described, a similar effect may be produced by blowing the air through a number of smaller tubes arranged so as to form a ring of separate tubes, the area of the whole being such in amount as is requisite to produce the proper effect; or a bar, or partition, may be placed across the aperture of the blow-pipe in such way as to distribute the air through two, or more, openings, and thus to produce an effect analogous to that of the single annular opening, all of which I should esteem as invasions of my right, being only different, though inferior, modes of carrying my principle of diffusing the blast into operation.

What I claim as my invention is—

The so forming the blow-pipe of a furnace that the air shall enter it through an open space left between the pipe and a plug which partially fills it, in the manner, and operating upon the principle, herein set forth; together with such variations of the said principle, or mode of operating as will produce analogous results by means substantially the same.

JOHN BARKER.

Witnesses:

THO. W. GRIFFITH,

FRANCIS BARKER.